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GEOLOGICAL SURVEY

W. C. MENDENHALL, Director

Water-Supply Paper 835

SURFACE WATER SUPPLY
of HAWAII

JULY 1, 1936, to JUNE 30, 1937

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Prepared in cooperation with the
TERRITORY OF HAWAII



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SURFACE WATER SUPPLY OF HAWAII, JULY 1, 1936, to JUNE 30, 1937

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, 1937. Since the beginning of stream-gaging work in Hawaii in 1910 records of flow of streams and ditches have been obtained at about 480 stations for periods ranging from a few months to 26 years. In addition hundreds of miscellaneous measurements have been made, and rather extensive studies of ground water have been made in Kau, Hawaii,¹ and on the islands of Oahu,² Maui, Molokai, and Lanai.

In this volume are given the records of daily flow that were obtained at stations that were operated during the year ending June 30, 1937, and the results of miscellaneous measurements of stream flow made during that year. The results of ground-water studies will be 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-foot" is an abbreviation for "cubic feet a 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 43,560 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-foot, million gallons a day, and acre-foot: 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. The records of stage are obtained from water-stage recorders that give continuous records of the fluctuations. Measurements of

¹ Stearns, H. T., and Clark, W. O., Geology and water resources of the Kau district, Hawaii: U. S. Geol. Survey Water-Supply Paper 618, 1930.

² Stearns, H. T., and Vaksvik, K. N., Geology and ground-water resources of Oahu, Hawaii: T. H. Division of Hydrography Bull. 1, 1935: Records of the drilled wells on Oahu, Hawaii: Idem, Bull. 4, 1938. Stearns, N. D., Annotated bibliography and index of geology and water supply of Oahu, Hawaii: T. H. Division of Hydrography, Bull. 3, 1935.

discharge are usually made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge. 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. Occasionally discharge is determined from a weir or a rating flume, using standard formulas, and for a few stations the high-water discharge has been determined by the use of models.

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 run-off. Skeleton rating tables are published except for ditch 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 5 per cent of the true mean, the mean has been obtained by averaging discharges for intervals during the day or by use of the discharge integrator.

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 run-off in million gallons" is the sum of the daily flows, and the "total run-off in acre-feet" is computed from the total monthly discharges in million gallons a day.

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 per cent, respectively.

It should be borne in mind that the observations 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 run-off (million gallons and acre-feet) above 10,000 are carried to four significant figures.

PUBLICATIONS

The following table gives by years the serial numbers of the papers on the surface-water supply of Hawaii published from 1903 to 1937, and, used in conjunction with the list of stations maintained, given in Water-Supply Paper 795, provides a convenient index for finding the data for any station. 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 has been 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, 1903-37

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

*Water resources of Molokai, by Waldemar Lindgren.

†Calendar years; reports subsequent to Water-Supply Paper 373 cover the year beginning July 1 and ending June 30.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The following table contains a list of gaging stations in the Territory of Hawaii at which records of discharge were collected by agencies other than the Geological Survey during the fiscal year July 1936 to June 1937. The records for these stations are not contained in the publications of the Geological Survey.

Records of discharge collected by agencies other than the Geological Survey

ISLAND OF KAUAI

Stream	Location	Period	Operated by
Anahola ditch, Lower....	Near Government Road near Anahola.	1925-37	East Kauai Water Co.
East Lawai ditch.....	Near Government Road near Kalaheo.	1924-37	McBryde Sugar Co.
Kleele ditch.....	Near Government Road near Kalaheo.	1924-37	Do.
Hanalei ditch.....	Above Kalihuiwai Reservoir, near Kilauea.	1925-37	Kilauea Sugar Plantation Co.
Hanamaulu ditch.....	Below intake, near Hanamaulu.	1925-37	Lihue Plantation Co.
Hanapepe ditch.....	At Makaweli Plantation boundary near Makaweli.	1926-37	Hawaiian Sugar Co.
Hanapepe Field ditch....	Below Hanapepe River intake near Kleele.	1924-37	McBryde Sugar Co.
Hanapepe Stream.....	At tidalwater near Kleele.	1924-37	Do.
Kamoola ditch.....	Near Koloa boundary, near Koloa.	1924-37	Do.
Kapaia River diversion to field B reservoir.	Near Hanamaulu.....	1926-37	Lihue Plantation Co.
Kapaia River diversion to field B.	Near Lihue.....	1927-37	Do.
Lawai Stream.....	$\frac{1}{2}$ mile above cannery near Kalaheo.	1924-37	McBryde Sugar Co.
Lihue Lower ditch.....	Below intake, near Lihue.	1925-37	Lihue Plantation Co.

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

ISLAND OF KAUAI--Continued

Stream	Location	Period	Operated by
Lihue upper ditch.....	Below intake, near Lihue...	1925-37	Lihue Plantation Co.
Lumaha'i Stream.....	Near Hanale'i, at altitude about 600 feet.	1934-37	McBryde Sugar Co.
Makaleha ditch.....	Near Mimito Reservoir, near Kealia.	1925-37	East Kauai Water Co.
Old Tunnel ditch.....	Above confluence with main Koloa ditch, near Koloa.	1925-37	Koloa Sugar Co.
Olokele ditch.....	At power-house near Makaweli.	1926-37	Hawaiian Sugar Co.
Stable storm ditch.....	At Stable Camp road crossing near Lihue.	1931-37	Lihue Plantation Co.
Storm ditch.....	Above Kalaheo-Lihue main highway near Koloa.	1926-37	Koloa Sugar Co.
Wahiawa Stream.....	Above Alexander Reservoir, near Kalaheo.	1924-37	McBryde Sugar Co.
Wahiawa Stream, East Branch.	do.....	1929-37	Do.
Waiahi River.....	Above Lihue ditch intake, near Lihue.	1925-37	Lihue Plantation Co.
Wailua ditch.....	Near Flume 4, near Kapaa.	1922-37	East Kauai Water Co.
Wainiha Stream.....	Near Hanale'i, at altitude about 960 feet.	1927-37	McBryde Sugar Co.
West Lawai ditch.....	Near camp 12 near Kalaheo.	1924-37	Do.

ISLAND OF OAHU

*Alewa Heights Spring.....	Below reservoir 3.....	1932-37	Board of Water Supply City and County of Honolulu.
*Booth Springs.....	In Pauao Valley, at altitude 685 feet.	1929-37	Do.
Helemano ditch.....	About 3 miles below Upper Helemano Reservoir.	1935-37	Waialua Agricultural Co.
*Hering Springs.....	In Makiki Valley, at altitude 970 feet.	1925-37	Board of Water Supply City and County of Honolulu.
*Kahuawai Springs.....	In Pauao Valley, at altitude, 618 feet.	1925-37	Do.
*Kalihi tunnels.....	At diversion, at altitude 650 feet.	1926-37	Do.
Kamananui ditch.....	In Kawaiaola Gulch about 500 yards above third siphon from Government Road.	1934-37	Waialua Agricultural Co.
Kipapa Stream.....	At altitude 375 feet.....	1917-37	Waiahole Water Co.
*Makiki Springs.....	In Makiki Valley, at altitude 350 feet.	1926-37	Board of Water Supply City and County of Honolulu.
*Manoa tunnels.....	Upper Manoa Valley.....	1925-37	Do.
*Nuuanu tunnels.....	At Lower Luakaha.....	1926-37	Do.
*Nuuanu tunnel 3.....	At overflow, in upper Nuuanu Valley.	1931-37	Do.
*Palolo tunnel.....	Upper Palolo Valley.....	1926-37	Do.
Wahiawa Reservoir outlet...	About 1,200 feet below dam.	1906-9, 1912-37	Wahiawa Water Co.
Waiahole Stream.....	At altitude 250 feet.....	1919-37	Waiahole Water Co.
Waiahole tunnel.....	At adit 8.....	1916-37	Do.
Waiawa Stream.....	At altitude 750 feet.....	1917-37	Do.
Waikakalau Stream.....	do.....	1917-37	Do.

ISLAND OF MAUI (East Maui)

Banana Spring.....	Near east wall of Keanae Valley, at altitude 700 feet.	1935-37	East Maui Irrigation Co....
Hanawi Stream.....	In low-water channel of Hanawi Gulch near Nahiku, at altitude 650 feet.	1935-37	Do.
Hanawi Spring upper high-level.	On east side of pali in Hanawi Gulch near Nahiku, at altitude 675 feet.	1932-37	Do.
Hanawi Spring lower high-level.	On east side of pali in Hanawi Gulch near Nahiku, at altitude 575 feet.	1932-37	Do.
Makapipi ditch.....	At west edge of Makapipi Gulch near Nahiku, at altitude 1,300 feet.	1935-37	Do.
Oheo Spring.....	In Keanae Valley along Belt road, 5/4 mile east of Keanae P. O., at altitude 200 feet.	1935-37	Do.

ISLAND OF MAUI (West Maui)

Everett ditch.....	Below intake, near Wailuku.	1935-37	Wailuku Sugar Co.
Iao pipe line.....	do.....	1935-37	County of Maui.
Iao-Waikapu ditch.....	At lower end of tunnels near Wailuku.	1925-37	Wailuku Sugar Co.
Kama ditch.....	Below intake, near Wailuku.	1935-37	Do.
Maniania ditch.....	do.....	1923-37	Do.
North Waiehu ditch.....	Near end of Waiehu Camp road, near Wailuku.	1922-37	Do.

*Published in Biennial Reports of Honolulu Sewer & Water Commission and of Board of Water Supply City and County of Honolulu.

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.....	Above first lateral, near Waikapu.	1935-37	Wailuku Sugar Co.
Do.....	Below tunnel sections near Waikapu.	1923-37	Do.
Spreckels ditch.....	Below intake, near Waihee.	1931-37	Do.
Waihee ditch.....	do.....	1922-37	Do.

ISLAND OF HAWAII

Kohala ditch.....	At Awini weir in Honokane, near Niuli.	†1917-37	Kohala Ditch Co.
Kohala ditch.....	At Niuli weir, near Niuli.	†1917-37	Do.
Pololu Inlet 1.....	At Pololu, near Niuli....	1929-37	Do.
Pololu Inlet 2.....	do.....	1929-37	Do.
Waipuka Stream.....	Above Kohala ditch near Niuli.	1929-37	Do.
Waipuhi Stream.....	Above Kohala ditch near Halawa.	1933-37	Do.
Makapala Stream.....	do.....	1929-37	Do.
Waipunalaa Stream.....	do.....	1929-37	Do.
Mountain House tunnel.....	6.0 miles north of Wiohima.	1927-37	Hutchinson Sugar Plantation Co.
Plantation Springs tunnel..	8.7 miles north of Naalehu.	1927-37	Do.
Shirakura tunnel 20.....	In Moaula Gulch, at altitude 4,650 feet, 6.5 miles from Pahala.	1929-37	Hawaiian Agricultural Co.
Domestic supply tunnel 16.	3.8 miles from Pahala, at altitude 2,800 feet.	1926-37	Do.
Tanaka tunnel 15.....	In Hionamaa Gulch, at altitude 3,000 feet, 3.4 miles from Pahala.	1926-37	Do.
Double Arch tunnel 11.....	In Piikea Gulch, at altitude 4,150 feet, 5.35 miles from Pahala.	1926-37	Do.
Mud Flow tunnel 2.....	In Piikea Gulch, at altitude 3,750 feet, 4.8 miles from Pahala.	1926-37	Do.
Noguchi tunnel 19.....	5.3 miles from Pahala, at altitude 3,500 feet.	1928-37	Do.
Makakupu tunnel 13.....	In Waiakaloa Gulch, at altitude 3,750 feet, 6.1 miles from Pahala.	1926-37	Do.
Upper Hamakua ditch and Reservoir 3 Weir.	Near Honokaa at base of Puu Lala.	†1907-12, 1921-37	Hawaiian Irrigation Co.
Lower Hamakua ditch.....	At main weir near Kukuihaele.	†1921-37	Do.
Honokaape ditch.....	At Kukuihaele Village....	1923-37	Do.

*Records for some earlier years published in water-supply papers of Geological Survey.
†Records for 1913-20 published in water-supply papers of Geological Survey.

Note.- Records not published unless otherwise indicated.

COOPERATION

The work during the year ending June 30, 1937, was done under cooperative agreement with the Territory of Hawaii through the commissioner of public lands and the Board of Water Supply City and County of Honolulu. 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 Waterworks, 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 data were collected and prepared for publication under the direction of M. H. Carson, district engineer, Honolulu, Hawaii.

GAGING-STATION RECORDS

ISLAND OF KAUAI

Waimea River below Kekaha ditch intake, near Waimea

Location.- Water-stage recorder, lat. 22°02'40", long. 159°38'35", in Waimea Canyon, 500 feet below Kekaha ditch intake and 6½ miles northeast of Waimea. Altitude, 490 feet, by barometer.

Drainage area.- 45.0 square miles.

Records available.- July 1921 to June 1937.

Average discharge.- 12 years (1925-37), 40.9 million gallons a day (83.3 second-feet).

Extremes.- Maximum discharge during year, 5,500 million gallons a day (8,590 second-feet)

Mar. 19 (gage height, 15.00 feet), from rating curve extended above 350 million gallons a day; minimum, 0.04 million gallons a day (0.06 second-foot) Oct. 2-18.

1921-37: 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 350 million gallons a day; no flow occasionally, owing to regulation.

Remarks.- Records fair for medium stages and poor for all extremely high and low stages.

Kokōe and Kekaha ditches divert above station, taking practically all the water at low and medium stages for irrigation near Waimea and Kekaha.

Rating tables, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Mar. 19						Mar. 20 to June 30					
3.68	0.04	4.2	1.66	6.0	79	9.0	820	3.9	0.13	4.4	3.55
3.7	.06	4.5	5.0	6.5	133	10.0	1,300	4.0	.30	4.7	8.8
3.8	.16	5.0	17.5	7.0	212	11.0	1,890	4.2	1.40	5.0	17.5
4.0	.56	5.5	42	8.0	460	12.0	2,660				

Note.- Same as preceding table above 5.0 feet.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.11	0.12	4.1	0.05	28	0.08	104	46	18.7	3.25	30	0.13
2	.10	.10	.10	.04	14.9	.08	63	313	75	.43	30.5	.13
3	.75	4.9	.09	.04	7.2	.10	36	1,010	42	2.56	12	.13
4	8.4	170	.08	.04	3.1	.55	17.5	292	39	4.3	35	.13
5	31.6	41	.11	.04	52	15.1	13.6	109	101	.30	322	.16
6	10.9	.48	.10	.04	36	98	10.3	115	98	.28	109	.18
7	34.5	.56	.08	.04	213	68	7.6	117	226	.25	34	.18
8	227	2.6	.16	.04	164	58	5.9	367	66	.23	6.9	.20
9	37.5	.14	19.8	.04	75	326	1.56	152	151	.23	42	.18
10	35	.13	.13	.04	79	190	.27	115	74	.23	8.9	1.27
11	41	.10	.06	.04	35	99	.22	71	58	.23	.27	.18
12	26	256	.06	.04	15.2	97	13.2	137	138	.23	.20	.13
13	.12	91	.06	.04	.17	63	397	109	65	.23	.16	.13
14	.11	11.3	.06	.04	19.3	885	198	84	48	.20	.15	.13
15	9.5	.14	7.4	.04	3.15	321	79	476	56	.18	.13	.13
16	53	25.5	246	.04	.12	88	116	334	41	.22	.13	.13
17	3.1	31	65	.04	6.1	52	238	108	78	.22	.16	.13
18	.62	1.07	22	.04	12.3	42	136	348	907	.22	.18	.13
19	1.04	.09	1.33	4.2	.09	16.8	94	268	1,970	.20	.18	.13
20	.08	.09	.10	.16	1.93	13.6	52	477	1,600	112	.18	.13
21	.08	.08	.09	.19	6.4	67	18.6	375	374	31.5	64	.13
22	1.29	.08	.06	53	1.17	150	17.7	342	193	1.94	61	.13
23	1.40	.08	.06	365	518	42	5.7	169	127	1.09	3.1	.13
24	39	4.1	.06	127	106	103	.78	88	98	.45	.18	.13
25	449	345	.06	207	7.4	49	.15	52	79	.25	.16	.16
26	403	137	.06	251	2.9	31	1.73	39.5	67	.23	.15	24.5
27	56.5	2.2	3.7	173	.22	4.7	5.9	34	56	.22	.98	3.95
28	9.4	.13	.06	279	.12	31	.50	21.5	39.5	18.9	.15	.25
29	.55	52	.05	242	.10	401	45	89	30.5	89	.13	.20
30	17.6	2.6	.05	54	.09	517	416	-	24.5	82	.13	.15
31	3.9	4.5	-	28	-	312	118	-	17.8	-	.13	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	449	0.08	47.8	74.0	1,480	4,550
August.....	345	.08	38.2	59.1	1,180	3,630
September.....	245	.05	12.4	19.2	371	1,140
October.....	518	.04	57.5	89.1	1,760	5,480
November.....	518	.09	47.0	72.7	1,410	4,330
December.....	865	.08	133	206	4,130	12,670
Calendar year 1936	1,300	.04	66.0	105	24,690	76,420
January.....	416	.15	71.4	110	2,210	6,790
February.....	1,010	21.5	222	343	6,210	19,060
March.....	1,970	17.8	224	347	6,960	21,350
April.....	112	.16	11.7	18.1	352	1,080
May.....	322	.13	28.1	43.5	872	2,680
June.....	24.5	.13	1.13	1.75	33.8	104
Fiscal year 1936-37	1,970	.04	74.0	114	26,990	82,860

Kawaikoi Stream near Waimea

Location.- Water-stage recorder, lat. 22°08'00", long. 159°37'15", at old trail crossing, 12½ miles northeast of Waimea. Altitude, 3,420 feet, by barometer.

Drainage area.- 4.1 square miles.

Records available.- April 1909 to June 1937. July 1917 to July 1919 (unpublished).

Average discharge.- 18 years (1919-37), 21.6 million gallons a day (33.4 second-feet).

Extremes.- Maximum discharge during year, 2,460 million gallons a day (3,810 second-feet) Mar. 18 (gauge height, 9.07 feet), from rating curve extended above 200 million gallons a day; minimum, 2.3 million gallons a day (3.6 second-feet) July 3.

1909-37: Maximum discharge, that of Mar. 18, 1937; minimum, 1.3 million gallons a day (2.0 second-feet) Sept. 15, 1921.

Highest known stage, 15.2 feet, Dec. 18, 1916 (discharge not determined).

Remarks.- Records for ordinary stages are good; those for extremely high stages and for period Sept. 29 to Oct. 21, which were computed on basis of records for stations on Waiahulu Stream and Kokee ditch are poor.

Rating tables, fiscal year 1936-37 (gauge height, in feet, and discharge, in million gallons a day)

July 1 to Oct. 19				Oct. 20 to June 30			
1.5	2.5	2.4	26	2.0	2.7	3.5	70
1.6	3.8	2.8	46	2.2	5.1	4.0	141
1.7	5.4	3.2	76	2.4	8.9	4.5	241
1.9	9.5	3.6	112	2.6	14.4	5.1	380
2.1	15.2	4.0	160	3.0	30.5		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.2	8.4	12.0	4.0	22.5	8.3	45	10.2	21	8.9	9.1	5.1
2	2.5	7.1	13.7	3.8	12.3	19.7	155	57	57	9.4	7.2	5.0
3	2.5	10.0	12.6	3.7	9.4	9.6	18.5	198	16.0	15.3	16.1	6.1
4	14.5	72	10.8	3.6	8.5	9.2	16.0	40	35	10.6	24	5.1
5	52	16.6	14.3	3.5	42	11.8	15.1	20.5	91	8.1	200	10.3
6	26.5	7	13.0	3.4	60	28.5	13.2	31	78	7.4	65	14.4
7	48	37	6.9	3.3	120	16.0	11.7	29	120	7.2	21.5	27
8	68	23	10.9	3.2	67	14.7	10.2	99	75	6.8	13.5	26
9	32	42	14.0	3.1	47	196	9.2	39	86	6.5	42	24
10	27.5	20	6.2	4.0	41	59	10.9	26.5	48	11.6	12.0	15.8
11	21.5	11.9	4.6	4.5	20.5	68	10.8	20.5	57	13.8	8.5	8.1
12	25.5	42	3.8	3.5	15.1	60	10.2	72	100	12.3	7.2	5.6
13	15.2	21.5	10.5	3.3	12.0	56	58	27	36.5	7.4	6.3	5.0
14	19.3	9.8	19.6	3.1	64	355	45	59	41	6.3	6.0	5.8
15	19.6	7.7	49	2.9	19.6	94	56	262	48	5.8	7.2	6.3
16	16.8	44	114	2.9	12.0	30.5	60	52	32	5.4	13.8	4.8
17	9.5	25	23.5	2.8	31.5	25	38.5	24.5	30	5.1	8.1	4.3
18	17.1	10.8	14.0	2.8	18.8	26	17.0	57	356	5.1	6.1	6.1
19	10.0	8.0	11.1	3.0	11.2	22.5	18.5	30	326	5.1	23.5	6.5
20	6.0	6.2	7.5	3.0	24.5	22.5	14.1	91	167	12.4	29.5	4.6
21	30.5	5.4	6.4	3.0	25.5	63	31	138	41	12.3	78	3.9
22	21	4.8	5.4	*190	11.4	67	17.3	116	27	6.1	37.5	3.7
23	30	7.3	4.8	*250	229	38	12.0	39.5	21.5	5.1	15.6	3.5
24	31	20	4.1	95	48	43	10.9	22.5	18.1	4.7	9.4	3.4
25	*148	156	3.7	109	21.5	22.5	13.8	17.7	16.0	4.6	7.4	3.7
26	97	40	4.6	208	15.4	18.5	11.7	20.5	14.1	8.1	12.1	14.8
27	31.5	13.7	20.5	86	12.3	14.1	8.9	18.5	17.8	4.6	14.0	25
28	20	9.8	*6.0	90	10.6	12.0	8.1	14.1	16.7	4.7	7.4	12.3
29	11.9	18.7	6.0	50	9.4	129	8.3	-	12.0	17.3	6.1	13.8
30	12.2	13.7	8.0	20.5	8.7	118	56	-	10.4	13.0	5.6	6.5
31	9.8	12.1	-	15.1	-	166	18.4	-	9.6	-	5.3	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	148	2.5	28.4	43.9	879	2,700
August.....	156	4.8	24.0	37.1	745	2,280
September.....	114	3.7	14.7	22.7	442	1,350
October.....	250	2.8	37.9	58.6	1,170	3,600
November.....	229	8.5	35.0	54.2	1,050	3,220
December.....	355	8.3	58.8	91.0	1,820	5,600
Calendar year 1936.....	355	2.0	30.9	47.8	11,320	34,720
January.....	60	8.1	22.4	34.7	695	2,150
February.....	262	10.2	61.8	95.6	1,730	5,310
March.....	356	9.6	65.3	101	2,020	6,210
April.....	17.3	4.6	8.50	12.8	249	764
May.....	200	5.3	23.4	36.2	725	2,220
June.....	27	3.4	9.55	14.8	286	879
Fiscal year 1936-37.....	356	2.5	32.4	50.1	11,810	36,260

*Partly estimated.

Mohihi Stream at altitude 3,500 feet, near Waimea

Location.-- Water-stage recorder, lat. 22°07'05", long. 159°36'15", at altitude 3,500 feet at upper trail crossing, 3.8 miles northeast of confluence of Waiahulu and Poomau Streams and 12 miles northeast of Waimea.

Drainage area.-- 1.6 square miles.

Records available.-- June 1920 to October 1926 and October 1936 to June 1937. April 1909 to December 1912 at site 2 miles downstream (fragmentary).

Extremes.-- Maximum discharge during period October 1936 to June 1937, 246 million gallons a day (381 second-feet) Mar. 19 (gage height, 4.40 feet), from rating curve extended above 25 million gallons a day; minimum, 0.7 millions a day (1.1 second-feet) June 25, 1920-26, 1936-37: Maximum discharge recorded, 520 million gallons a day (805 second-feet) Jan. 16, 1921 (gage height, 8.91 feet, present datum), from rating curve extended above 25 million gallons a day; minimum recorded, 0.2 million gallons a day (0.3 second-foot) July 16, 1921, Sept. 14, 15, 1921, Aug. 7, 8, 1922, May 16, 1926.

Remarks.-- Records good except those for Oct. 18 to Nov. 9, which were computed on basis of records for nearby stations and are poor. No diversions.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.0	0.5	1.6	5.0	2.5	27
1.2	1.4	1.8	8.2	3.0	53
1.4	2.8	2.0	12.4	3.6	108

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1				-	3.0	2.0	14.4	4.6	4.0	2.7	4.9	1.2
2				-	2.5	2.2	8.6	23	4.8	2.6	2.6	1.1
3				-	2.1	2.2	6.8	67	4.3	2.6	5.2	1.0
4				-	2.0	2.6	4.6	17.5	5.8	2.8	3.3	1.0
5				-	5.0	3.5	4.4	8.6	11.3	2.4	23	2.6
6				-	6.0	8.8	3.8	14.0	12.9	2.2	3.9	3.5
7				-	25	7.0	3.5	15.8	22.5	2.0	6.8	4.8
8				-	16	7.4	3.0	43	11.0	1.9	3.5	6.4
9				-	10	33	2.6	16.0	18.0	1.8	7.0	3.1
10				-	11.3	22	2.6	10.6	12.6	1.8	4.4	4.0
11				-	6.0	15.2	2.7	8.0	10.2	1.9	2.5	2.2
12				-	4.2	15.0	2.6	17.4	18.0	1.9	1.9	1.5
13				-	3.1	10.1	20	10.2	10.4	1.9	1.6	1.2
14				-	6.6	99	14.8	10.5	10.2	1.7	1.5	1.2
15				0.9	4.2	29	10.9	35	11.5	1.6	1.4	1.1
16				.9	2.9	10.6	14.9	19.2	8.4	1.6	1.6	1.0
17				.9	4.7	7.4	21	9.0	10.0	1.5	1.6	1.3
18				.8	5.4	7.5	9.8	24.5	65	1.5	1.4	.9
19				1.7	3.0	7.4	9.0	18.0	101	1.5	1.7	.9
20				1.6	5.8	6.5	6.4	28	69	3.4	2.5	.9
21				1.4	5.3	11.0	8.0	21.5	18.8	4.6	13.1	.9
22				9.0	3.0	17.7	6.7	22	10.9	2.0	10.6	.8
23				40	35.5	8.6	4.8	12.4	7.9	1.6	4.2	.8
24				22	10.3	11.7	3.6	7.7	6.4	1.5	2.2	.7
25				20	4.6	6.5	3.5	6.0	5.3	1.4	1.7	.7
26				35	3.4	4.6	3.8	5.3	4.6	1.4	1.5	1.2
27				21	2.8	3.7	3.9	4.8	4.3	1.4	1.6	2.0
28				23	2.4	3.3	2.9	4.3	4.2	2.0	1.5	1.7
29				21	2.2	17.1	3.2	-	3.6	7.0	1.3	1.6
30				5.0	2.1	4.0	27	-	3.2	6.7	1.2	1.3
31				4.0	-	25.5	9.3	-	2.9	-	1.2	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	-	-	-	-	-	-
August.....	-	-	-	-	-	-
September.....	-	-	-	-	-	-
October 15-31.....	40	0.8	12.2	16.9	208	639
November.....	35.5	2.0	6.61	10.2	198	609
December.....	99	2.0	14.5	22.4	448	1,380
Calendar year						
January.....	27	2.6	7.81	12.1	242	743
February.....	67	4.3	17.3	26.8	484	1,490
March.....	101	2.9	15.9	24.8	493	1,510
April.....	7.0	1.4	2.37	3.67	71.1	218
May.....	23	1.2	3.95	6.11	122	376
June.....	6.4	.7	1.74	2.69	52.3	161
The period.....						7,130

Kokee ditch near Waimea

Location.- Water-stage recorder, lat. 22°06'25", long. 159°40'45", 1,000 feet west of road and 1½ miles north of Waimea. Altitude, 3,310 feet, by barometer.

Records available.- September 1926 to June 1937.

Average discharge.- 10 years (1927-37), 18.6 million gallons a day (28.8 second-feet).

Extremes.- Maximum discharge during year, 67 million gallons a day (104 second-feet) Oct. 27 (gauge height, 2.60 feet); no flow Dec. 24, Feb. 4, 23, when water was shut out of ditch.

1926-37: Maximum discharge, 75 million gallons a day (113 second-feet) Dec. 21, 1933 (gauge height, 2.83 feet); no flow occasionally, when water was shut out of ditch just above weir.

Remarks.- Records excellent except those for June 15-27, which were computed on basis of twice-daily gage readings and are fair, and those for Aug. 25, Oct. 22 to Nov. 2, Nov. 19-24, Mar. 1-14, which were computed on basis of records for stations on Kawaikoi Stream. Kokee ditch at altitude 3,400 feet diverts water from all streams tributary to Waimea River west of Mohihi Stream for irrigation near Kehaha. Flow regulated by head gates.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.2	11.8	13.3	7.7	25	17.2	19.8	21	30	27	18.5	9.5
2	7.6	10.1	16.0	6.6	20	27	23.5	27	40	25.5	16.0	9.2
3	7.4	12.2	13.1	6.0	16.0	18.5	28.5	37.5	30	30	27	9.7
4	13.4	25	13.1	5.6	14.7	17.2	28.5	28.5	35	25.5	18.0	9.4
5	48	26.5	13.1	5.4	31.5	17.2	27	39	50	22.5	55	13.6
6	30	11.6	17.2	5.2	31.5	34.5	24	26.5	50	21	55	17.2
7	41	35.5	10.1	5.1	22.5	25.5	22.5	21	50	19.8	36	27
8	51	27	11.1	4.9	21.0	24	19.8	17.2	40	18.5	19.8	34.5
9	36	39	18.5	4.8	23.5	39	18.5	30	30	18.5	44	25.5
10	34.5	25.5	9.9	5.5	25.5	39	19.8	27	25	21	21	22.5
11	27	16.0	8.1	6.9	10.7	27	19.8	28.5	25	24	16.0	13.1
12	28.5	30	7.2	5.4	16.1	25.5	19.8	25	30	22.5	13.8	9.9
13	19.8	31.5	10.1	4.9	19.8	22.5	34	17.2	25	18.5	12.4	8.6
14	19.8	14.2	19.8	4.6	37.5	28.5	48	24	25	16.0	11.8	8.8
15	22.5	11.4	36	4.5	25.5	27	50	35	39	14.7	11.8	9.2
16	19.8	26	55	4.5	19.8	21	51	28.5	30	14.2	18.5	8.4
17	14.2	33	31.5	4.4	33	19.8	41	22.5	28.5	13.8	14.2	7.6
18	18.5	14.7	18.5	4.4	26.5	31.5	28.5	28.5	34.5	13.3	11.4	7.4
19	14.7	11.4	14.7	6.0	25	37.5	28.5	25.5	27.5	13.1	28.5	9.0
20	9.7	9.5	10.9	5.8	35	36	22.5	25.5	14.2	19.1	27	7.9
21	22.5	8.6	9.5	5.5	40	34.5	31.5	26	20	24	55	7.4
22	27.5	8.1	8.8	10	25	30	28.5	27	33	14.7	46	6.7
23	28	8.6	8.2	60	45	27	21	14.7	27	12.6	25.5	6.4
24	27	*24	7.7	60	35	22.5	18.5	31.5	17.2	11.8	16.0	6.0
25	51	50	7.2	50	28.5	9.1	19.8	24	24	11.4	13.1	5.8
26	59	*40	7.0	50	31.5	23	17.5	28.5	22.5	12.4	14.5	18.5
27	37.5	19.8	21	60	25.5	16.0	30	27	11.1	19.8	24	24
28	28.5	14.2	9.7	30	22.5	25.5	14.7	25.5	27	11.6	12.4	17.2
29	16.0	21	8.7	30	19.8	24	16.0	-	33	24	10.7	17.2
30	16.0	16.0	11.6	30	18.5	28.5	41	-	30	24	9.9	10.3
31	13.6	16.0	-	25	-	25.5	34.5	-	28.5	-	9.5	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	59	7.4	25.7	39.8	798	2,450
August.....	50	8.1	20.9	32.3	648	1,980
September.....	55	7.0	14.9	23.1	447	1,370
October.....	60	4.4	17.4	26.9	539	1,650
November.....	45	10.7	25.7	39.8	771	2,370
December.....	39	9.1	26.0	40.2	808	2,480
Calendar year 1936	60	4.4	23.2	35.9	8,470	26,030
January.....	51	14.7	26.9	41.6	834	2,560
February.....	39	14.7	26.4	40.6	740	2,270
March.....	50	14.2	30.6	47.3	948	2,910
April.....	30	11.1	18.5	28.6	556	1,710
May.....	55	9.5	22.8	35.3	706	2,170
June.....	34.5	5.8	12.9	20.0	389	1,190
Fiscal year 1936-37	60	4.4	22.4	34.7	8,180	25,120

*Partly estimated.

Waiahulu Stream near Waimea

Location.-- Water-stage recorder and crude masonry-dam control, lat. $22^{\circ}04'45''$, long. $159^{\circ}39'15''$, in Waimea Canyon, half a mile above confluence with Koale Stream and 8 $\frac{1}{2}$ miles north of Waimea. Altitude, 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 1937. July 1918 to November 1920 at same site (fragmentary and unreliable; unpublished).

Average discharge.-- 12 years (1925-37), 28.7 million gallons a day (44.4 second-feet).

Extremes.-- Maximum discharge during year, 1,280 million gallons a day (1,980 second-feet) Mar. 18 (gage height, 8.58 feet), from rating curve extended beyond 400 million gallons a day; minimum, 8.6 million gallons a day (13.3 second-feet) Oct. 15, 1918.

1916, 1917-18, 1925-37: Maximum discharge, 2,550 million gallons a day (3,950 second-feet) Dec. 24, 1927 (gage height, 9.92 feet), from rating curve extended beyond 400 million gallons a day; minimum, 5.2 million gallons a day (8.0 second-feet) Nov. 4, 1927.

Remarks.-- Records good for ordinary stages and poor for high stages. Kokee ditch diverts water above station for irrigation near Kekaha.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.9	6.6	1.4	27	2.5	137	4.0	454
1.0	9.5	1.6	40	3.0	221	4.5	609
1.2	17.0	2.0	75	3.5	327	5.0	750

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.5	10.5	11.5	9.5	16.2	10.9	50	20.5	20.5	18.5	19.5	11.5
2	9.2	9.8	10.9	9.2	13.7	10.9	32.5	21.4	60	16.0	20.5	11.5
3	9.2	9.8	10.9	9.2	12.2	11.2	22	500	39.5	17.5	23.5	11.5
4	9.2	39.5	10.9	9.2	11.5	11.5	15.4	151	35	17.5	19.5	11.5
5	13.4	21.5	11.5	9.2	22.5	11.2	14.5	46	92	17.0	228	12.2
6	15.0	11.5	13.7	8.9	29.5	16.2	13.7	50	60	16.6	53	13.7
7	16.6	10.9	11.5	8.9	142	16.2	12.9	60	181	166	21.5	15.0
8	66	12.2	10.9	8.9	95	16.6	12.6	246	72	16.2	15.8	17.0
9	18.5	11.9	12.9	8.9	55	220	11.9	96	123	16.2	23.5	15.0
10	15.8	12.2	11.2	8.9	60	108	11.9	62	75	16.2	16.6	15.4
11	15.8	10.9	10.2	8.9	37	94	11.9	37	63	15.8	14.1	13.7
12	14.5	33.5	9.8	8.9	23	82	11.9	111	130	15.8	13.3	12.6
13	12.2	31	10.2	8.9	12.2	50	51	60	58	15.4	12.6	11.9
14	11.2	12.2	10.9	6.9	37	623	43	76	46	15.0	12.6	11.9
15	10.9	10.9	13.3	5.6	15.4	228	30	377	54	14.5	12.2	11.9
16	11.9	19.6	155	5.6	12.2	70	61	136	42	14.5	12.6	11.9
17	11.9	19.6	20	5.6	20	46	46	59	41	14.5	12.6	11.9
18	11.2	11.5	14.5	5.6	16.2	32.5	19.5	112	275	14.5	12.2	11.9
19	11.9	10.5	11.9	11.2	11.9	19.5	19.0	80	715	14.5	12.6	11.9
20	10.5	9.6	11.2	11.2	13.7	17.0	15.4	273	660	20.5	13.7	11.9
21	10.9	9.6	10.5	10.5	15.0	47	19.4	221	216	20.5	56	11.9
22	14.5	9.5	10.2	92	12.9	100	19.0	236	110	15.4	30.5	11.9
23	12.6	9.2	10.2	294	371	41	13.7	98	75	14.1	16.2	11.9
24	13.3	9.8	9.8	113	84	60	12.9	48	60	13.3	13.7	11.9
25	161	201	9.5	134	21	47	12.6	26.5	50	13.3	12.6	11.9
26	164	53	9.5	221	15.0	26	14.5	23	45	13.3	12.2	11.9
27	17.0	14.1	10.9	112	13.3	13.7	13.7	21.5	33.5	12.9	12.2	12.9
28	13.3	11.2	10.5	136	12.2	12.9	13.7	20	25	15.8	11.9	13.3
29	11.2	12.2	9.8	122	11.2	107	15.0	-	22	30	11.9	12.9
30	11.2	12.6	9.5	25.5	11.2	227	130	-	20.5	22	11.9	12.6
31	11.2	11.9	-	17.5	-	209	45	-	19.0	-	11.9	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	164	9.2	24.1	37.3	747	2,290
August.....	201	9.2	21.7	33.6	674	2,070
September.....	155	9.5	16.1	24.9	483	1,480
October.....	224	6.6	47.1	72.9	1,460	4,480
November.....	371	11.2	40.8	63.1	1,220	3,760
December.....	623	10.9	65.4	129	2,590	7,930
Calendar year 1936	623	8.6	44.2	68.4	16,160	49,600
January.....	130	11.9	26.3	40.7	616	2,500
February.....	500	20	123	190	3,450	10,930
March.....	660	19.0	115	178	3,560	10,930
April.....	30	12.9	16.5	25.5	496	1,520
May.....	226	11.9	24.8	36.4	770	2,360
June.....	17.0	11.5	12.6	19.5	379	1,160
Fiscal year 1936-37	660	8.6	45.6	70.6	16,640	51,070

Kekaha ditch at camp 1, near Waimea

Location.— Water-stage recorder, lat. 22°02'35", long. 159°38'30", in Waimea Canyon, a quarter of a mile below lower intake and 6½ miles northeast of Waimea. Altitude, 520 feet, by barometer.

Records available.— November 1907 to June 1937.

Average discharge.— 18 years (1918-24, 1925-37), 37.3 million gallons a day (57.7 second-foot).

Extremes.— Maximum discharge during year, 70 million gallons a day (108 second-foot) Oct. 22 (gage height, 4.03 feet); minimum, 0.52 million gallons a day (0.80 second-foot) July 12.

1907-37: Maximum discharge, 71 million gallons a day (110 second-foot) Apr. 25, 1928 (gage height, 4.33 feet); no flow occasionally, when water was shut out of ditch.

Remarks.— Records good. Diverts water for hydroelectric plant from Waiahulu Stream and Koale River 3 miles above lower intake. Lower intake is on Waimea River 300 feet below power house and 1 mile below confluence with Waialae River. Flow regulated by head gates. Water used for irrigation in vicinity of Kekaha.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	25	41	51	28.5	30.5	34	36	25	30.5	48	48	34
2	26	34	38.5	26	29.5	34	36	24	28.5	48	48	34
3	29.5	46	36	25	30.5	34	36	20.5	28.5	51	41	33
4	34	43	38.5	24	30.5	43	36	23	28.5	51	41	33
5	38.5	48	36	24	29.5	48	36	23	29.5	48	46	36
6	41	41	46	23	28.5	53	36	22	28.5	46	48	39
7	41	41	34	23	28.5	53	36	23	28.5	43	48	46
8	41	48	35.5	24	28.5	51	36	21.5	28.5	43	48	51
9	41	48	48	23	28.5	53	41	22	38.5	41	48	46
10	41	46	36	23	42	53	46	22	46	43	51	51
11	41	38.5	29.5	23	51	51	51	25	46	51	48	43
12	35	51	27.5	23	51	51	49	25	46	51	46	37
13	43	51	28.5	22	43	51	53	25	43	48	43	33
14	36	48	36	22	48	53	51	27	43	41	41	35
15	43	41	51	22	48	53	53	29.5	51	41	39	32
16	48	46	51	22	38.5	53	53	28.5	51	43	39	32
17	46	48	51	22	48	53	51	28.5	51	43	41	32
18	43	46	48	22	48	53	51	27.5	46	48	39	31
19	43	38.5	43	41	38.5	53	51	27.5	25.5	43	39	32
20	34	31.5	34	48	43	53	51	25	20.5	43	43	33
21	34	31.5	31.5	53	43	53	51	26	24	51	51	32
22	48	31.5	29.5	43	43	53	51	23	29	48	53	31
23	43	29.5	28.5	51	51	53	51	26	32	48	51	31
24	46	38.5	27.5	43	51	53	51	28.5	34	48	43	31
25	46	48	26	43	51	53	48	28.5	36	46	41	31
26	48	51	30.5	38.5	48	53	48	29.5	36	43	41	46
27	46	51	49	31.5	46	51	53	29.5	36	41	46	48
28	51	46	31.5	29.5	41	51	51	29.5	36	46	41	43
29	48	48	28.5	30.5	36	53	43	-	36	43	37	37
30	51	51	27.5	29.5	34	38.5	26	-	36	46	36	34
31	48	51	-	29.5	-	36	24	-	39	-	34	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	51	25	41.4	64.1	1,280	3,940
August.....	51	29.5	43.6	67.5	1,350	4,150
September.....	51	26	37.0	57.2	1,110	3,410
October.....	53	22	30.1	46.6	932	2,860
November.....	51	28.5	40.2	62.2	1,210	3,710
December.....	53	34	49.3	76.3	1,530	4,690
Calendar year 1936	53	2.2	36.0	55.7	13,180	40,430
January.....	53	24	44.7	69.2	1,380	4,250
February.....	29.5	20.5	25.5	39.5	715	2,190
March.....	51	20.5	35.9	55.5	1,110	3,410
April.....	51	41	45.8	70.9	1,370	4,220
May.....	53	34	43.8	67.8	1,360	4,170
June.....	51	31	36.8	56.9	1,100	3,390
Fiscal year 1936-37	53	20.5	39.6	61.3	14,450	44,390

Hanapepe River at Koula, near Eleele

Location.-- Water-stage recorder, lat. 21°57'20", long. 159°33'15", just below junction with Manuahi Stream, 4 miles northeast of Eleele. Altitude, 150 feet, by barometer.

Drainage area.-- 18.8 square miles.

Records available.-- May 1917 to January 1921, December 1926 to June 1937. August 1910 to December 1915 at site half a mile upstream; (records not equivalent).

Average discharge.-- 13 years (1917-20, 1927-37), 55.6 million gallons a day (86.0 second-feet).

Extremes.-- Maximum discharge during year, 5,550 million gallons a day (8,590 second-feet) Mar. 19 (gage height, 8.59 feet), from rating curve extended above 2,500 million gallons a day; minimum, 14.4 million gallons a day (22.3 second-feet) Oct. 18.

1910-21, 1926-37: Maximum discharge, that of Mar. 19, 1937; minimum, 7.5 million gallons a day (11.8 second-feet) Dec. 15, 18, 1928.

Remarks.-- Records for ordinary stages are good; those for Oct. 29 to Nov. 17 (computed on basis of records for stations on South Fork of Waialua River) and those for extremely high stages are poor. Hanapepe ditch diverts water from river 3 miles above station for irrigation in vicinity of Makaweli.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.2	10.8	1.0	2.0	3.2	700
.4	18	1.2	3.3	3.6	860
.6	29	1.4	2.6	4.0	1,170
.8	45	1.7	2.9	4.5	1,510

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	28	40	57	37.5	45	16.8	154	27	36	25.5	159	20
2	20	36.5	38	26	40	16.8	100	37	30	25	273	18.5
3	20.5	60	39.5	22	35	16.0	73	554	26	42	176	20.5
4	35	173	31	21	45	21	80	138	27	26	62	17.6
5	72	68	50	19.5	80	46	54	107	52	23.6	114	18.0
6	49	36	32	19.5	40	229	42	94	64	23	278	18.5
7	109	44	25	18.0	100	138	30.5	71	74	21.5	81	21
8	250	43	90	22	70	86	26.5	48	36	20	55	20.5
9	107	39	77	17.6	40	379	30.5	50	39	20	123	34.5
10	75	36.5	33	16.4	33	194	67	59	29	51	61	24
11	84	107	26	16.0	37	94	61	50	24	35	45	22
12	48	402	22	16.0	30	55	102	57	35	36.5	36.5	19.0
13	31	156	29	16.8	26	41	689	55	25.5	25	30.5	17.6
14	26.5	63	28.5	15.6	24	93	362	48	23	20.5	29	17.2
15	62	41	53	15.2	22	45	202	133	25	50	27	16.8
16	118	93	183	15.6	20	28	201	287	31.5	34.5	27	16.8
17	40	52	164	15.2	19	36	804	91	182	96	23.5	16.0
18	44	36.5	123	14.8	17.2	31	651	488	1,170	118	23	23
19	27	26.5	50	91	16.0	26	368	318	1,500	42	25	21
20	53	46	50	47	16.0	29	325	319	1,060	356	21	16.8
21	41	122	35	58	17.6	74	171	168	213	93	41	15.6
22	68	37.5	28	61	17.2	99	162	139	114	64	100	16.0
23	94	30	28.5	102	220	38	94	124	71	78	30	18.0
24	203	61	23.5	75	33	142	122	81	54	56	34	16.0
25	648	684	23.5	94	22	80	109	73	45	48	65	21
26	660	349	170	91	19.0	57	73	61	36.5	36	82	52
27	132	158	99	177	17.6	42	54	58	33	28	67	57
28	74	51	39	*306	17.2	145	62	52	31	43	26	18.0
29	67	100	33	*100	18.5	588	177	-	31	58	22.5	22.5
30	81	94	80	60	17.2	516	319	-	29	154	21	36.5
31	68	94	-	50	-	407	108	-	26.5	-	21.5	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	660	20	111	172	3,440	10,540
August.....	684	26.5	108	167	3,360	10,310
September.....	183	22	58.4	90.4	1,750	5,370
October.....	306	14.8	53.4	82.6	1,660	5,080
November.....	220	16.0	38.5	59.6	1,150	3,540
December.....	588	16.8	123	190	3,810	11,700
Calendar year 1936	684	10.0	62.2	96.2	22,780	69,910
January.....	804	26.5	189	292	5,870	18,030
February.....	554	48	139	215	5,900	11,960
March.....	1,500	23	167	258	5,180	15,880
April.....	356	20	58.2	90.0	1,750	5,360
May.....	278	21	70.2	109	2,180	6,680
June.....	57	15.6	22.4	34.7	672	2,060
Fiscal year 1936-37	1,500	14.8	95.1	147	34,720	106,500

*Partly estimated.

Hanapepe ditch below intake, near Eleele

Location.— Water-stage recorder, lat. 21°58'55" long. 159°32'05", 1 mile below intake and 7 miles northeast of Eleele. Altitude, 500 feet, by barometer.

Records available.— March 1930 to June 1937.

Extremes.— Maximum discharge during year, 35 million gallons a day (54 second-feet) July 25 (gage height, 3.68 feet); no flow occasionally, when water was turned out of ditch.

1930-37: Maximum discharge, 41 million gallons a day (63 second-feet) Nov. 12, 1931 (gage height, 3.96 feet); no flow occasionally, owing to closing of head gates.

Remarks.— Records good except those for Nov. 4-16, which were computed on basis of records for Hanapepe ditch at Koula and are fair. Ditch diverts water from Hanapepe River for irrigation in vicinity of Makaweli.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	31	34	32.5	32.5	14.1	26.5	23.5	32.5	26.5	28	32.5	32.5
2	32.5	34	32.5	32.5	26.5	26.5	29.5	29.5	26.5	28	31	31
3	31	34	32.5	32.5	26.5	26	32.5	28	28	29.5	32.5	31
4	32.5	34	32.5	32.5	27	28	32.5	20	28	28	32.5	31
5	34	34	32.5	31	29	29.5	31	0	29.5	28	32.5	31
6	32.5	34	32.5	31	28	31	29	0	29.5	28	32.5	31
7	34	34	32.5	31	20	31	32.5	7.8	31	29.5	32.5	32.5
8	34	34	32.5	31	29	31	31	18.0	29.5	29.5	32.5	31
9	34	34	32.5	31	29	29	31	11.5	29.5	29.5	32.5	32.5
10	34	34	32.5	29.5	29	28	32.5	1.35	29.5	32.5	32.5	32.5
11	32.5	34	32.5	29.5	29	31	32.5	2.25	29.5	31	32.5	32.5
12	34	32	32.5	29.5	26	31	32.5	8.6	31	32.5	32.5	31
13	34	34	32.5	31	29	31	32.5	16.7	29.5	31	32.5	31
14	34	32.5	34	29.5	29	32.5	31	18.0	29.5	31	32.5	31
15	34	34	34	28	28	31	31	26.5	31	32.5	32.5	31
16	34	34	34	29.5	28	31	31	29.5	31	32.5	32.5	31
17	34	34	34	28	*28	31	31	28	31	32.5	31	31
18	34	32.5	34	28	26.5	31	31	31	32.5	32.5	31	32.5
19	34	34	32.5	32.5	26.5	31	31	29.5	27	32.5	32.5	32.5
20	34	34	32.5	32.5	26.5	31	31	28	3.25	32.5	32.5	31
21	34	32.5	32.5	32.5	28	31	31	26.5	0	32.5	34	31
22	34	32.5	32.5	15.7	26.5	32.5	31	25	6.5	32.5	32.5	31
23	32.5	34	32.5	6.6	31	32.5	32.5	23.5	21	32.5	32.5	31
24	34	34	32.5	7.3	31	32.5	31	22	23.5	31	32.5	31
25	34	34	32.5	21.5	29.5	31	31	23.5	26.5	31	32.5	32.5
26	28.5	34	34	29.5	28	31	32.5	26.5	29.5	32.5	32.5	32.5
27	34	32.5	32.5	31	28	31	32.5	26.5	29.5	31	32.5	34
28	34	32.5	34	29.5	26.5	32.5	32.5	16.0	29.5	31	32.5	32.5
29	34	34	34	25	28	32.5	32.5	-	29.5	32.5	32.5	32.5
30	32.5	34	32.5	11.9	26.5	29.5	31	-	28	32.5	32.5	25.5
31	32.5	32.5	-	10.8	-	29.5	31	-	28	-	32.5	-
Month		Million gallons a day			Second-feet (mean)	Total run-off						
		Maximum	Minimum	Mean		Million gallons	Acre-feet					
July.....		34	28.5	33.3	51.5	1,030	3,170					
August.....		34	32	33.6	52.0	1,040	3,200					
September.....		34	32.5	32.9	50.9	987	3,030					
October.....		32.5	6.6	26.9	41.6	834	2,560					
November.....		31	14.1	27.3	42.2	813	2,510					
December.....		32.5	26.5	30.5	47.2	946	2,900					
Calendar year 1936		34	0	28.3	43.8	10,370	31,850					
January.....		32.5	23.5	31.2	48.3	968	2,970					
February.....		32.5	0	19.9	30.8	556	1,710					
March.....		32.5	0	26.3	40.7	814	2,500					
April.....		32.5	28	31.0	48.0	930	2,850					
May.....		34	31	32.4	50.1	1,000	3,080					
June.....		34	25.5	31.5	48.7	944	2,900					
Fiscal year 1936-37		34	0	29.8	46.1	10,870	33,380					

*Partly estimated.

ISLAND OF KAUAI

Hanapepe ditch at Koula, near Eleele

Location.-- Water-stage recorder, lat. 21°57'10", long. 159°33'00", at first flume below siphon at Koula, 3 miles below intake and 4 miles north of Eleele. Altitude, 490 feet, by barometer.

Records available.-- January 1910 to June 1921, March 1927 to June 1937.

Average discharge.-- 20 years (1910-20, 1927-37), 25.7 million gallons a day (39.6 second-feet).

Extremes.-- Maximum discharge during year, 38.5 million gallons a day (59.6 second-feet) Mar. 19 (gage height, 3.18 feet); no flow occasionally, when head gates were closed for channel repairs.

1910-21, 1927-37: Maximum discharge, that of Mar. 19, 1937; ditch occasionally dry owing to closing of head gates.

Remarks.-- Records good except those for July 12 to Aug. 24, computed on basis of records for Hanapepe ditch at intake, which are fair. 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 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	24	28	28	26	13.8	22.5	21	30	21	26	30	28
2	24	28	28	28	26	22.5	26	28	24	26	30	26
3	24	10	28	26	26	24	28	28	24	26	30	26
4	26	6	28	26	26	26	28	17.8	26	26	30	26
5	26	20	28	26	28	28	26	0	26	26	30	26
6	26	28	28	26	27.5	28	26	0	26	26	30	26
7	26	28	28	26	16.5	28	30	7.3	28	26	28	26
8	28	28	28	23	28	28	30	11.8	26	26	28	26
9	26	28	21	26	28	28	30	3.8	26	26	30	28
10	26	28	28	24	28	28	30	.8	26	28	28	28
11	26	28	28	24	28	30	30	1.7	26	28	28	26
12	27	27	28	24	23.5	30	30	1.3	28	26	28	26
13	27	28	28	24	26	30	30	0	26	28	28	26
14	27	27	28	24	24	30	28	4.4	26	28	30	26
15	27	28	28	24	24	30	26	24	26	30	30	26
16	27	29	24	24	24	28	30	28	26	28	30	26
17	27	29	28	24	24	28	30	28	28	26	30	26
18	27	29	28	24	24	30	28	28	33	28	30	28
19	27	29	28	28	24	30	28	.8	26	28	30	28
20	28	29	28	26	24	30	30	0	.2	30	30	26
21	28	28	28	23.5	24	30	28	0	0	30	33	24
22	28	29	28	10.2	24	33	30	0	5.6	30	30	24
23	26	29	28	6.0	28	30	30	0	21	30	30	26
24	28	29	28	5.7	26	33	30	0	22.5	28	20.5	24
25	28	30	28	17.3	26	30	30	0	24	28	0	26
26	26	33	30	26	24	30	30	4.1	23	28	7.0	28
27	28	30	28	28	24	30	30	3.0	28	28	28	28
28	28	28	28	26	24	30	30	6.2	26	28	28	28
29	28	30	28	21	24	33	30	-	26	30	28	14.8
30	28	28	28	8.0	24	30	30	-	26	30	28	0
31	28	28	-	5.9	-	28	28	-	26	-	26	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	28	24	26.7	41.5	829	2,540
August.....	33	6	27.0	41.8	837	2,570
September.....	30	21	27.7	42.9	831	2,560
October.....	28	5.0	22.0	34.0	682	2,090
November.....	28	13.8	24.7	38.2	741	2,270
December.....	33	22.5	28.8	44.6	894	2,740
Calendar year 1936	33	0	24.4	37.8	8,920	27,360
January.....	30	21	28.7	44.4	869	2,730
February.....	30	0	9.18	14.2	257	769
March.....	33	0	23.4	36.2	726	2,230
April.....	30	26	27.9	43.2	836	2,570
May.....	33	0	27.4	42.4	848	2,600
June.....	28	0	25.2	39.0	755	2,320
Fiscal year 1936-37	33	0	25.0	38.7	9,120	28,000

South Fork of Wailua River near Lihue

Location.- Water-stage recorder, lat. 22°02'10", long. 159°22'55", a third of a mile above Wailua Falls and 5 miles north of Lihue. Altitude, 230 feet, by barometer.

Drainage area.- 22.4 square miles.

Records available.- December 1911 to June 1937. December 1911 to November 1918 at site a third of a mile upstream.

Average discharge.- 15 years (1921-24, 1925-37), 70.1 million gallons a day (108 second-feet).

Extremes.- Maximum discharge during year, 14,200 million gallons a day (22,000 second-feet) May 2 (gage height, 8.77 feet), from rating curve extended above 10,000 million gallons a day; minimum, 2.4 million gallons a day (3.7 second-feet) July 1, 1911-37: 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 10,000 million gallons a day; minimum, 1.2 million gallons a day (1.9 second-feet) May 3, 1926.

Remarks.- Records good except those for extremely high stages, which are poor. Lihue and Hanamaula ditches divert water above station at altitudes of 800 and 500 feet, respectively, for irrigation in vicinity of Lihue.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.7	1.6	1.9	34	4.0	665
.9	2.8	2.1	51	4.5	1,010
1.1	5.0	2.4	86	5.0	1,580
1.3	8.4	2.7	140	5.5	2,450
1.5	13.5	3.1	245	6.0	3,550
1.7	21.5	3.5	400		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.7	22	120	13.3	111	48	273	224	52	8.2	691	7.6
2	2.6	48	89	5.0	89	48	195	198	27	7.3	1,680	7.3
3	2.5	73	70	4.2	87	26	130	704	23.5	7.4	709	7.5
4	2.5	57	80	4.2	99	46	126	180	19.2	10.9	202	6.0
5	6.5	33.5	110	4.2	168	56	60	120	67	19.8	462	5.8
6	17.2	6.5	88	3.9	102	215	59	120	85	6.7	850	5.8
7	25	5.0	84	4.1	202	147	49	102	171	5.8	315	5.9
8	140	5.4	94	4.3	165	99	38	96	69	5.6	202	6.0
9	52	31.5	5.8	5.8	102	245	48	86	62	5.6	237	6.4
10	29.5	33.5	36	4.7	92	193	102	80	46	19.9	165	9.2
11	56	57	11.8	3.8	111	97	144	72	26	8.4	140	6.2
12	60	316	14.8	3.8	86	82	118	85	42	23	120	5.6
13	22.5	57	50	3.7	75	76	320	73	41	8.6	92	5.2
14	4.0	24.5	20	3.6	72	154	256	62	46	5.3	88	5.0
15	11.7	9.4	11.2	3.5	65	100	175	147	32	14.5	82	5.0
16	110	82	107	3.6	63	70	246	262	25	5.4	76	5.2
17	17.2	50	109	3.5	64	59	1,470	111	193	55	71	4.3
18	4.6	10.3	69	3.3	60	62	725	266	626	150	70	5.3
19	19.1	6.0	11.5	111	56	58	470	257	2,860	46	66	6.0
20	26.5	16.5	53	28.5	55	63	511	470	1,430	200	49	5.0
21	12.0	123	30	13.7	56	80	252	170	230	81	69	4.6
22	37	11.0	5.8	144	61	91	182	178	140	61	169	5.0
23	63	32	11.2	304	212	26	152	170	111	86	78	4.5
24	97	46	4.8	102	66	131	130	96	96	64	45	4.2
25	414	1,720	4.8	136	56	102	125	78	83	49	51	4.2
26	540	496	182	120	51	89	86	65	75	46	59	7.8
27	130	178	99	712	49	75	68	48	69	126	93	25.5
28	76	120	41	1,060	46	477	114	60	65	176	28.5	7.1
29	62	163	7.1	352	136	398	286	-	51	176	20.5	4.5
30	73	178	48	152	65	389	454	-	27	180	31.5	5.9
31	57	165	-	120	-	423	149	-	19.1	-	9.5	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	540	2.5	70.7	109	2,190	6,720
August.....	1,720	5.0	154	207	4,170	12,790
September.....	182	4.8	56.5	87.4	1,700	5,200
October.....	1,060	5.3	111	172	3,440	10,550
November.....	212	46	91.1	141	2,730	8,390
December.....	477	26	136	210	4,220	12,960
Calendar year 1936	1,720	2.5	72.7	112	26,600	81,630
January.....	1,470	38	243	376	7,530	23,110
February.....	48	154	154	254	5,580	14,060
March.....	2,860	19.1	223	345	6,910	21,200
April.....	2,800	5.3	54.3	84.0	1,630	5,000
May.....	1,680	9.5	228	350	7,020	21,550
June.....	22.5	3.9	6.30	9.75	189	580
Fiscal year 1936-37	2,860	2.5	127	196	46,310	142,100

North Fork of Wailua River at altitude 650 feet, near Lihue

Location.-- Water-stage recorder, lat. 22°03'50", long. 159°26'20", 1½ miles above intake of Kanaha ditch and 7½ miles northwest of Lihue. Altitude, 650 feet, from topographic map.

Drainage area.-- 6.6 square miles.

Records available.-- August to December 1910, September 1914 to June 1937. December 1910 to September 1914 at site 300 feet below confluence of main and east branches; records not equivalent.

Average discharge.-- 16 years (1921-37), 51.7 million gallons a day (80.0 second-feet).

Extremes.-- Maximum discharge during year, 3,720 million gallons a day (5,760 second-feet) Mar. 19 (gage height, 8.67 feet), from rating curve extended above 600 million gallons a day and slope measurement of 2,250 million gallons a day; minimum, 6.5 million gallons a day (10.1 second-feet) July 1.

1910-37: Maximum discharge, that of Mar. 19, 1937; minimum unknown, owing to water surface dropping below intake to gage well; minimum daily-discharge 1.6 million gallons a day (2.5 second-feet), estimated, May 23-25, 28, 1936.

Remarks.-- Records for ordinary stages are good; those for Sept. 18-22 which were computed on basis of gage readings, are fair; those for high stages are poor. Since 1925 Hanalei tunnel has discharged water into river, and North Wailua and Stable storm ditches have diverted water above station for irrigation in vicinity of Lihue.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

-0.4	7.2	.4	35	1.2	89	2.5	302	4.0	770
-.2	11.6	.7	48	1.6	139	3.0	456	5.0	1,160
+.1	21	.9	61	2.0	198	3.5	594		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	18.6	46	58	50	58	33	115	192	48	32.5	508	36.5
2	9.2	57	51	43	50	35	82	184	43	33	421	29.5
3	11.2	64	61	37.5	46	35	64	420	40	44	200	32
4	16.5	94	55	37.5	46	35	37.5	135	43	31.5	125	25
5	29.5	57	90	35	73	48	44	94	58	29	396	24
6	35	40	54	33	56	111	24	97	92	27.5	317	23.5
7	74	46	48	32.5	81	130	20.5	76	118	20.5	139	26
8	106	48	95	15.4	59	67	30.5	98	109	24.5	106	15.7
9	68	48	80	8.3	48	126	61	72	100	23.5	120	17.7
10	59	48	49	11.5	48	89	129	61	74	43	79	14.0
11	69	140	46	9.4	54	65	201	60	69	29	74	13.5
12	46	313	43	6.3	43	54	173	98	110	23	58	12.6
13	37.5	103	46	10.8	40	58	244	63	69	23	54	12.1
14	39	69	43	7.9	53	146	172	57	65	23.5	54	12.1
15	60	51	51	7.9	40	69	169	126	74	55	48	12.6
16	104	76	84	8.3	37.5	54	161	176	92	46	46	11.8
17	45	58	104	7.9	43	59	602	106	195	69	43	11.3
18	43	56	61	7.4	37.5	46	441	200	371	115	43	16.8
19	35	40	51	52	35	46	254	155	1,030	51	43	11.6
20	38	91	65	30	37.5	48	307	196	390	146	43	9.2
21	43	114	54	36.5	37.5	70	193	140	106	46	84	9.0
22	74	59	48	179	33	58	156	172	74	61	125	9.0
23	73	43	46	137	115	46	115	176	61	78	51	9.4
24	108	51	40	83	40	77	101	79	61	60	52	9.2
25	238	549	41	90	35	67	79	65	46	54	50	10.4
26	180	187	274	93	33	58	67	61	43	40	91	12.4
27	81	64	116	415	31.5	51	54	51	43	51	67	19.3
28	60	68	65	354	30.5	246	87	48	40	83	43	9.0
29	76	64	64	137	77	193	143	-	43	117	40	9.0
30	83	93	80	82	35	145	184	-	37.5	234	37.5	8.5
31	69	74	-	65	-	166	83	-	33	-	40	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	238	9.2	65.4	101	2,030	6,220
August.....	549	40	95.0	147	2,950	9,040
September.....	274	40	68.2	106	2,050	6,280
October.....	415	7.4	70.1	108	2,170	6,670
November.....	115	30.5	45.4	74.9	2,450	4,460
December.....	246	33	51.6	126	2,530	7,770
Calendar year 1936	549	1.6	57.1	88.3	20,900	64,110
January.....	602	20.5	150	232	4,640	14,230
February.....	420	48	124	192	3,470	10,640
March.....	1,030	33	122	189	3,760	11,590
April.....	234	20.5	57.1	88.3	2,710	5,260
May.....	508	37.5	115	179	3,600	11,050
June.....	36.5	6.5	15.8	24.4	473	1,450
Fiscal year 1936-37	1,030	7.4	84.5	131	30,850	94,660

*Partly estimated.

Hanalei tunnel outlet near Lihue

Location.- Water-stage recorder, lat. 22°05'10", long. 159°28'15", at end of Hanalei tunnel, 2½ miles below intake on Kaapoko Stream and 9½ miles northwest of Lihue. Altitude, 1,210 feet, by Lihue Plantation Co. levels.

Records available.- July 1932 to June 1937.

Extremes.- Maximum discharge during year, 78 million gallons a day (121 second-feet) Mar. 19 (stage height, 1.83 feet); no flow at times when water was shut out of ditch.
1932-37: Maximum discharge, that of Mar. 19, 1937; no flow occasionally, when water was shut out of ditch.

Remarks.- Records good. Tunnel diverts water from Kaapoko Stream and Hanalei River and empties it into north branch of North Fork of Waialua 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 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	23.5	26	26	26	23.5	22	24	52	27.5	23.5	60	26.5
2	19.5	29.5	25	24	23.5	24	22	55	28	24	58	25.5
3	22	28.5	27	23	23.5	24	24.5	55	26.5	29	51	25
4	25.5	34.5	26.5	23	23.5	24	27.5	47	28.5	24	43	25
5	31	30	28	20.5	25.5	26	13.4	39	39	23	60	27
6	28.5	24	26.5	20.5	25.5	28.5	.17	39	47	22	55	27
7	34.5	29	26	19.9	26	28.5	.09	36.5	47	14.5	50	30.5
8	39	29.5	29	19.9	25	26.5	13.5	44	47	19.1	44	28.5
9	36.5	31.5	27	19.5	25	29	29.5	36.5	50	18.7	44	31
10	34.5	29.5	25	23.5	26	27.5	44	32	44	26.5	36.5	27
11	36.5	34.5	24.5	21.5	25.5	26	52	32	44	21.5	34.5	26
12	29.5	44	24	19.9	24	25.5	55	42	50	15.4	32	24.5
13	25	36.5	25	21.5	24	26	58	32	39	17.6	30.5	24
14	26	32	24	19.1	26.5	30	55	32	37.5	19.9	31.5	23.5
15	34.5	29	26.5	19.1	25	27	55	47	40	23	30	25
16	36.5	34.5	29	19.1	24	26	55	52	44	29	30	23.5
17	26.5	31	29.5	18.7	25	26	61	42	52	42	28.5	23.5
18	27	52	27.5	18.7	24	25.5	58	52	58	48	28.5	29
19	22.5	25	23.5	25	23.5	25	55	50	61	38	30	26
20	23.5	34.5	27.5	22.5	24	25.5	55	47	47	13.7	32	23.5
21	27	36.5	26.5	21	24	26.5	52	44	34.5	16.1	46	23
22	34.5	30.5	26	26.5	23	26	50	52	30	39	47	23
23	34.5	27	25.5	29.5	27	25.5	42	47	30.5	43	34.5	24.5
24	36.5	31	25	27.5	24.5	27	39	36.5	28.5	36.5	32	23.5
25	42	42	25	27	23.5	26	34.5	32	27.5	34.5	32	27
26	39	32	32	28	22	25.5	31	32	26.5	29.5	39	31
27	36.5	27.5	29	32	21.5	25	28.5	29	26.5	30	34.5	31
28	31.5	26.5	27	31	21	26	36.5	27.5	26	36	28.5	24.5
29	34.5	27.5	27	26	26.5	24	39	-	27	44	27.5	23.5
30	36.5	28	28	24	22.5	24	50	-	25.5	48	27	22
31	34.5	28	-	23.5	-	25.5	36.5	-	24	-	27.5	-
Month					Million gallons a day			Second-foot (mean)	Total run-off			
					Maximum	Minimum	Mean		Million gallons	Acre-feet		
July.....					42	19.5	31.3	48.4	969	2,970		
August.....					44	24	31.0	48.0	962	2,950		
September.....					32	24	26.7	41.5	801	2,460		
October.....					32	18.7	25.3	36.1	721	2,210		
November.....					27	21	24.2	37.4	726	2,230		
December.....					30	22	26.0	40.2	806	2,470		
Calendar year 1936					44	14.2	25.8	39.9	9,440	28,970		
January.....					61	.09	38.6	59.7	1,200	3,670		
February.....					55	27.5	41.6	64.4	1,160	3,570		
March.....					61	24	37.5	58.0	1,160	3,570		
April.....					48	13.7	28.3	43.8	849	2,610		
May.....					60	27	38.2	59.1	1,180	3,640		
June.....					31	22	25.8	59.9	774	2,370		
Fiscal year 1936-37					61	.09	31.0	48.0	11,310	34,720		

ISLAND OF KAUAI

North Wailua ditch near Lihue

Location.— Water-stage recorder, lat. 22°03'40", long. 159°27'55", 300 feet below intake diversion dam on North Fork of Wailua River, 8 miles west of Wailua, and 8½ miles northwest of Lihue. Zero of gage is 1,105.45 feet above mean sea level, by Lihue Plantation Co. levels.

Records available.— July 1932 to June 1937. Records for 1926 to June 1932 obtained by Lihue Plantation Co.

Extremes.— Maximum discharge during year, 50 million gallons a day (77 second-feet) July 1 (gage height, 1.41 feet); minimum, no flow for periods of a few hours each when water was diverted around station.

1932-37: 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 good. Flow regulated by gates. No diversions. Water used for power and irrigation in vicinity of Lihue.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	20	15.6	12.0	15.9	12.3	14.2	12.6	12.0	12.3	12.6	8.4	12.9
2	16.2	17.0	12.3	16.6	12.3	14.6	12.0	12.0	12.3	12.6	8.7	13.9
3	17.7	16.6	12.6	15.9	12.4	14.9	12.0	13.3	12.3	13.3	7.1	14.2
4	16.9	17.3	12.6	17.3	12.9	15.6	12.9	12.0	12.9	13.3	8.2	14.2
5	24	14.9	12.0	14.9	13.3	15.9	12.6	12.0	15.2	14.2	8.2	15.2
6	23	15.6	11.7	14.2	12.6	13.3	12.6	12.3	16.2	14.2	6.6	16.6
7	24.5	16.6	12.6	13.9	12.9	12.6	12.3	12.0	15.6	15.9	6.6	16.6
8	20.5	17.0	12.9	13.6	12.3	13.3	12.6	12.0	15.6	13.9	6.6	16.6
9	19.8	16.6	12.3	13.3	12.3	12.6	13.3	11.7	15.2	15.2	6.8	20.5
10	19.0	17.0	9.1	15.6	12.6	12.3	14.1	11.7	15.6	23	6.9	16.6
11	19.8	19.4	12.9	15.9	12.3	12.6	12.9	12.6	15.9	20	5.9	16.2
12	17.6	17.0	12.9	13.6	12.3	12.3	12.0	12.9	14.2	20	9.2	14.9
13	16.6	12.6	12.9	16.2	12.6	12.6	12.3	12.6	12.6	16.6	9.6	14.6
14	17.0	12.9	12.9	12.9	13.3	14.6	12.0	12.3	12.9	17.9	9.8	13.9
15	23	15.6	13.6	12.6	12.6	12.9	12.3	12.6	12.9	23.5	10.7	15.9
16	25	15.9	14.2	12.6	12.6	12.6	12.3	12.3	13.6	24	11.0	14.2
17	18.4	15.6	14.9	12.6	12.9	12.9	12.0	12.3	13.6	25	11.0	13.6
18	16.0	17.0	13.6	12.3	12.6	12.6	10.4	12.0	12.3	23.5	11.7	20
19	17.0	15.6	13.3	20.6	12.9	12.4	11.7	12.3	10.1	16.0	12.6	16.6
20	16.4	31	14.2	15.9	13.3	12.6	10.2	12.3	7.6	14.9	12.6	14.2
21	16.8	23	13.6	17.6	13.3	12.6	11.7	12.0	6.6	10.1	13.6	13.9
22	17.1	16.2	13.6	16.2	12.9	11.7	12.3	12.0	7.4	12.9	12.3	14.6
23	16.2	16.7	16.2	12.0	11.7	12.6	12.3	12.0	12.6	12.4	12.0	16.0
24	13.3	20	19.0	12.3	12.3	13.6	12.3	12.3	12.6	12.3	12.6	14.2
25	15.2	15.1	16.4	12.3	12.6	12.0	12.0	12.3	12.6	13.6	12.6	20.5
26	11.7	12.0	16.8	12.9	12.6	12.0	13.3	12.3	12.8	17.3	12.9	23.5
27	14.9	12.9	12.0	11.4	12.6	12.3	13.3	12.3	12.9	17.3	12.3	22.5
28	15.9	12.9	12.6	6.4	12.6	12.0	13.9	12.3	12.9	15.9	12.3	15.2
29	17.0	13.6	15.9	6.4	14.6	9.5	14.6	-	13.3	11.0	12.6	14.6
30	16.2	12.0	17.3	10.7	14.9	9.5	12.3	-	12.9	9.5	12.6	13.9
31	15.6	12.3	-	12.3	-	12.6	10.2	-	12.6	-	12.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	25	11.7	18.3	28.3	566	1,740
August.....	31	12.0	16.3	28.2	508	1,560
September.....	19.0	9.1	15.8	21.4	413	1,272
October.....	20.5	8.4	13.9	21.5	431	1,350
November.....	14.9	11.7	12.8	19.6	383	1,160
December.....	15.9	9.5	12.8	19.8	398	1,220
Calendar year 1936	32.5	7.3	13.9	21.5	5,090	15,680
January.....	14.6	10.2	12.4	19.2	393	1,180
February.....	13.3	11.7	12.2	18.9	343	1,050
March.....	16.2	6.6	12.6	19.6	398	1,220
April.....	25	9.5	16.0	24.8	481	1,480
May.....	13.6	5.9	10.2	15.8	316	971
June.....	23.5	12.9	16.0	24.8	481	1,480
Fiscal year 1936-37	31	5.9	14.0	21.7	5,100	15,660

Stable storm ditch near Lihue

Location.- Water-stage recorder, lat. 22°04'00", long. 150°26'45", 100 feet below intake, 7.8 miles northwest of Lihue, and 8.2 miles west of Kapaa.

Records available.- December 1936 to June 1937. Records for April 1931 to December 1936 obtained by Lihue Plantation Co. at staff gage at site, 1 mile downstream.

Extremes.- Maximum discharge during period, 38 million gallons a day (59 second-feet) June 27 (gage height, 1.49 feet); no flow at times when water was shut out of ditch.

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

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1						-	*0.07	0.07		0	*0.19	0.12
2						-	*.07	.07		0	.12	2.8
3						-	.07	.07		1.93	.12	.19
4						-	.02	.07		0	.07	6.4
5						-	0	.07		0	.07	10.3
6						-	0	.07		0	.07	10.3
7						-	0	0		.66	.07	10.8
8						-	0	*0		0	.07	20.5
9						-	0	*0		.26	.07	24.5
10						-	0	*0		.26	.02	21.5
11						-	*.07	*0		.26	0	19.5
12						†0.19	*.07	*0		.26	0	19.6
13						.19	*.07	*0		.26	0	19.8
14						.19	*.07	*0		.26	0	19.8
15						.19	*.07	*0		.26	0	19.8
16						.12	†.07	*0		.26	0	18.2
17						.12	.07	*0		.19	0	18.2
18						.12	.07	*0		.12	0	19.8
19						.12	.07	*0		.12	0	23
20						.12	.07	*0		.12	.12	21.5
21						.12	.07	*0		.12	.19	19.8
22						.12	.07	*0		.07	.19	19.8
23						.12	.07	*0		.07	.26	21.5
24						.12	.07	*0		1.77	.19	19.6
25						.12	0	*0		.26	.19	24.5
26						.12	0	*0		.26	.12	28
27						.12	0	*0		.26	.12	28
28						.12	0	*0		.19	.12	23
29						.12	.03	-		.19	.12	21.5
30						.07	.07	-		.19	.12	21.5
31						†.07	.07	-		-	.12	-
Month						Million gallons a day			Second-foot (mean)	Total run-off		
						Maximum	Minimum	Mean		Million gallons	Acre-feet	
July.....												
August.....												
September.....												
October.....												
November.....												
December 12-31.....						0.19	0.07	0.083	0.128	2.58	7.9	
Calendar year												
January.....						.07	0	.045	.070	1.38	4.2	
February.....						.07	0	.015	.023	.42	1.3	
March.....						0	0	0	0	0	0	
April.....						1.93	0	.287	.444	8.6	26	
May.....						.26	0	.088	.136	2.73	8.4	
June.....						28	.12	17.8	27.5	535	1,640	
The period.....											1,690	

*Estimated.

†Partly estimated.

ISLAND OF KAUAI

Kanaha ditch near Lihue

Location.- Water-stage recorder, lat. 22°03'50", long. 159°25'30", 750 feet below intake and 7 miles northwest of Lihue. Altitude, 540 feet, by barometer.

Records available.- August 1910 to June 1937.

Average discharge.- 17 years (1916-22, 1926-37), 8.22 million gallons a day (12.7 second-feet).

Extremes.- Maximum discharge during year, 19.5 million gallons a day (30.2 second-feet) Oct. 19 (gate height, 0.72 foot); no flow Oct. 28, Feb. 1, Mar. 31, May 3, 4, when intake gate was closed.

1910-37: Maximum discharge recorded, 45 million gallons a day (70 second-feet) Dec. 24, 1927 (gate height, 3.22 feet, former site and datum); no flow occasionally, when water was shut out of ditch.

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

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.8	5.0	0.60	5.6	1.02	1.18	1.34	1.58	4.7	5.8	5.3	5.6
2	4.8	5.3	.73	5.6	1.18	1.18	1.34	2.05	5.6	5.8	4.0	5.0
3	4.8	5.3	.87	5.8	1.34	.87	1.51	1.94	5.6	5.8	1.00	5.6
4	5.3	5.0	.87	5.6	1.87	1.18	1.51	1.18	5.8	5.6	1.46	4.8
5	5.8	5.0	1.02	5.6	2.05	5.2	1.18	1.02	5.8	5.6	1.34	5.6
6	5.0	5.0	.87	5.6	1.51	5.0	.87	1.02	5.8	5.6	.87	5.6
7	5.3	5.0	1.34	5.6	1.51	4.1	2.15	1.02	5.8	4.6	1.18	5.8
8	5.0	5.0	1.18	3.8	1.34	1.69	5.3	.87	5.8	5.8	1.87	4.0
9	5.0	5.3	1.02	3.1	1.18	1.87	5.3	.87	5.6	5.8	1.69	4.0
10	5.0	5.3	1.18	4.0	.87	2.65	5.0	.87	5.6	5.8	1.34	4.0
11	5.0	5.3	.87	3.55	1.51	5.0	5.6	.87	5.8	5.3	1.34	4.0
12	5.0	5.3	.73	3.1	1.87	5.0	5.6	.73	5.8	3.95	1.51	4.1
13	5.0	5.3	1.34	3.55	1.69	5.0	5.3	.73	5.8	5.6	1.51	5.8
14	5.0	5.6	4.9	2.9	1.87	4.8	5.0	.73	6.1	5.6	1.51	6.4
15	5.0	5.6	5.8	2.65	1.87	5.0	5.3	.60	6.1	5.8	1.51	7.2
16	5.0	5.8	5.8	2.65	1.87	5.0	5.6	.60	5.8	4.5	1.51	6.9
17	5.3	5.6	5.8	2.45	1.87	5.0	5.6	.73	6.1	1.51	1.61	6.7
18	5.3	5.6	5.8	2.45	1.69	5.0	5.6	1.51	5.8	2.9	1.51	9.0
19	5.3	5.6	6.1	1.89	1.51	5.0	5.6	2.45	2.75	5.6	1.51	7.2
20	5.3	5.6	6.1	1.34	1.51	4.5	5.6	1.78	1.06	5.0	1.34	6.1
21	5.3	5.6	5.8	1.18	1.34	4.8	5.0	1.34	.73	5.3	1.51	5.8
22	5.0	5.6	6.1	.87	1.34	5.0	5.3	1.18	.60	5.6	1.69	6.1
23	5.0	5.6	6.1	.73	1.87	4.8	5.8	1.34	.26	5.6	2.85	6.1
24	5.0	5.8	6.1	.73	1.34	5.3	5.8	1.87	.47	5.3	5.3	5.6
25	5.3	2.35	6.1	.73	1.34	5.0	5.6	1.87	.47	5.3	5.8	6.4
26	5.0	.73	6.1	1.34	1.18	5.0	5.6	1.87	.56	5.3	5.6	9.7
27	5.3	.73	5.8	1.60	1.02	5.0	5.3	1.87	.56	5.3	5.3	6.2
28	5.6	1.18	6.1	.55	1.02	4.4	5.6	1.87	.26	5.6	5.3	6.1
29	5.3	.73	6.1	.73	1.34	4.5	2.65	-	.47	5.0	5.3	5.8
30	5.0	.60	5.8	.73	1.18	2.25	.60	-	1.85	5.3	5.3	5.0
31	5.0	.60	-	.60	-	1.51	.87	-	3.65	-	5.3	-
Month							Million gallons a day			Second-foot (mean)	Total run-off	
							Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	5.8						4.8	5.12	7.92	159	487	
August.....	5.8						.60	4.39	6.79	156	347	
September.....	6.1						.60	3.77	6.83	113	347	
October.....	5.8						.60	2.79	4.32	86.6	266	
November.....	2.05						.87	1.47	2.27	41.1	135	
December.....	5.3						.87	3.93	6.08	122	374	
Calendar year 1936.....	6.1						.03	4.01	6.20	1,470	4,500	
January.....	5.8						.60	4.14	6.41	128	394	
February.....	2.45						.60	1.30	2.01	36.4	112	
March.....	6.1						.26	3.76	5.82	117	358	
April.....	5.8						1.51	5.19	8.03	156	477	
May.....	5.8						.87	2.71	4.19	84.1	258	
June.....	9.7						4.0	5.87	9.08	176	541	
Fiscal year 1936-37.....	9.7						.26	3.72	5.76	1,360	4,170	

Wailua ditch near Kapaa

Location.- Water-stage recorder, lat. 22°04'25", long. 159°24'05", 2,000 feet below Wailua Reservoir, 5½ miles west of Kapaa, and 7 miles north of Lihue. Altitude, 462 ± 5 feet, by estimating slope of 2,000 feet of length of ditch from Lihue Plantation Co. levels.

Records available.- November 1936 to June 1937. Records obtained 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 period, 45 million gallons a day (63 second-feet) June 5 (gage height, 3.54 feet); minimum, 0.7 million gallons a day (1.1 second-feet) Dec. 16, 17.

Remarks.- Records excellent. Diverts water from North Fork of Wailua Stream to reservoir 2,000 feet above station for irrigation of sugarcane. Flow regulated by gates at reservoir.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1					-	19.4	3.9	5.6	20	8.8	8.2	20
2					-	26.5	3.9	4.4	21	8.8	8.2	32
3					-	30.5	3.8	4.6	21	8.8	8.2	39.5
4					-	30.5	3.7	4.7	20	8.8	7.6	41
5					-	18.5	3.7	4.6	20	8.8	7.6	28
6					-	8.2	3.7	4.5	16.3	13.4	7.6	11.0
7					-	8.2	3.8	4.5	11.6	30.5	7.6	29.5
8					-	8.2	3.8	4.5	28	36.5	7.6	38
9					-	8.2	3.7	4.4	29.5	30.5	7.6	30.5
10					-	9.3	3.7	4.5	22.5	18.7	7.6	21
11					-	12.1	3.8	4.6	17.5	10.4	8.2	21
12					-	12.1	3.8	4.8	17.5	18.7	8.8	21
13					-	12.1	8.6	4.8	15.3	18.7	8.8	13.9
14					-	12.1	15.1	4.8	8.8	16.3	8.8	32
15					-	10.4	15.1	4.8	16.3	11.0	8.8	39.5
16					-	5.7	13.3	4.8	13.3	11.0	7.6	28
17					-	5.0	9.3	4.9	13.3	11.0	4.5	24
18					-	7.6	9.3	4.9	13.9	12.7	4.6	22.5
19					-	8.2	9.8	4.9	11.0	13.9	4.8	19.7
20					-	8.2	9.8	4.9	8.8	8.8	4.8	12.7
21					-	5.6	9.3	4.9	7.6	8.8	4.8	18.7
22					-	4.1	9.3	4.8	7.6	8.2	4.8	30.5
23					-	4.1	9.3	4.9	8.2	8.2	4.7	28
24					-	4.1	9.3	4.8	8.8	8.2	4.6	22.5
25					-	4.1	9.3	4.7	8.8	8.2	8.2	25
26					-	4.1	9.3	4.6	8.8	7.6	12.1	21
27					-	4.1	9.3	4.5	8.8	8.2	12.1	11.5
28					-	4.1	9.3	8.4	8.8	8.2	12.1	27
29					7.1	4.1	9.3	-	8.8	8.2	12.1	32
30					13.2	4.0	8.8	-	8.8	8.2	12.1	35
31					-	3.9	8.2	-	8.8	-	12.1	-
Month						Million gallons a day			Second-foot (mean)	Total run-off		
						Maximum	Minimum	Mean		Million gallons	Acre-feet	
July.....												
August.....												
September.....												
October.....												
November.....												
December.....						30.5	3.9	9.91	15.3	307	943	
Calendar year												
January.....						15.1	3.7	7.63	11.8	236	725	
February.....						8.4	4.4	4.86	7.52	136	418	
March.....						29.5	7.6	14.1	21.8	437	1,340	
April.....						36.5	7.6	12.9	20.0	388	1,190	
May.....						17.1	4.5	7.97	12.3	247	759	
June.....						41	11.0	25.8	39.9	775	2,380	
The period.....											7,760	

East Branch of North Fork of Wailua River near Lihue

Location.- Water-stage recorder, lat. 22°04'10", long. 159°25'05", 1,200 feet above confluence with North Fork and $7\frac{1}{2}$ miles northwest of Lihue. Altitude, 500 feet, by barometer.

Drainage area.- 6.2 square miles.

Records available.- July 1912 to June 1937.

Average discharge.- 17 years (1920-37). 31.9 million gallons a day (49.4 second-feet).

Extremes.- Maximum discharge during year, 2,260 million gallons a day (3,500 second-feet) Dec. 28 (gage height, 9.83 feet), from rating curve extended above 500 million gallons a day; minimum, 11.0 million gallons a day (17.0 second-feet) July 3.
1912-37: 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 extremely high stages, which are poor. No disversions above station.

Rating tables, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Mar. 19					Mar. 20 to June 30		
1.0	9.2	2.2	64	4.5	353	1.0	9.8
1.2	14.5	2.5	86	5.0	455	1.2	16.4
1.4	22	2.9	122	5.5	570	1.4	25
1.6	31	3.4	179			1.6	35.5
1.9	46	4.0	262			1.9	54

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.7	27	35	22	38.5	14.8	76	85	23.5	21.5	173	19.3
2	11.5	28	32.5	20	32	17.0	55	110	23	21	144	17.6
3	11.4	32.5	53	18.8	29	15.6	41	152	21	21.5	125	17.6
4	13.6	31	32.5	16.0	28.5	15.9	41	59	21	19.3	72	16.8
5	25	26	44	17.1	38.5	18.6	33	46	26.5	18.9	187	17.6
6	23	21	31	16.6	32.5	37	29.5	44	38.5	18.0	176	17.2
7	49	24	26.5	16.2	41	46	27	39	59	17.4	85	19.7
8	49	26	36.5	15.9	32.5	29	25	45	43	16.8	64	16.0
9	36	24	27	15.2	27.5	70	25.5	55	46	16.8	61	21.5
10	33	26.5	24	17.6	29	44	29.5	31	36	24	47	18.0
11	33	55	23.5	15.9	32.5	29.5	32.5	30.5	31	23	41	16.8
12	23.5	81	21.5	15.2	24	27	49	41	46	19.7	35.5	16.0
13	19.6	38.5	22.5	17.0	22	32	45	39	32	16.8	33.5	15.0
14	19.6	30.5	22.5	14.2	29	71	47	26	29.5	15.7	33	14.6
15	32.5	26.5	27	13.6	21.5	36	47	41	36	18.0	29.5	15.0
16	50	41	52	13.3	20	27.5	54	45	34.5	16.0	28	14.2
17	26	31.5	46	13.0	20.5	26	132	30.5	57	20	25.5	13.9
18	22.5	35.5	28	12.5	18.6	24	111	35.5	102	60	24.5	15.7
19	20.5	25	23	45	17.6	23.5	47	504	33	25.5	14.9	
20	21.5	31	23	18.4	18.4	24.5	82	95	193	122	23	13.5
21	27	39	21	17.3	20	34	56	51	85	39.5	44	13.2
22	30	29	19.8	169	17.1	26	68	66	58	27	50	13.5
23	35	24	18.8	114	31	21.5	54	48	47	27	27	13.5
24	55	29	18.0	72	17.3	32	44	36	40	24	24	12.8
25	96	276	17.6	58	16.2	25	38.5	31.5	35	24.5	23.5	13.5
26	74	119	100	68	15.6	22.5	33.5	30	31.5	22.5	33	16.8
27	42	64	43	312	15.0	21	30	27	28.5	45	31	19.7
28	32.5	46	26.5	235	14.6	200	37	25.5	26.5	60	22.5	13.9
29	33.5	55	25	85	23.5	100	82	-	26	86	21	12.8
30	39.5	52	29.5	55	15.7	78	66	-	24	82	20.5	12.5
31	36	44	-	44	-	79	38.5	-	22.5	-	20	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	96	11.4	33.5	51.5	1,030	3,170
August.....	276	21	46.4	71.8	1,440	4,410
September.....	100	17.6	31.7	49.0	950	2,920
October.....	312	12.8	51.1	79.1	1,590	4,860
November.....	41	14.6	24.6	38.1	739	2,270
December.....	200	14.8	40.9	63.3	1,270	3,890
Calendar year 1936	312	10.8	30.7	47.5	11,250	34,490
January.....	132	25	52.0	80.5	1,610	4,950
February.....	152	25.5	49.4	76.4	1,380	4,250
March.....	504	21	58.9	91.1	1,830	5,610
April.....	122	15.7	33.2	61.4	997	3,060
May.....	187	20	56.4	87.3	1,750	5,370
June.....	21.5	12.5	15.8	24.4	475	1,460
Fiscal year 1936-37	504	11.4	41.2	63.7	15,060	46,220

Kapaa River at Kapahi ditch intake, near Kapaa

Location.— Water-stage recorder, lat. 22°06'05", long. 159°22'30", 4 miles northwest of Kapaa and 4.5 miles northwest of Wailua. Altitude, 365 feet, by barometer.

Drainage area.— 3.3 square miles.

Records available.— December 1936 to June 1937. July 1910 to May 1915 at site half a mile upstream, known as "Kapaa River at Kapaa." June 1915 to April 1920 at site three-quarters of a mile upstream, known as "Kapaa River near Kealia."

Extremes.— Maximum discharge during year, 3,390 million gallons a day (5,250 second-feet) Mar. 19 (gage height, 4.50 feet), from rating curve extended above 400 million gallons a day; no flow when low flow is diverted into Kapahi ditch.

Remarks.— Records good except those above 400 million gallons a day, which are poor. En-tire low flow is diverted into several ditches above station. Records for July 1 to Dec. 14 furnished by East Kauai Water Co.

Rating table. fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

-0.05	0	0.30	8.2	0.90	70	1.70	318
.00	.3	.40	14.1	1.10	111	1.90	415
.10	1.3	.50	21.5	1.30	166	2.10	530
.20	4.0	.70	42	1.50	234	2.30	660

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	0.5	19.3	0	21.5	0	80	52	12.3	7.1	53	3.4
2	0	5.1	20	0	17.1	6.1	35	65	10.4	12.9	76	1.2
3	0	4.4	17.1	0	16.3	5.6	20	83	11.7	14.1	91	0
4	0	2.0	12.6	0	17.8	4.2	20	26	12.9	12.3	47	0
5	0	0	26	0	30.5	11.8	16.3	19.3	17.1	4.8	221	1.5
6	0	0	18.5	0	23.6	28	11.7	21	41	0	187	4.8
7	5.8	0	10.3	2.0	22.8	30.5	10.0	17.8	55	0	52	.2
8	7.9	0	7.1	1.4	21.5	9.6	12.9	27.5	42	0	32	2.9
9	9.8	0	12.3	0	18.5	49	14.1	19.3	36.5	.2	35.5	10.2
10	11.7	0	1.4	.4	19.3	22.5	19.3	16.3	24.5	20	25.5	4.1
11	6.7	0	0	0	23	8.3	13.6	15.6	19.3	19.3	24.5	.2
12	8.2	.5	0	0	16.3	8.4	15.6	18.5	34.5	4.8	21	2.8
13	0	0	0	0	15.5	28	21.5	14.1	22.5	6.6	18.5	.4
14	0	0	0	0	33	35	19.4	12.9	23.5	4.9	19.3	0
15	.1	0	.1	0	16.3	17.1	15.7	23.5	28	3.2	17.8	0
16	10.5	3.6	.8	0	14.8	8.5	23.5	25.5	24.5	6.1	17.1	3.6
17	1.3	1.0	16.2	0	15.6	10.0	47	17.1	28.5	10.6	15.6	1.4
18	0	1.7	.6	0	14.1	12.3	48	24.5	99	36	14.1	6.9
19	0	.7	0	56	12.9	14.1	41	34.5	565	35.5	12.9	7.1
20	0	5.1	6.8	17.1	14.1	15.6	44	49	230	210	8.8	8.8
21	-	8.4	.3	15.6	15.6	20	23.5	60	36.5	29.5	24	.3
22	8.5	1.2	.9	212	12.3	15.6	24.5	81	23.5	19.3	30.5	4.8
23	6.0	2.3	.2	108	25	13.5	21	36.5	20	17.4	12.9	3.8
24	23.5	1.0	0	45	11.7	17.8	29	21.5	16.3	16.3	7.5	.6
25	56	306	0	33	7.8	14.8	20	19.5	16.6	16.3	6.0	0
26	40	66	34.5	37.5	7.4	6.8	18.5	20	15.6	15.6	21	.8
27	11.5	27	19.3	146	6.9	13.5	16.3	17.1	12.3	175	9.6	4.4
28	3.2	20.5	1.5	266	6.5	46	10.6	15.6	14.8	139	0	0
29	0	34.5	0	41	13.3	59	97	-	6.7	97	0	0
30	0	33	0	23.5	2.5	44	65	-	1.3	52	1.3	0
31	1.2	26	-	19.3	-	41	25.5	-	4.9	-	.3	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	56	0	6.85	10.6	212	652
August.....	306	0	17.8	27.5	560	1,690
September.....	34.5	0	7.53	11.7	226	693
October.....	266	0	32.7	80.5	1,010	3,110
November.....	33	2.5	16.6	25.7	497	1,530
December.....	59	0	19.9	30.8	617	1,890
Calendar year						
January.....	87	10.0	28.0	43.3	868	2,660
February.....	83	12.9	30.4	47.0	853	2,620
March.....	563	1.3	48.5	75.0	1,500	4,610
April.....	210	0	32.8	50.7	984	3,020
May.....	221	0	35.5	54.9	1,100	3,380
June.....	10.2	0	2.47	38.2	74.0	227
Fiscal year 1936-37	563	0	23.3	36.1	8,490	26,080

Kapahi ditch near Kealia

Location.- Water-stage recorder, lat. 22°06'00", long. 159°22'30", 500 feet below intake and 4½ miles northwest of Kealia. Altitude, 380 feet, by barometer.

Records available.- April 1909 to May 1914, May 1915 to June 1937.

Average discharge.- 19 years (1917-20, 1921-37), 6.94 million gallons a day (10.7 second-feet).

Extremes.- Maximum discharge during year, 104 million gallons a day (161 second-feet) Sept. 26 (gage height, 1.85 feet); no flow occasionally, when water was shut out of ditch.

1909-14, 1915-37: 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 for ordinary stages are good; those for Nov. 24-26, which were determined from field notes made during construction of Parshall flume, are fair. Ditch diverts water from Kapaa River for irrigation in vicinity of Kapaa. Flow regulated by head gates.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.6	4.6	0.68	7.0	0.15	3.0	0.16	0.23	3.25	1.82	0	6.9
2	5.5	2.9	.90	5.5	.60	6.5	.16	.32	7.1	1.09	0	6.2
3	5.2	5.6	9.5	4.3	1.08	6.4	.19	.56	1.36	.82	0	5.9
4	9.7	11.4	9.8	4.0	.73	5.7	.19	.32	.41	.52	0	5.1
5	19.6	6.5	.68	3.7	.73	2.4	.16	.27	.36	7.3	0	4.7
6	17.9	5.2	.68	4.9	.73	.56	3.7	.27	.32	8.9	0	1.47
7	31	5.6	5.2	6.1	.90	.06	4.8	.32	.27	8.0	0	6.6
8	18.5	5.2	10.3	7.0	1.08	7.0	.66	.52	.23	7.6	.16	4.8
9	6.9	4.3	3.15	6.5	.90	7.9	.32	.68	.27	8.3	.56	5.5
10	3.45	4.0	5.8	6.6	.90	1.8	.32	.68	.27	4.7	.27	5.2
11	6.9	7.0	4.6	3.45	.90	8.5	5.9	.63	.27	.41	.27	7.7
12	.58	18.7	4.0	3.45	.90	7.5	8.0	.63	.27	11.2	.27	4.6
13	4.7	7.2	4.9	3.7	.90	.57	7.1	.57	.27	4.3	.27	5.0
14	5.5	5.5	5.7	3.15	.90	3.45	9.4	.52	.27	1.99	.23	5.0
15	12.3	4.3	8.6	2.9	1.08	.81	7.0	.52	.27	2.3	.27	6.6
16	11.9	10.3	26	2.9	1.08	5.6	5.2	.41	.32	.68	.23	4.0
17	6.9	8.1	17.0	2.65	.73	3.75	1.93	.41	5.9	.63	.23	6.3
18	5.5	9.0	12.7	2.65	1.08	1.29	9.0	.57	3.55	.57	1.32	5.0
19	4.6	4.3	9.0	1.24	.90	.41	7.4	.41	1.74	.12	2.4	3.45
20	6.8	6.2	1.54	.15	.45	.41	3.7	.36	.01	.08	6.4	.75
21	8.7	4.9	6.9	.25	.35	.41	2.65	.32	0	0	9.5	6.4
22	7.7	3.75	4.6	.45	.35	.41	10.5	.36	.06	.10	5.9	4.8
23	18.1	1.22	4.9	.58	.35	.46	8.2	.36	.12	.68	5.0	6.0
24	4.9	4.4	4.0	.90	.55	2.05	.85	.46	.62	.32	7.7	5.1
25	.45	7.5	4.0	.68	.35	.75	.36	.36	.27	.27	11.0	4.5
26	.35	.35	21	.35	.30	6.9	.32	.36	.27	.32	10.2	4.7
27	9.0	1.58	1.90	.55	.27	.68	.56	.32	2.35	.52	11.0	6.3
28	7.4	.80	8.0	.72	.25	3.25	9.4	.32	.12	.16	9.1	7.0
29	7.2	.45	9.7	.35	0	3.05	6.2	-	3.05	0	8.1	5.5
30	9.8	.45	13.7	.25	.02	.12	0	-	3.0	0	6.9	3.8
31	7.7	.45	-	.25	-	.12	.07	-	.19	-	7.5	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	31	0.35	8.75	13.5	271	833
August.....	18.7	.35	5.15	7.97	160	490
September.....	26	.58	7.30	11.3	219	672
October.....	7.0	.15	2.80	4.35	86.9	267
November.....	1.08	0	.640	.990	19.2	59
December.....	8.5	.06	2.92	4.52	90.3	278
Calendar year 1936	31	0	4.56	7.06	1,670	5,120
January.....	10.6	0	3.69	5.71	114	351
February.....	7.1	.25	1.429	.664	12.0	37
March.....	11.2	0	1.19	1.84	36.3	113
April.....	11.2	0	2.44	3.75	73.1	224
May.....	11.0	0	3.37	5.21	105	321
June.....	7.7	.75	5.10	7.89	153	469
Fiscal year 1936-37	31	0	3.67	6.68	1,340	4,110

Makaleha ditch near Kealia

Location.- Water-stage recorder, 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.- December 1936 to June 1937. Equivalent records for July 1925 to November 1936 obtained by East Kauai Water Co. at site 150 feet downstream.

Extremes.- Maximum discharge during period, 16.3 million gallons a day (25.2 second-feet) Apr. 20 (gage height, 2.09 feet); minimum, 0.03 million gallons a day (0.05 second-foot) several days during November, December, and January.

Remarks.- Records good. Diverts water from Makaleha Stream for irrigation of sugar-cane. Flow regulated by gates at intake and wasteway 1 mile upstream.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1						0.03	0.22	0.13	0.06	0.05	0.10	4.8
2						.03	.05	.17	.06	.05	.16	5.2
3						.03	.03	.26	.06	.05	.39	6.4
4						.03	.03	.10	.06	.05	.16	6.9
5						.03	.05	.06	.09	.05	.19	7.4
6						.05	.05	.09	.10	2.0	.22	9.2
7						2.1	.05	.06	.10	3.15	.17	9.7
8						3.3	.06	.06	.09	3.15	.15	7.4
9						3.5	.06	.06	.06	3.25	.14	7.4
10						1.66	.09	.09	.06	2.1	.14	6.9
11						.30	.06	.09	.05	.30	.12	6.9
12						.24	.06	.10	.06	.27	.12	6.9
13						.48	.06	.10	.06	2.55	.10	6.9
14						.49	1.06	.10	.06	5.5	.10	6.9
15						.27	4.5	.12	.06	7.4	.10	6.9
16						.22	4.7	.12	.06	6.0	.10	4.9
17						.19	4.8	.12	.12	4.3	.09	3.9
18						.17	3.1	.14	.20	5.4	.09	4.0
19						.14	.72	.13	2.6	4.8	.08	4.0
20						.14	.69	.12	.78	2.95	.08	4.1
21						.17	.57	.08	.14	.17	.08	4.1
22						.14	.65	.10	.10	.10	.06	4.0
23						.12	.57	.09	.06	.09	.05	4.0
24						.12	1.06	.09	.06	.06	.05	6.0
25						.12	.64	.06	.06	.06	.05	6.8
26						.12	.61	.06	.06	.05	.06	6.0
27						.12	.50	.06	.06	.13	3.6	6.4
28						.17	.65	.06	.06	.42	5.2	4.9
29						.27	1.56	-	.06	.25	5.2	5.6
30						.06	.12	-	.06	.10	5.2	6.9
31						.06	.09	-	.06	-	5.2	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....						
August.....						
September.....						
October.....						
November.....						
December.....	3.5	0.03	0.480	0.743	14.9	46
Calendar year						
January.....	4.8	.03	.896	1.39	27.8	65
February.....	.26	.06	.101	.156	2.83	8.7
March.....	2.6	.05	.161	.280	5.61	17
April.....	7.4	.05	.183	.283	54.6	168
May.....	5.2	.05	.898	1.37	27.5	64
June.....	9.7	3.9	6.06	9.36	191	557
The period.....						966

ISLAND OF KAUAI

Anahola River near Kealia

Location.-- Water-stage recorder, lat. 22°08'55", long. 159°21'20", just above intake of Lower Anahola ditch, 4½ miles northwest of Kealia. Altitude, 220 feet, by barometer.

Drainage area.-- 5.5 square miles.

Records available.-- August to November 1910, December 1912 to June 1937.

Average discharge.-- 18 years (1919-37), 13.4 million gallons a day (20.7 second-feet).

Extremes.-- Maximum discharge during year, 3,580 million gallons a day (5,540 second-feet) Mar. 19 (gage height, 7.72 feet), from rating curve extended above 300 million gallons a day; minimum, 3.9 million gallons a day (6.0 second-feet) Oct. 18, 19.

1910, 1912-37: Maximum discharge, that of Mar. 19, 1937, from rating curve extended above 300 million gallons a day; minimum, 1.4 million gallons a day (2.2 second-feet) Sept. 12, 13, 1923.

Remarks.-- Records good for ordinary stages; those for June 22-30 (computed on basis of records for stations on nearby streams) and those for high stages are poor. Anahola ditch diverts water 3 miles above station for irrigation in vicinity of Kealia.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.9	2.85	1.35	6.6	1.7	16.5	2.9	145
1.1	4.3	1.4	7.1	1.9	28	3.4	254
1.25	5.6	1.45	7.7	2.2	50	4.0	456
1.3	6.0	1.5	8.5	2.5	81	4.5	692

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.5	6.9	9.8	5.7	27.5	6.7	41	36.5	9.1	8.1	30	7.1
2	4.9	7.3	9.8	5.1	20.5	7.0	26.5	164	31.5	8.3	42	6.8
3	4.6	7.7	25.5	4.9	16.5	6.6	11.1	84	9.5	8.1	43	6.6
4	4.4	12.2	26	4.8	15.1	6.0	13.1	24	6.3	7.6	168	6.2
5	9.5	6.9	18.7	4.8	22.5	7.2	9.1	18.7	9.1	7.4	194	6.4
6	8.8	5.7	13.6	4.9	17.0	20	8.1	19.8	48	7.3	238	6.2
7	16.8	6.0	10.7	5.5	19.9	18.2	7.6	14.6	50	7.0	56	6.6
8	37.5	6.3	10.4	7.3	17.6	9.5	7.4	14.1	32.5	6.7	37	6.2
9	9.5	6.4	9.1	4.7	13.1	68	7.3	12.2	21	6.7	38	7.3
10	7.9	7.6	8.1	5.1	13.1	13.2	10.7	12.2	11.7	9.1	27.5	7.0
11	14.9	7.0	7.6	4.9	14.6	8.1	7.9	11.1	10.7	9.1	24.5	6.8
12	14.0	28	7.3	4.5	11.1	10.1	10.7	11.1	13.6	7.3	24.5	5.7
13	7.3	7.1	6.9	4.9	15.3	8.9	7.9	9.1	10.7	6.4	22	5.6
14	7.4	6.0	6.6	4.5	90	18.7	13.3	8.5	11.1	5.9	22.5	5.6
15	10.7	5.5	7.3	4.2	21	7.4	10.7	11.1	12.2	5.8	19.2	5.3
16	11.1	12.6	13.0	4.3	16.5	7.0	17.9	11.1	11.7	5.6	14.6	5.1
17	7.1	7.3	33.5	4.1	35	7.0	7.9	19.2	5.5	15.1	4.9	
18	6.2	15.6	8.9	4.0	17.6	7.0	30.5	8.1	86	108	12.2	6.1
19	5.9	5.8	7.4	17.5	13.6	7.1	28	20.5	577	36.5	12.2	5.2
20	7.3	5.4	6.6	8.1	12.7	7.9	21	32.5	294	132	11.4	4.8
21	14.0	7.9	5.9	7.6	13.6	7.4	10.7	52	35	17.0	27	4.7
22	9.8	5.4	5.6	305	11.1	7.0	13.1	91	23	11.1	18.8	5.2
23	13.0	5.4	5.4	80	11.7	6.1	16.0	35	18.2	9.1	9.1	5.6
24	14.1	5.9	5.3	54	8.8	6.6	68	14.6	15.1	8.5	8.5	5.0
25	38	488	5.3	22	8.1	5.9	14.6	11.7	12.7	7.9	8.1	5.4
26	22	54	11.7	35	7.6	5.9	11.1	12.2	11.4	7.8	12.1	6.2
27	12.7	19.8	17.0	99	7.3	5.6	9.8	10.4	10.4	132	12.1	5.0
28	9.8	14.1	6.1	297	7.2	62	9.5	9.5	10.4	106	7.7	4.7
29	10.7	25	6.1	61	7.2	57	156	-	9.5	90	7.3	4.5
30	9.3	15.5	9.6	32.5	6.9	24	54	-	9.8	66	7.2	4.3
31	7.6	11.4	-	26	-	34	22.5	-	8.3	-	7.1	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	38	4.4	11.6	17.9	360	1,110
August.....	488	5.4	26.6	41.2	826	2,530
September.....	33.5	5.3	10.8	16.7	324	996
October.....	305	4.0	36.5	56.5	1,130	3,480
November.....	90	6.9	17.3	26.8	520	1,590
December.....	68	5.6	16.3	23.7	473	1,450
Calendar year 1936.....	488	4.0	16.3	25.2	5,960	18,310
January.....	156	7.3	22.6	35.0	700	2,150
February.....	164	7.9	27.4	42.4	768	2,360
March.....	577	8.3	46.4	71.8	1,440	4,420
April.....	132	5.5	28.5	44.1	854	2,620
May.....	238	7.1	37.9	58.6	1,170	3,600
June.....	7.3	4.3	5.74	8.88	172	528
Fiscal year 1936-37.....	577	4.0	24.0	37.1	8,740	26,830

Anahola ditch above Kaneha Reservoir, near Kealia

Location.- Water-stage recorder, lat. 22°08'00". long. 159°22'30", at point of discharge into Kaneha Reservoir, 5 miles northwest of Kealia. Altitude, 831 feet, by levels from Lihue Plantation Co. benchmark.

Records available.- May 1915 to June 1937.

Average discharge.- 14 years (1921-25, 1927-37), 3.49 million gallons a day (5.40 second-feet).

Extremes.- Maximum discharge during year, 45 million gallons a day (70 second-feet) Oct. 22 (gauge height, 2.53 feet); no flow several days, when gates were closed.
1915-37: Maximum discharge recorded, 130 million gallons a day (201 second-feet) Jan. 16, 1921 (gauge height, 8.25 feet, former site and datum); no flow occasionally, when water was shut out of ditch.

Remarks.- Records good except those for July 1, Aug. 23-28, computed on basis of records for nearby stations, which are poor. 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 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.0	5.2	0.02	4.3	0.04	0.02	0.06	0.02	0.04	0	0.19	3.35
2	4.0	6.6	.02	3.45	.04	.95	.08	.02	.04	0	.06	2.6
3	2.6	4.5	.02	3.15	.04	2.1	.08	.04	.02	0	.06	2.7
4	2.05	4.7	.02	2.8	.04	2.3	.08	.04	.01	0	.10	2.4
5	6.2	4.2	.02	2.6	.04	6.1	.08	.04	.01	1.92	.05	2.8
6	10.1	4.3	.02	2.5	.05	7.5	.06	.04	.04	2.4	.06	2.6
7	13.8	5.8	.02	3.15	.04	.06	.06	.04	.04	2.2	.04	4.0
8	12.6	6.1	.02	2.6	.04	.02	.01	.04	.04	2.1	.02	3.6
9	11.5	8.1	.02	2.3	.04	.04	.02	.04	.04	2.2	.02	7.1
10	10.9	9.2	.02	4.0	.04	.04	.04	.04	.04	8.9	.02	4.2
11	16.6	9.5	2.95	2.5	.02	.04	.04	.04	.04	4.5	.02	4.0
12	11.0	5.1	3.7	2.3	.02	.06	.04	.04	.04	3.7	.02	2.95
13	7.6	5.1	3.45	3.15	.02	.10	.04	.04	.04	2.6	.02	2.6
14	8.2	5.2	3.7	2.2	.06	.06	.04	.04	.04	2.3	.02	2.8
15	12.9	4.4	8.3	1.92	.04	.06	.04	.06	.04	2.5	.04	2.7
16	8.6	11.4	4.8	2.0	.04	.06	.04	.06	.04	2.2	.04	2.1
17	4.2	7.9	4.1	1.63	.06	.06	.04	.06	.04	2.7	.04	2.0
18	5.5	12.6	2.5	1.65	.04	.04	.04	.06	.04	5.9	.04	4.3
19	4.3	5.2	4.3	8.2	.04	.04	.04	.04	1.59	.06	.04	2.7
20	4.9	7.0	4.8	3.05	.03	.06	.04	.02	.09	.84	.04	2.1
21	13.0	10.5	3.0	2.55	.04	.08	.04	.04	.04	.04	.04	1.92
22	10.0	4.9	3.35	12.9	.04	.08	.04	.06	.04	.02	.04	2.5
23	3.6	4.0	3.15	.04	.04	.06	.04	.04	.04	.02	.04	3.05
24	1.51	6.0	2.95	.02	.04	.04	.10	.04	.02	.02	.04	2.0
25	.10	2.5	2.95	.02	.04	.06	.06	.04	.01	.04	.04	2.85
26	.06	.02	13.0	.02	.04	1.25	.06	.04	.01	.04	.04	3.2
27	.04	.02	8.5	.03	.04	3.15	.06	.04	.01	.20	.04	4.4
28	5.3	.02	3.7	.66	.02	6.5	.10	.04	.01	.08	1.47	2.2
29	8.1	.04	5.0	.02	.04	.06	.10	-	0	.06	3.15	1.92
30	7.3	.02	9.2	.02	.02	.04	.02	-	0	.34	3.15	1.74
31	7.6	.02	-	.02	-	.04	.02	-	0	-	3.15	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	16.6	0.04	7.15	11.1	222	680
August.....	12.6	.02	5.17	8.00	160	491
September.....	13.0	.02	5.28	5.07	98.4	302
October.....	12.9	.02	2.45	3.79	76.0	233
November.....	.06	.02	.038	.059	1.14	3.5
December.....	7.5	.02	1.00	1.55	31.1	95
Calendar year 1936	16.6	.02	3.00	4.64	1,100	3,370
January.....	.10	.01	.052	.080	1.61	4.9
February.....	.06	.02	.041	.063	1.16	3.6
March.....	1.59	0	.081	.125	2.50	7.7
April.....	0.9	0	1.60	2.48	47.9	147
May.....	3.15	.02	.390	.603	12.1	37
June.....	7.1	1.74	2.98	4.61	89.4	274
Fiscal year 1936-37	16.6	0	2.04	3.16	743	2,280

Anahola ditch wasteway near Kealia

Location.- Water-stage recorder, lat. 22°08'10", long. 159°22'30", 300 feet below wasteway gates on Anahola ditch, 500 feet above Kaneha Reservoir, 3.8 miles west of Anahola, and 4.9 miles northwest of Kealia.

Records available.- December 1936 to June 1937.

Extremes.- Maximum discharge during year, 78 million gallons a day (121 second-feet) Mar. 19 (gage height, 2.42 feet); no flow on several days during year.

Remarks.- Records good. Water that passes station is returned to Anahola River. Records from July 1 to Nov. 30 furnished by East Kauai Water Co.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	0.02	7.2	0	10.8	2.95	19.8	13.7	4.4	3.6	16.7	0.19
2	0	.02	8.4	0	6.2	4.5	13.6	26	13.8	3.65	18.2	.19
3	0	2.15	12.3	0	5.2	.64	7.7	23	4.8	3.65	17.9	.12
4	0	5.7	12.1	0	5.2	.19	10.9	11.8	4.6	2.95	16.7	.12
5	.01	1.86	11.6	0	12.0	.19	6.2	8.2	9.8	.85	31	.12
6	0	.02	8.2	0	11.3	10.7	5.2	9.4	19.5	.19	*28	.12
7	.01	.02	8.7	0	12.3	15.0	4.5	6.2	18.2	.19	16.7	.12
8	3.95	0	9.4	0	8.9	8.2	4.0	8.9	16.4	.22	13.1	.12
9	2.25	0	6.2	0	6.0	18.2	4.3	7.7	16.7	.19	17.3	.02
10	.07	0	4.8	0	7.2	11.3	10.4	6.6	9.6	.12	7.4	.07
11	.02	0	1.19	0	7.2	7.7	10.1	5.2	8.9	2.8	4.1	.04
12	1.81	10.0	.12	0	5.0	9.4	10.1	8.9	15.6	.12	1.20	.02
13	.12	1.62	.12	0	5.3	6.5	12.3	5.2	8.0	.10	1.20	.02
14	.07	.02	.12	0	21.5	10.6	13.1	4.4	10.0	.19	1.20	.01
15	.02	.02	.12	0	7.5	4.8	11.4	12.2	11.6	.10	2.65	.07
16	3.35	.02	.07	0	5.4	3.85	13.9	9.4	12.6	.10	4.4	.12
17	1.35	0	8.9	0	12.8	3.65	19.8	5.4	14.2	.10	4.0	.12
18	.07	0	3.45	0	6.4	4.2	23	9.5	23	4.4	3.65	.10
19	.07	0	.12	0	4.8	5.6	21.5	11.6	36.5	3.8	4.0	.10
20	.07	0	.12	0	4.8	6.0	18.2	12.3	27.5	13.6	3.5	.10
21	.07	0	.07	0	7.2	6.3	12.3	14.2	15.9	8.7	15.2	.07
22	.02	0	.07	9.9	4.0	4.8	13.3	26	9.8	5.1	15.0	.07
23	7.4	0	.07	23	6.8	3.85	12.4	16.4	7.7	6.2	4.8	.04
24	12.7	0	.07	19.8	4.2	6.2	18.5	8.4	6.6	5.6	4.0	.04
25	17.8	24.5	.07	12.3	3.85	4.4	8.9	6.6	5.6	4.9	4.8	.04
26	14.7	15.6	.02	19.8	3.15	2.2	6.6	7.5	5.0	3.65	10.4	.04
27	10.8	10.8	2.7	23	2.8	.12	5.6	5.2	4.4	18.1	7.7	.02
28	2.75	7.8	.61	31	2.95	10.3	7.5	4.6	4.8	20.5	2.3	.02
29	3.15	13.9	.07	19.8	6.3	19.8	17.4	-	4.6	21	.26	.02
30	.84	10.1	†.03	11.3	2.95	15.6	17.4	-	4.0	18.4	.26	.02
31	.02	9.8	-	9.6		23	7.7	-	3.6	-	.26	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	17.8	0	2.69	4.16	83.5	256
August.....	24.5	0	3.68	5.69	114	350
September.....	12.3	.02	3.57	5.52	107	328
October.....	31	0	5.79	8.96	180	551
November.....	21.5	2.8	7.00	10.8	210	644
December.....	23	.12	7.44	11.5	231	708
Calendar year						
January.....	23	4.0	11.9	16.4	368	1,130
February.....	26	4.4	10.5	16.2	294	904
March.....	36.5	5.6	11.5	17.8	359	1,100
April.....	21	.10	5.10	7.89	153	469
May.....	31	.26	8.96	13.9	278	852
June.....	.19	.01	.079	.122	2.37	7.3
Fiscal year 1936-37	36.5	0	6.51	10.1	2,380	7,300

*Partly estimated.

†Estimated.

Lower Anahola ditch near Kealia

Location.— Water-stage recorder, lat. 22°08'00", long. 159°19'30", 100 feet below last wasteway, 1.3 miles southwest of mouth of Anahola River, and 2.5 miles northwest of Kealia. Altitude, 271± 5 feet, by levels from approximate site of two demolished Geological Survey benchmarks.

Records available.— December 1936 to June 1937. Records obtained 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 period, 16.5 million gallons a day (25.5 second-feet) Apr. 19 (gage height, 2.11 feet); no flow when water was turned out of ditch.

Remarks.— Records excellent. Water used for irrigation of sugarcane. Flow regulated by spillways and gates.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1						-				0	0	6.2
2						-				0	0	8.2
3						-				0	0	8.2
4						-				0	0	7.8
5						0				0	0	7.8
6						0				0	0	7.3
7						0				2.9	0	7.8
8						0				5.0	0	7.3
9						0				4.5	0	7.3
10						0				2.75	0	7.8
11						0				0	0	7.8
12						0				5.8	0	4.3
13						0				7.8	0	2.65
14						0				7.3	0	4.3
15						0				7.3	0	5.0
16						0				6.9	0	6.4
17						0				6.9	0	6.4
18						0				7.3	0	6.9
19						0				2.5	0	6.9
20						0				.01	0	6.0
21						0				0	0	6.0
22						0				0	0	6.4
23						0				0	0	6.0
24						0				0	0	6.9
25						0				0	0	6.0
26						0				0	0	6.0
27						0				0	0	6.0
28						0				.02	0	5.6
29						0				0	1.0	5.6
30						0				0	5.6	5.2
31						0				-	8.2	-
Month				Million gallons a day			Second-feet (mean)	Total run-off				
				Maximum	Minimum	Mean		Million gallons	Acre-feet			
July.....												
August.....												
September.....												
October.....												
November.....												
December 5-31.....				0	0	0	0	0	0			
Calendar year												
January.....				0	0	0	0	0	0			
February.....				0	0	0	0	0	0			
March.....				0	0	0	0	0	0			
April.....				7.8	0	2.25	3.45	67.0	206			
May.....				8.2	0	.48	.74	14.6	45			
June.....				8.2	2.65	6.47	10.0	194	596			
The period.....									847			

Ka Loko ditch near Kilauea

Location.- Water-stage recorder, lat. 22°10'35", long. 159°23'00", 60 feet below junction of Ka Loko and Moloaa ditches, 400 feet above Ka Loko Reservoir, and $\frac{3}{4}$ miles southeast of Kilauea. Altitude, 750 feet, from topographic map.

Records available.- August 1932 to June 1937.

Extremes.- Maximum discharge during year, 106 million gallons a day (164 second-feet) Aug. 25 (gage height, 4.35 feet); minimum, 0.63 million gallons a day (0.98 second-foot) Dec. 13, 15.

1932-37: 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 Dec. 15-17, which were estimated and are fair. Ditch diverts water from Moloaa and Puu Ka Ele Streams half a mile southeast and $\frac{1}{2}$ 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 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.05	3.35	4.3	3.05	3.85	2.55	3.35	3.25	3.8	3.55	5.8	3.05
2	2.05	3.55	4.0	2.55	1.98	2.65	2.9	13.2	5.2	3.55	6.4	2.65
3	1.98	3.9	6.5	2.45	1.80	2.65	1.63	7.0	2.1	3.55	4.0	2.65
4	1.80	6.4	8.3	2.35	2.05	2.45	1.39	2.85	2.65	3.15	21.5	2.45
5	4.4	3.55	7.1	2.35	2.95	3.6	2.0	1.99	4.1	2.95	24	2.45
6	3.55	2.95	5.0	2.35	3.25	7.4	2.5	2.65	7.0	2.95	38	2.35
7	5.7	3.15	4.3	2.45	3.8	5.2	1.23	1.80	6.6	2.85	11.8	2.65
8	11.0	3.25	4.0	2.65	3.25	4.0	1.02	1.63	4.9	2.75	8.9	2.45
9	4.0	3.15	3.7	2.35	2.65	5.9	1.02	2.75	6.2	2.85	9.5	3.5
10	5.7	4.8	3.25	2.45	2.35	*2.05	1.09	3.0	4.3	4.9	7.1	3.15
11	5.0	4.9	3.15	2.35	2.75	*1.09	2.4	2.35	4.0	4.7	6.2	2.95
12	3.9	10.3	3.15	2.25	2.75	*.75	3.65	1.97	4.9	3.45	5.5	2.25
13	2.75	4.4	3.15	2.25	3.65	*.68	1.23	2.7	4.1	2.75	5.1	2.25
14	3.8	3.35	3.05	2.15	8.8	1.25	1.80	3.15	4.1	2.65	5.0	2.15
15	4.6	3.05	3.25	2.05	2.35	†2.1	5.7	2.35	4.5	2.55	4.6	2.05
16	5.9	4.4	6.0	1.98	3.55	†2.8	7.9	1.71	5.1	2.35	4.4	1.98
17	2.95	3.7	11.2	1.98	4.7	†2.8	11.0	1.16	6.7	2.25	4.0	1.98
18	2.75	6.0	3.9	1.89	2.45	2.55	10.9	2.3	9.2	11.6	3.8	2.45
19	2.75	3.05	3.05	7.2	2.65	2.75	4.3	4.6	21	14.5	3.7	2.05
20	4.2	3.15	2.85	3.55	3.7	2.95	3.6	3.9	12.2	8.0	3.45	1.89
21	7.1	4.4	2.75	2.95	3.7	3.25	1.98	4.8	3.25	4.5	5.7	1.80
22	5.5	3.05	2.65	32.5	3.25	2.95	1.80	5.8	6.4	3.35	8.6	2.15
23	5.3	3.05	2.65	14.1	2.95	2.45	2.35	3.0	6.4	3.25	4.0	2.05
24	6.6	2.85	2.45	11.1	1.71	2.25	5.3	3.0	5.9	3.15	3.45	1.89
25	19.9	41	2.45	5.0	2.25	1.23	4.3	3.7	5.4	3.15	3.35	1.89
26	9.9	16.5	5.6	7.5	2.95	.81	2.85	2.9	5.0	2.85	5.2	1.69
27	5.6	6.7	8.3	16.5	2.85	1.63	1.71	2.9	2.75	23.5	5.6	1.98
28	5.0	6.0	3.05	29	2.85	6.4	1.39	3.25	1.71	18.2	3.35	1.80
29	5.6	7.3	3.45	5.6	2.85	10.1	10.8	-	2.85	12.7	3.05	1.80
30	4.4	6.8	5.0	2.95	2.65	3.15	4.5	-	4.1	7.3	2.95	1.63
31	3.8	5.6	-	4.5	-	2.75	3.0	-	3.7	-	2.65	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	19.9	1.80	5.07	7.84	157	493
August.....	41	2.85	6.02	9.51	187	573
September.....	11.2	2.45	4.38	6.78	132	404
October.....	32.5	1.89	5.95	9.21	184	566
November.....	6.8	1.71	3.11	4.81	95.3	296
December.....	10.1	.68	3.07	4.75	95.1	292
Calendar year 1936	41	.68	4.30	6.65	1,570	4,820
January.....	11.0	1.02	3.56	5.51	110	339
February.....	13.2	1.16	3.42	5.29	96.6	294
March.....	21	1.71	5.49	8.49	170	523
April.....	23.5	2.25	5.68	8.76	170	521
May.....	38	2.85	7.45	11.5	231	708
June.....	3.5	1.63	2.27	3.51	68.2	209
Fiscal year 1936-37	41	.68	4.64	7.18	1,690	5,200

*Partly estimated.

†Estimated.

Puu Ka Ele ditch near Kilauea

Location.- Water-stage recorder, lat. 22°11'05", long. 159°24'20", 100 feet above Puu Ka Ele Reservoir and 2 miles south of Kilauea. Altitude, 430 feet, by barometer.

Records available.- August 1932 to June 1937.

Extremes.- Maximum discharge during year, 32 million gallons a day (50 second-foot) Apr. 18 (gage height, 2.04 feet); no flow for several periods during year. 1932-37: Maximum discharge, 32 million gallons a day (50 second-foot) June 4, 1934, Dec. 9, 1935 (gage height, 2.05 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent except those for Dec. 21-23, Jan. 25, Feb. 17-19, Mar. 31 to Apr. 4, June 18-19, 28-30, which were computed on basis of records for stations on Ka Loko and Kalihiwai ditches and are fair. Ditch diverts water from Puu Ka Ele Stream 1 mile southwest of station. Flow regulated by wasteway gate 100 feet above station. No diversions. Water used for irrigation in vicinity of Kilauea.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.15	5.0	2.15	4.9	0.58	3.15	1.54	2.75	4.1	4.0	0.57	3.65
2	3.25	5.2	6.0	4.1	.92	3.25	.81	1.80	3.65	3.9	.55	3.25
3	3.05	4.9	6.0	3.8	1.15	3.35	.06	.05	0	3.9	.05	3.35
4	2.65	8.3	1.45	3.55	1.19	3.25	.12	.01	.04	3.6	1.55	3.25
5	5.1	5.0	.73	3.45	.45	3.35	0	0	.12	3.55	6.9	3.25
6	4.0	4.1	.44	3.45	.06	2.1	0	.03	.12	3.55	2.2	3.15
7	5.6	4.1	0	3.55	.06	.54	1.73	0	.12	3.25	.23	3.45
8	11.8	4.1	0	3.25	.05	1.43	4.7	.12	.09	3.15	0	3.15
9	5.1	4.5	0	3.05	.09	4.2	5.0	0	0	3.25	8.1	4.0
10	4.6	5.1	.02	3.25	0	2.05	5.5	0	0	6.6	2.6	4.1
11	5.1	9.1	2.7	3.25	.21	3.45	6.5	.22	.03	5.8	0	4.1
12	4.0	9.8	4.1	3.05	.04	2.7	10.3	0	0	4.3	.13	3.15
13	3.55	4.8	4.1	3.05	.02	0	10.9	0	.04	3.55	.20	3.05
14	5.1	5.1	4.0	2.75	3.4	1.23	10.7	.62	0	3.25	.20	3.05
15	5.5	4.6	4.3	2.65	.20	2.45	3.25	.58	0	3.15	0	3.05
16	8.6	5.5	5.1	2.65	.04	3.45	3.35	0	.02	3.05	0	2.8
17	5.0	5.0	1.98	2.65	1.19	3.8	5.0	0	.02	2.95	3.75	2.7
18	4.3	5.0	3.45	2.55	.10	3.8	5.2	0	.14	4.6	4.9	2.5
19	4.7	4.0	4.3	6.6	.13	3.7	5.0	.19	2.0	3.0	4.6	3.0
20	6.8	5.0	3.9	5.5	0	3.8	4.0	.16	.70	.03	4.4	2.85
21	8.8	5.9	3.7	3.8	.10	2.0	2.45	.16	0	.26	6.3	2.55
22	9.1	3.7	3.55	14.6	.72	.1	2.55	.19	.01	.51	9.9	2.75
23	7.0	4.0	3.55	6.3	0	0	2.95	.16	.04	2.9	5.0	2.75
24	9.1	3.8	3.55	4.6	.07	0	4.1	.16	.01	4.4	4.3	2.65
25	16.6	4.7	3.45	3.95	0	0	4.4	.12	.04	4.6	4.0	2.45
26	12.9	.13	8.6	7.1	.55	2.1	5.1	5.3	0	4.1	6.3	2.8
27	8.3	3.2	10.3	5.6	.38	2.85	5.6	3.75	.07	4.3	6.5	2.9
28	8.1	.23	4.7	2.95	2.65	3.5	1.84	.05	0	.71	4.0	2.5
29	9.1	1.28	5.9	6.5	3.45	2.55	1.78	-	0	1.59	5.8	2.4
30	7.4	.96	7.9	1.71	3.35	1.09	1.86	-	.12	3.25	3.7	2.4
31	5.9	.92	-	.68	-	1.54	2.5	-	1.5	-	3.45	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	16.6	2.65	6.56	10.1	203	624
August.....	9.8	.13	4.41	6.82	137	420
September.....	10.3	0	3.65	5.65	110	336
October.....	14.6	.68	4.16	6.44	129	396
November.....	3.45	0	2.703	1.09	21.1	65
December.....	4.2	0	2.28	5.53	70.8	237
Calendar year 1936.....	16.6	0	3.88	6.00	1,420	4,360
January.....	10.9	0	3.83	5.93	119	364
February.....	5.3	0	.569	.911	16.5	51
March.....	4.1	0	.419	.648	15.0	40
April.....	6.6	.03	3.32	5.07	98.2	302
May.....	9.9	0	3.17	4.90	98.2	301
June.....	4.1	2.4	3.03	4.69	90.9	279
Fiscal year 1936-37	16.6	0	3.03	4.69	1,110	3,400

Kalihiwai ditch near Kilauea

Location.- Water-stage recorder, lat. 22°10'55", long. 159°25'55", 0.1 mile above Kalihiwai Reservoir and 2.4 miles southwest of Kilauea. Altitude, 410 feet, by barometer.

Records available.- June 1934 to June 1937.

Extremes.- Maximum discharge during year, 63 million gallons a day (98 second-feet)

Oct. 22 (gage height, 3.12 feet); minimum, 0.19 million gallons a day (0.29 second-foot) Sept. 10, 11, Jan. 9.

1934-37: Maximum discharge, that of Oct. 22, 1936; minimum, 0.01 million gallons a day (0.02 second-foot) Nov. 28, Dec. 4, 1934.

Remarks.- Records good except those for July 13-23, Aug. 7-23, Apr. 28 to May 6, which were computed on basis of records for nearby stations and are poor. Ditch diverts low-water flow from most branches of Pohakuho Stream at intakes, about 1 mile south of station. Diversion of flow to Kalihiwai 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 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.95	1.34	0.36	0.32	0.63	0.63	0.81	0.52	0.88	4.3	1.2	3.55
2	3.05	2.7	.36	2.35	4.2	.57	.75	.88	1.16	4.0	1.2	3.35
3	3.05	.75	.36	3.45	5.8	.52	.52	.75	.86	4.1	1.0	3.35
4	3.05	2.25	.41	3.35	4.1	1.53	.41	.63	.81	3.7	1.2	3.25
5	7.1	4.6	.41	3.35	1.63	5.8	.36	.41	.81	3.55	1.4	3.15
6	5.2	5.8	.41	3.35	1.39	6.8	.36	.41	1.09	3.45	2.0	3.15
7	11.1	5.0	.36	3.15	1.31	1.80	.27	.41	1.23	3.35	.75	3.55
8	12.1	4.5	.32	3.15	1.16	1.39	.23	.36	.88	3.25	.68	3.15
9	2.3	5.0	.27	2.95	.95	1.47	.19	.32	.81	3.35	.68	5.1
10	.88	5.4	.23	3.7	.81	.68	.41	.32	.68	9.5	.63	5.6
11	.68	7.0	2.45	3.15	.81	.52	.57	.32	.63	7.2	.57	4.0
12	.79	7.2	3.8	3.05	.88	.52	.46	.32	.68	5.0	3.95	3.25
13	5.6	4.7	3.8	2.95	.95	.41	.41	.27	.63	3.8	5.8	3.25
14	6.0	4.5	4.1	2.95	2.35	.57	.52	.27	.63	3.45	5.4	3.05
15	6.2	4.5	4.4	2.75	1.39	.41	.46	.32	.63	3.8	5.0	3.05
16	6.6	4.7	10.2	2.65	1.23	.41	.52	.27	.63	3.35	2.4	2.85
17	5.7	4.5	7.2	2.45	1.23	.41	.75	.23	.75	3.55	.63	2.75
18	5.5	4.5	.68	2.45	1.23	.36	.68	.23	1.23	5.4	.57	3.35
19	5.6	3.7	.52	4.7	.88	.36	.63	5.2	1.85	4.1	2.1	2.95
20	5.8	4.5	.36	3.5	.81	.36	.63	13.8	1.09	11.7	4.0	2.75
21	6.6	5.4	1.66	3.15	.81	.36	.52	13.9	.81	4.1	7.6	2.55
22	6.4	3.6	3.45	16.0	.75	.46	.57	6.1	.68	.68	13.2	2.65
23	6.0	3.7	3.25	6.3	.81	.36	.57	1.47	.63	.68	5.1	2.65
24	1.47	3.6	3.15	5.4	.81	.46	.63	1.16	3.55	.63	4.4	2.55
25	1.64	4.5	3.05	3.05	.81	.41	.57	3.7	6.6	.68	4.3	2.75
26	1.31	3.7	19.2	4.4	.75	.52	.46	4.7	6.6	.63	7.2	3.05
27	1.09	.63	11.3	5.0	.68	.63	2.75	.95	5.4	.68	4.4	3.05
28	1.09	.52	.63	1.71	.63	1.63	4.2	.81	2.6	1.7	4.3	2.65
29	.88	.57	.46	1.31	.63	1.02	1.71	-	.75	1.5	3.9	2.55
30	.81	.46	.36	1.09	.63	.81	1.09	-	.68	1.3	3.8	2.45
31	.75	.46	-	.75	-	.81	.63	-	2.65	-	3.7	-
Month							Million gallons a day			Second-foot (mean)	Total run-off	
							Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....							12.1	0.68	4.10	6.34	127	390
August.....							7.2	.46	3.69	5.71	114	351
September.....							19.2	.23	2.92	4.52	87.5	269
October.....							16.0	.32	3.45	5.38	108	331
November.....							6.8	.63	1.37	2.12	41.0	126
December.....							6.8	.36	1.06	1.64	33.0	101
Calendar year 1936.....							21.5	.23	2.50	3.87	916	2,810
January.....							4.2	.19	.763	1.18	23.6	73
February.....							13.9	.23	2.11	3.26	69.0	181
March.....							6.6	.63	1.58	2.44	49.0	150
April.....							11.7	.63	3.55	5.49	106	327
May.....							13.2	.57	3.32	5.14	103	316
June.....							5.6	2.45	3.18	4.92	95.4	293
Fiscal year 1936-37							19.2	.19	2.60	4.02	946	2,910

Hanalei River at altitude 625 feet, near Hanalei

Location.- Water-stage recorder, lat. 22°07'10", long. 159°28'05", 0.4 mile below confluence with Kaapoko Stream and 6½ miles southeast of Hanalei. Altitude, 625 feet, from topographic map.

Drainage area.- 7.4 square miles.

Records available.- January 1914 to June 1937.

Average discharge.- 19 years (1918-37), 50.2 million gallons a day (77.7 second-feet).

Extremes.- Maximum discharge during year, 11,100 million gallons a day (17,200 second-feet) Mar. 19 (gage height, 10.52 feet), from rating curve extended above 230

million gallons a day; minimum, 8.7 million gallons a day (13.5 second-feet) July 1.

1914-37: Maximum discharge, that of Mar. 19, 1937; minimum, 5.8 million gallons a day (9.0 second-feet) Apr. 28, May 1-3, 1926.

Remarks.- Records for ordinary stages are good; those for Dec. 27, 28, Jan. 3-5, 8-17, 21 (computed on basis of records for stations on nearby streams) and those for extremely high stages are poor. Since 1925 Hanalei tunnel has been diverting an average of about 20 million gallons a day from Kaapoko Stream and Hanalei River at points about 2 miles above station. Diverted water used for irrigation in vicinity of Lihue.

Rating tables, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Mar. 19					Mar. 20 to June 30				
0.6	5.1	1.5	79	4.0	650	0.6	9.7	1.9	88
.7	11.0	2.1	110	4.5	890	.7	12.5	2.1	124
.8	14.5	2.4	152	5.1	1,300	.8	16.5	2.4	170
1.0	25.5	2.7	207			1.0	26	2.7	227
1.2	35	3.1	308			1.2	38	3.1	325
1.5	55	3.5	440			1.5	61	3.5	451

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.0	27	31.5	20.5	37	13.4	99	142	18.4	18.5	405	17.5
2	9.6	30	29	17.9	26	17.9	81	273	18.4	19.0	312	17.0
3	9.6	34.5	54	16.2	22.5	17.1	66	256	16.6	26	112	17.0
4	13.6	63	54	15.8	22.5	17.1	56	71	17.1	19.5	89	16.8
5	26.5	27	55	14.5	45	32	50	41	29	19.0	418	16.5
6	26	20	30	14.2	35.5	79	47	36	74	18.5	276	16.0
7	80	28	24	14.2	92	109	43	32.5	85	24.5	92	17.0
8	74	27.5	69	15.1	39	55	40	54	60	19.5	24	17.5
9	47	32.5	33.5	12.8	31.5	157	35	52	57	21	70	20.5
10	34	28.5	20	16.6	40	75	30	26	41	35	37	16.5
11	46	102	18.8	15.8	42	44	25	27	38	30	32	13.5
12	27	321	18.4	12.0	25	38	20	49	65	32	27	13.5
13	21	73	21	14.6	24.5	37	110	25.5	34.5	22	24	12.5
14	24	38	19.7	11.7	77	181	45	23.5	31	21	24	12.0
15	46	28	34	11.0	30	61	60	63	35	54	22	12.5
16	64	53	74	11.0	22.5	35	110	103	38.5	30.5	22	12.0
17	24.5	31.5	78	10.7	31.5	32.5	370	40	115	42	19.5	11.5
18	26	35	37	10.4	21.5	29	*338	188	342	96	19.0	13.5
19	23.5	22.5	25	42	17.9	24.5	*187	97	1,290	23	19.0	12.0
20	24.5	59	32	13.4	19.3	28	*122	91	403	141	22.5	11.5
21	41	63	22	11.0	21.5	50	90	124	100	51	68	11.5
22	39.5	24	19.7	216	15.8	41	68	117	61	21	86	11.5
23	41	20.5	17.9	176	61	27	42	57	42	35.5	27	11.5
24	92	28	16.6	111	17.9	61	40	34.5	34	23	23.5	11.0
25	190	478	18.4	104	15.4	43	29	28	28	23	24.5	11.5
26	137	137	158	147	14.2	32.5	24	25.5	25	20	40	16.0
27	52	59	61	335	13.1	27	21	22	26	23	28.5	19.6
28	35	40	31	253	12.9	25	33.5	19.7	22	66	19.0	12.0
29	40	60	30	102	31	*174	85	-	22	90	18.5	11.5
30	55	58	44	55	15.4	*210	92	-	20	209	18.0	11.0
31	38.5	48	-	40	-	*160	32	-	19.0	-	17.5	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	190	9.6	45.8	70.9	1,420	4,360
August.....	478	20	67.6	105	2,100	6,430
September.....	158	16.6	36.8	60.0	1,160	3,570
October.....	336	10.4	59.9	92.7	1,860	5,700
November.....	92	12.8	30.6	47.3	918	2,820
December.....	210	13.4	62.4	96.5	1,930	5,930
Calendar year 1936	478	8.1	39.7	61.4	14,530	44,580
January.....	370	20	80.3	124	2,490	7,640
February.....	273	19.7	74.9	116	2,100	6,440
March.....	1,290	16.6	104	161	3,210	9,850
April.....	209	18.5	42.4	65.6	1,270	3,900
May.....	418	17.5	78.5	122	2,440	7,480
June.....	20.5	11.0	14.1	21.8	425	1,300
Fiscal year 1936-37.....	1,290	9.6	58.4	90.4	21,320	65,420

*Partly estimated.

Hanakapiai Stream near Hanalei

Location.- Water-stage recorder, lat. 22°11'20", long. 159°35'50", 1½ miles above mouth of stream and 6 miles west of Hanalei. Altitude, 450 feet, by barometer.

Drainage area.- 2.6 square miles.

Records available.- December 1931 to June 1937.

Extremes.- Maximum discharge during year, 1,340 million gallons a day (2,070 second-feet) Mar. 18 (gage height, 6.31 feet), from rating curve extended above 60 million gallons a day; minimum, 4.2 million gallons a day (6.5 second-feet) Oct. 15-18.

1931-37: Maximum discharge, 1,780 million gallons a day (2,750 second-feet) Dec. 9, 1935 (gage height, 7.20 feet), from rating curve extended above 60 million gallons a day; minimum, 2.5 million gallons a day (3.9 second-feet) Jan. 15-19, Mar. 12, 13, 21, 22, 1934.

Remarks.- Records good for ordinary stages and poor for high stages. No diversions.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.4	2.8	1.2	14.5	2.4	79
.6	4.4	1.5	23.5	2.8	121
.8	6.7	1.8	36	3.0	151
1.0	10.0	2.1	54	3.5	248

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.3	6.4	7.0	5.2	12.4	6.5	25	6.0	56	6.4	5.9	6.2
2	5.7	7.0	7.8	4.9	7.3	11.1	12.2	46	35	6.4	6.6	6.0
3	5.3	8.0	12.3	4.8	6.5	6.5	8.9	57	10.8	9.7	8.5	6.8
4	9.5	33.5	8.0	4.6	7.0	6.2	6.4	15.9	28.5	6.6	56	6.4
5	32	10.2	7.8	4.6	27.5	7.0	7.5	10.2	68	6.0	132	8.5
6	14.5	7.1	6.8	4.6	30.5	17.2	7.1	19.6	70	5.6	54	10.0
7	26	18.5	5.8	4.5	43	10.4	6.6	11.2	71	5.6	15.4	17.8
8	39.5	11.2	17.9	4.4	34.5	9.3	6.2	17.4	56	5.6	13.8	12.2
9	17.5	18.5	8.5	4.5	17.5	64	6.0	17.4	51	5.6	24	28
10	15.1	16.9	6.0	7.4	14.3	21.5	6.2	11.2	24	15.5	10.4	18.3
11	12.0	8.9	5.4	5.8	9.7	18.3	15.7	8.5	40	13.3	8.4	9.5
12	12.9	12.6	5.5	4.8	7.6	21.5	9.3	19.0	68	11.6	7.5	7.5
13	14.2	8.9	6.4	4.5	9.5	31.5	60	10.0	25	6.6	7.0	7.0
14	18.9	6.4	8.9	4.4	42	76	29	20.5	25	6.0	6.8	7.0
15	13.8	6.0	31.5	4.2	12.0	28.5	41	139	23.5	5.6	7.5	6.8
16	10.4	28	83	4.2	9.3	12.0	39.5	26	19.5	5.6	9.3	6.4
17	7.0	14.0	15.4	4.2	70	9.5	19.3	12.2	16.5	5.6	7.3	6.2
18	10.2	7.8	8.7	4.2	14.2	9.5	13.8	31	175	5.5	6.8	7.5
19	6.3	6.2	6.8	4.6	9.1	8.5	12.2	12.5	109	5.5	11.9	6.8
20	11.0	5.4	6.0	4.4	14.2	8.2	10.4	30	36	9.6	10.7	6.2
21	41	5.2	5.8	4.6	13.1	27.5	9.5	98	14.6	6.6	47	5.9
22	14.5	4.9	5.4	59	7.3	29	8.5	87	10.8	5.6	25	5.9
23	23.5	5.4	5.2	124	92	23	7.3	22.5	8.9	5.5	11.0	5.6
24	31.5	14.9	5.1	52	31	24	7.3	11.8	8.2	5.2	8.4	5.6
25	105	128	5.0	32	15.2	13.0	6.6	9.3	8.0	5.6	7.1	8.8
26	59	26	10.5	96	9.1	10.0	6.4	15.3	7.8	6.2	10.6	12.8
27	17.5	9.3	11.7	88	7.5	8.0	5.9	10.0	7.8	5.2	8.9	14.6
28	11.8	7.1	5.5	28	6.6	7.0	5.9	8.4	7.5	5.4	6.8	9.1
29	9.9	13.3	7.7	24	8.0	7.4	5.9	-	6.8	14.6	6.4	10.0
30	8.7	8.9	6.4	10.6	6.2	53	13.3	-	6.4	7.8	6.2	7.1
31	7.1	8.2	-	8.9	-	58	7.5	-	6.4	-	6.2	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	105	5.3	19.9	30.8	616	1,890
August.....	128	4.9	15.2	23.5	473	1,450
September.....	83	5.0	11.1	17.2	334	1,020
October.....	124	4.2	19.4	30.0	600	1,840
November.....	92	6.0	19.9	30.6	593	1,820
December.....	76	6.2	20.7	32.0	643	1,970
Calendar year 1936	180	3.2	15.8	24.4	5,790	17,740
January.....	60	5.9	13.9	21.5	431	1,320
February.....	139	6.0	27.2	42.1	763	2,340
March.....	175	6.4	35.5	54.9	1,100	3,380
April.....	15.5	5.2	7.9	11.1	216	668
May.....	132	5.9	17.7	27.7	553	1,700
June.....	28	5.6	9.22	14.3	276	849
Fiscal year 1936-37	175	4.2	18.1	28.0	6,600	20,240

Hanakoa Stream near Hanalei

Location.— Water-stage recorder, lat. 22°11'00", long. 159°37'35", three-quarters of a mile above mouth and 7½ miles west of Hanalei. Altitude, 470 feet, by barometer.

Drainage area.— 1.1 square miles.

Records available.— December 1931 to June 1937.

Extremes.— Maximum discharge during year, 413 million gallons a day (639 second-feet)

Mar. 18 (gage height, 4.82 feet), from rating curve extended above 30 million gallons a day; minimum, 0.46 million gallons a day (0.71 second-foot) Oct. 18-19.

1931-37: Maximum discharge, 443 million gallons a day (685 second-feet) June 4, 1934 (gage height, 4.96 feet), from rating curve extended above 30 millions gallons a day; minimum, 0.17 million gallons a day (0.26 second-foot) Mar. 21, 22, 1934.

Remarks.— Records good for ordinary stages and poor for high stages. No diversions.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.05	0.46	1.4	5.1	2.4	47
1.1	.81	1.6	9.7	2.7	71
1.15	1.30	1.8	15.6	3.0	101
1.2	1.89	2.0	24		
1.3	3.35	2.2	34.5		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.90	1.41	1.41	0.81	2.9	1.52	9.0	1.20	22.5	1.41	0.81	0.90
2	1.00	1.52	1.52	.73	1.89	2.2	4.4	21	16.8	1.41	1.10	.81
3	.81	1.41	2.55	.66	1.52	1.30	3.05	29	3.9	2.05	1.63	1.00
4	1.71	6.6	1.63	.66	1.53	1.30	2.6	6.0	6.0	1.30	16.3	.90
5	8.1	2.45	1.52	.66	7.5	1.52	2.2	3.35	24.5	1.20	54	1.52
6	3.7	1.63	1.30	.66	10.2	3.35	2.05	10.0	21	1.10	14.0	1.52
7	8.5	4.8	1.10	.66	20	2.35	1.63	4.6	30	1.10	3.9	3.05
8	11.8	2.75	1.52	.59	15.0	1.69	1.52	7.6	17.1	1.10	2.7	2.45
9	5.2	3.9	1.20	.59	6.6	32	1.41	6.9	17.4	1.10	5.0	5.0
10	4.0	3.5	1.00	.90	4.8	8.4	1.41	3.9	9.1	2.35	1.89	3.35
11	2.9	2.2	.81	.73	3.2	7.2	1.52	3.05	12.7	2.35	1.52	1.63
12	3.2	2.2	.90	.59	2.35	8.4	1.30	7.6	26.5	2.35	1.30	1.10
13	3.35	1.63	1.20	.59	2.5	17.6	13.8	3.5	6.7	1.10	1.10	1.00
14	4.2	1.30	1.89	.52	10.0	55	7.1	8.1	9.0	1.00	1.10	1.00
15	3.5	1.20	9.6	.52	3.05	17.4	9.7	76	8.0	1.00	1.20	.90
16	2.6	8.1	39.5	.46	3.3	5.1	13.4	11.6	5.7	.90	1.30	.81
17	1.63	3.7	4.8	.46	41	3.9	4.6	4.9	.81	.81	1.10	.81
18	2.6	1.76	2.6	.46	5.7	3.05	6.7	62	.61	1.00	1.00	1.00
19	1.52	1.30	1.76	1.00	3.2	2.9	2.6	4.2	62	.81	2.5	.81
20	1.63	1.10	1.52	.59	4.2	2.6	2.35	14.0	21.5	1.44	2.15	.73
21	12.9	1.00	1.30	.66	3.9	10.3	1.89	37.5	6.8	1.10	14.2	.66
22	4.4	1.00	1.20	24	2.35	11.9	1.63	23.5	4.4	.81	5.7	.66
23	5.6	1.10	1.10	46	51	7.7	1.52	6.8	3.35	.81	2.35	.66
24	8.4	3.6	1.00	19.7	13.7	6.8	1.30	4.0	2.9	.73	1.52	.59
25	46	57	1.00	11.3	5.6	4.2	1.30	3.05	2.45	.66	1.30	1.14
26	30.5	9.8	1.74	50	3.05	3.05	1.10	3.9	2.2	.81	1.63	2.05
27	5.7	3.05	2.35	26.5	2.35	2.45	1.10	2.75	1.89	.66	1.41	2.85
28	3.7	2.05	1.00	14.7	1.89	2.2	1.10	2.2	1.76	.73	1.10	1.52
29	2.6	2.9	1.20	10.6	1.63	31.5	1.20	—	1.65	3.2	1.00	1.63
30	2.2	1.89	1.10	3.9	1.63	25	3.7	—	1.52	1.41	1.00	1.00
31	1.63	1.76	—	2.75	—	26	1.63	—	1.41	—	1.00	—

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	46	0.81	8.54	9.81	196	603
August.....	57	1.00	4.67	7.07	142	435
September.....	39.5	.61	3.08	4.77	98.3	283
October.....	50	.46	7.20	11.1	223	665
November.....	51	1.52	7.93	12.3	238	730
December.....	55	1.30	10.0	15.5	311	953
Calendar year 1936	90	.4	5.96	9.22	2,180	6,690
January.....	13.8	1.10	3.42	5.29	106	326
February.....	76	1.20	11.4	17.6	319	978
March.....	62	1.41	15.7	21.2	424	1,300
April.....	3.2	.66	1.25	1.93	37.6	115
May.....	54	.81	4.76	7.56	148	453
June.....	5.0	.59	1.44	2.23	43.0	132
Fiscal year 1936-37	76	.46	6.24	9.65	2,280	6,990

Kalalau Stream near Hanalei

Location.- Water-stage recorder, lat. 22°09'50", long. 159°38'15", 2 miles above mouth and 9 miles southwest of Hanalei. Altitude, 960 feet, by barometer.

Drainage area.- 1.6 square miles.

Records available.- November 1931 to June 1937.

Extremes.- Maximum discharge during year, 166 million gallons a day (260 second-feet) Mar. 18 (gage height, 3.08 feet), from rating curve extended above 20 million gallons a day; minimum, 3.05 million gallons a day (4.72 second-feet) July 1-3, 1931-37; Maximum discharge, that of Mar. 18, 1937; minimum, 1.9 million gallons a day (2.9 second-feet) Dec. 10, 11, 1933.

Remarks.- Records good for ordinary stages and poor for high stages. No diversions.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.9	2.25	1.2	6.1	2.0	37
1.0	3.15	1.4	10.5	2.5	81
1.1	4.4	1.6	17.0		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.05	3.25	3.35	3.15	4.4	4.0	7.1	4.4	20	4.6	4.7	4.9
2	3.05	3.25	3.35	3.15	4.0	4.1	5.9	17.8	18.2	4.7	5.4	4.9
3	3.05	3.25	3.35	3.15	3.6	3.85	5.4	21.5	9.5	4.6	5.6	4.9
4	3.15	4.0	3.35	3.15	3.55	3.6	4.7	12.3	10.0	4.6	6.6	4.9
5	3.5	3.35	3.35	3.15	4.0	3.6	4.6	9.5	13.8	4.4	24	4.9
6	3.25	3.35	3.35	3.15	4.6	3.75	4.4	15.2	13.5	4.4	9.5	4.9
7	3.6	3.85	3.35	3.15	7.9	3.6	4.3	12.9	15.7	4.4	6.9	4.9
8	4.1	3.6	3.35	3.15	9.1	3.6	4.3	13.8	12.3	4.4	6.1	4.9
9	3.6	3.85	3.35	3.15	7.7	8.4	4.1	13.5	11.7	4.6	5.9	4.9
10	3.35	3.6	3.35	3.15	6.5	6.7	4.1	11.1	10.5	4.7	5.4	4.9
11	3.25	3.35	3.35	3.15	5.4	5.9	4.1	10.8	10.6	4.7	5.4	4.9
12	3.15	3.6	3.35	3.15	4.3	5.9	4.1	11.4	15.2	4.7	5.1	4.8
13	3.15	3.35	3.35	3.15	4.3	7.5	4.6	10.5	13.2	4.7	5.1	4.8
14	3.25	3.35	3.35	3.15	6.9	38.5	4.4	13.0	11.7	4.7	5.1	4.8
15	3.35	3.35	4.5	3.15	5.8	22	4.4	35.5	11.1	4.7	5.1	4.6
16	3.25	4.0	6.9	3.15	6.2	9.1	4.9	15.8	10.3	4.7	5.1	4.8
17	3.25	3.75	4.4	3.15	18.4	6.9	4.3	10.8	9.5	4.7	5.1	4.8
18	3.35	3.5	3.75	3.15	9.5	5.8	4.0	11.4	49	4.7	5.1	4.8
19	3.35	3.35	3.35	3.25	5.9	5.4	4.0	10.3	74	4.9	5.2	4.8
20	3.35	3.35	3.35	3.25	5.6	4.9	4.1	16.3	43	5.8	5.4	4.6
21	4.3	3.35	3.35	3.35	4.3	5.6	4.0	21	16.2	4.9	6.5	4.8
22	3.6	3.35	3.25	6.7	4.6	6.5	4.0	15.3	9.8	4.7	5.8	4.8
23	3.5	3.35	3.25	10.8	27	8.6	3.85	10.0	7.9	4.7	5.4	4.8
24	3.75	3.85	3.25	9.9	15.1	6.2	4.0	9.5	6.9	4.7	5.2	4.8
25	9.9	9.8	3.25	7.5	7.7	4.9	4.0	9.1	6.5	4.7	6.1	4.8
26	8.3	6.5	3.25	13.0	5.8	4.6	4.0	9.1	5.8	4.7	4.9	4.8
27	4.6	4.6	3.25	11.0	5.1	4.4	4.0	7.5	5.4	4.7	4.9	4.9
28	3.85	4.0	3.25	11.7	4.4	4.6	4.0	7.1	5.2	4.7	4.9	4.8
29	3.35	3.6	3.25	13.4	4.3	7.8	4.3	-	4.7	5.8	4.9	4.8
30	3.35	3.35	3.25	6.9	4.1	9.4	6.0	-	4.7	5.2	4.9	4.8
31	3.25	3.35	-	5.2	-	10.0	4.9	-	4.4	-	4.9	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	9.9	3.05	5.81	5.89	118	363
August.....	9.8	3.25	3.85	5.96	119	366
September.....	6.9	3.25	3.52	5.45	106	325
October.....	13.4	3.15	5.25	8.12	163	499
November.....	27	3.35	6.96	10.8	209	641
December.....	38.5	3.6	7.28	11.3	226	693
Calendar year 1936	80	2.4	5.55	8.59	2,030	6,240
January.....	7.1	3.85	4.48	6.93	139	426
February.....	33.5	4.4	13.0	20.1	365	1,120
March.....	74	4.4	14.9	23.1	460	1,410
April.....	5.8	4.4	4.75	7.35	142	437
May.....	24	4.7	6.10	9.44	189	581
June.....	4.9	4.8	4.84	7.49	145	446
Fiscal year 1936-37.....	74	3.05	6.53	10.1	2,380	7,310

MISCELLANEOUS DISCHARGE MEASUREMENTS

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

Miscellaneous discharge measurements on Kauai, fiscal year July 1936 to June 1937

Date	Stream	Tributary to-	Locality	Discharge	
				Second-foot	Million gallons a day
Dec. 15	Opaekaa.....	Pacific Ocean...	500 feet above Opaekaa Falls at Nonou, near Kapaa.	9.41	6.08
Apr. 30	Maiaakii ditch.	Mimimo Reservoir.	100 feet above Kealia power house for day pipe and 4 miles northwest of Kealia.	10.9	7.04

Right Branch of North Fork of Kaukonahua Stream, near Wahiawa

Location.- Water-stage recorder and masonry dam control, lat. $21^{\circ}31'15''$, long. $157^{\circ}56'55''$, 200 feet upstream from intake of Wahiawa Water Co.'s tunnel, which is just below confluence of right and left branches of North Fork of Kaukonahua Stream, and 8 miles northeast of Wahiawa. Altitude, 1,200 feet, from topographic map.

Drainage area.- 1.2 square miles.

Records available.- May 1913 to December 1932, February 1934 to June 1937.

Average discharge.- 18 years (1915-24, 1926-32, 1934-37), 7.95 million gallons a day (12.3 second-feet).

Extremes.- Maximum discharge during year, 698 million gallons a day (1,080 second-feet) Dec. 28 (gage height, 7.75 feet), from rating curve extended above 20 million gallons a day; minimum, 0.93 million gallons a day (1.44 second-feet) Dec. 1, 2, June 30, 1913-37: Maximum discharge, 1,160 million gallons a day (1,790 second-feet) Jan. 1, 1933 (gage height, 9.63 feet), from rating curve extended above 120 million gallons a day; minimum, 0.09 million gallons a day (0.15 second-foot) Mar. 22, 1926.

Remarks.- Records good for ordinary stages and poor for high stages. No diversions above station.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

2.6	0.30	3.0	3.4	3.4	14.1	4.0	50	4.8	145
2.8	1.36	3.2	7.3	3.6	23	4.4	91	5.5	254

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.0	7.1	4.8	7.3	4.8	0.99	73	4.4	3.15	2.85	32	2.4
2	3.4	24	9.8	5.6	3.95	1.54	11.9	3.95	2.85	2.65	23.5	1.94
3	2.5	7.2	6.2	5.0	3.5	1.79	7.1	3.55	2.5	3.9	7.9	2.5
4	2.3	39	12.2	5.2	3.25	1.44	7.2	3.25	2.65	2.4	5.2	1.78
5	2.2	7.9	12.5	4.3	4.4	6.5	4.8	18.4	7.7	2.2	57	4.4
6	2.9	5.8	4.6	4.2	3.4	11.7	4.2	40	14.1	2.4	45	2.05
7	9.8	5.2	9.6	4.6	4.0	15.3	3.5	7.4	23	2.05	17.0	2.3
8	12.2	5.2	37	3.4	3.65	2.85	3.15	4.8	19.1	1.94	11.0	1.94
9	3.65	5.4	7.6	3.0	2.65	4.9	4.1	3.95	16.4	1.78	14.5	6.5
10	7.0	4.4	23	3.45	2.2	2.3	7.5	3.5	7.2	2.05	8.3	6.5
11	10.1	84	7.1	4.1	7.6	1.78	19.9	3.15	5.6	1.78	5.4	19.2
12	3.65	57	5.2	2.5	3.15	1.94	33	3.85	15.4	4.3	4.8	3.25
13	3.5	9.9	4.2	2.4	2.2	1.69	39.5	2.75	4.6	1.78	3.95	2.2
14	7.2	6.8	5.0	2.3	3.35	4.2	11.3	2.85	3.95	1.94	3.95	2.05
15	9.8	5.4	6.0	2.1	2.85	3.0	7.3	3.25	4.6	3.5	3.5	1.86
16	22.5	5.0	5.7	2.95	2.2	1.69	48	22	5.7	5.3	3.15	1.69
17	4.8	7.5	10.2	2.1	2.05	1.79	90	25	92	7.8	2.85	1.60
18	10.8	5.6	3.95	1.86	2.05	2.15	134	57	151	21.5	2.75	1.69
19	6.8	4.2	3.65	1.78	1.69	1.35	45	8.0	62	14.8	2.75	2.2
20	10.0	40	13.6	1.69	1.52	1.23	35	4.6	18.2	5.6	3.15	1.44
21	7.1	16.7	3.75	1.78	1.44	3.05	15.6	3.95	10.5	3.25	4.5	2.05
22	10.3	5.2	6.0	2.35	1.35	4.2	15.5	37.5	7.6	6.8	17.0	1.52
23	8.5	4.4	3.4	4.6	2.25	8.7	9.9	17.3	6.1	13.0	3.0	2.1
24	20.5	5.0	18.2	2.7	1.69	3.05	7.3	5.2	5.2	11.5	16.8	1.52
25	87	71	50	3.2	1.29	5.2	6.5	4.3	4.6	3.75	3.4	5.0
26	32	8.4	67	23	1.17	5.0	7.5	4.3	4.3	3.15	7.7	2.25
27	11.2	12.0	27	65	1.11	3.5	5.0	5.0	5.0	34	3.4	1.29
28	46	6.4	7.1	119	1.23	84	6.9	3.4	4.2	58	2.5	1.17
29	43	7.0	18.9	34.5	1.17	110	5.4	-	9.2	19.9	2.2	1.05
30	14.2	9.8	46	10.2	.99	24.5	27.5	-	3.75	22	2.3	.99
31	9.2	12.6	-	6.1	-	24.5	6.2	-	3.0	-	2.2	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	87	2.2	13.8	21.4	427	1,310
August.....	84	4.2	16.0	24.8	495	1,520
September.....	67	3.4	14.6	22.6	439	1,350
October.....	119	1.69	11.0	17.0	342	1,090
November.....	7.6	.99	24.60	4.02	78.2	240
December.....	110	.99	11.2	17.3	346	1,060
Calendar year 1936	119	.24	8.33	12.9	3,060	9,350
January.....	134	3.15	22.7	35.1	703	2,160
February.....	67	2.75	11.0	17.0	307	941
March.....	151	2.5	16.9	26.1	525	1,610
April.....	58	1.78	8.96	13.9	269	825
May.....	57	2.2	10.4	16.1	322	990
June.....	19.2	.99	2.93	4.53	88.0	270
Fiscal year 1936-37	151	.99	11.9	18.4	4,340	13,330

Left Branch of North Fork of Kaukonahua Stream, near Wahiawa

Location.- Water-stage recorder, lat. 21°31'10", long. 157°56'55", 100 feet upstream from intake of Wahiawa Water Co.'s tunnel, which is just below confluence of right and left branches of North Fork of Kaukonahua Stream, and 8 miles northeast of Wahiawa. Altitude, 1,200 feet, from topographic map.

Drainage area.- 1.5 square miles.

Records available.- May 1913 to June 1937.

Average discharge.- 20 years (1915-24, 1926-37), 11.5 million gallons a day (17.8 second-feet).

Extremes.- Maximum discharge during year, 2,380 million gallons a day (3,680 second-feet) Dec. 23 (gage height, 8.56 feet), from rating curve extended above 70 million gallons a day; minimum, 1.2 million gallons a day (1.9 second-feet) Dec. 1.

1913-37: 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, less than 0.1 million gallons a day (0.2 second-foot) June 15, 1931.

Remarks.- Records for ordinary stages are good; those for period of missing gage heights, Feb. 12-18, which were computed on basis of records for Right Branch of North Fork of Kaukonahua Stream, are fair; and those for high stages are poor. No diversions above station.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.0	1.2	1.6	16.3	3.5	146
1.2	3.2	2.0	23.5	4.0	238
1.4	6.3	2.5	48		
1.6	10.6	3.0	96		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.6	11.7	6.9	8.3	6.3	1.2	108	7.3	4.2	2.8	82	3.3
2	5.6	31.6	14.7	7.1	5.4	2.3	15.7	6.9	3.9	2.6	41	3.1
3	4.0	11.6	9.4	6.5	4.9	4.4	10.6	6.3	3.5	5.4	16.4	4.1
4	3.8	36	13.6	7.1	4.6	3.5	10.9	6.0	4.4	2.5	12.5	2.9
5	4.3	10.1	31.5	5.4	11.4	11.4	7.5	22	14.6	2.4	74	7.2
6												
7	6.9	8.8	7.3	5.3	5.6	19.3	6.5	57	20	2.9	60	3.1
8	22.5	7.9	11.9	12.9	8.2	18.9	6.0	9.9	33.6	2.1	23.5	4.6
9	26	9.8	22.5	4.9	4.9	4.8	5.3	6.5	21.5	1.9	18.4	3.2
10	7.3	9.4	6.9	4.5	4.0	11.9	14.9	5.4	17.9	1.8	19.0	16.6
11	17.5	7.9	20	5.6	3.8	4.3	15.8	4.9	8.1	2.4	11.4	11.9
12												
13	23	96	12.3	6.2	9.5	3.5	22.5	4.6	7.5	1.8	7.7	31.5
14	7.3	53	10.4	4.0	6.3	3.5	25	5.6	18.1	4.2	6.5	4.9
15	7.3	11.4	6.3	3.9	3.8	3.0	59	4.0	6.5	1.9	6.0	3.6
16	18.7	8.8	12.0	3.9	6.9	6.9	21	4.2	5.3	2.0	6.1	3.2
17	26	7.7	12.1	3.3	6.1	5.0	16.1	4.8	6.1	2.3	6.3	3.1
18												
19	34	6.9	11.1	4.4	3.8	2.9	60	20	9.7	2.8	4.6	2.9
20	9.0	15.5	13.2	3.2	3.9	3.5	59	30	55	2.5	4.3	2.9
21	25.5	13.4	6.9	2.8	3.6	6.3	198	70	82	16.8	4.3	4.0
22	23.5	6.7	6.0	2.7	2.8	2.6	88	8.6	53	14.4	4.2	4.4
23	17.9	47	24.5	2.6	2.5	2.2	51	5.4	15.1	5.6	5.2	2.6
24												
25	11.9	22	6.0	2.7	2.4	8.0	14.6	4.5	8.5	2.6	9.5	2.3
26	21	7.9	7.8	6.7	2.3	10.2	24.5	34.5	6.1	9.8	28.5	2.3
27	14.6	7.1	5.3	10.6	5.2	16.1	14.2	18.0	5.1	9.5	4.8	3.1
28	38.5	9.4	15.9	6.8	2.7	5.8	11.4	6.1	4.3	16.3	9.2	2.2
29	147	62	50	5.4	2.1	12.5	9.9	5.1	3.9	5.4	4.3	8.4
30												
31	64	9.4	70	34	1.8	8.8	11.4	7.2	3.8	3.2	14.0	3.8
32	17.7	9.4	32.5	79	1.6	6.2	8.1	7.5	9.2	44	5.8	2.0
33	83	9.6	9.0	145	2.0	122	11.1	4.6	5.4	109	3.9	1.7
34	89	12.3	25	42	1.8	96	9.2	-	14.5	30	3.6	1.6
35	28	21.5	24.5	11.7	1.3	40	35	-	3.8	20.5	3.3	1.4
36	15.1	13.4	-	7.7	-	40	9.9	-	3.0	-	3.2	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	147	3.8	25.6	39.6	794	2,440
August.....	96	6.7	19.2	29.7	595	1,830
September.....	70	5.5	16.8	26.0	506	1,550
October.....	145	2.6	14.7	22.7	456	1,400
November.....	11.4	1.3	4.34	6.71	130	399
December.....	122	1.2	15.7	24.3	486	1,490
Calendar year 1936	147	.3	11.6	17.9	4,240	13,010
January.....	198	6.3	30.3	46.9	939	2,880
February.....	70	4.0	13.5	20.9	377	1,160
March.....	52	3.0	14.7	22.7	447	1,360
April.....	109	1.8	11.0	17.0	331	1,010
May.....	82	3.2	16.2	25.1	502	1,540
June.....	31.5	1.4	5.06	7.83	162	466
Fiscal year 1936-37	198	1.2	15.7	24.3	5,720	17,560

ISLAND OF OAHU

Puhawai Stream at Lualualei, near Waianae

Location.- Water-stage recorder, lat. 21°28'10", long. 158°08'00", in Lualualei Valley, 5 miles northeast of Waianae. Altitude, 600 feet, from topographic map.

Drainage area.- 0.6 square mile.

Records available.- September 1930 to June 1937.

Extremes.- Maximum discharge during year unknown due to faulty gage-height record; minimum, 0.01 million gallons a day (0.02 second-foot) Sept. 22, 23, 1930-37; Maximum discharge, 60 million gallons a day (93 second-foot) Feb. 21, 1932 (gage height, 3.58 feet); minimum, 0.01 million gallons a day (0.02 second-foot) Dec. 19, 20, 1931, Jan. 11, 1932, June 25, 26, 1935, Sept. 22, 23, 1936.

Remarks.- Records for ordinary stages are good; those for Oct. 21, Oct. 29 to Nov. 2, Jan. 1-22 (computed on basis of rainfall and records for stations on streams in Kaukonahua and Moanalua Valley) and those for high stages are poor. Continuous rainfall records are obtained at station.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.07	0.06	0.06	0.05	0.40	0.06	0.8	0.87	0.20	0.10	0.17	0.09
2	.07	.08	.06	.03	.50	.07	.6	.67	.17	.10	.17	.08
3	.06	.08	.06	.03	.22	.06	.45	1.00	.14	.12	.75	.10
4	.07	.34	.08	.03	.18	.06	.35	1.35	.15	.10	.35	.06
5	.08	.12	.14	.03	.18	.06	.30	1.82	.14	.09	.34	.09
6	.08	.09	.09	.05	.17	.08	.25	2.95	.14	.09	.34	.09
7	.10	.09	.09	.06	.16	.08	.20	2.66	.13	.07	.26	.09
8	.08	.12	.13	.06	.14	.06	.17	1.83	.12	.07	.25	.09
9	.07	.10	.10	.06	.12	.08	.15	1.54	.12	.06	.19	.13
10	.10	.10	.13	.05	.09	.07	.14	1.06	.12	.06	.17	.12
11	.10	.09	.09	.06	.10	.07	.14	.70	.12	.06	.16	.10
12	.09	.20	.07	.04	.10	.08	.15	.70	.13	.06	.15	.08
13	.08	.12	.06	.04	.10	.05	.14	.63	.12	.06	.13	.06
14	.10	.09	.06	.05	.10	.07	.13	.43	.10	.06	.13	.05
15	.10	.09	.06	.05	.10	.08	.12	.36	.12	.06	.12	.06
16	.09	.08	.05	.06	.14	.06	.11	.28	.10	.05	.10	.05
17	.08	.12	.07	.07	.28	.07	.11	.25	.10	.05	.10	.05
18	.08	.09	.06	.06	.17	.06	.11	.25	.24	.12	.10	.06
19	.07	.06	.07	.06	.10	.07	.11	.21	.54	.15	.10	.06
20	.07	.06	.07	.10	.06	.08	.10	.18	1.59	.41	.08	.05
21	.07	.06	.06	.8	.03	.06	.09	.18	.90	.17	.09	.05
22	.07	.05	.04	.81	.03	.07	.09	.12	.66	.10	.10	.05
23	.08	.05	.03	.35	.68	.06	.09	.20	.41	.08	.08	.04
24	.09	.05	.05	.12	.56	.07	.09	.18	.51	.06	.28	.04
25	.12	.16	.05	.09	.21	.07	.09	.18	.26	.05	.10	.04
26	.15	.12	.10	.12	.14	.07	.24	.18	.21	.05	.09	.04
27	.09	.10	.10	.34	.10	.07	.12	.15	.20	.06	.10	.04
28	.07	.09	.05	3.65	.09	.07	.15	.14	.17	.04	.10	.04
29	.07	.09	.06	2.5	.08	.64	.15	-	.15	.66	.10	.05
30	.07	.09	.07	1.0	.07	1.18	1.93	-	.12	.36	.10	.05
31	.06	.06	-	.7	-	.62	2.0	-	.10	-	.09	-
Month		Million gallons a day			Second-foot (mean)	Total run-off						
		Maximum	Minimum	Mean		Million gallons	Acre-feet					
July.....		0.15	0.06	0.085	0.128	2.58	7.9					
August.....		.34	.06	.100	.185	3.10	9.5					
September.....		.14	.05	.074	.114	2.21	6.8					
October.....		3.65	.03	.565	.565	11.3	35					
November.....		.58	.03	.183	.252	4.90	15					
December.....		1.18	.05	.140	.217	4.35	13					
Calendar year 1936		3.65	.03	.134	.207	48.9	150					
January.....		2.0	.09	.312	.483	9.67	30					
February.....		2.95	.14	.752	1.15	21.1	65					
March.....		1.39	.10	.245	.379	7.68	23					
April.....		.66	.04	.119	.184	3.56	11					
May.....		.75	.08	.173	.268	5.35	16					
June.....		.18	.04	.068	.105	2.04	6.3					
Fiscal year 1936-37		3.65	.03	.213	.330	77.7	238					

Pearl Harbor Springs at Puukapu, near Pearl City

Location.- Water-stage recorder, lat. 21°23'20", long. 157°58'10", on left bank of stream, near levee, two-fifths of a mile from Pearl City and 6.9 miles (revised) northwest of Honolulu. Zero of gage is 0.5 foot (revised) below mean sea level.

Records available.- July 1931 to June 1937.

Extremes.- Not determined because extremes at gaging-station site are caused by changes in tidal backwater.

Remarks.- Records excellent. About a million gallons a day is occasionally diverted from stream. Surface run-off caused by floods not included in figures of discharge given below.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.9	2.15	2.1	3.9
2.0	2.95	2.2	4.9

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.9	2.9	3.15	3.15	3.7	3.95	3.9	4.2	4.4	4.3	4.1	3.95
2	2.9	2.9	3.15	3.15	3.8	3.9	3.9	4.2	4.4	4.3	4.2	3.9
3	2.9	2.9	3.15	3.15	3.8	3.9	3.8	4.2	4.4	4.3	4.3	3.9
4	2.9	2.9	3.05	3.15	3.9	3.9	3.8	4.2	4.4	4.4	4.4	3.8
5	2.95	2.9	3.15	3.25	3.9	3.9	3.8	4.2	4.4	4.4	4.4	3.8
6	2.95	2.95	3.15	3.25	3.95	3.9	3.8	4.2	4.4	4.3	4.4	3.8
7	2.95	2.95	3.15	3.25	4.1	3.9	3.9	4.2	4.4	4.3	4.4	3.9
8	2.95	2.9	3.15	3.25	4.1	3.9	3.9	4.2	4.4	4.3	4.2	3.9
9	2.9	2.95	3.15	3.25	4.1	3.9	3.95	4.2	4.4	4.3	4.1	3.95
10	2.9	2.95	3.15	3.25	4.1	3.9	4.1	4.2	4.4	4.2	4.2	3.95
11	2.9	2.95	3.15	3.25	4.1	3.9	4.1	4.2	4.4	4.2	4.1	3.95
12	2.95	2.95	3.15	3.25	4.1	3.9	4.1	4.2	4.3	4.2	4.1	3.95
13	2.95	2.95	3.05	3.25	4.1	3.9	4.1	4.3	4.3	4.2	4.2	3.95
14	2.95	3.05	3.05	3.2	3.95	3.9	3.95	4.3	4.3	4.1	4.2	3.95
15	2.95	3.15	3.05	3.2	3.95	3.9	3.95	4.3	4.3	4.1	4.2	3.95
16	2.9	3.15	2.95	3.2	3.95	3.9	4.1	4.3	4.3	4.1	4.2	3.95
17	2.9	3.15	3.05	3.2	4.1	3.9	4.1	4.3	4.4	4.1	4.2	3.95
18	2.9	3.15	3.05	3.2	3.95	3.95	4.1	4.4	4.5	4.1	4.2	3.95
19	2.9	3.15	3.05	3.2	3.95	4.2	4.1	4.3	4.5	4.2	4.2	3.95
20	2.9	3.15	3.15	3.2	3.95	4.2	4.2	4.3	4.5	4.2	4.2	3.95
21	2.9	3.05	3.15	3.2	3.95	4.2	4.2	4.3	4.5	4.2	4.1	3.95
22	2.9	3.05	3.15	3.3	4.1	4.2	4.1	4.4	4.4	4.2	4.1	3.7
23	2.9	3.05	3.15	3.4	4.2	3.95	4.1	4.4	4.5	4.2	4.1	3.6
24	2.9	3.05	3.15	3.5	4.2	3.9	4.2	4.4	4.5	4.2	4.1	3.6
25	2.9	3.15	3.15	3.6	4.1	3.8	4.2	4.4	4.5	4.2	4.1	3.6
26	2.9	3.15	3.15	3.6	4.1	3.7	4.2	4.4	4.5	4.2	4.1	3.6
27	3.0	3.15	3.15	3.6	4.1	3.7	4.2	4.4	4.5	4.2	4.1	3.7
28	3.0	3.15	3.15	3.6	3.95	3.7	4.2	4.4	4.4	4.2	4.1	3.7
29	2.9	3.15	3.15	3.7	3.95	3.8	4.2	-	4.4	4.3	3.95	3.8
30	2.9	3.15	3.15	3.8	3.95	3.9	4.3	-	4.3	4.2	3.95	3.8
31	2.9	3.15	-	3.7	-	3.9	4.2	-	4.3	-	3.95	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	3.0	2.9	2.92	4.52	90.5	278
August.....	3.15	2.9	3.04	4.70	94.2	289
September.....	3.15	2.9	3.12	4.53	93.6	287
October.....	3.6	3.15	3.33	5.15	103	317
November.....	4.2	3.7	4.00	6.19	120	369
December.....	4.2	3.7	3.92	6.07	121	373
Calendar year 1936.....	4.2	2.8	3.29	5.09	1,200	3,690
January.....	4.3	3.8	4.06	6.28	126	386
February.....	4.4	4.2	4.29	6.64	120	368
March.....	4.5	4.3	4.41	6.82	137	420
April.....	4.4	4.1	4.22	6.53	127	389
May.....	4.4	3.95	4.17	6.45	129	396
June.....	3.95	3.6	3.85	5.96	115	354
Fiscal year 1936-37.....	4.5	2.9	3.77	5.83	1,380	4,230

ISLAND OF OAHU

Pearl Harbor Springs at Loko Kukona, near Pearl City

Location.- Water-stage recorder, lat. $21^{\circ}23'30''$ long. $157^{\circ}58'00''$ on left bank of stream, near levee, half a mile from Pearl City and 8.8 miles (revised) northwest of Honolulu. Zero of gage is 0.80 foot below mean sea level.

Records available.- June 1931 to June 1937.

Extremes.- Not determined because extremes at gaging-station site are caused by changes in tidal backwater.

Remarks.- Records excellent. No diversions. Surface run-off caused by floods not included in figures of discharge given below.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

2.1	1.75
2.2	2.55
2.3	3.4

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.3	2.4	2.55	2.55	2.6	2.45	2.9	2.8	2.95	2.95	2.9	3.15
2	2.3	2.45	2.55	2.55	2.6	2.45	2.9	2.7	2.95	2.95	2.95	3.25
3	2.3	2.55	2.55	2.6	2.6	2.45	2.8	2.6	2.95	2.95	2.95	3.25
4	2.4	2.55	2.55	2.6	2.6	2.45	2.8	2.7	2.95	2.95	3.05	3.25
5	2.4	2.55	2.55	2.55	2.6	2.45	2.7	2.7	2.9	2.95	3.05	3.15
6	2.3	2.55	2.55	2.55	2.6	2.45	2.6	2.8	2.8	2.95	3.05	3.15
7	2.3	2.55	2.55	2.45	2.7	2.45	2.6	2.6	2.8	2.95	3.15	3.15
8	2.3	2.55	2.55	2.45	2.7	2.45	2.6	2.6	2.8	2.95	3.15	3.05
9	2.3	2.55	2.55	2.45	2.8	2.45	2.7	2.6	2.9	2.95	3.15	3.05
10	2.2	2.55	2.6	2.45	2.9	2.4	2.7	2.6	2.9	2.95	3.15	3.05
11	2.2	2.55	2.6	2.45	2.95	2.45	2.7	2.6	2.9	3.05	3.25	3.05
12	2.2	2.3	2.6	2.45	2.95	2.45	2.7	2.55	2.9	3.05	3.15	3.05
13	2.3	2.05	2.6	2.45	2.95	2.55	2.7	2.7	2.9	3.05	3.15	3.05
14	2.3	2.3	2.6	2.45	2.95	2.55	2.6	2.8	2.8	3.05	3.25	3.15
15	2.3	2.3	2.6	2.45	2.95	2.55	2.6	2.8	2.8	3.05	3.25	3.15
16	2.3	2.3	2.6	2.45	2.95	2.45	2.6	2.9	2.8	3.05	3.25	3.05
17	2.3	2.4	2.6	2.45	2.95	2.45	2.6	2.9	2.7	2.9	3.25	2.95
18	2.3	2.55	2.6	2.45	2.95	2.45	2.7	2.95	2.8	2.8	3.25	2.95
19	2.3	2.55	2.6	2.45	2.9	2.55	2.7	2.95	2.9	2.9	3.25	2.95
20	2.3	2.55	2.55	2.45	2.8	2.6	2.7	2.95	2.9	2.8	3.25	2.95
21	2.3	2.55	2.55	2.45	2.8	2.7	2.7	2.8	2.9	2.8	3.25	2.95
22	2.3	2.55	2.55	2.45	2.8	2.7	2.7	2.9	2.9	2.8	3.25	2.9
23	2.3	2.55	2.55	2.6	2.7	2.7	2.7	2.9	2.9	2.8	3.3	2.9
24	2.3	2.55	2.55	2.7	2.7	2.7	2.8	2.9	2.9	2.9	3.3	2.9
25	2.3	2.55	2.55	2.8	2.6	2.8	2.8	2.9	2.9	2.9	3.3	2.9
26	2.3	2.55	2.55	2.7	2.6	2.8	2.7	2.95	2.9	2.9	3.3	2.9
27	2.3	2.55	2.55	2.6	2.6	2.8	2.7	2.95	2.95	2.9	3.3	2.9
28	2.3	2.55	2.55	2.6	2.6	2.8	2.7	2.95	2.95	2.8	3.25	2.9
29	2.3	2.55	2.55	2.6	2.6	2.9	2.8	2.95	2.95	2.9	3.15	2.95
30	2.3	2.55	2.55	2.6	2.55	2.9	2.8	-	2.9	2.9	3.15	3.15
31	2.3	2.55	-	2.6	-	2.9	2.8	-	2.95	-	3.15	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	2.4	2.2	2.30	3.56	71.2	219
August.....	2.55	2.05	2.49	3.85	77.2	237
September.....	2.6	2.55	2.57	3.98	77.0	236
October.....	2.6	2.45	2.53	3.91	78.4	241
November.....	2.95	2.55	2.75	4.25	82.6	253
December.....	2.9	2.4	2.59	4.01	80.2	246
Calendar year 1936	2.95	2.05	2.60	4.02	951	2,920
January.....	2.9	2.6	2.71	4.19	84.1	258
February.....	2.95	2.55	2.79	4.32	78.0	240
March.....	2.95	2.7	2.88	4.46	89.4	274
April.....	3.05	2.8	2.93	4.53	87.6	269
May.....	3.3	2.9	3.18	4.92	98.6	302
June.....	3.25	2.9	3.04	4.70	91.2	280
Fiscal year 1936-37	3.3	2.05	2.73	4.22	996	3,060

Pearl Harbor Springs at Kaluaoopu, near Pearl City

Location.- Water-stage recorder, lat. 21°23'30", long. 157°57'55", on left bank of stream, a fifth of a mile below Kamehameha Highway, 0.7 mile from Pearl City, and 8.7 miles (revised) northwest of Honolulu. Zero of gage is 0.90 foot below mean sea level.

Records available.- August 1931 to May 1937 (discontinued).

Extremes.- Not determined because extremes at gaging-station site are caused by changes in tidal backwater.

Remarks.- Records good except those for periods of missing gage heights, Nov. 28 to Dec. 2, Dec. 4-7, Feb. 13-18, May 5, which were computed on basis of records for other Pearl Harbor Springs stations and are fair. No diversions. Surface run-off caused by floods not included in figures of discharge given below.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.7 15.6
1.8 19.7
1.9 24

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
1	16.4	16.4	17.2	16.8	15.8	19.7	19.7	20.5	23	22.5	23.5	
2	16.4	16.4	16.8	16.8	19.2	19.7	19.7	20.5	22.5	22.5	23.5	
3	16.4	16.4	16.8	16.8	19.2	*19.7	19.7	20.5	22.5	22.5	23.5	
4	16.4	16.4	16.4	16.8	19.7	19.7	19.7	21	22.5	22.5	*23.5	
5	16.4	16.4	16.4	16.8	19.7	19.7	19.7	21.5	22.5	22.5	23.5	
6	16.8	16.4	16.8	16.8	19.7	19.7	19.7	21.5	22.5	22.5	*23.5	
7	16.4	16.4	16.8	16.8	19.7	19.7	19.7	22	22.5	22	23.5	
8	16.4	16.4	16.8	16.8	19.7	*19.7	19.7	22	22.5	22	23.5	
9	16.4	16.4	16.8	16.4	19.7	19.7	20	21.5	22.5	22	24	
10	16.4	16.4	16.8	16.4	19.7	19.7	20.5	21.5	22.5	22.5	23.5	
11	16.4	16.4	16.8	16.4	19.7	19.7	20.5	21.5	22.5	22.5	23	
12	16.4	16.4	16.8	16.4	19.7	19.7	20.5	*21.5	22	22.5	23	
13	16.4	16.4	16.8	16.4	19.2	19.7	20	21.5	22	22.5	23	
14	16.4	16.8	16.8	16.4	19.2	20	20.5	21.5	22.5	22.5	23	
15	16.4	16.8	16.8	16.4	19.2	20	20.5	21.5	22.5	22.5	23	
16	16.4	16.8	16.8	16.0	19.2	19.7	20.5	21.5	22.5	22.5	23	
17	16.0	16.8	16.8	15.6	19.2	19.2	20.5	*22	22	22.5	23	
18	16.0	16.8	16.8	16.0	19.2	19.2	20	22	22	23	23	
19	16.0	16.8	16.8	16.4	19.2	19.2	20	22	22	23	23	
20	16.0	16.8	17.6	16.4	19.2	19.2	20	22	22.5	23	23	
21	16.0	16.8	17.2	16.8	19.2	19.2	20	22	22.5	23	23	
22	16.0	16.8	17.2	17.2	19.2	19.2	19.7	22	22.5	23	23	
23	15.6	16.8	17.8	17.6	19.7	19.2	19.7	22	23	23	23	
24	15.6	16.8	16.8	18.0	19.7	19.2	20	22	23	23	23	
25	16.4	16.8	16.8	18.4	*19.7	19.2	20	22	22.5	23	*23	
26	16.4	16.8	16.8	18.8	19.7	19.2	20	22.5	22.5	23	-	
27	16.4	16.8	17.2	19.7	19.7	19.2	20.5	22.5	22.5	23	-	
28	16.4	16.8	17.2	19.7	19.7	19.2	20.5	22.5	22.5	23	-	
29	16.4	16.8	17.2	19.7	19.7	19.2	20.5	-	22	23	-	
30	16.4	17.2	16.8	19.7	19.7	19.2	20.5	-	22.5	23	-	
31	16.4	17.2	-	18.8	-	19.2	20.5	-	22.5	-	-	

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	16.8	15.6	16.3	25.2	505	1,550
August.....	17.2	16.4	16.7	25.8	516	1,580
September.....	17.8	16.4	16.9	26.1	507	1,560
October.....	19.7	15.6	17.2	26.6	534	1,640
November.....	19.7	18.8	19.5	30.2	584	1,790
December.....	20	19.2	19.5	30.2	604	1,860
Calendar year 1936.....	21.5	15.6	18.3	28.3	6,690	20,510
January.....	20.5	19.7	20.1	31.1	623	1,910
February.....	22.5	20.5	21.7	33.6	607	1,860
March.....	23	22	22.5	34.8	696	2,140
April.....	23	22	22.7	35.1	680	2,090
May 1-25.....	24	23	23.2	35.9	580	1,780
June.....	-	-	-	-	-	-
The period.....	-	-	-	-	6,440	19,760

*Partly estimated.

Pearl Harbor Springs at Waiau, near Pearl City

Location.- Water-stage recorder, lat. 21°23'25", long. 157°57'40", on left bank of Waiau Stream, a fifth of a mile below Kamehameha Highway, 0.8 mile from Pearl City, and 8.5 miles northwest of Honolulu (mileage revised). Zero of gage is 0.74 foot below mean sea level.

Records available.- May 1931 to June 1937.

Extremes.- Not determined because extremes at gaging-station site are caused by changes in tidal backwater.

Remarks.- Records excellent. A small pumping plant diverts water above station for irrigation. Surface run-off caused by floods not included in figure of discharge given below.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.8	2.8	2.1	7.9
1.9	4.3	2.2	9.9
2.0	6.0	2.3	12.1

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.7	5.1	5.7	6.2	7.1	7.9	8.5	8.8	9.7	9.5	9.0	9.7
2	4.2	5.1	5.7	6.2	7.5	7.9	8.5	8.8	9.5	9.3	9.0	9.5
3	5.1	5.1	5.7	6.2	7.5	7.7	8.5	8.8	9.5	9.3	9.3	9.5
4	5.5	5.3	5.7	6.2	7.7	7.7	8.6	8.8	9.5	9.5	9.0	9.3
5	5.7	5.1	5.7	6.4	7.7	7.7	8.6	9.3	9.5	9.5	9.3	9.5
6	5.5	5.3	5.7	6.4	7.7	7.9	*8.7	9.5	9.5	9.3	9.3	9.5
7	5.5	5.1	5.7	6.4	7.7	7.9	8.7	9.3	9.5	9.3	9.3	9.3
8	5.3	5.1	5.7	6.4	7.7	7.9	8.7	9.3	9.5	9.0	9.5	9.3
9	5.1	5.1	5.7	6.4	7.7	7.9	8.7	9.3	9.5	9.0	9.5	9.3
10	5.0	5.1	5.8	6.4	7.9	7.7	8.7	9.3	9.5	9.0	9.7	9.0
11	5.1	5.1	5.8	6.2	7.9	7.7	8.7	9.3	9.5	9.0	9.7	9.0
12	5.3	6.0	5.8	6.2	7.9	7.7	8.7	9.3	9.5	9.0	9.5	9.0
13	5.1	5.3	6.2	6.2	7.9	7.9	8.7	9.3	9.5	9.5	9.7	9.3
14	5.1	5.5	6.2	6.0	7.7	7.9	8.7	9.3	9.7	9.3	9.7	9.0
15	5.0	5.5	6.2	6.0	7.7	7.9	8.7	9.3	9.7	9.3	9.7	8.8
16	5.0	5.7	6.2	6.0	7.7	7.9	8.7	9.3	9.7	8.8	9.9	8.8
17	5.0	5.7	6.2	6.0	7.9	7.9	8.7	9.5	9.5	8.8	9.9	8.7
18	5.0	5.7	6.2	6.0	7.9	7.9	8.7	9.5	9.5	8.8	9.7	8.7
19	5.0	5.7	6.2	6.0	7.9	7.9	8.7	9.5	9.5	8.8	9.7	8.8
20	5.0	5.7	6.4	6.0	7.9	7.9	8.5	9.5	9.9	8.8	9.7	9.0
21	5.0	5.7	6.4	6.0	7.9	7.9	8.5	9.5	9.9	8.8	9.7	9.0
22	5.0	5.7	6.4	6.2	7.9	7.9	8.5	9.7	9.9	8.8	9.7	9.0
23	5.0	5.7	6.2	*6.4	7.9	7.9	8.5	9.7	9.9	8.8	9.7	9.0
24	5.0	5.7	6.2	6.5	7.9	7.9	8.7	9.7	9.9	8.8	10.1	9.0
25	5.0	5.7	6.2	6.7	7.9	7.9	8.7	9.7	9.9	8.8	9.7	8.8
26	5.1	5.7	6.2	6.7	7.9	7.9	8.7	9.7	9.9	8.8	9.5	8.8
27	5.3	5.7	6.2	6.7	7.9	7.9	8.7	9.7	9.9	8.8	9.5	8.8
28	5.3	5.7	6.2	6.9	7.9	7.9	8.8	9.7	9.9	8.8	9.5	8.8
29	5.1	5.7	6.2	6.9	7.9	7.9	8.8	-	9.7	9.0	9.5	8.7
30	5.1	5.7	6.2	6.9	7.9	8.1	9.3	-	9.5	9.0	9.5	8.7
31	5.2	5.8	-	7.1	-	8.1	8.8	-	9.5	-	9.7	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	5.7	4.2	5.14	7.95	159	489
August.....	6.0	5.1	5.49	8.49	170	522
September.....	6.4	5.7	6.03	9.33	181	555
October.....	7.1	6.0	6.55	9.82	197	604
November.....	7.9	7.1	7.79	12.1	234	717
December.....	8.1	7.7	7.87	12.2	244	749
Calendar year 1936	8.6	4.2	6.57	10.2	2,400	7,380
January.....	9.3	8.5	8.88	13.4	269	828
February.....	9.7	8.8	9.37	14.5	282	895
March.....	9.9	9.5	9.65	14.9	299	918
April.....	9.5	8.8	8.98	13.9	270	827
May.....	10.1	9.0	9.55	14.8	296	909
June.....	9.7	8.0	9.05	14.0	272	834
Fiscal year 1936-37	10.1	4.2	7.82	12.1	2,850	8,760

*Partly estimated.

Pearl Harbor Springs at Kalauao, near Aiea

Location.— Water-stage recorder, lat. 21°23'00", long. 157°56'50", on left bank of Kalauao Stream, a quarter of a mile below Honolulu Plantation pump 6, 1.1 miles from Aiea, and 7.6 miles (revised) northwest of Honolulu. Zero of gage is 1.10 feet below mean sea level.

Records available.— March 1931 to June 1937.

Extremes.— Not determined because extremes at gaging-station site are caused by changes in tidal backwater.

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

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.9	8.1	2.3	23
2.0	11.5	2.4	27
2.2	18.7		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.7	11.7	11.3	13.1	19.5	14.2	21.5	23	16.8	16.4	22.5	16.0
2	10.7	16.0	10.3	12.3	19.5	14.2	21.5	23	17.6	16.8	22.5	15.6
3	12.0	10.7	10.0	18.4	19.5	14.2	21.5	23	17.6	18.4	23.5	15.6
4	18.0	11.7	11.0	16.8	19.5	14.2	21.5	23.5	17.2	21	23.5	15.6
5	17.6	11.2	12.3	10.3	19.9	16.4	21.5	24	16.0	18.7	23.5	18.0
6	12.0	10.3	16.0	11.3	19.9	17.6	22	24.5	20.5	19.5	23.5	19.5
7	11.7	15.3	11.0	10.0	19.9	12.5	22	24	24	19.1	23.5	15.6
8	11.7	13.1	11.0	10.0	19.9	15.1	22.5	23.5	20.5	18.0	23.5	15.3
9	13.1	16.8	10.7	10.3	20.5	13.4	22.5	23.5	24	18.0	24	15.3
10	11.0	15.6	12.0	12.7	20.5	13.4	22.5	23.5	24	20.5	24	15.6
11	12.0	13.4	12.3	16.4	20.5	13.4	22.5	23.5	19.9	21	19.1	17.6
12	17.6	17.2	12.3	10.7	20.5	16.0	16.4	23.5	19.9	18.7	15.6	22
13	12.3	17.2	16.4	10.3	20.5	17.6	18.0	23.5	21.5	18.0	15.6	21.5
14	10.7	17.6	11.7	10.3	20.5	16.4	22	23.5	22	18.0	16.0	16.0
15	10.3	17.6	12.0	11.3	20.5	20.5	22	23.5	21	18.0	19.9	15.6
16	10.7	17.6	10.8	10.3	19.9	20.5	22.5	23.5	21	16.0	23	14.5
17	10.3	17.6	11.0	12.7	18.0	20.5	22.5	23.5	21	18.7	17.6	15.6
18	12.0	17.6	11.0	16.4	16.4	20.5	22.5	23.5	23.5	20.5	15.6	15.3
19	17.2	18.0	12.7	11.3	16.4	20.5	17.6	24	24	15.3	15.6	18.4
20	11.0	11.7	16.4	10.0	16.8	20.5	15.6	24	24	15.6	15.6	21
21	10.7	11.0	11.3	15.3	18.0	20.5	15.6	24	24	15.6	15.3	16.4
22	10.3	12.0	10.3	18.0	18.7	20.5	15.6	24	24	15.6	18.0	15.6
23	10.3	16.4	10.3	18.0	18.7	17.2	20.5	24	24	16.4	22.5	14.9
24	11.3	10.7	10.3	18.4	20.5	17.2	21	24	24	18.0	19.9	15.3
25	12.0	13.4	11.0	17.2	20.5	20.5	14.9	24.5	24	22	22.5	14.5
26	16.8	17.6	12.3	17.2	20.5	17.6	22.5	18.4	24	18.0	23	17.6
27	12.0	18.0	18.0	18.7	20.5	19.1	22.5	20.5	24.5	16.4	21.5	19.9
28	9.4	18.0	13.8	19.1	20.5	13.1	23	23.5	24.5	14.9	18.4	15.3
29	11.3	18.0	11.3	19.5	20.5	21.5	23	-	17.6	18.4	18.4	14.9
30	12.0	18.0	12.3	19.1	14.5	21	24.5	-	18.7	22.5	22.5	15.3
31	11.7	17.2	-	19.1	-	21.5	23	-	17.2	-	20.5	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	18.0	9.4	12.3	19.0	380	1,170
August.....	18.0	10.3	15.1	23.4	468	1,440
September.....	18.0	10.0	12.1	18.7	365	1,110
October.....	19.5	10.0	14.3	22.1	444	1,360
November.....	20.5	14.5	19.4	30.0	582	1,780
December.....	21.5	12.3	17.5	27.1	541	1,660
Calendar year 1936.....	21.5	9.4	15.0	23.2	5,470	16,780
January.....	24.5	14.9	20.9	32.3	647	1,980
February.....	24.5	18.4	23.4	36.2	654	2,010
March.....	24.5	16.0	21.4	33.1	662	2,030
April.....	22.5	14.9	18.1	28.0	544	1,670
May.....	24	15.3	20.3	31.4	630	1,930
June.....	22	14.5	16.6	25.7	499	1,530
Fiscal year 1936-37.....	24.5	9.4	17.6	27.2	6,410	19,670

Moanalua Stream near Honolulu

Location.- Duplex water-stage recorder and sharp-crested weir and orifice control, lat. 21°23'30", long. 157°51'10", 5½ miles above mouth and 5.6 miles north of Honolulu post office (mileage revised). Zero of gage is 339.12 feet above mean sea level.

Drainage area.- 3.2 square miles.

Records available.- June 1926 to June 1937.

Average discharge.- 11 years (1926-37), 2.62 million gallons a day (4.05 second-feet).

Extremes.- Maximum discharge during year, 936 million gallons a day (1,450 second-feet) Aug. 12 (gage height, 7.82 feet), from rating curve extended above 40 million gallons a day based on weir formulas; no flow for several periods during year.
1926-37: Maximum discharge, 2,370 million gallons a day (3,670 second-feet) Nov. 18, 1930 (gage height, 11.58 feet), from rating curve extended above 40 million gallons a day based on weir formulas; no flow in dry weather.

Remarks.- Records for ordinary stages are good; those for periods of missing gage heights, Oct. 12-19, May 5-11, May 15 to June 22 (computed on basis of records for stations on adjacent streams) and those for high stages are poor. Continuous records of rainfall are obtained at station.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.19	0.7	1.06	0.9	3.2	2.0	53
.4	.52	.75	1.12	1.0	5.6	2.5	93
.6	.94	.8	1.47	1.5	24	3.0	140

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.08	0.42	0.74	3.45	2.6	0	95	2.05	.76	0.22	26.5	0.05
2	.06	.55	.47	2.8	1.47	0	11.2	6.1	.46	.13	3.9	0
3	.04	.56	1.22	*1.74	1.11	0	4.4	1.47	.16	.42	11.3	0
4	.04	6.0	.95	2.4	.94	0	2.4	1.05	.08	.07	1.90	0
5	.03	1.22	.80	1.30	.89	0	1.47	8.0	1.06	.04	72	0
6	.03	.56	.62	.92	1.02	0	.94	50	4.0	.04	92	0
7	.20	.27	.27	1.86	1.11	0	.42	9.9	17.5	.04	23	0
8	1.08	.12	46	13.6	*.82	0	.22	3.0	12.5	.03	12	0
9	.70	.06	4.9	3.9	*.44	0	.12	1.60	5.1	.02	6.0	7.0
10	.99	.06	45	2.8	.22	0	.09	1.10	1.90	.01	3.6	8.5
11	5.4	2.05	4.6	3.45	.14	0	.62	.77	1.21	.01	2.3	8.5
12	.95	1.50	4.8	.6	.16	0	1.27	.56	1.09	.01	1.05	.6
13	.49	5.2	2.25	.3	.05	0	11.4	.44	.59	0	.70	.15
14	.75	2.05	2.05	.2	.10	0	3.15	.93	.38	0	.56	.1
15	.98	1.12	3.5	.1	.56	0	1.12	.85	.32	0	6.5	.03
16	2.8	1.07	3.9	.08	.12	.01	1.57	4.6	.29	0	1.1	.01
17	1.00	.98	8.8	.06	1.41	.01	9.6	2.55	6.8	0	.7	.01
18	.50	.62	3.7	.05	.76	.01	32	19.2	55	2.8	.4	.01
19	.21	.22	1.90	.04	.17	0	13.7	2.6	30.5	3.25	.4	0
20	.09	.07	1.60	.03	.05	0	8.7	1.16	18.0	.77	.4	0
21	.07	.68	1.25	3.3	.03	0	3.2	.80	8.6	.10	2.2	0
22	.06	.09	.45	4.5	.03	.09	2.05	11.8	4.2	.04	1.8	0
23	.04	.04	.21	2.85	2.25	.07	1.29	10.2	3.0	.05	.4	0
24	.84	.02	*.16	1.90	.80	.05	1.10	1.60	2.25	.02	5.0	0
25	8.8	47	4.6	2.3	*.13	.04	1.00	1.06	1.90	.02	.6	0
26	11.2	4.3	13.4	15.3	*.04	.04	1.05	.82	1.06	.01	.9	0
27	2.6	5.8	34.5	18.3	*.02	.03	.61	.84	4.8	.01	.4	0
28	1.21	1.21	5.4	50	*.02	16.2	4.2	.50	1.74	9.6	.2	0
29	9.5	1.29	5.9	58	*.01	55	1.84	-	2.25	8.5	.1	0
30	1.28	2.75	17.8	23	*0	24.5	42	-	.84	4.0	.08	0
31	.81	1.11	-	6.1	-	17.7	8.7	-	.55	-	.05	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	11.2	0.03	1.70	2.63	52.8	162
August.....	47	.02	2.87	4.44	89.0	273
September.....	46	.15	7.39	11.4	222	681
October.....	58	.03	7.23	11.2	224	688
November.....	2.6	0	.577	.893	17.3	53
December.....	55	0	3.67	5.68	114	349
Calendar year 1936	58	0	2.21	3.42	809	2,480
January.....	95	.09	8.59	13.3	266	818
February.....	50	.44	5.19	8.03	145	446
March.....	53	.08	6.02	9.31	187	573
April.....	9.6	0	1.01	1.56	30.2	93
May.....	92	.05	8.97	13.9	278	853
June.....	8.5	0	.832	1.29	25.0	77
Fiscal year 1936-37	95	0	4.52	6.99	1,650	5,070

*Partly estimated.

Kalihi Stream near Honolulu

Location.- Water-stage recorder, lat. 21°22'10", long. 157°50'25", at Kiwi Pool, three-eighths of a mile upstream from Catholic Orphanage and 4.4 miles (revised) north of Honolulu post office. Zero of gage is 464.40 feet above mean sea level.

Drainage area.- 2.7 square miles.

Records available.- September 1913 to June 1937.

Average discharge.- 20 years (1916-20, 1921-37), 5.13 million gallons a day (7.94 second-feet).

Extremes.- Maximum discharge during year, 1,720 million gallons a day (2,660 second-feet) Jan. 1 (gage height, 11.00 feet), from rating curve extended above 220 million gallons a day by test on model of station site; minimum, 1.28 million gallons a day (1.98 second-feet) Dec. 20, 21.

1913-37: 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 for ordinary stages, and fair for high stages; those for periods of missing gage heights, July 19 to Aug. 15, Feb. 5-18 which were computed on basis of records for stations on streams from the Waianae to the Kalihi, are poor. Work for domestic use diverted from stream above station.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.8	0.60	1.4	8.7	2.3	30.5	3.5	74
1.0	2.2	1.7	14.8	2.6	40	4.0	98
1.2	5.1	2.0	22	3.0	54	4.5	127

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.65	3.5	3.0	6.0	7.8	1.91	121	6.6	3.95	3.8	24	2.45
2	2.7	5.0	3.0	4.8	6.5	2.0	15.1	17.2	3.0	3.25	12.0	2.2
3	2.45	3.2	5.4	4.1	5.6	1.91	8.3	5.8	2.7	3.35	28.5	2.2
4	2.45	4.5	3.1	6.1	5.1	1.91	6.5	4.9	2.7	3.0	6.0	2.1
5	2.35	3.0	3.25	3.8	5.8	2.45	5.1	15	6.2	3.0	79	2.45
6	2.6	4.0	2.6	3.65	4.5	2.6	4.5	70	16.6	3.25	97	2.1
7	8.5	2.9	14	8.2	6.0	2.1	3.8	10	28	2.6	34.5	2.1
8	4.8	2.8	40	20.5	4.5	1.82	3.5	4.5	10.6	2.45	19.9	2.1
9	3.65	2.7	27.5	4.6	3.65	1.91	3.5	3.8	9.8	2.45	10.8	12.5
10	5.1	2.6	36	5.1	3.55	1.73	3.25	3.5	6.3	2.6	8.1	14.6
11	5.8	4.5	5.4	4.1	3.25	1.82	4.1	3.3	6.7	2.35	6.5	14.4
12	3.65	12	5.4	3.25	3.0	1.64	8.4	3.5	6.0	2.7	5.6	3.8
13	5.1	5.0	4.0	3.0	2.85	1.64	12.9	3.5	4.6	2.2	4.9	2.85
14	5.0	4.5	4.1	2.85	4.8	2.1	6.6	3.7	4.0	2.35	4.8	2.6
15	4.0	4.5	3.8	2.6	3.35	1.64	6.3	3.3	4.0	2.1	12.2	2.35
16	8.5	4.1	5.3	2.45	4.1	1.55	17.1	4.0	3.8	2.1	4.8	2.2
17	4.1	3.8	12.0	2.35	6.2	1.64	18.1	7.6	18.3	3.0	4.1	2.0
18	3.25	3.25	5.1	2.2	3.6	1.55	45	27.6	69	6.8	3.65	2.35
19	3.2	2.85	3.8	2.2	2.85	1.45	19.5	5.4	24.5	3.8	3.5	2.6
20	3.0	3.0	3.5	2.2	2.5	1.37	15.9	4.1	26	2.7	3.65	2.0
21	3.5	3.8	3.1	16.5	2.45	2.05	10.0	3.5	12.0	2.35	6.4	2.1
22	4.5	2.6	3.0	12.1	2.35	2.25	10.9	16.5	7.6	2.2	5.8	1.82
23	4.0	2.35	2.85	10.7	10.8	1.82	8.1	10.0	6.3	2.1	3.5	1.73
24	5.0	2.45	2.85	6.1	3.25	1.64	7.0	4.8	5.4	2.5	10.1	1.64
25	8.0	61	7.8	5.7	2.6	2.05	6.0	4.0	4.8	2.1	3.8	1.73
26	20	5.8	21.5	27.5	2.35	1.64	7.5	4.1	5.3	2.1	4.5	1.82
27	5.0	5.4	56	25	2.2	1.73	5.3	4.0	6.7	24	3.35	1.55
28	6.0	4.8	6.5	96	2.1	42	17.9	3.25	4.8	19.6	3.0	1.55
29	15	4.1	12.8	57	2.0	48	7.4	-	5.8	15.2	2.7	1.46
30	7.0	5.8	17.1	24.5	1.91	24.5	42	-	4.1	32	2.6	1.46
31	4.5	3.35	-	10.6	-	21	10.2	-	3.65	-	2.45	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	20	2.35	5.23	8.17	184	502
August.....	61	2.35	5.91	9.14	183	562
September.....	56	2.6	10.8	16.7	324	994
October.....	86	2.2	12.2	16.9	378	1,160
November.....	10.8	1.91	4.04	6.25	121	372
December.....	48	1.37	5.98	9.25	185	569
Calendar year 1936.....	86	.78	5.56	8.60	2,030	6,240
January.....	121	3.25	14.9	23.1	462	1,420
February.....	70	3.25	9.19	14.2	257	790
March.....	69	2.7	10.4	16.1	323	992
April.....	32	2.1	5.47	8.46	164	503
May.....	97	2.45	13.5	20.9	420	1,290
June.....	14.6	1.46	3.29	5.09	98.8	303
Fiscal year 1936-37.....	121	1.37	8.44	13.1	3,080	9,460

Nuuanu Stream below reservoir 2 wasteway, near Honolulu

Location.- Water-stage recorder, lat. 21°20'55", long. 157°49'40", on Pali road in upper Nuuanu Valley, a quarter of a mile below reservoir 2 wasteway and 3.5 miles (revised) from Honolulu post office. Zero of gage is 831.71 feet above mean sea level.

Drainage area.- 3.4 square miles.

Records available.- October 1913 to June 1937.

Average discharge.- 18 years (1917-20, 1922-37), 5.80 million gallons a day (8.97 second-foot).

Extremes.- Maximum discharge recorded during year, 1,220 million gallons a day (1,690 second-foot) Apr. 30 (gage height, 6.40 feet), from rating curve extended above 300 million gallons a day by test on model of station site; minimum, 4.6 million gallons a day (7.1 second-foot) July 1.

1913-37: Maximum discharge, 1,600 million gallons a day (2,480 second-foot) Jan. 16, 1921 (gage height, 8.74 feet, from floodmarks), from rating curve extended above 300 million gallons a day based on weir formulas; minimum, 0.06 million gallons a day (0.09 second-foot) Sept. 10, 11, 1925.

Remarks.- Records for ordinary stages are good; those for periods of missing gage heights, Oct. 28-30, Feb. 5-16 (computed on basis of records for stations on all other streams between the Waiomao and the Kalihi), and those for high stages are poor. 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.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.0	3.8	1.5	16.0	3.0	11.0
1.1	4.9	2.0	40	3.5	154
1.2	6.9	2.5	72	4.0	199

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.3	5.9	5.9	9.6	14.9	8.1	84	11.6	9.9	10.1	156	9.1
2	5.3	6.5	6.1	9.3	13.7	8.1	18.8	22	9.6	9.3	72	8.8
3	5.1	5.9	6.3	9.1	13.3	8.1	12.6	11.6	9.1	9.9	79	8.8
4	5.1	8.0	5.5	9.9	12.6	8.1	12.2	10.7	9.3	9.3	31.5	8.8
5	5.1	5.9	5.9	9.1	13.3	8.1	11.6	20	10.1	9.3	60	8.8
6	5.1	5.9	5.7	8.6	11.9	8.6	11.9	30	14.6	9.3	97	8.6
7	6.7	5.7	8.1	8.6	11.9	7.8	10.1	25	30	8.8	52	9.6
8	5.5	5.5	26	8.6	11.3	7.6	8.3	20	13.3	8.8	30	8.3
9	5.7	5.3	7.7	8.6	11.0	7.6	8.6	15	13.7	8.6	25.5	11.8
10	5.7	5.1	36.5	8.6	10.7	*7.1	9.3	12	11.0	8.8	18.0	14.6
11	5.9	6.4	8.1	8.1	10.4	7.1	9.9	11	11.0	8.6	15.2	15.4
12	5.5	29	8.3	7.8	10.1	6.9	11.5	11	11.0	8.6	13.7	9.1
13	5.3	6.5	7.3	7.8	10.1	7.1	16.6	12	10.1	8.1	13.3	8.6
14	6.3	6.1	8.1	7.6	10.4	7.1	9.9	14	9.9	8.6	13.0	8.3
15	5.5	5.9	7.8	7.6	9.9	6.7	9.9	12	9.9	8.6	16.4	8.1
16	9.4	6.1	8.6	7.3	9.6	6.7	14.8	18	9.6	8.1	12.2	8.3
17	5.7	5.9	15.8	7.3	11.3	6.5	17.6	13.0	16.6	8.8	11.6	7.8
18	5.3	5.7	8.6	7.1	9.9	6.5	35.5	28	59	10.5	11.3	8.1
19	4.9	5.5	7.8	6.9	9.3	6.3	20	11.6	22.5	8.3	11.0	7.8
20	4.9	5.7	7.6	7.1	9.3	6.3	18.0	11.0	25	7.8	11.0	7.3
21	4.9	7.6	7.3	11.9	9.1	6.9	13.7	10.7	17.0	7.6	11.6	7.6
22	5.3	5.5	7.1	7.6	9.1	7.1	13.7	16.5	13.0	7.8	13.7	7.3
23	4.9	5.5	6.9	8.1	12.8	6.3	12.2	13.0	11.9	7.8	10.7	7.1
24	6.8	5.5	6.9	8.1	9.6	6.1	11.9	10.7	11.6	7.8	17.9	7.1
25	8.3	18	12.4	8.1	9.1	6.3	11.6	10.4	11.3	7.3	11.0	6.9
26	11.4	6.5	16.7	11.6	9.8	6.1	12.2	10.4	11.3	7.6	11.0	6.7
27	8.3	7.0	30	22.5	8.8	6.1	11.0	10.1	17.2	23.5	10.1	8.5
28	7.6	6.3	9.6	45	8.6	17.6	16.8	9.9	11.3	29	9.6	6.5
29	12.8	6.1	14.6	50	8.3	58	11.9	-	11.0	18.3	9.3	6.5
30	6.3	7.0	15.3	25	8.3	23	31	-	10.7	153	9.3	6.5
31	6.1	6.1	-	18.4	-	16.0	13.3	-	10.1	-	9.3	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	12.8	4.9	6.26	9.69	194	595
August.....	29	5.1	7.21	11.2	224	686
September.....	36.5	5.5	11.0	17.0	325	1,019
October.....	50	6.9	12.3	19.0	381	1,170
November.....	14.9	8.3	10.6	15.4	317	974
December.....	56	6.1	9.80	15.2	304	935
Calendar year 1936	56	1.70	6.77	10.5	2,480	7,600
January.....	84	8.3	16.5	25.5	511	1,570
February.....	30	9.9	14.7	22.7	411	1,250
March.....	59	9.1	14.6	22.6	452	1,390
April.....	153	7.3	15.0	23.2	448	1,380
May.....	166	9.3	28.2	43.6	873	2,680
June.....	15.4	6.5	8.46	13.1	254	779
Fiscal year 1936-37	166	4.9	12.9	20.0	4,700	14,430

*Partly estimated

West Branch of Manoa Stream near Honolulu

Location.- Water-stage recorder, lat. 21°19'50", long. 157°48'15", 75 feet above lower highway and 4 miles northeast of Honolulu post office. Zero of gage is 290.84 feet above mean sea level (Board of Water Supply benchmark).

Drainage area.- 1.1 square miles.

Records available.- August 1925 to June 1937. May 1913 to January 1921 at site 200 feet upstream.

Average discharge.- 18 years (1913-20, 1926-37), 2.92 million gallons a day (4.52 second-feet).

Extremes.- Maximum discharge during year, 821 million gallons a day (1,270 second-feet) Oct. 28 (gage height, 5.20 feet), from rating curve extended above 35 million gallons a day by test on model of station site; minimum, 0.58 million gallons a day (0.90 second-foot) June 30.

1913-21, 1925-37: Maximum stage, 10.4 feet, Jan. 16, 1921, at former site and datum, from floodmarks (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 for ordinary stages are good; those for period of missing gage heights, Sept. 25 to Oct. 17 (computed on basis of graph plotted from staff gage-readings made twice daily or oftener and records for stations on all other streams from the Waiohomo to the Kalihi) and those for high stages are fair. No diversions above station.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.62	.8	5.6	1.4	23
.4	1.70	1.0	9.7	1.6	32
.6	3.2	1.2	15.8	1.8	43

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.78	2.7	1.78	2.7	3.5	0.77	40	2.7	2.15	1.64	13.4	1.46
2	1.58	4.8	1.85	2.1	2.8	.77	7.4	3.55	1.52	1.52	6.5	1.29
3	1.46	2.5	2.9	1.78	2.6	.91	4.3	2.1	1.35	1.46	7.9	1.23
4	1.46	4.7	1.58	11.0	2.5	.82	3.5	1.85	1.78	1.35	3.3	1.23
5	1.11	2.4	3.4	2.3	4.6	1.52	2.7	6.4	5.3	1.52	34	1.29
6	1.54	2.65	1.85	2.1	2.6	2.55	2.3	26	5.6	1.93	31.5	1.23
7	5.5	1.92	7.1	5.2	2.85	1.11	1.92	5.2	11.9	1.23	11.8	1.46
8	2.35	1.92	16.7	1.52	2.1	.91	1.70	3.05	5.2	1.11	7.9	1.50
9	3.25	1.25	5.0	1.40	1.85	1.66	1.58	2.45	5.3	1.01	5.5	10.5
10	4.0	1.52	8.6	1.35	1.58	1.17	2.05	2.15	3.05	1.32	4.1	11.2
11	3.6	3.7	2.5	1.23	1.72	1.06	3.05	1.92	2.8	1.01	3.2	10.1
12	2.45	18.8	3.2	1.11	1.46	.96	3.0	1.85	2.9	1.11	2.8	2.6
13	2.1	2.75	2.1	1.06	1.35	.86	7.9	1.94	2.15	.91	2.5	1.85
14	7.0	2.15	3.1	1.01	2.4	1.29	3.4	2.3	1.92	1.23	3.1	1.58
15	3.5	1.64	3.1	.96	1.40	.91	2.45	2.1	1.92	1.29	7.4	1.46
16	8.6	1.85	6.3	.91	1.17	.77	8.3	3.15	2.55	.96	3.0	1.35
17	3.1	2.1	10.5	.86	4.0	.85	11.9	3.75	5.6	1.39	2.45	1.29
18	2.4	1.52	3.4	.77	1.64	1.11	29	11.2	17.8	3.15	2.1	1.50
19	2.1	1.35	2.45	.77	1.29	.82	14.3	2.9	7.5	2.75	2.0	1.40
20	1.92	3.2	2.55	.77	1.17	.77	15.8	2.0	8.4	1.52	2.4	.91
21	2.3	5.5	1.85	4.0	1.06	1.31	6.9	1.70	4.9	1.17	2.4	1.26
22	3.65	1.78	2.0	1.73	1.01	2.6	6.0	7.1	3.05	1.06	4.2	.96
23	2.7	1.64	1.58	2.45	4.1	1.52	4.0	4.6	2.45	.96	1.92	.96
24	6.0	1.78	1.64	1.92	1.40	1.17	3.6	2.45	2.15	1.30	8.5	.86
25	12.3	16.5	4.6	2.9	1.11	1.61	2.9	1.92	1.85	1.01	2.45	1.01
26	20	2.8	12.3	5.8	1.01	1.11	3.15	2.15	1.85	.86	2.9	1.14
27	6.0	5.2	14.5	8.1	.96	1.01	2.4	2.4	7.6	8.7	1.85	.96
28	10.7	14.6	3.05	33	.86	8.8	6.8	1.70	2.85	7.5	1.58	.77
29	11.4	2.9	11.4	27.5	.82	16.7	2.9	-	2.3	7.2	1.46	.77
30	4.0	5.1	5.6	11.6	.77	16.8	13.8	-	2.1	22.5	1.40	.72
31	3.0	2.15	-	5.2	-	11.5	4.2	-	1.78	-	1.40	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	20	1.11	4.61	7.13	143	438
August.....	18.8	1.55	4.06	6.28	126	387
September.....	16.7	1.58	4.95	7.66	145	456
October.....	35	.77	4.68	7.24	145	445
November.....	4.6	.77	1.93	2.99	57.8	177
December.....	16.8	.77	2.77	4.29	85.7	263
Calendar year 1936	33	.36	2.77	4.29	1,010	3,110
January.....	40	1.58	7.14	11.0	221	679
February.....	26	1.70	4.01	6.20	112	345
March.....	17.8	1.55	4.15	6.42	129	395
April.....	22.5	.86	2.72	4.21	81.7	251
May.....	34	1.40	6.02	9.31	157	572
June.....	11.2	.72	2.19	3.39	65.8	202
Fiscal year 1936-37	40	.72	4.12	6.37	1,500	4,610

East Branch of Manoa Stream near Honolulu

Location.-- Water-stage recorder and combined Parshall flume and concrete control, lat. 21°19'50", long. 157°48'10", just below highway bridge 400 feet upstream from confluence with West Branch of Manoa Stream, 4 miles northeast of Honolulu post office. Zero of gage is 294.50 feet above mean sea level (Board of Water Supply benchmark).

Drainage area.-- 1.0 square mile.

Records available.-- May 1913 to January 1921, August 1925 to June 1937.

Average discharge.-- 18 years (1913-30, 1926-37), 2.99 million gallons a day (4.63 second-feet).

Extremes.-- Maximum discharge recorded during year, 236 million gallons a day (365 second-feet) Oct. 28 (gage height, 3.93 feet), from rating curve extended above 11 million gallons a day by test on model of station site; minimum discharge, 1.34 million gallons a day (2.09 second-feet) July 4, 5, 6.

1913-21, 1925-36: Maximum gage height, 10.4 feet, Jan. 16, 1921, at former site and datum, from floodmarks (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 for ordinary stages are good; those for period of missing gage heights, Sept. 3-24 (computed on basis of graph plotted from staff-gage readings made twice daily or oftener) and those for high stages are fair; those for Oct. 31 to Nov. 2, Jan. 1-4, Apr. 3-11, Apr. 27 to May 7 (computed on basis of records for stations on all other streams from the Waialae to the Kalia) are poor. Water is diverted from stream about 1,500 feet above station by East Manoa ditch.

Rating tables, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Jan. 30 and May 8 to June 30				Jan. 31 to May 7			
0.2	0.52	1.0	7.2	1.8	22	0.4	1.85
4	1.65	1.2	9.4	2.0	30	.6	3.65
.6	3.15	1.4	12.2			.8	5.6
.8	5.1	1.6	15.9			1.0	8.1
							1.2
							10.9
							1.4
							14.8
							1.6
							19.5
							1.8
							26

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.40	3.0	2.6	3.45	4.3	2.2	30	4.4	4.3	4.3	20	4.3
2	1.46	2.9	2.5	3.05	3.8	2.35	6.0	4.6	3.65	4.0	12	4.0
3	1.48	2.35	3.6	2.9	*3.55	2.5	3.5	4.0	3.55	4.0	6.0	4.0
4	1.53	3.8	2.2	7.1	3.6	2.3	3.1	3.85	4.0	4.0	12	3.9
5	1.40	2.5	3.6	3.25	4.8	2.45	3.05	8.2	6.8	3.9	8.0	4.4
6	1.73	2.6	2.4	3.35	3.55	3.9	2.65	18.7	9.1	4.5	20	4.1
7	4.6	2.2	5.4	7.2	4.1	2.6	2.6	13.0	4.0	4.0	22	4.4
8	2.05	2.35	9.0	3.0	3.05	2.35	2.6	4.6	8.0	3.9	9.0	4.3
9	2.4	2.3	4.9	2.85	2.9	2.85	2.75	4.2	9.4	3.9	7.0	8.8
10	4.0	2.2	5.3	3.15	2.85	2.45	3.65	4.0	5.8	4.2	6.2	8.1
11	3.0	3.25	2.5	2.9	2.9	2.35	-4.1	3.85	5.5	4.0	5.4	7.2
12	1.86	9.4	3.6	2.75	2.65	2.45	4.6	4.0	5.5	4.1	4.9	4.2
13	1.53	2.65	2.4	2.65	2.65	2.35	5.6	4.0	4.7	3.75	4.7	3.8
14	3.95	2.5	2.8	2.6	4.2	3.0	3.55	4.2	4.6	4.0	5.0	3.6
15	2.35	2.35	2.8	2.45	3.05	2.45	3.25	4.0	4.6	3.95	7.4	3.55
16	4.3	2.5	5.1	2.45	2.65	2.35	6.2	4.6	4.6	3.75	5.0	3.45
17	2.15	2.65	7.8	2.3	5.8	2.35	9.2	5.0	5.9	3.95	4.8	3.55
18	1.79	2.3	3.2	2.3	3.0	2.45	16.3	9.1	12.4	6.1	4.7	3.8
19	1.72	2.15	3.0	2.3	2.65	2.3	8.9	4.4	7.6	6.2	4.7	3.6
20	1.65	3.25	2.8	2.35	2.6	2.3	9.4	4.0	9.5	4.3	5.0	3.45
21	2.15	3.95	2.5	5.5	2.5	2.35	5.7	3.65	7.1	3.95	6.0	4.2
22	2.7	2.35	2.5	2.9	2.45	2.6	5.4	10.4	5.2	3.85	5.9	3.55
23	2.35	2.2	2.4	4.1	5.0	2.35	4.7	6.5	4.7	3.75	4.8	3.45
24	3.7	2.3	2.4	3.8	2.65	2.3	4.9	4.2	4.4	3.75	8.5	*3.35
25	4.9	7.9	*6.1	3.8	2.5	2.75	4.0	3.95	4.2	3.75	5.0	*3.7
26	9.0	3.0	12.3	7.5	2.35	2.35	4.4	4.5	4.7	3.75	5.1	3.8
27	3.55	5.0	12.0	6.1	2.35	2.3	3.6	5.3	10.0	3.0	4.6	3.45
28	4.2	3.85	3.5	19.6	2.3	6.8	6.5	3.95	5.8	8.0	4.4	3.25
29	5.7	4.1	7.3	*16.1	2.2	7.8	4.6	-	4.8	7.0	4.3	3.0
30	2.9	5.4	5.1	*7.2	2.2	8.9	13.2	-	4.7	6.0	4.3	2.9
31	2.55	2.75	-	4.6	-	8.0	5.8	-	4.3	-	4.2	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	9.0	1.40	2.90	4.49	90.0	276
August.....	9.4	2.15	3.29	5.09	102	313
September.....	12.3	2.2	4.45	6.89	134	419
October.....	19.6	2.3	4.76	7.36	149	453
November.....	5.8	2.2	3.17	4.90	95.2	292
December.....	8.9	2.2	3.19	4.94	98.8	303
Calendar year 1936	19.6	.77	2.81	4.35	1,030	3,150
January.....	30	2.6	6.22	9.62	193	592
February.....	18.7	3.65	5.43	9.40	152	479
March.....	13.0	3.55	6.21	9.61	192	590
April.....	9.0	3.75	4.59	7.10	138	422
May.....	22	4.2	7.45	11.5	231	709
June.....	8.8	2.9	4.17	6.45	125	384
Fiscal year 1936-37	30	1.40	4.65	7.19	1,700	5,210

*Partly estimated.

East Manoa ditch near Honolulu

Location.- Water-stage recorder, lat. $21^{\circ}19'50''$, long. $157^{\circ}48'06''$, 150 feet east of lower highway and gaging station on East Branch of Manoa Stream and 4 miles northwest of Honolulu post office. Zero of gage is 317.09 feet above mean sea level (Board of Water Supply benchmark).

Records available.- May 1915 to December 1916, January 1918 to January 1921, August 1925 to June 1937.

Average discharge.- 11 years (1926-37), 0.726 million gallons a day (1.12 second-foot).

Extremes.- Maximum discharge during year, 6.8 million gallons a day (10.5 second-foot) July 29 (gage height, 1.33 feet); minimum, 0.04 million gallons a day (0.06 second-foot) several days during year.

1915-16, 1918-21, 1925-37: Maximum discharge, about 26 million gallons a day (40 second-foot) Jan. 16, 1921 (gage height, 2.27 feet, fromer datum); no flow Aug. 26, 1927.

Remarks.- Records good except those for periods of missing gage heights, Aug. 17 to Sept. 4, Sept. 21-29, which were computed on basis of records for East and West Branches of Manoa Stream near Honolulu and are fair. Water diverted from East Manoa Stream about a quarter of a mile above station by means of crude stone dam.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.77	0.95	0.54	0.30	0.05	0.05	0.79	0.43	0.36	0.25	0.09	0.08
2	.73	.86	.54	.27	.06	.05	.15	.45	.33	.25	.08	.06
3	.73	.81	.70	.25	.10	.05	.05	.43	.33	.25	.08	.06
4	.69	.89	.64	.45	.10	.05	.05	.39	.33	.25	.08	.06
5	.69	.77	.53	.27	.08	.05	.09	.52	.43	.25	1.39	.06
6	.73	.77	.46	.27	.05	.08	.21	.83	.46	.27	1.48	.06
7	1.04	.73	.50	.43	.05	.05	.21	.46	.73	.21	.45	.06
8	.81	.73	.72	.27	.11	.05	.21	.39	.50	.17	.16	.06
9	.73	.64	.49	.25	.21	.05	.21	.56	.17	.15	.06	.19
10	.97	.64	.49	.27	.25	.04	.18	.27	.08	.10	.05	.21
11	.95	.60	.43	.25	.27	.04	.06	.05	.06	.11	.06	.14
12	.73	1.10	.43	.21	.27	.04	.08	.11	.06	.13	.15	.05
13	.69	.64	.43	.21	.27	.04	.28	.30	.05	.15	.16	.05
14	.90	.57	.43	.21	.33	.04	.11	.30	.04	.13	.17	.05
15	.73	.57	.39	.19	.30	.04	.10	.30	.04	.13	.25	.05
16	1.05	.57	.43	*.19	.27	.04	.43	.34	.04	.11	.11	.05
17	.64	.56	.49	*.17	.37	.04	.69	.33	.10	.11	.10	.05
18	.57	.56	.30	.17	.21	.04	1.35	.39	.23	.15	.10	.05
19	.53	.54	.27	.17	.13	.04	.83	.33	.11	.11	.08	.05
20	.53	.52	.27	.17	.11	.04	.77	.30	.17	.10	.08	.05
21	.53	.70	.27	.33	.10	.04	.43	.30	.10	.08	.10	.05
22	.60	.54	.27	.19	.10	.04	.39	.63	.06	.08	.10	.05
23	.50	.52	.27	.27	.13	.04	.33	.43	.05	.06	.06	.05
24	.73	.50	.29	.21	.06	.04	.30	.20	.05	.05	.22	.05
25	.69	1.2	.40	.20	.06	.05	.27	.05	.06	.05	.11	.06
26	1.68	.60	.70	.42	.06	.05	.25	.18	.10	.05	.11	.07
27	.64	.64	.80	.33	.05	.05	.19	.39	.23	.10	.10	.06
28	.88	.56	.40	1.10	.05	.14	.30	.36	.05	.09	.10	.06
29	1.39	.70	.47	1.02	.05	.25	.27	-	.11	.21	.10	.10
30	1.00	1.0	.39	.37	.05	.35	.80	-	.30	.12	.08	.10
31	.95	.56	-	.10	-	.23	.49	-	.30	-	.08	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	1.68	0.50	0.794	1.23	24.6	75
August.....	1.2	.50	.695	1.08	21.6	66
September.....	.80	.27	.458	.709	13.7	42
October.....	1.10	.10	.307	.475	9.51	29
November.....	.37	.05	.142	.220	4.26	13
December.....	.35	.04	.072	.111	2.23	6.8
Calendar year 1936	5.3	.04	.623	.964	228	698
January.....	1.35	.05	.350	.542	10.8	33
February.....	.83	.05	.350	.542	9.80	30
March.....	.75	.04	.189	.282	5.85	18
April.....	.37	.05	.142	.220	4.26	13
May.....	1.48	.05	.204	.316	6.33	19
June.....	.21	.05	.071	.110	2.13	6.5
Fiscal year 1936-37	1.68	.04	.315	.487	115	351

*Partly estimated.

Pukele Stream near Honolulu

Location.— Water-stage recorder and concrete control lat. $21^{\circ}19'15''$, long. $157^{\circ}47'10''$, 200 feet upstream from Palolo belt-road bridge, five-eighths of a mile above confluence of Pukele and Waiomao Streams and $\frac{1}{2}$ miles east of Honolulu post office. Zero of gage is 344.78 feet above mean sea level (Board of Water Supply benchmark).

Drainage area.— 1.2 square miles.

Records available.— June 1926 to June 1937. April 1912 to September 1913, above present site and just below Mahoe Springs.

Average discharge.— 11 years (1926-37), 1.47 million gallons a day (2.27 second-foot).

Extremes.— Maximum discharge during year, 331 million gallons a day (512 second-foot). Oct. 28 (gage height, 4.68 feet), from rating curve extended above 15 million gallons a day by test on model of station site; minimum, 0.44 million gallons a day (0.68 second-foot) Oct. 20, 21.

1912-13, 1926-37: Maximum discharge, 1,680 million gallons a day (revised) (2,600 second-foot) Apr. 11, 1930 (gage height, 7.75 feet, from floodmarks), from rating curve based on model tests; minimum, 0.09 million gallons a day (0.14 second-foot) Dec. 7-13, 20, 21, 1933.

Remarks.— Records for ordinary stages are good; those for periods of missing gage heights, July 22-29, Oct. 29 to Dec. 1, Dec. 5-12, Dec. 17 to Jan. 7, Feb. 2-4, Feb. 7 to Mar. 16, Mar. 25-27 (computed on basis of records for stations on all other streams between the Waiomao and Kalihi) and those for high stages are poor. A 2-inch pipe diverts water from stream above station.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.1	0.28	1.5	2.7	2.0	12.5
1.2	.60	1.6	3.9	2.2	19.0
1.3	1.10	1.7	5.5	2.4	27
1.4	1.76	1.8	7.4	2.8	48

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.85	1.23	0.60	1.00	3.0	0.6	25	*2.5	1.7	1.00	10.5	0.75
2	.80	1.17	.60	.80	2.0	.57	2.0	1.95	1.3	1.00	6.6	.70
3	.75	1.05	.84	.75	1.7	.57	1.5	1.56	1.1	1.00	2.55	.65
4	.70	2.5	.65	2.05	1.5	.57	1.4	1.23	1.4	1.00	1.17	.65
5	.65	1.23	.76	.90	3.5	.6	1.3	7.4	4.0	1.00	32	.60
6	.60	1.00	.60	1.07	2.0	2.0	1.3	25	8.0	1.12	43	.60
7	.96	.90	.57	5.9	2.5	.9	1.2	4.0	12	.85	12.5	.60
8	.79	.90	2.6	.95	1.8	.7	1.10	2.5	7.0	.85	8.3	.60
9	1.00	.80	.65	.75	1.3	1.4	1.00	2.0	6.0	.80	3.6	3.2
10	1.92	.75	1.12	.88	1.0	.8	.95	1.7	3.5	.80	2.4	7.0
11	1.76	1.22	.57	.90	.8	.7	1.19	1.4	2.5	.75	1.76	4.2
12	.90	5.4	.54	.70	.7	.6	1.43	1.2	2.2	.70	1.63	1.00
13	.85	.85	.54	.65	.6	.54	2.55	1.3	1.7	.70	1.50	.80
14	2.35	.70	.58	.60	2.5	.65	1.36	1.6	1.5	1.04	1.36	.75
15	1.10	.70	.62	.54	2.0	.57	1.10	1.4	1.4	.75	2.85	.80
16	4.6	.70	1.35	.54	.7	.54	2.5	6.0	1.7	.70	1.23	.85
17	1.23	.65	3.1	.54	3.5	.6	4.7	4.0	2.75	.70	1.05	.85
18	.95	.65	.85	.50	1.2	.6	15.0	12	6.0	.70	1.00	.85
19	.90	.60	.60	.47	.9	.5	6.1	4.0	2.9	.88	1.00	.80
20	.85	.57	.60	.44	.8	.5	7.1	3.0	8.8	.75	.95	.70
21	.80	1.08	.60	4.6	.7	.9	3.05	2.0	4.8	.70	2.75	.82
22	.9	.60	.60	9.0	.7	2.0	2.4	8.0	1.76	.65	1.91	.60
23	.9	.57	.57	2.45	5.0	1.1	1.95	7.0	1.36	.60	1.00	.60
24	1.5	.57	.54	2.4	2.5	.8	1.76	3.5	1.17	.60	3.46	.57
25	2.5	3.75	1.16	2.45	1.5	1.2	1.43	1.8	1.1	.60	1.10	.57
26	5.0	.75	3.55	4.8	1.3	.9	1.81	2.2	1.2	.57	.95	.60
27	2.0	.80	6.3	4.6	1.1	.7	1.30	2.5	3.0	.80	.95	.54
28	2.5	.70	.80	24.5	1.0	.6	6.1	1.5	1.56	4.0	.90	.54
29	3.0	1.12	4.3	10	.9	.9	3.6	-	1.30	8.4	.85	.54
30	1.56	1.75	3.7	30	.8	1.5	17.4	-	1.46	14.1	.80	.50
31	1.17	.65	-	5.0	-	2.0	4.4	-	1.10	-	.76	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	5.0	0.60	1.49	2.31	46.3	142
August.....	5.4	.57	1.16	1.79	35.9	110
September.....	6.3	.54	1.55	2.09	40.5	124
October.....	30	.44	3.89	6.02	121	371
November.....	5.0	.6	1.65	2.55	49.5	152
December.....	2.0	.5	.971	1.35	27.0	83
Calendar year 1936	30	.16	1.34	2.07	491	1,510
January.....	25	.95	4.03	6.24	125	384
February.....	25	1.2	4.08	6.31	114	351
March.....	12	1.10	3.14	4.86	97.2	298
April.....	14.1	.57	1.60	2.48	48.1	148
May.....	43	.75	4.91	7.60	152	468
June.....	7.0	.50	1.09	1.69	32.8	101
Fiscal year 1936-37	43	.44	2.44	3.78	889	2,730

*Partly estimated.

Waialae Stream above Pukele Stream, near Honolulu

Location.— Water-stage recorder and concrete control, lat. 21°19'10", long. 157°46'45", 300 feet west of road, 1 mile upstream from confluence of Waialae and Pukele Streams, and 5 miles east of Honolulu post office. Zero of gage is 373.49 feet above mean sea level (Board of Water Supply benchmark).

Drainage area.— 1.0 square mile.

Records available.— June 1926 to June 1937. April 1911 to December 1912 at highway bridge below present site.

Average discharge.— 11 years (1926-37), 1.30 million gallons a day (2.01 second-feet).

Extremes.— Maximum discharge during year, 393 million gallons a day (608 second-feet), May 1 (gage height, 4.94 feet), from rating curve extended above 5 million gallons a day by test on model of station site; minimum, 0.09 million gallons a day (0.14 second-foot) Oct. 18-20, Dec. 21, 23.

1911-12, 1926-37: Maximum discharge, 461 million gallons a day (713 second-feet) Apr. 11, 1930 (gage height, 6.27 feet), from rating curve based on weir formulas; no flow in extremely dry weather.

Remarks.— Records for ordinary and medium stages are good; those for periods of missing gage heights, July 12-15, Aug. 11, 12, 18, 25, 27, 29, 30, Oct. 31, Nov. 1, Nov. 22 to Dec. 2, Feb. 9-14 (computed on basis of records for stations on all streams between the Pukele and the Kalihi) and those for very high stages are poor. Board of Water Supply diverts water from tunnels in drainage area.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.1	0.09	1.4	1.04	1.7	3.8	2.2	15.2	2.8	44
1.2	.26	1.5	1.70	1.8	5.3	2.4	23	3.0	57
1.3	.56	1.6	2.6	2.0	9.4	2.6	32.5	3.2	72

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.33	0.58	0.39	0.83	2.6	0.4	18.1	1.56	1.11	0.42	28	0.21
2	.26	*.56	.33	.48	1.70	.4	2.9	.99	.78	.36	7.0	.19
3	*.28	*.48	1.34	.36	1.10	.33	1.30	.83	.33	.33	2.75	.17
4	.28	*.99	.52	.86	.78	.23	.93	.64	.59	.28	1.42	.17
5	.19	*.48	.48	.42	1.14	.26	.56	9.6	1.40	.30	27	.21
6	.21	.39	.36	.28	.84	1.05	.39	30	6.2	.64	63	.19
7	.92	.30	.28	3.8	.98	.56	.30	6.4	9.4	.30	26	.30
8	.73	.28	2.2	.56	.64	.33	.23	2.2	3.9	.23	5.7	.26
9	1.17	.26	.48	.36	.48	.33	.26	1.3	5.0	.21	9.0	3.1
10	1.74	.28	.66	.32	.36	.28	.39	.9	1.95	.28	5.7	3.95
11	1.22	.6	.33	.41	.38	.21	.53	.7	1.15	.21	3.2	4.8
12	.52	2.1	.30	.23	.26	.19	1.44	.5	1.28	.23	2.0	.93
13	.4	.56	.23	.19	.21	.15	2.25	.4	.78	.21	1.56	.56
14	2.0	.42	.26	.17	1.86	.52	.94	.5	.56	.58	1.15	.42
15	.6	.30	.34	.14	1.70	.28	.52	.33	.60	.52	1.80	.33
16	3.65	.26	1.11	.22	.83	.17	1.46	.76	.75	.26	1.04	.26
17	.94	.28	2.2	.14	5.4	.18	4.5	.42	1.21	.19	.69	.21
18	.48	.26	.60	.10	1.44	.21	13.6	2.05	3.75	.30	.48	.37
19	.39	.21	.33	.09	.69	.14	.63	.69	2.85	.44	.48	.45
20	.30	.29	.26	.14	.48	.12	7.3	.39	10.8	.45	.53	.21
21	.29	.56	.21	5.6	.36	.11	2.95	.28	6.5	.26	.77	.61
22	.62	.30	.17	22	.3	.18	1.85	4.2	1.70	.19	1.70	.30
23	.45	.21	.14	4.7	6.0	.49	1.35	2.5	1.04	.15	.69	.21
24	.88	.19	.11	5.3	1.0	.24	1.27	.69	.69	.15	2.15	.17
25	1.77	2.0	.66	3.4	.8	.31	.93	.45	.52	.12	1.04	.19
26	4.8	*.91	2.8	7.2	.7	.19	1.54	1.09	1.11	.11	.60	.66
27	1.28	.4	8.5	9.0	.6	.14	.73	1.91	3.6	.33	.48	.26
28	2.65	*.33	1.06	*29.5	.6	1.13	5.7	.99	1.04	6.2	.33	.21
29	3.15	.7	3.55	6.4	.5	1.48	2.7	-	.73	9.1	.28	.17
30	.88	1.5	4.6	*27	.5	4.8	18.9	-	.98	5.9	.26	.14
31	*.56	.56	-	4.4	-	5.7	4.7	-	.48	-	.23	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	4.8	0.19	1.09	1.69	33.8	104
August.....	2.1	.19	.565	.874	17.5	54
September.....	8.5	.11	1.16	1.79	34.8	107
October.....	29.5	.09	4.34	6.71	135	413
November.....	6.0	.21	1.17	1.81	35.2	108
December.....	5.7	.11	.681	1.05	21.1	65
Calendar year 1936	29.5	.02	3.25	1.95	462	1,420
January.....	18.9	.23	1.45	5.34	107	328
February.....	30	.28	2.62	4.35	73.3	225
March.....	10.8	.33	2.32	3.59	71.9	221
April.....	9.1	.11	.977	1.51	29.3	90
May.....	63	.23	6.35	9.82	197	604
June.....	4.8	.14	.874	1.04	20.2	62
Fiscal year 1936-37	63	.09	2.12	3.28	776	2,380

*Partly estimated.

Kahaluu Stream near Heeia

Location.- Water-stage recorder and Parshall flume, lat. 21°26'20", long. 157°51'05", 40 feet above intake of Libby ditch, half a mile above forest-reserve boundary, and 3.5 miles northwest of Heeia post office. Zero of gage is 357.22 feet above mean sea level (Wright, Harvey & Wright Engineering Co. levels).

Drainage area.- 0.4 square mile.

Records available.- October 1935 to June 1937.

Extremes.- Maximum discharge during year, 153 million gallons a day (237 second-feet) May 5 (gage height, 3.80 feet), from rating curve extended above 5 million gallons a day; minimum, 2.35 million gallons a day (3.64 second-feet) Sept. 3-5.
1935-37: Maximum discharge recorded, that of May 5; minimum recorded that of Sept. 3-5.

Remarks.- Records good except those for periods of missing gage heights, July 3 to Aug. 6, Aug. 12 to Sept. 3, Nov. 16-19, which were computed on basis of records for station on Waihee Stream and are fair. No diversion above station.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.3	2.65	.7	10.2
.4	4.2	.9	15.3
.5	6.0	1.2	24
.6	8.0		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.8	3.1	3.5	2.65	3.05	4.0	8.8	3.85	4.5	4.0	6.9	4.3
2	2.9	3.1	3.5	2.65	2.9	3.85	3.55	4.2	4.3	4.2	7.4	4.5
3	3.1	3.1	3.5	2.65	2.9	3.85	3.35	4.0	4.3	4.2	6.7	4.5
4	3.1	3.1	2.8	2.65	3.05	3.85	3.35	4.0	4.5	4.2	5.2	4.5
5	3.2	3.1	4.2	2.65	3.05	3.85	3.35	4.7	4.5	4.2	22.5	4.5
6	3.3	3.1	3.05	2.8	3.05	3.85	3.35	11.5	4.9	4.2	8.4	4.5
7	3.6	2.9	2.9	3.3	3.05	3.85	3.55	4.3	6.6	4.2	8.6	4.5
8	3.4	2.9	4.5	3.05	3.05	3.85	3.55	3.85	4.2	4.2	4.3	4.5
9	3.4	3.0	2.8	3.05	3.2	3.85	3.55	3.7	4.2	4.2	4.5	4.5
10	4.0	3.0	2.9	3.2	3.55	3.85	3.55	3.85	4.0	4.3	4.5	4.3
11	3.5	3.05	2.9	3.2	3.7	3.85	3.7	3.85	4.0	4.3	4.2	4.3
12	3.3	9.0	2.9	3.2	3.7	3.85	3.7	3.85	4.2	4.3	4.0	4.0
13	3.3	3.5	2.9	3.05	3.55	3.85	3.7	3.85	4.2	4.3	4.2	4.0
14	3.4	3.1	3.05	3.05	3.85	3.85	3.55	4.0	4.2	4.3	4.2	4.0
15	3.3	3.1	3.2	2.9	3.55	3.85	3.55	4.0	4.2	4.3	4.2	4.0
16	3.2	3.1	3.35	2.9	3.5	3.85	4.1	4.0	4.2	4.3	4.3	4.0
17	3.2	3.1	3.55	2.8	3.7	3.85	4.3	4.0	4.3	4.3	4.3	4.0
18	3.1	3.1	3.55	2.65	3.6	3.85	5.6	4.5	5.6	4.5	4.5	4.2
19	3.1	3.1	3.55	2.65	3.6	3.85	4.0	4.0	5.5	5.0	4.7	4.2
20	3.1	4.0	3.55	2.65	3.55	3.7	3.85	4.0	5.2	4.3	4.7	4.2
21	3.1	3.5	3.55	3.85	3.7	3.7	3.7	4.0	4.7	4.3	4.9	4.2
22	3.1	3.5	3.55	5.2	3.7	3.7	3.7	4.5	4.3	4.3	5.0	4.2
23	3.1	3.5	3.55	3.9	5.0	3.7	3.7	4.2	4.2	4.3	5.0	4.2
24	3.5	3.5	3.55	2.8	3.85	3.7	4.0	4.2	4.2	4.3	5.2	4.2
25	3.7	4.5	*6.0	2.9	3.85	3.7	3.85	4.2	4.2	4.3	4.5	4.3
26	3.3	3.5	7.2	6.0	3.85	3.7	4.0	4.2	4.7	4.3	4.5	4.3
27	3.2	3.5	7.2	4.2	4.0	3.7	3.85	4.3	4.7	4.3	4.3	4.5
28	3.4	3.5	2.65	7.8	4.0	6.7	4.5	4.3	4.3	10.7	4.3	4.5
29	3.5	3.5	2.8	12.3	4.0	3.7	4.0	-	4.3	7.0	4.3	4.7
30	3.3	3.5	2.8	3.65	4.0	3.35	8.6	-	4.3	7.3	4.3	4.7
31	3.2	3.5	-	3.05	-	3.7	4.2	-	4.3	-	4.3	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	4.0	2.8	3.27	5.06	102	311
August.....	9.0	2.9	3.49	5.40	108	332
September.....	7.2	2.65	3.63	5.62	109	335
October.....	12.3	2.65	3.66	5.66	113	348
November.....	5.0	2.9	3.56	5.51	107	328
December.....	6.7	3.35	3.88	6.00	120	369
Calendar year 1936	12.3	2.5	3.42	5.29	1,250	3,840
January.....	8.8	3.35	4.13	6.39	128	393
February.....	11.5	3.7	4.35	6.73	122	374
March.....	6.6	4.0	4.53	7.01	140	431
April.....	10.7	4.0	4.70	7.27	141	432
May.....	22.5	4.0	5.88	8.63	173	531
June.....	4.7	4.0	4.31	6.67	129	397
Fiscal year 1936-37	22.5	2.65	4.09	6.33	1,490	4,580

*Partly estimated.

Waihee Stream near Heeia

Location.- Water-stage recorder and Parshall flume, lat. 21°27'05", long. 157°51'35", 70 feet above intake of Kihe ditch, 120 feet below forest-reserve boundary, and 4.1 miles northwest of Heeia post office. Zero of gage is about 193 feet above mean sea level.

Drainage area.- 1.1 square miles.

Records available.- December 1935 to June 1937.

Extremes.- Maximum discharge during year, unknown; minimum, 5.1 million gallons a day (7.9 second-feet) July 1-3.

1935-37: Maximum discharge, unknown; minimum, 4.9 million gallons a day (7.6 second-feet) Jan. 24, 25, 1936.

Remarks.- Records good except those for periods of missing gage heights, Aug. 23, 24, Aug. 27 to Sept. 3, Oct. 29, 30, Nov. 1, Dec. 28 to Jan. 2, Jan. 10-27, Jan. 30 to Feb. 3, May 2-15, which were computed on basis of records for station on Kahaluu Stream, and are fair. No diversions above station.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.4	4.7	1.0	20.5
.5	6.8	1.1	24
.6	9.1	1.2	27.5
.7	11.6	1.4	35.5
.8	14.5	1.6	44
.9	17.5	2.0	63

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.3	5.5	6.4	6.2	5.5	7.0	25	8.0	7.4	7.7	14.2	8.6
2	5.1	6.1	6.4	6.1	*5.5	7.0	10	7.4	7.4	7.9	16	8.6
3	5.1	5.7	7.7	6.1	5.5	7.0	*6.8	7.4	7.4	7.9	14	8.6
4	5.3	6.2	7.3	6.4	5.9	7.0	6.8	7.4	7.4	7.9	12	8.6
5	5.5	5.7	11.3	6.1	6.8	7.0	6.8	9.8	7.4	7.9	60	8.6
6	5.7	5.5	6.2	6.1	6.6	7.2	6.8	30.5	8.6	8.1	19	8.4
7	6.6	5.5	6.1	8.9	6.4	7.0	6.8	10.1	12.4	8.1	21	8.4
8	6.1	5.5	10.3	6.2	6.4	7.0	6.8	8.1	8.4	8.4	9.0	8.4
9	6.1	5.5	6.1	6.1	6.6	7.0	*6.8	7.7	7.7	8.4	10	8.1
10	7.7	5.5	6.1	6.1	6.6	6.8	6.8	7.4	7.2	8.4	10	7.9
11	6.6	6.0	5.9	6.1	6.6	6.8	6.4	7.4	7.2	8.4	9.0	8.1
12	6.2	33.5	5.9	6.1	6.6	6.8	6.4	7.4	7.4	8.4	8.6	7.7
13	6.2	6.6	5.9	6.2	6.6	6.8	6.4	7.2	7.2	8.4	8.6	7.7
14	6.4	6.0	6.1	6.2	7.2	6.8	6.2	7.2	7.2	8.6	8.6	7.7
15	6.1	5.9	6.2	6.2	7.2	6.6	6.2	7.0	7.2	8.6	8.6	7.4
16	6.2	5.9	6.4	6.6	7.2	6.6	7.0	7.0	7.2	8.4	8.6	7.4
17	6.1	5.9	6.6	6.2	7.9	6.8	5.0	7.0	8.1	8.4	8.4	7.4
18	6.1	5.9	6.6	6.1	7.2	6.8	11	8.1	13.0	9.5	8.4	7.9
19	5.9	5.9	6.6	6.1	7.2	6.8	7.0	7.2	12.9	11.4	8.6	7.9
20	5.9	7.5	6.6	6.1	7.4	6.8	6.6	7.2	10.6	8.6	8.6	7.9
21	5.9	6.4	6.6	13.4	7.4	6.8	6.6	7.0	8.8	8.4	8.6	7.9
22	5.7	*6.4	6.6	15.7	7.4	6.8	6.6	8.1	8.1	8.4	8.8	7.9
23	5.7	6.4	6.6	11.1	10.2	6.8	6.6	7.7	7.9	8.1	8.8	7.9
24	6.7	6.4	6.9	5.9	7.2	6.8	6.8	7.4	7.7	8.1	10.9	8.4
25	7.7	*10.3	17.3	5.5	7.2	6.8	6.8	7.4	7.9	8.1	8.6	8.4
26	6.9	*6.6	31	*9.4	7.2	6.8	6.8	7.4	11.1	8.1	8.8	8.4
27	6.1	6.4	27.5	7.0	7.2	*6.8	6.8	7.4	8.4	8.4	8.6	8.4
28	6.4	6.4	7.2	*16.4	7.2	6.8	10.1	7.4	7.9	29.5	8.6	8.6
29	7.6	6.4	7.5	22	7.0	6.8	7.0	-	7.9	18.4	8.6	8.6
30	5.9	6.4	6.9	7.0	7.0	6.8	20	-	7.8	16.5	8.6	8.6
31	5.5	6.4	-	*5.5	-	6.8	9.0	-	7.7	-	8.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	7.7	5.1	6.14	9.50	190	584
August.....	33.5	5.5	7.11	11.0	220	676
September.....	31	5.9	8.69	13.4	261	800
October.....	22	5.5	7.91	12.2	245	752
November.....	10.2	5.5	6.93	10.7	208	638
December.....	7.2	6.6	6.85	10.6	212	652
Calendar year 1936	33.5	4.9	6.72	10.4	2,460	7,550
January.....	25	6.2	8.18	12.7	254	779
February.....	30.5	7.0	8.44	13.1	236	725
March.....	13.0	7.2	8.40	13.0	260	799
April.....	29.5	7.7	9.71	15.0	291	894
May.....	60	8.4	11.9	18.4	369	1,130
June.....	8.8	7.4	8.15	12.6	245	751
Fiscal year 1936-37	60	5.1	8.20	12.7	2,990	9,180

*Partly estimated.

MISCELLANEOUS DISCHARGE MEASUREMENTS

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

Miscellaneous discharge measurements on Oahu, fiscal year July 1936 to June 1937

Date	Stream	Tributary to-	Locality	Discharge	
				Second-foot	Million gallons a day
July 3	Pearl Harbor Springs.	Pacific Ocean....	At 27-inch culvert 300 feet west of Waiau railway station.	3.45	2.23
Aug. 7	do.....	do.....	do.....	3.59	2.32
Sept. 4	do.....	do.....	do.....	3.62	2.34
Oct. 27	do.....	do.....	do.....	3.62	2.34
Dec. 16	do.....	do.....	do.....	4.09	2.64
Feb. 17	do.....	do.....	do.....	5.11	3.30
Apr. 13	do.....	do.....	do.....	4.69	3.03
May 25	do.....	do.....	do.....	5.33	3.44
July 3	do.....	do.....	At wooden culvert 10 feet west of Waiau railway station.	.464	.300
Aug. 7	do.....	do.....	do.....	.465	.301
Sept. 4	do.....	do.....	do.....	.750	.485
Oct. 27	do.....	do.....	do.....	.627	.405
Dec. 16	do.....	do.....	do.....	.846	.547
Feb. 17	do.....	do.....	do.....	1.08	.898
Apr. 13	do.....	do.....	do.....	.867	.560
May 25	do.....	do.....	do.....	.760	.491
July 3	do.....	do.....	At ditch levee 1,000 feet west of Puukapu gaging station.	.518	.335
Aug. 18	do.....	do.....	do.....	.658	.425
Sept. 4	do.....	do.....	do.....	*.16	.10
Oct. 22	do.....	do.....	do.....	*.12	.08
Dec. 17	do.....	do.....	do.....	*.15	.097
Mar. 8	do.....	do.....	do.....	.463	.299
Apr. 13	do.....	do.....	do.....	.754	.487
May 25	do.....	do.....	do.....	*.16	.10
July 3	do.....	do.....	New ditches about 600 feet west of Puukapu gaging station.	.845	.546
Aug. 18	do.....	do.....	do.....	.971	.628
Sept. 4	do.....	do.....	do.....	1.13	.730
Oct. 22	do.....	do.....	do.....	1.29	.831
Dec. 17	do.....	do.....	do.....	1.77	1.14
Mar. 8	do.....	do.....	do.....	2.51	1.62
Apr. 13	do.....	do.....	do.....	2.56	1.65
May 25	do.....	do.....	do.....	3.29	2.13
July 14	Kalihi.	do.....	160 feet mauka of School Street Bridge.	14.1	9.11
15	do.....	do.....	do.....	9.38	6.06
15	do.....	do.....	do.....	10.4	6.72
14	do.....	do.....	30 feet makai of School Street Bridge.	34.6	22.4
15	do.....	do.....	do.....	30.3	19.6
15	do.....	do.....	do.....	31.7	20.5

*Estimated.

Honokahau Stream near Honokahau

Location.-- Water-stage recorder, lat. 20°57'45", long. 156°35'20", 1,000 feet above intake of Honokahau ditch and 5 miles southeast of Honokahau. Altitude, about 950 feet, by barometer.

Drainage area.-- 4.2 square miles.

Records available.-- March 1913 to September 1920, May 1922 to June 1937.

Average discharge.-- 19 years (1916-20, 1922-37), 25.4 million gallons a day (39.3 second-feet).

Extremes.-- Maximum discharge during year, 922 million gallons a day (1,430 second-feet) May 2 (gage height, 8.87 feet), from rating curve extended above 150 million gallons a day; minimum, 10.9 million gallons a day (16.9 second-feet) July 2, 19, Aug. 13, 1913-20, 1922-37: Maximum discharge, 2,200 million gallons a day (3,400 second-feet) Feb. 13, 1924 (gage height, 7.92 feet), from rating curve extended above 100 million gallons a day; minimum, 6.2 million gallons a day (9.6 second-feet) June 30, 1926.

Remarks.-- Records excellent for ordinary stages and poor for high stages. No diversions.

Rating tables, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Sept. 26					Sept. 27 to June 30				
2.0	8.7	2.6	35		2.0	9.5	2.8	52	
2.1	11.5	2.8	51		2.1	12.4	3.0	75	
2.2	14.9	3.1	85		2.2	16.0	3.4	130	
2.4	23.5	3.5	147		2.4	25	3.8	204	
					2.6	37	4.2	304	

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.5	14.2	18.7	16.0	13.8	14.9	104	23.5	24	38.5	33	20.5
2	10.9	19.2	22	14.6	13.5	43	22.5	23	25.5	27.5	175	20
3	19.3	15.6	15.7	19.4	13.5	22	18.8	21	21	29	25	38
4	14.4	56	27.5	15.6	17.5	20	51	49	47	31	22.5	23.5
5	16.7	13.2	27	14.9	45	16.5	19.2	87	114	28	67	44
6	12.9	11.8	14.9	14.6	23	20	17.6	102	88	69	168	27
7	16.6	16.0	18.5	14.2	21.5	16.4	17.2	73	103	35.5	51	27
8	54	23	19.2	14.2	22.5	14.9	16.8	28	52	37.5	27.5	51
9	16.9	16.9	14.9	14.2	17.1	30.5	87	23.5	130	27.5	27	58
10	34	13.2	52	14.2	48	23	67	23	49	32	24.5	26
11	34	12.7	16.1	14.9	52	41	19.6	24	37.5	32.5	23.5	37
12	17.6	35	30.5	13.8	17.8	22.5	18.4	38.5	97	60	22	24.5
13	13.8	34.5	16.3	13.5	14.2	14.9	48	76	36	27	22	20
14	24	16.5	18.0	13.1	14.2	32.5	24.5	75	40	43	38.5	21
15	32	13.2	68	13.1	34	61	89	35	48	26	36	20.5
16	27.5	11.8	66	20.5	14.3	32.5	126	54	40	29	32	24
17	12.2	11.5	17.3	14.6	55	40	157	56	57	33.5	24.5	31.5
18	11.2	10.9	13.9	13.5	51	20.5	142	180	93	85	22.5	23
19	11.8	12.5	13.9	13.1	18.8	15.3	94	151	48	28.5	50	19.6
20	46	134	12.9	13.1	21	36.5	101	423	28	23	137	21.5
21	40	25.5	12.5	16.8	16.0	126	29	20.5	97	23	54	33.5
22	30	13.2	16.0	24.5	14.6	183	56	80	48	27.5	35.5	25.5
23	45	26.5	13.2	52	47	189	36	115	31	72	25	22
24	16.6	35.5	14.2	18.4	20	33.5	25	26	27	97	28.5	19.2
25	49	27.5	13.5	48	15.3	57	29.5	22	25.5	35.5	23	29
26	104	27	234	87	14.9	20.5	55	28.5	44	76	41	24.5
27	17.3	23	62	32	13.8	64	22	83	44	29	23	22.5
28	27	80	18.4	16.6	13.8	63	20.5	47	27.5	23	42	19.6
29	51	40	53	55	13.5	99	22	-	26	22.5	22.5	19.6
30	15.7	33	25.5	21	13.5	190	71	-	34.5	24	21.5	19.2
31	14.2	23	-	17.6	-	133	57	-	36.5	-	20.5	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	104	10.9	27.5	42.2	847	2,600
August.....	134	10.9	27.4	42.4	848	2,600
September.....	234	12.5	32.2	49.8	966	2,960
October.....	87	13.1	22.0	34.0	683	2,100
November.....	55	13.5	23.7	36.7	710	2,180
December.....	190	14.9	54.1	53.7	1,660	5,140
Calendar year 1936	234	7.1	26.2	40.5	9,600	29,440
January.....	157	16.8	53.7	83.1	1,660	5,110
February.....	180	20.5	55.1	82.2	1,490	4,550
March.....	130	21	52.5	80.9	1,620	4,970
April.....	97	22.5	39.1	60.5	1,170	3,600
May.....	175	20.5	44.0	68.1	1,360	4,180
June.....	58	19.2	27.1	41.9	812	2,490
Fiscal year 1936-37	234	10.9	37.9	58.6	13,850	42,490

*Partly estimated.

†Estimated.

Honokawai ditch near Lahaina

Location.- Water-stage recorder, lat. 20°56'00", long. 156°37'30", just below intake on Honokawai Stream, 2½ miles above Pioneer Mill Co.'s power house and 7½ miles northeast of Lahaina. Altitude, about 1,900 feet, from topographic map.

Records available.- July 1912 to June 1937. July 1912 to December 1917 at site half a mile downstream, on old ditch line. November 1918 to May 1921 at site 1½ miles downstream. Staff gage used from July 1912 to November 1918.

Average discharge.- 18 years (1919-37), 5.86 million gallons a day (9.07 second-feet).

Extremes.- 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 of daily discharges since July 1932 furnished by Pioneer Mill Co. Ditch diverts water for power and irrigation from Honokawai Stream just above station. Flow regulated by head gates at intake.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.35	2.4	3.2	2.85	2.45	2.4	4.3	3.7	3.7	4.9	4.4	4.6
2	2.35	2.7	3.55	2.7	2.25	3.35	7.0	3.3	3.7	4.1	9.0	4.5
3	3.35	2.45	2.95	3.4	2.25	4.2	3.6	3.3	3.25	5.4	4.6	8.0
4	2.95	15.3	4.3	2.6	3.1	3.5	4.6	5.7	5.5	5.2	4.4	5.4
5	3.4	2.45	3.0	2.25	11.5	2.35	3.3	7.7	10.7	4.4	6.0	6.4
6	2.6	2.3	2.7	2.2	5.8	4.7	2.8	9.1	2.55	7.9	11.9	6.0
7	3.4	2.65	2.95	2.15	3.5	3.45	3.05	6.9	5.8	5.8	7.0	5.8
8	13.0	3.6	3.55	2.15	3.7	3.2	3.1	4.5	5.3	6.0	5.0	11.3
9	3.35	3.1	2.6	2.15	2.8	6.2	10.6	3.7	7.5	4.3	5.4	13.5
10	7.6	2.35	10.4	2.15	5.0	4.6	6.6	3.45	6.4	5.8	5.3	6.9
11	6.2	19.0	2.85	2.15	7.1	9.3	3.5	3.85	4.8	6.2	4.8	6.1
12	3.0	7.3	7.5	2.1	2.6	4.5	3.2	5.8	9.1	7.8	4.5	5.6
13	2.7	8.5	3.35	2.1	2.45	2.95	7.6	8.8	5.0	4.8	4.5	4.8
14	5.5	2.85	3.6	2.15	2.35	8.0	4.4	9.6	5.2	5.9	7.8	4.5
15	8.6	2.45	16.3	2.15	2.55	14.6	16.0	5.8	4.9	4.2	8.0	4.5
16	5.1	2.4	18.1	2.1	2.6	6.9	9.6	8.8	6.2	5.6	7.4	4.3
17	2.45	2.35	3.35	2.1	7.4	9.9	8.2	9.2	8.9	7.2	5.3	7.1
18	2.4	2.6	2.85	2.1	6.2	4.2	7.1	9.7	9.1	8.4	4.6	5.6
19	2.4	2.55	2.85	2.1	2.95	3.1	7.4	4.4	4.9	5.5	9.4	4.5
20	7.9	16.1	2.9	2.1	3.2	9.0	7.5	3.6	3.55	4.1	12.7	4.4
21	6.1	5.2	2.8	2.7	2.65	10.2	5.1	3.2	9.4	3.9	10.1	7.1
22	4.0	2.45	2.65	3.9	2.55	12.2	7.6	5.5	5.8	6.0	7.4	6.0
23	6.2	2.75	2.7	8.3	9.2	17.3	5.1	8.8	5.0	10.4	6.0	5.3
24	4.0	6.8	2.85	3.0	3.2	8.0	3.6	4.3	4.1	11.0	6.6	4.3
25	7.8	10.3	2.95	9.7	2.6	10.2	3.85	3.45	3.85	6.6	5.2	8.4
26	22.5	4.1	18.8	15.0	2.6	4.2	5.5	3.7	5.2	7.1	7.3	6.6
27	3.3	3.9	8.0	5.6	2.55	6.3	3.35	7.7	5.8	4.2	5.1	5.4
28	2.5	12.9	3.05	2.6	2.5	8.0	3.25	5.7	5.2	4.1	4.6	4.4
29	12.8	15.8	6.2	8.3	2.45	9.2	3.35	-	4.6	4.3	4.9	4.2
30	2.9	20.5	4.2	3.1	2.45	8.4	6.4	-	5.6	4.4	4.6	4.1
31	2.6	6.7	-	2.95	-	12.6	7.4	-	6.1	-	4.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	22.5	2.35	5.33	8.25	165	507
August.....	20.5	2.3	6.35	9.82	197	604
September.....	18.8	2.6	5.24	8.11	157	482
October.....	13.0	2.1	3.51	5.43	109	334
November.....	11.5	2.25	3.82	5.91	114	351
December.....	17.3	2.35	7.00	10.8	217	666
Calendar year 1936	25.5	2.1	4.78	7.40	1,750	5,360
January.....	16.0	2.8	5.74	8.88	178	546
February.....	9.7	3.2	5.83	9.02	163	501
March.....	10.7	2.55	5.70	8.82	177	542
April.....	11.0	3.9	5.55	9.05	176	539
May.....	12.7	4.4	6.41	9.92	199	609
June.....	13.5	4.1	6.01	9.30	180	553
Fiscal year 1936-37	22.5	2.1	5.57	8.62	2,030	6,230

Olowalu ditch near Olowalu

Location.- Water-stage recorder, lat. 20°49'40", long. 156°36'40", 114 feet above intake of pipe line to hydroelectric plant, 1½ miles northeast of Olowalu, and 7 miles east of Lahaina.

Records available.- August 1911 to June 1937. (January 1932 to October 1933, discharge determined by three stations about 1,000 feet below present site.)

Average discharge.- 19 years (1917-20, 1921-37), 4.75 million gallons a day (7.35 second-feet).

Extremes.- 1911-32: Maximum discharge, 18 million gallons a day (28 second-feet) Dec. 25, 1920 (gage height, 1.53 feet, former site and datum); no flow occasionally, when water was shut out of ditch.

Remarks.- Record of daily discharge furnished by Pioneer Mill Co. since January 1932.

Intake in Olowalu Stream at elevation about 450 feet. Water used for power and irrigation. Flow regulated by head gates.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.5	6.0	7.8	6.2	8.1	4.4	8.4	4.4	10.1	8.4	7.0	6.3
2	4.1	5.4	6.7	5.5	6.4	5.3	7.7	8.3	10.1	7.9	8.9	6.0
3	5.8	5.0	6.4	5.2	5.2	5.6	7.9	8.3	10.1	8.2	7.6	6.4
4	4.4	7.9	7.0	4.9	5.6	5.0	8.0	8.6	10.1	8.1	7.5	5.9
5	4.4	5.8	6.5	4.5	7.2	4.3	7.9	9.0	10.1	8.0	7.4	6.3
6	3.9	5.2	8.2	4.3	7.6	4.1	7.9	6.2	10.1	6.3	7.4	6.6
7	4.0	5.2	7.2	4.1	6.4	3.9	8.4	7.2	10.1	8.3	7.1	6.6
8	7.5	5.6	6.2	4.0	5.9	3.85	6.2	7.9	10.0	8.3	6.3	8.1
9	6.9	5.8	5.4	4.0	5.6	5.3	9.6	8.7	10.1	8.2	5.9	9.7
10	8.5	4.9	5.7	3.7	6.0	6.6	9.0	9.3	10.0	8.1	7.4	8.5
11	8.6	6.4	4.9	3.6	7.6	7.9	9.3	9.1	10.0	8.0	7.5	7.2
12	7.2	8.5	5.8	3.5	5.9	8.4	9.2	9.3	9.9	8.1	7.5	6.4
13	6.1	8.5	4.9	3.4	5.3	6.4	9.1	9.6	9.9	7.9	7.1	5.7
14	6.1	7.4	4.7	3.3	5.0	7.1	8.9	9.6	9.8	7.7	8.2	5.6
15	6.4	6.1	6.8	3.2	6.1	9.2	9.0	9.3	9.8	7.4	8.1	5.4
16	6.6	5.4	8.4	3.6	5.2	6.9	9.7	9.2	9.8	7.6	8.5	5.4
17	5.3	4.9	8.1	3.35	7.5	8.7	9.3	9.2	9.8	7.4	7.6	6.2
18	4.6	4.5	6.9	3.15	7.9	8.7	9.8	9.5	9.8	7.5	7.0	5.4
19	4.7	4.3	5.9	3.05	6.6	7.5	9.7	9.3	9.7	7.6	8.1	5.0
20	6.8	7.2	5.2	4.9	7.8	8.8	9.7	9.3	9.7	7.8	10.1	4.9
21	7.3	8.5	4.9	7.4	7.7	9.0	9.6	8.7	9.9	7.9	10.2	5.6
22	8.7	7.2	4.6	6.1	7.1	9.3	9.5	9.9	8.8	7.6	10.1	5.1
23	8.7	6.7	4.3	5.9	10.5	8.9	9.5	10.2	8.1	9.8	8.9	4.7
24	8.1	5.9	4.1	5.9	13.6	8.8	8.7	10.2	8.6	9.6	9.2	4.5
25	7.2	7.2	3.9	6.0	12.9	9.1	9.3	10.1	8.5	9.5	9.2	4.7
26	8.8	6.4	3.25	6.1	10.5	9.0	9.4	10.0	8.9	9.4	8.4	4.5
27	8.7	7.1	6.4	6.4	5.9	8.3	9.4	10.1	8.5	9.4	7.7	4.5
28	8.4	7.8	8.4	6.5	5.4	9.2	9.3	10.1	8.4	8.7	8.3	4.2
29	8.2	8.6	8.4	7.2	4.8	9.4	9.4	-	8.4	7.9	7.8	4.1
30	8.0	8.5	7.5	6.7	4.7	9.6	8.7	-	8.4	6.8	7.0	4.0
31	6.8	8.2	-	5.8	-	9.6	4.7	-	8.4	-	6.7	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	8.8	3.9	6.62	10.2	205	620
August.....	8.6	4.3	6.52	10.1	202	620
September.....	8.5	3.25	6.28	9.72	188	578
October.....	7.4	3.05	4.89	7.57	151	465
November.....	13.5	4.7	7.07	10.9	212	651
December.....	9.6	3.85	7.42	11.5	230	706
Calendar year 1936	13.6	1.60	5.52	8.54	2,020	6,200
January.....	9.8	4.7	8.78	13.6	272	835
February.....	10.2	4.4	8.95	13.8	251	769
March.....	10.1	8.1	9.48	14.7	294	902
April.....	9.8	6.8	8.18	12.7	245	753
May.....	10.2	5.9	7.93	12.3	246	754
June.....	9.7	4.0	5.78	8.94	174	532
Fiscal year 1936-37	13.6	3.05	7.32	11.3	2,670	8,200

Oheo Stream below diversion dam, near Kipahulu

Location.- Water-stage recorder and concrete control, lat. 20°41'05", long. 156°04'10", below old diversion dam at altitude 1,550 feet, 2 miles northwest of Kipahulu and 2½ miles above mouth.

Drainage area.- 5.8 square miles.

Records available.- February 1927 to September 1929, December 1931 to June 1937.

Extremes.- Maximum discharge during year, 1,870 million gallons a day (2,890 second-feet)

Dec. 29 (gauge height, 10.30 feet), from rating curve extended above 400 million gallons a day; minimum recorded, 0.01 million gallons a day (0.02 second-foot) June 20-25.

1927-29, 1931-37: Maximum discharge, 6,190 million gallons a day (9,580 second-feet) Jan. 4, 1933 (gauge height, 11.95 feet), from rating curve extended above 450 million gallons a day; no flow during dry periods.

Remarks.- Records good for ordinary stages and poor for high stages. Discharge for July 1-17, Aug. 2 to Sept. 4 not computed because of insufficient data. Small quantity of water is diverted for domestic supply and for livestock.

Rating table, fiscal year 1936-37 (gauge height, in feet, and discharge, in million gallons a day)

1.1	0.00	1.6	2.05	2.5	29.5	4.0	149	7.0	705
1.2	.02	1.8	5.3	3.0	58	5.0	285	8.0	1,000
1.4	.49	2.0	10.7	3.5	98	6.0	470		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	-	5.3	-	10.5	5.7	0.13	109	190	11.6	1.94	15.2	3.15
2	-	-	-	4.4	2.55	0.07	18.3	40	3.25	1.63	229	.49
3	-	-	-	24	1.19	5.0	5.3	6.2	1.10	27	26	.40
4	-	-	-	31	61	11.9	16.4	3.15	1.10	4.4	46.0	1.38
5	-	-	†8.0	6.2	76	1.25	3.75	2.15	38.5	1.94	†25.5	.18
6	-	-	1.63	34	40	.24	1.27	68	70	7.0	44	.12
7	-	-	.57	17.3	41	180	.83	116	7.2	.64	18.6	.33
8	-	-	10.6	22	27	19.9	.64	9.6	3.8	.40	†7.1	5.8
9	-	-	12.7	47	13.7	74	21	3.3	27	.28	36.5	40
10	-	-	33.5	3.6	6.0	113	52	1.73	17.5	5.5	75	11.1
11	-	-	14.4	1.52	11.5	155	96	8.6	6.2	2.35	†5.5	1.62
12	-	-	47	.76	2.3	47	336	1.35	17.5	30.5	41.8	1.12
13	-	-	10.2	.59	.59	5.0	470	91	5.7	3.25	*.8	.21
14	-	-	30.5	8.4	.49	81	263	137	.76	3.95	*.5	.21
15	-	-	88	3.45	3.7	203	145	85	2.45	17.1	†30	.07
16	-	-	146	113	3.95	60	222	373	13.6	5.4	17.3	.02
17	-	-	76	11.5	.33	47	181	246	292	85	†3.8	.02
18	5.8	-	20.5	4.4	.21	13.6	178	820	734	213	*1.9	.01
19	28	-	12.3	.96	.12	2.4	178	219	650	232	†15.0	.01
20	50	-	40	.64	.07	37.5	170	75	128	14.5	288	.01
21	11.6	-	18.8	.49	.05	110	31.5	13.9	197	15.8	48	.01
22	9.6	-	45	.33	1.28	195	43	16.6	35	91	18.4	.01
23	18.2	-	9.2	.54	1.24	274	22	54	47	145	4.4	.01
24	15.1	-	26	.54	.54	74	12.5	13.4	6.0	78	130	.01
25	38	-	160	114	.29	116	15.1	5.1	3.15	13.3	7.5	8.6
26	76	-	593	93	.12	23	22.5	2.7	3.9	77	21.5	38
27	14.7	-	211	87	.06	135	5.85	2.4	69	175	5.6	33.5
28	25.5	-	14.3	102	12.9	330	17.4	17.2	24.5	72	5.9	3.2
29	24	-	21	49	2.9	940	8.2	-	16.4	449	1.66	5.6
30	46	-	107	16.7	.24	488	20.5	-	4.4	151	3.1	6.9
31	17.7	-	-	69	-	318	153	-	7.9	-	1.82	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July 18-31.....	76	5.8	27.2	42.1	390	1,170
August.....	-	-	-	-	-	-
September 5-30	593	.57	67.6	105	1,760	5,390
October.....	114	.33	28.4	43.9	880	2,700
November.....	76	.05	10.6	16.4	317	973
December.....	940	.07	132	204	4,090	12,550
Calendar year						
January.....	470	.64	90.9	141	2,820	8,650
February.....	820	1.35	93.5	145	2,620	8,040
March.....	734	.76	78.9	122	2,450	7,500
April.....	449	.26	64.2	99.3	1,920	5,910
May.....	288	.5	35.3	54.6	1,100	3,360
June.....	40	.01	5.40	8.36	162	497
Fiscal year						

*Estimated.

†Partly estimated.

Right Branch of Kahalawe Stream near Kipahulu

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

Drainage area.- 0.1 square mile.

Records available.- February 1927 to April 1937.

Extremes.- Maximum discharge during period July 1936 to April 1937, 1,940 million gallons a day (3,000 second-foot) Apr. 29 (gage height, 15.74 feet), from rating curve extended above 30 million gallons a day; minimum, 0.9 million gallons a day (1.4 second-foot) July 2.

1927-37: Maximum discharge, that of Apr. 29, 1937; minimum, 0.15 million gallons a day (0.23 second-foot) Dec. 16, 1929.

Remarks.- Records for ordinary stages are good. Those for Aug. 8 to Sept. 4, Feb. 2 to Mar. 17 (computed on basis of records for stations on nearby streams) and those for high stages are poor. No diversions. Station destroyed by flood of Apr. 29.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

8.1	0.5	8.4	3.6	9.0	20.5
8.2	1.0	8.6	7.8	9.2	30
8.3	2.0	8.8	13.0	9.5	49

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.		
1	0.9	2.6	3.0	3.3	2.7	1.0	10.7	19.0	3.0	2.0		
2	.9	3.5	2.5	2.7	2.2	1.0	4.6	3.5	2.7	1.8		
3	1.6	2.1	2.3	2.4	2.1	1.4	3.3	3.0	2.5	1.6		
4	1.4	2.4	2.1	5.2	3.0	2.2	7.8	2.5	3.5	1.4		
5	1.4	1.8	4.5	2.2	8.0	1.1	3.1	2.2	4.5	1.4		
6	1.2	1.7	1.7	9.6	3.1	1.4	2.4	4.0	5.4	2.7		
7	1.2	3.2	1.6	4.0	2.6	7.2	2.0	3.2	6.0	1.3		
8	6.7	4.0	2.7	6.3	2.2	2.1	1.8	2.3	5.0	1.3		
9	1.7	4.5	2.1	2.1	2.0	4.1	2.4	2.0	6.0	1.1		
10	3.8	3.5	3.4	2.2	2.0	4.8	3.7	3.5	5.0	2.0		
11	4.2	7.0	1.7	1.8	2.2	2.4	5.9	2.7	4.3	1.3		
12	1.6	5.4	4.6	1.6	1.8	2.1	6.7	5.0	6.4	3.6		
13	1.7	6.0	1.7	1.5	1.5	1.4	5.4	7.0	3.2	1.4		
14	3.0	3.5	2.8	5.4	1.5	1.7	4.0	9.0	2.7	1.5		
15	5.7	2.7	6.0	2.5	5.8	3.5	3.4	6.0	4.0	1.6		
16	5.6	2.0	5.9	11.0	2.2	1.9	5.5	10.0	3.0	1.3		
17	1.7	1.7	3.2	2.2	1.5	2.2	6.7	8.0	4.5	1.7		
18	1.6	1.6	2.2	1.8	1.3	1.6	14.7	15.0	14.2	5.6		
19	2.9	1.5	2.3	1.7	1.3	1.3	13.6	7.0	14.1	9.6		
20	5.0	3.5	7.2	1.5	1.3	2.8	10.2	5.0	6.2	2.1		
21	3.7	2.0	5.7	1.4	1.3	4.7	5.0	3.5	7.1	2.5		
22	4.4	1.7	7.2	1.4	3.7	4.3	6.8	4.5	7.8	2.7		
23	6.6	4.0	2.6	2.0	2.2	6.5	5.6	6.6	4.6	3.2		
24	4.6	5.0	4.1	6.3	1.4	2.2	3.6	3.7	3.0	4.0		
25	4.6	2.7	11.7	6.0	1.3	4.2	5.0	3.4	2.7	1.8		
26	8.9	2.3	44	8.3	1.1	2.0	3.6	3.2	2.6	3.8		
27	4.6	1.8	20.5	4.4	1.1	9.9	2.2	4.3	8.0	5.8		
28	4.5	4.7	4.8	10.5	3.5	8.2	2.0	4.0	4.2	5.8		
29	4.0	4.2	5.6	3.6	1.2	2.5	2.1	-	3.1	-		
30	4.4	4.0	9.7	9.1	1.0	16.4	3.0	-	1.8	-		
31	2.7	4.5	-	8.6	-	16.9	16.1	-	2.5	-		

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	8.9	0.9	3.45	5.34	107	328
August.....	7.0	1.5	3.26	5.04	101	310
September.....	44	1.6	5.98	9.25	179	550
October.....	11.0	1.4	4.28	6.82	133	407
November.....	8.0	1.0	2.26	3.50	67.7	208
December.....	16.4	1.0	4.06	6.28	126	387
Calendar year 1936.....	44	.5	3.29	5.09	1,200	3,690
January.....	16.1	1.8	5.58	8.63	173	531
February.....	19.0	2.0	5.47	8.46	153	470
March.....	14.2	1.8	4.95	7.66	154	471
April 1-28.....	9.6	1.1	2.71	4.19	75.9	233
May.....	-	-	-	-	-	-
June.....	-	-	-	-	-	-
The period.....						3,900

ISLAND OF MAUI

Makapipi Stream near Nahiku

Location.- Water-stage recorder and concrete control, lat. 20°48'35", long. 156°05'55", 100 feet above highway crossing, 1½ miles south of Nahiku, and 4½ miles southeast of Keanae post office.

Drainage area.- 5.0 square miles.

Records available.- July 1932 to June 1937. Records at same site obtained by East Maui Irrigation Co., June 1930 to June 1932.

Extremes.- Maximum discharge during year, 884 million gallons a day (1.370 second-feet) Jan. 1 (gage height, 4.95 feet), from rating curve extended above 100 million gallons a day by tests on model of station site; minimum, 0.84 million gallons a day (1.30 second-feet) Dec. 8.

1932-37: Maximum discharge, that of Jan. 1, 1937; no flow occasionally during dry weather.

A higher stage may have been reached on Feb. 25, 1935.

Remarks.- Records good except those for Nov. 16-24, which were computed on basis of records for stations on nearby streams and are poor. Koolau ditch diverts water 1 mile above station for irrigation in central Maui.

Rating tables, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

July 1 to May 2				May 3 to June 30			
0	0	1.0	41	0.4	3.8	1.0	45
.2	.30	1.2	62	.5	6.7	1.2	65
.4	3.0	1.5	97	.6	10.7	1.5	97
.6	9.7	2.0	166	.8	22.5		
.8	20.5	2.5	250				

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.55	3.85	5.5	4.4	2.1	1.02	119	13.1	9.3	8.9	7.8	4.7
2	3.55	4.1	5.0	3.85	2.1	1.02	30	12.1	8.5	8.9	127	4.7
3	3.55	3.55	4.4	3.85	1.92	.93	19.3	12.1	8.5	6.9	13.2	5.2
4	3.0	3.3	4.1	3.55	1.92	.85	34.5	11.6	8.5	6.9	8.7	4.7
5	3.0	3.0	4.1	3.3	1.92	.93	10.2	12.5	9.3	8.9	17.8	5.0
6	2.8	3.0	3.55	3.3	2.1	.93	7.0	11.6	66	8.9	105	4.7
7	2.45	2.8	3.55	3.95	2.1	.93	6.2	11.6	44	8.9	38.5	4.7
8	4.6	2.65	3.3	3.0	2.1	.84	6.2	11.1	29	8.5	17.7	4.7
9	3.55	2.65	3.0	3.0	2.1	.93	8.5	11.1	45	8.5	12.2	5.0
10	3.3	2.65	3.0	2.8	1.92	1.02	10.7	11.1	32.5	8.5	14.4	6.4
11	3.55	24	2.8	2.65	2.1	1.11	8.9	10.7	19.6	8.5	8.7	5.5
12	3.55	13.7	2.8	2.45	2.1	1.38	13.9	11.6	25.5	9.3	7.5	5.2
13	3.55	10.4	2.8	2.3	1.92	1.38	41	15.4	17.5	6.1	6.4	5.2
14	3.55	6.2	2.8	2.1	2.7	1.38	32	35	12.1	8.1	6.1	5.2
15	3.85	5.5	4.6	2.1	6.6	1.98	26.5	15.5	16.9	7.8	11.8	5.2
16	4.1	4.7	7.2	2.1	4.0	1.92	39.5	54	14.0	7.9	6.8	5.0
17	3.85	4.4	5.5	2.1	6.0	1.92	75	47	29	7.4	5.5	5.0
18	3.3	3.3	5.0	1.92	5.0	1.92	54	146	118	7.4	5.2	4.7
19	2.8	3.0	4.4	1.92	3.5	1.92	33	34	155	7.4	10.2	4.7
20	3.55	3.85	4.1	1.92	2.5	1.92	36.5	18.7	56	7.4	50	4.4
21	3.3	4.4	3.85	1.92	2.0	15.9	19.3	14.5	102	7.0	31.5	4.4
22	3.55	3.85	3.55	1.74	1.90	55	19.3	13.6	31.5	7.0	12.0	4.1
23	3.85	3.3	3.3	1.74	1.90	120	15.9	49	25	16.0	9.7	3.8
24	4.1	3.85	3.0	1.74	1.75	24	39.5	13.5	18.1	19.5	12.5	3.8
25	5.0	4.7	4.0	2.05	1.56	24.5	36	10.7	13.5	11.2	8.7	3.8
26	6.2	4.4	39.5	7.6	1.38	13.7	15.1	9.3	11.6	10.4	7.9	3.8
27	5.5	4.1	14.2	4.3	1.20	36	13.1	9.7	10.7	9.3	6.4	3.8
28	5.9	4.4	7.4	3.0	1.20	90	14.8	11.8	10.2	7.8	10.3	3.8
29	5.2	4.7	5.2	2.8	1.11	215	12.6	-	9.7	23	5.8	3.8
30	5.0	5.2	4.7	2.45	1.02	135	15.6	-	8.9	13.4	5.6	3.6
31	4.4	6.6	-	2.3	-	155	31.6	-	8.9	-	5.2	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	6.2	2.45	3.90	6.03	121	371
August.....	24	2.65	5.16	7.98	160	491
September.....	39.5	2.8	5.67	8.77	170	522
October.....	7.6	1.74	2.84	4.39	87.9	270
November.....	5.6	1.02	2.39	3.70	71.6	220
December.....	215	.84	29.3	45.3	908	2,790
Calendar year 1936.....	215	0	.567	.877	2,070	6,370
January.....	119	6.2	27.5	42.5	652	2,610
February.....	146	9.3	22.8	35.3	638	1,960
March.....	155	8.5	31.4	48.6	974	2,990
April.....	23	7.0	9.72	15.0	292	895
May.....	127	5.2	19.2	29.7	595	1,850
June.....	6.4	3.6	4.62	7.15	139	425
Fiscal year 1936-37.....	215	.84	1.37	2.12	5,010	15,370

West Makapipi Spring near Nahiku

Location.— Water-stage recorder and Parshall flume, lat. 20°48'20", long. 156°06'20", half a mile above highway, 1.7 miles south of Nahiku, and 4½ miles southeast of Keanae post office.

Records available.— July 1932 to June 1937. Records at same site obtained by East Maui Irrigation Co. June 1931 to June 1932.

Extremes.— Maximum discharge during year, 2.45 million gallons a day (3.79 second-feet)

Mar. 19 (gage height, 0.74 foot); minimum recorded, 0.38 million gallons a day (0.59 second-foot) Dec. 8 (gage height, 0.29 foot).

1932-37: Maximum discharge, 32 million gallons a day (50 second-feet) Feb. 25, 1935 (gage height, 2.93 feet), from rating curve extended above 1.5 million gallons a day by weir formulas; no flow during dry weather.

Remarks.— Records good. Discharge Nov. 23 to Dec. 7, Dec. 23 to Jan. 4, May 2-10, 12-16 computed on basis of hydrographic comparison with nearby stations, which are fair. No diversions.

Rating tables, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Dec. 7			Dec. 8 to June 30		
0.3	0.33		0.3	0.40	
.4	.65		.4	.79	
.5	.72		.5	1.26	
.6	.85		.6	1.75	
.7	.94		.7	2.25	
.9	1.09				
1.1	1.24				

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.07	0.64	0.98	0.95	0.73	0.42	0.97	1.95	1.75	1.60	*1.41	1.21
2	1.04	.66	.98	.93	.72	.42	1.00	1.95	1.75	1.80	1.41	1.26
3	1.02	.68	.98	.92	.68	.41	1.05	1.95	1.75	1.80	1.41	1.26
4	1.00	.70	.99	.92	.66	.40	1.09	1.90	1.75	1.80	1.41	1.31
5	.98	.72	1.00	.91	.66	.40	*1.17	1.90	1.75	1.80	1.41	1.31
6	.96	.73	1.00	.90	.66	.40	1.26	1.90	1.95	1.80	1.31	1.36
7	.95	.74	1.00	.91	.64	.40	1.31	1.90	1.95	1.80	1.31	1.36
8	.96	.76	.99	.90	.62	*.40	1.46	1.90	1.95	1.80	1.31	1.36
9	.93	.77	.99	.90	.62	.40	1.55	1.90	1.95	1.80	1.31	1.41
10	.91	.78	.99	.89	.62	.40	1.65	1.65	1.95	1.80	1.31	1.41
11	.9	.84	.99	.89	.61	.40	1.70	1.85	1.90	1.80	*1.31	1.46
12	.88	.84	.99	.88	.59	.44	1.80	1.85	1.85	1.80	1.26	1.46
13	.85	.85	.99	.88	.59	.44	1.90	1.85	1.85	1.75	1.20	1.46
14	.84	.84	.99	.87	.61	.47	1.95	1.85	1.85	1.75	1.20	1.46
15	.82	.84	1.00	.87	.64	.47	1.95	1.85	1.80	1.75	1.20	1.41
16	.81	.84	1.03	.86	.62	.47	2.00	1.90	1.80	1.70	1.17	1.36
17	.77	.84	1.02	.85	.62	.47	2.05	1.90	1.80	1.65	*1.17	1.36
18	.74	.82	1.01	.85	.61	.47	2.05	1.90	1.90	1.65	1.17	1.36
19	.7	.82	1.00	.84	.59	.47	2.05	*1.85	2.00	1.65	1.17	1.36
20	.7	.85	.99	.82	.55	.47	2.05	*1.85	1.90	1.60	1.26	1.36
21	.68	.87	.98	.81	.53	.54	2.00	1.80	1.85	1.60	1.17	1.31
22	.68	.88	.97	.80	.51	.62	2.00	1.75	1.80	1.60	1.17	1.31
23	.66	.88	.96	.80	.49	.65	1.95	1.80	1.80	1.60	1.17	1.31
24	.64	.89	.96	.80	.48	.70	1.95	1.80	1.80	1.60	1.17	1.31
25	.64	.90	.97	.80	.47	.74	2.00	1.75	1.80	1.60	1.17	1.31
26	.66	.90	1.11	.87	.46	.78	1.95	1.75	1.80	1.55	1.17	1.31
27	.64	.91	1.04	.85	.45	.82	1.90	1.75	1.80	1.55	1.17	1.31
28	.64	.92	.98	.81	.45	.85	1.95	1.75	1.60	1.55	1.17	1.31
29	.64	.95	.96	.78	.44	.88	1.95	-	1.80	1.50	1.17	1.31
30	.64	.95	.96	.76	.43	.91	1.95	-	1.80	1.55	1.17	1.26
31	.64	.98	-	.74	-	.94	2.00	-	1.80	-	1.17	-
Month							Million gallons a day			Second-foot (mean)	Total run-off	
							Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....						1.07	0.64	0.806	1.25	25.0	77	
August.....						.98	.64	.826	1.23	25.6	79	
September.....						1.11	.96	.993	1.54	29.8	91	
October.....						.95	.74	.857	1.33	26.6	82	
November.....						.73	.43	.579	.896	17.4	53	
December.....						.94	.40	.550	.851	17.0	52	
Calendar year 1936.....						2.05	0	.636	.832	197	605	
January.....						2.05	.97	1.73	2.68	53.6	165	
February.....						1.95	1.75	1.85	2.68	51.9	159	
March.....						2.00	1.75	1.84	2.85	57.0	175	
April.....						1.80	1.50	1.69	2.61	50.8	156	
May.....						1.41	1.17	1.24	1.92	38.6	118	
June.....						1.46	1.21	1.34	2.07	40.4	124	
Fiscal year 1936-37.....						2.05	.40	1.19	1.84	434	1,330	

*Partly estimated.

Hanawi Stream near Nahiku

Location.- Water-stage recorder, lat. 20°48'35", long. 156°06'50". 200 feet above Koolau ditch intake and trail, 1½ miles southwest of Nahiku, and 4½ miles southeast of Keanae.

Drainage area.- 0.6 square mile.

Records available.- January 1914 to January 1916, November 1921 to June 1937.

Average discharge.- 15 years (1922-37), 12.5 million gallons a day (19.3 second-feet).

Extremes.- Maximum discharge during year, 546 million gallons a day (845 second-feet), Mar. 21 (gage height, 7.06 feet), from rating curve extended above 160 million gallons a day; minimum, 2.6 million gallons a day (4.0 second-feet) Oct. 22, 23.

1914-16, 1921-37: Maximum gage height, about 20 feet during flood of Jan. 18, 1916, from floodmarks, (discharge not determined); minimum discharge, 1.2 million gallons a day (1.9 second-feet) Feb. 19, 1936.

Remarks.- Records for ordinary stages are good except those for Sept. 17-29, which were computed on basis of records for stations on nearby streams and are fair; those for extremely high and low stages are poor. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.3	1.9	2.5	58
.5	3.4	3.0	89
.7	5.4	3.5	123
1.0	9.1	4.0	166
1.3	14.4	4.5	216
1.6	21	5.0	274
2.0	34	6.0	400

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.1	8.7	10.4	6.0	3.3	3.5	135	21.5	10.7	13.0	7.2	8.2
2	4.5	8.6	8.6	5.4	3.2	3.6	27	10.4	9.9	8.5	7.4	
3	6.6	9.8	6.4	8.3	3.0	5.1	19.8	8.7	9.4	16.8	8.4	12.6
4	10.8	31.5	9.7	6.5	5.4	7.6	56	7.9	11.9	8.4	10.0	8.8
5	6.7	7.9	6.4	5.2	17.7	5.1	22	8.2	28.5	9.1	37.5	11.5
6	6.0	7.6	5.8	5.0	13.4	4.7	19.8	14.9	49	10.9	149	9.6
7	7.2	8.8	5.4	5.3	12.9	11.7	17.6	9.9	61	12.5	31	11.1
8	51	10.4	5.3	4.5	9.9	6.2	15.4	7.4	41	10.5	12.5	24.5
9	12.5	12.5	6.7	4.3	8.4	24	25.5	6.6	64	7.3	9.6	37
10	20	9.6	5.1	4.4	9.4	58	27	12.7	41	6.8	18.0	11.5
11	11.6	57	12.4	4.4	7.4	80	13.4	8.4	26.5	6.6	8.2	7.8
12	6.8	42	7.3	3.8	5.0	42	27.5	24.5	71	8.6	7.3	6.8
13	5.5	29	7.4	3.6	4.1	8.4	139	106	20.5	6.1	7.0	6.1
14	6.6	18.4	57	3.5	6.5	57	118	121	16.2	7.2	9.2	5.6
15	12.1	9.7	51	3.3	19.8	110	84	45	33	5.5	47	5.2
16	12.2	7.4	9.9	3.3	7.0	42	87	154	22	5.2	19.2	4.8
17	6.7	6.6	8.0	3.1	15.5	21	69	84	42	6.0	9.0	4.7
18	6.1	5.9	6.4	3.0	15.1	11.0	90	249	170	6.0	11.4	4.5
19	5.6	5.5	5.7	2.9	7.2	8.6	25.5	37	151	6.5	42	4.2
20	15.2	9.7	5.3	2.8	7.2	46	62	12.5	45	4.8	181	4.0
21	10.2	7.8	5.1	2.8	6.7	80	17.6	8.8	128	5.2	68	3.8
22	9.9	6.1	4.9	2.7	5.1	138	35.5	25.5	22	11.1	25	3.8
23	12.5	19.5	4.7	2.7	4.4	130	26.5	78	15.4	43	17.6	3.7
24	9.3	28	4.7	4.8	6.4	83	51	14.4	14.4	47	18.5	3.6
25	11.9	11.6	27.5	65	6.6	83	38.5	11.6	13.4	19.7	9.4	4.7
26	27	10.4	90	44	5.3	26	23	10.7	11.6	15.8	9.3	11.4
27	12.5	9.1	22	10.2	4.1	50	13.4	18.9	10.2	9.6	8.5	9.5
28	14.9	18.9	8.6	5.2	3.8	116	12.1	18.0	9.7	6.2	26	5.5
29	12.3	14.4	5.9	11.0	3.6	279	11.2	-	9.4	13.6	10.1	5.9
30	10.5	14.4	9.3	4.1	3.5	231	35	-	9.0	13.2	8.8	4.6
31	10.9	14.7	-	3.7	-	175	65	-	9.4	-	8.3	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	51	4.5	11.6	17.9	361	1,110
August.....	57	5.5	14.8	22.9	458	1,410
September.....	90	4.7	14.1	21.8	423	1,300
October.....	65	2.7	7.90	12.2	245	751
November.....	19.8	3.0	7.70	11.9	231	709
December.....	279	3.5	62.9	97.3	1,950	5,980
Calendar year 1936.....	279	1.2	15.2	23.5	5,560	17,050
January.....	139	11.2	45.5	70.4	1,410	4,320
February.....	249	6.6	40.6	62.8	1,140	3,480
March.....	170	9.0	38.0	58.8	1,180	3,610
April.....	47	4.8	11.7	18.1	352	1,080
May.....	181	7.0	29.5	45.6	915	2,810
June.....	37	5.6	8.41	15.0	252	774
Fiscal year 1936-37.....	279	2.7	24.4	37.8	8,920	27,350

Hanawi Stream below Government Road, near Nahiku

Location.- Water-stage recorder and 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, 500 feet, by barometer.

Drainage area.- 1.6 square miles.

Records available.- July 1932 to June 1937. Records at same site obtained by East Maui Irrigation Co. January 1927 to June 1932.

Extremes.- Maximum discharge during year, 7,180 million gallons a day (11,100 second-feet) Mar. 21 (gage height, 9.54 feet), from rating curve extended above 20 million gallons a day; minimum, 10.2 million gallons a day (15.8 second-feet) Oct. 22, 23.

1932-37: Maximum discharge, that of Mar. 21, 1937; minimum, 8.2 million gallons a day (12.7 second-feet) Feb. 25, 26, 1936.

Remarks.- Records good for ordinary stages and poor for high stages. Entire flow of stream above station up to 25 million gallons a day is diverted by East Maui Irrigation Co.'s ditch at altitude 1,300 feet for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.8	6.6	2.2	140
1.0	15.7	2.5	198
1.2	26.5	3.0	322
1.4	40	3.5	486
1.6	59	4.0	696
1.8	80	4.5	865
2.0	106	5.0	1,260

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.5	11.8	13.0	12.2	11.2	10.5	355	39.5	13.4	13.0	14.9	14.9
2	11.2	12.2	12.6	11.6	11.2	10.5	43	13.8	13.0	12.6	361	14.9
3	11.2	12.2	12.2	11.5	10.8	10.5	27	13.4	12.6	14.1	19.1	15.3
4	11.2	30.5	12.2	11.6	10.8	11.2	79	13.0	12.6	12.6	15.7	14.9
5	11.2	11.8	11.8	11.5	11.6	10.8	19.5	13.0	21.5	12.6	101	17.2
6	10.5	11.8	11.5	11.5	13.2	10.8	15.3	15.8	151	12.6	407	15.7
7	10.5	12.2	11.5	12.6	11.8	11.5	13.8	13.0	122	12.6	65	15.3
8	57	11.8	11.5	11.2	11.8	11.2	12.6	13.0	66	12.6	24	23.5
9	11.2	11.5	11.2	11.2	11.5	17.9	27.5	13.0	129	12.6	16.7	41
10	13.4	11.2	11.2	11.2	11.5	69	30	15.2	63	12.6	25	18.6
11	11.2	11.8	11.2	11.2	11.8	89	12.6	13.0	28.5	13.0	15.3	15.3
12	10.8	95	11.5	11.2	11.8	42	60	25	104	14.1	14.9	14.9
13	10.5	26	11.5	11.2	11.5	11.2	284	177	26	13.8	14.5	14.9
14	10.5	13.4	11.2	10.8	13.0	84	218	240	14.9	13.8	14.5	14.9
15	11.2	12.2	60	10.8	19.1	168	158	74	40	13.8	66	14.9
16	11.2	11.8	72	10.8	14.1	37.5	166	387	19.1	13.4	18.1	14.9
17	10.8	11.5	13.0	10.8	26	14.8	227	178	50	13.4	14.9	14.9
18	10.8	11.2	11.8	10.5	20.5	10.8	178	649	555	13.8	14.5	14.9
19	10.5	11.2	11.5	10.5	13.8	10.8	56	72	568	13.8	71	14.9
20	16.2	12.2	11.2	10.5	12.6	32.5	112	20	101	13.8	416	14.9
21	12.6	11.8	11.2	10.5	11.8	132	23.5	14.5	560	13.4	83	15.3
22	12.6	11.2	11.2	10.2	11.8	267	47	49	24	13.8	23	15.3
23	13.0	14.8	10.8	10.2	11.5	557	30	155	17.1	58	19.1	14.9
24	12.6	25	10.8	10.8	11.2	106	132	16.2	14.1	64	22.5	14.9
25	13.8	12.6	12.2	94	11.2	106	66	13.8	13.4	24	15.7	14.9
26	23	11.8	122	57	11.2	28	23.5	13.4	13.0	20	16.2	14.9
27	14.1	11.5	24	13.8	10.8	152	14.1	22.5	13.0	15.7	15.3	14.9
28	16.5	13.8	14.1	12.2	10.8	318	14.9	20.5	13.0	14.5	33.5	14.9
29	13.0	13.0	13.4	13.0	10.8	1,140	13.4	-	12.6	27.5	15.3	14.9
30	12.6	12.6	12.6	11.5	10.8	716	49	-	12.6	23.5	14.9	14.9
31	12.2	14.5	-	11.2	-	621	134	-	13.0	-	14.9	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	57	10.5	13.8	21.4	429	1,320
August.....	118	11.2	19.7	30.5	612	1,890
September.....	122	10.8	19.5	30.2	586	1,800
October.....	94	10.2	15.5	24.0	479	1,470
November.....	26	10.8	12.7	19.6	382	1,170
December.....	1,140	10.5	156	241	4,840	14,850
Calendar year 1936.....	1,140	8.2	27.8	43.0	10,170	31,210
January.....	355	12.6	85.3	132	2,640	8,110
February.....	849	13.0	89.4	138	2,500	7,680
March.....	569	12.6	90.2	140	2,800	8,580
April.....	64	12.6	18.0	27.9	539	1,650
May.....	416	14.5	64.0	99.0	1,980	6,080
June.....	41	14.9	16.4	25.4	490	1,510
Fiscal year 1936-37.....	1,140	10.2	50.1	77.5	18,280	56,100

Kapaula Stream near Nahiku

Location.- Water-stage recorder, lat. 20°49'50", long. 156°07'05", 40 feet above intake to Kōlāu ditch, 300 feet above ditch trail, $\frac{1}{4}$ miles southwest of Nahiku and 4 miles southeast of Keanae.

Drainage area.- 0.2 square mile.

Records available.- November 1921 to June 1937.

Average discharge.- 15 years (1922-37), 10.6 million gallons a day (16.4 second-feet).

Extremes.- Maximum discharge during year, 1,070 million gallons a day (1,660 second-feet).

Jan. 1 (gage height, 6.43 feet), from rating curve extended above 200 million gallons

a day; minimum, 1.2 million gallons a day (2.0 second-feet) Oct. 21.

1921-37: Maximum discharge, 1,560 million gallons a day (2,410 second-feet) Feb.

25, 1935 (gage height, 7.83 feet); minimum, 0.2 million gallons a day (0.3 second-

foot) Nov. 23-25, 1933.

Remarks.- Records good for ordinary stages and poor for extremely high and low stages.

No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.5	1.1	1.8	32
.6	2.1	2.0	41
.8	4.8	2.4	68
1.0	8.6	2.8	106
1.2	13.3	3.0	130
1.4	18.6	3.5	212
1.6	26	4.0	320

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.3	6.1	8.2	3.1	1.6	1.6	103	15.8	6.8	9.0	6.4	4.0
2	3.1	6.8	7.2	2.6	1.6	1.6	15.6	9.0	7.2	8.4	53	3.3
3	5.6	5.6	4.8	6.0	1.4	3.7	12.6	7.2	6.2	13.5	6.8	10.2
4	11.2	28	3.6	4.0	4.0	7.8	42	6.1	9.3	7.2	13.3	6.2
5	7.2	6.4	8.0	2.6	16.8	3.8	13.8	6.7	26	7.4	40	8.7
6	5.5	5.0	4.2	2.6	15.5	3.1	11.8	9.5	48	9.3	113	8.4
7	7.0	7.6	3.1	3.1	17.3	10.1	11.0	8.4	50	9.2	24	9.2
8	44	9.0	2.8	8.0	13.0	9.0	10.6	6.4	30.5	8.4	11.1	19.0
9	14.9	12.0	2.7	1.9	9.9	26	21	5.6	48	6.2	7.5	30.5
10	22.5	9.0	4.4	1.9	9.5	45	21.5	11.9	30	4.8	13.8	10.7
11	11.7	46	2.6	2.1	6.6	48	10.6	9.4	22	4.5	6.8	5.3
12	5.2	24.5	11.7	1.8	3.4	27	26	21	51	8.3	5.2	4.0
13	3.4	22.5	6.8	1.6	2.6	9.0	85	65	17.2	4.2	4.4	3.6
14	6.5	12.3	5.7	1.6	7.1	36	73	98	14.1	5.5	7.4	3.4
15	12.0	7.8	49	1.5	21.5	73	73	31	26.5	3.6	41	3.1
16	12.2	4.0	42	1.5	6.6	35.5	57	110	18.5	3.2	18.8	2.8
17	4.6	3.1	9.0	1.4	15.4	16.9	72	56	34	4.0	8.0	2.8
18	3.4	2.6	4.2	1.3	17.7	11.4	54	148	97	4.2	9.6	2.7
19	2.9	2.3	3.1	1.3	6.8	9.3	27.5	17.1	88	4.8	36.5	2.5
20	13.5	9.0	2.6	1.3	6.2	46	41	9.3	20.5	2.9	116	2.2
21	9.8	5.5	2.5	1.3	5.9	76	13.6	6.6	83	3.0	39.5	2.1
22	7.5	2.6	2.2	1.3	3.2	115	31	21	13.8	7.8	15.5	1.9
23	10.5	15.6	2.1	1.3	2.6	166	18.8	59	10.4	31.6	13.6	1.9
24	7.2	26.5	2.0	3.6	4.7	51	34	11.1	10.8	35.5	16.5	1.9
25	10.1	11.6	5.9	63	6.2	56	31	6.4	14.8	14.7	7.2	2.8
26	23.5	8.2	56	40	3.8	15.9	14.6	5.3	8.6	12.8	6.6	7.6
27	12.0	5.0	13.8	9.6	2.5	*50	8.4	13.3	6.2	8.7	4.8	9.4
28	12.1	14.5	4.4	3.1	2.1	*60	8.2	13.9	5.5	4.0	18.0	4.5
29	10.4	14.1	4.0	4.8	1.9	*214	7.0	-	5.5	10.2	6.6	4.2
30	8.2	12.0	6.1	2.5	1.7	*175	23.5	-	5.2	9.7	4.4	2.9
31	7.8	12.7	-	1.9	-	*145	44	-	6.6	-	3.9	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	44	2.9	10.3	15.9	318	975
August.....	46	2.3	11.6	17.8	358	1,100
September.....	56	2.0	9.49	14.7	285	874
October.....	65	1.3	5.72	8.85	177	548
November.....	21.5	1.4	7.30	11.3	219	672
December.....	214	1.6	49.5	76.6	1,540	4,710
Calendar year 1936	214	.4	12.2	18.9	4,470	13,710
January.....	105	7.0	32.7	50.6	1,010	3,110
February.....	148	5.3	27.8	45.0	778	2,390
March.....	97	5.2	26.5	41.0	920	2,520
April.....	35.5	2.9	8.85	13.7	266	815
May.....	116	3.9	21.9	33.9	679	2,080
June.....	30.5	1.9	6.06	9.38	182	558
Fiscal year 1936-37	214	1.3	18.2	28.2	6,630	20,350

*Partly estimated.

Kapaula Stream below Government Road, near Nahiku

Location.— Water-stage recorder and concrete control, lat. 20°49'25", long. 156°06'55", 3,000 feet below highway, 1.3 miles southwest of Nahiku, and 3.8 miles from Keanae post office. Altitude, 620 feet, by barometer.

Drainage area.— 0.5 square mile.

Records available.— July 1932 to June 1937. Records at same site obtained by East Maui Irrigation Co. March 1927 to June 1932.

Extremes.— Maximum discharge during year, 632 million gallons a day (978 second-feet) Dec. 31 (gage height, 4.12 feet), from rating curve extended above 70 million gallons a day; minimum, 1.3 million gallons a day (2.0 second-feet) June 19, 21–24, 30.

1932–37: Maximum discharge, 782 million gallons a day (1,210 second-feet) Feb. 25, 1935 (gage height, 4.55 feet), from rating curve extended above 70 million gallons a day; minimum, 1.1 million gallons a day (1.7 second-feet) several days in August 1934 and January 1935.

Remarks.— Records for ordinary stages are good except those for Aug. 9–15, May 5, which were computed on basis of records for station on Waiaka Stream, and are fair; those for high stages are poor. Koolau ditch diverts water 4,000 feet above station for irrigation in central Maui.

Rating table, fiscal year 1936–37 (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	2.5	204
.6	8.0	1.4	55		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.5	2.1	4.0	2.1	1.5	1.5	61	11.3	2.4	4.3	2.4	1.9
2	1.6	3.0	3.2	1.9	1.5	1.5	21	2.4	1.9	2.3	67	1.9
3	1.6	3.0	2.1	1.9	1.5	1.6	15.6	2.1	1.9	6.8	3.1	4.8
4	2.6	20	1.9	1.9	1.6	1.6	38	1.9	2.7	1.9	6.7	2.6
5	1.6	2.6	2.5	1.9	5.4	1.6	8.0	2.5	24.5	1.6	*50	5.2
6	1.5	1.9	2.1	1.9	7.8	1.6	11.4	3.2	48	2.2	104	3.2
7	1.5	2.1	1.6	1.8	5.0	3.3	7.5	2.2	46	3.1	31	2.6
8	30	2.1	1.8	1.8	3.3	2.1	5.3	1.9	32.5	3.0	14.4	10.8
9	5.6	*2.1	1.8	1.6	2.1	13.0	24.5	1.8	46	2.5	5.6	28
10	15.7	*2.1	1.9	1.6	1.8	28	24	5.4	29	1.6	14.1	4.8
11	4.9	*42	1.6	1.6	1.9	30	8.7	2.2	19.5	1.8	2.2	2.1
12	1.9	*15.0	4.0	1.6	1.8	20	17.8	11.2	40	4.5	2.1	1.8
13	1.6	*5.0	3.0	1.5	1.6	2.1	64	44	16.9	1.9	1.9	1.6
14	1.6	*3.8	1.8	1.4	3.9	24	81	63	14.6	2.1	1.9	1.6
15	4.7	*2.6	31	1.4	25.5	48	52	19.4	28.5	1.8	24.5	1.6
16	4.8	2.1	39	1.5	4.5	22	47	76	19.0	1.6	15.2	1.6
17	1.9	1.9	6.1	1.4	11.0	8.2	77	45	30.5	1.9	2.2	1.6
18	1.8	1.8	2.4	1.4	16.7	2.6	43	117	81	1.9	2.7	1.5
19	1.6	1.6	2.1	1.4	2.6	1.8	29	21	61	1.9	19.3	1.4
20	8.0	4.6	1.9	1.4	2.2	31	35.5	11.8	30	1.8	74	1.4
21	4.1	2.7	1.9	1.4	1.9	57	17.6	3.0	75	1.6	35.5	1.4
22	3.3	1.9	1.6	1.4	1.9	81	28.5	15.3	19.5	1.9	17.1	1.4
23	5.9	7.8	1.6	1.4	1.8	130	22	44	11.8	21.5	10.6	1.3
24	3.0	18.1	1.8	1.6	1.6	45	34	9.8	9.7	29	17.3	1.3
25	5.6	9.2	2.8	34	1.6	46	31.5	2.9	12.3	7.9	3.1	1.4
26	25.5	3.8	50	29	1.6	21	18.0	1.9	5.4	10.0	3.1	1.9
27	8.4	2.5	17.6	7.2	1.6	53	6.9	12.6	2.4	4.6	2.1	2.1
28	9.6	11.8	2.7	1.9	1.5	63	6.3	12.4	2.1	2.1	14.2	1.4
29	7.6	12.2	2.4	2.1	1.5	182	2.7	-	1.9	5.9	2.7	1.4
30	3.2	8.4	3.0	1.6	1.5	129	10.5	-	1.9	9.2	1.9	1.4
31	3.2	13.9	-	1.6	-	131	45	-	2.2	-	1.9	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	30	1.5	5.66	8.76	176	539
August.....	42	1.6	6.88	10.6	213	655
September.....	50	1.6	6.71	10.4	201	617
October.....	34	1.4	3.75	6.80	116	357
November.....	28.5	1.5	3.99	6.17	120	367
December.....	182	1.5	35.2	59.1	1,180	3,590
Calendar year 1936.....	182	1.2	8.80	13.6	3,220	9,880
January.....	77	2.7	27.9	43.2	864	2,650
February.....	117	1.8	19.5	30.2	547	1,680
March.....	81	1.9	23.2	35.9	720	2,210
April.....	29	1.6	4.81	7.44	144	443
May.....	104	1.9	17.9	27.7	564	1,700
June.....	26	1.3	3.16	4.89	94.9	291
Fiscal year 1936–37.....	182	1.3	13.5	20.9	4,930	15,140

*Estimated.

Koolau ditch at Nahiku weir, near Nahiku

Location.- Water-stage recorder, lat. 20°48'55", long. 156°07'15", between Kapaula and Waiohne Streams, 3½ miles southwest of Nahiku and 4 miles southeast of Keanae.

Records available.- February 1919 to June 1937.

Average discharge.- 18 years (1919-37), 20.6 million gallons a day (31.9 second-feet).

Extremes.- Maximum discharge during year, 56 million gallons a day (87 second-feet) Mar. 21, May 2 (gage height, 1.62 feet); no flow Jan. 2, Feb. 20, May 22.

1919-37: Maximum discharge, 61 million gallons a day (94 second-feet) May 3, 1934 (gage height, 1.68 feet); no flow occasionally, when intake gates were closed.

Remarks.- Records excellent except those for extremely low stages, which are good. Flow regulated by spillways and gates. Koolau ditch diverts water at altitude 1,200 feet from nearly all streams from the Makapipi west to the Aie. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	23.5	35.5	45	25.5	14.3	13.6	48	48	42	38	31	30.5
2	20.5	38	40	23	13.3	13.6	43	42	40	38	41	27.5
3	25.5	33.5	33.5	29.5	13.0	17.0	50	35.5	35.5	42	40	40
4	31	45	27.5	26	17.8	25.5	50	33.5	40	33.5	55.5	33.5
5	25.5	35.5	35.5	22	40	18.1	50	35.5	50	33.5	40	33.5
6	22.5	31	26.5	20.5	38	17.4	52	38	50	38	50	35.5
7	27.5	33.5	23.5	23	40	31.5	55	35.5	52	38	50	38
8	48	38	22	18.8	35.5	28	52	29.5	50	38	48	45
9	42	42	21	17.8	31	42	50	26.5	48	28.5	45	45
10	48	38	26.5	17.4	33.5	48	50	31	42	28	45	40
11	48	40	21	17.4	28.5	48	48	31	48	26.5	40	35.5
12	31	48	35.5	15.5	22	48	50	33.5	50	38	33.5	29.5
13	26	50	29	14.6	18.8	33.5	52	50	50	27.5	29.5	26
14	29.5	48	26.5	14.0	28	40	50	52	50	30.5	35.5	23.5
15	42	42	42	13.3	50	50	50	50	50	24	45	22
16	42	35.5	50	13.3	35.5	45	50	52	50	22	48	20.5
17	29.5	29.5	42	12.3	33.5	45	50	52	50	25.5	38	19.5
18	26	25.5	33.5	11.7	45	38	50	52	52	26	38	18.8
19	23.5	23.5	28	11.4	33.5	35.5	50	50	52	28.5	42	17.0
20	40	38	24	10.8	30.5	50	50	43	50	22	50	16.0
21	40	35.5	22	10.5	28	50	50	45	50	20.5	47	15.3
22	40	26	19.9	10.2	22	50	50	42	48	31	45	14.6
23	45	42	18.4	9.9	19.5	50	50	52	45	48	48	14.0
24	38	45	17.8	15.8	22.5	50	48	48	45	50	50	13.6
25	42	45	27	40	23.5	50	50	45	45	40	42	15.6
26	50	42	50	50	19.5	48	48	40	42	41	42	24.5
27	45	35.5	48	40	16.4	50	48	45	40	40	35.5	25.5
28	45	42	35.5	23.5	15.6	50	48	48	38	29.5	45	18.1
29	48	48	31	26.5	14.6	50	45	-	35.5	33.5	40	18.8
30	45	45	33.5	17.8	14.0	50	42	-	35.5	40	33.5	16.0
31	42	48	-	15.6	-	50	48	-	35.5	-	31	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	50	20.5	36.3	56.2	1,130	3,450
August.....	50	23.5	38.8	60.0	1,200	3,680
September.....	50	17.8	31.2	48.3	956	2,870
October.....	50	9.9	19.9	30.8	618	1,900
November.....	50	13.0	26.6	41.2	797	2,450
December.....	50	13.6	39.9	61.7	1,240	3,790
Calendar year 1936	52	3.9	29.0	44.9	10,620	32,570
January.....	55	42	49.3	76.3	1,530	4,690
February.....	52	26.5	42.3	65.4	1,190	3,640
March.....	52	35.5	45.5	70.4	1,410	4,330
April.....	50	20.5	33.3	51.5	1,000	3,070
May.....	50	29.5	41.4	64.1	1,280	3,940
June.....	45	13.6	25.8	39.9	773	2,370
Fiscal year 1936-37	55	9.9	35.9	55.5	13,100	40,190

Waiaka Stream near Nahiku

Location.- Water-stage recorder and concrete control, lat. 20°49'25", long. 156°07'00", 3,000 feet below Government Road, 1½ miles west of Nahiku, and 3½ miles southeast of Keanae post office. Station moved 40 feet downstream and datum lowered 5.49 feet in August 1936. Altitude, about 650 feet, by barometer.

Drainage area.- 0.1 square mile.

Records available.- July 1932 to June 1937. Records at same site obtained by East Maui Irrigation Co. March 1927 to June 1932.

Extremes.- Maximum discharge during year, 62 million gallons a day (96 second-feet) Mar. 21 (gage height, 2.92 feet, present datum), from rating curve extended above 20 million gallons a day by tests on model of station site; minimum, 0.38 million gallons a day (0.59 second-foot) Oct. 23.

1932-37: Maximum discharge, 73 million gallons a day (113 second-feet) Mar. 6, 1933 (gage height, 1.87 feet, former datum), 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 during October, November, 1933, April, May, June, 1934.

Remarks.- Records for ordinary stages are good; those for July 1-7, July 29 to Aug. 15, (computed on basis of records for stations on Kapaula and Paakea Streams) and those for high stages are poor. No diversions.

Rating tables, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Aug. 14

Aug. 15 to June 30

0.2	0.17	0.3	0.24	.7	3.15
.3	.60	.4	.58	.8	4.4
.4	1.40	.5	1.14	1.0	7.5
.5	2.65	.6	2.0	1.2	11.0

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.50	0.60	0.89	0.83	0.50	0.50	.53	0.89	0.77	0.67	0.72	0.58
2	.54	.60	.83	.77	.50	.50	1.49	.72	.67	.58	10.2	.54
3	.50	.60	.77	.72	.50	.50	1.02	.72	.67	.62	.83	1.02
4	.60	1.30	.67	.72	.50	.58	1.05	.72	.72	.54	.72	.62
5	.52	.80	.79	.67	.58	.54	.83	.67	1.21	.54	2.55	.70
6	.50	.50	.67	.67	.62	.50	.77	.67	7.1	.58	6.2	.62
7	.50	.50	.62	.97	.58	.58	.72	.77	3.05	.54	2.25	.53
8	.94	.50	.62	.62	.54	.57	.72	.62	1.56	.50	1.14	.53
9	.63	.50	.62	.58	.50	.66	.81	.58	8.9	.50	1.12	.62
10	.80	.50	.67	.53	.50	.58	.88	.63	10.3	.50	1.02	.58
11	.60	2.6	.58	.58	.61	.58	.67	.62	5.1	.52	.89	.54
12	.54	1.60	.67	.54	.54	.58	1.12	.89	1.64	1.07	.77	.54
13	.54	1.20	.58	.50	.50	.54	1.22	1.03	.83	.56	.72	.54
14	.49	1.00	.62	.50	1.00	.54	.89	1.03	.90	.66	.72	.50
15	.76	.70	1.14	.50	2.3	.54	.83	.74	.97	.54	.93	.50
16	.81	.62	1.19	.50	1.02	.54	1.33	2.0	.86	.54	.87	.50
17	.60	.62	.98	.46	1.72	.58	2.5	2.0	1.45	.60	.67	.50
18	.54	.58	.77	.46	1.42	.54	1.95	5.6	4.3	.58	.67	.50
19	.54	.54	.72	.42	.85	.54	1.49	1.51	8.7	.67	.86	.50
20	1.10	.96	.67	.42	.63	.58	1.14	1.32	3.9	.58	3.5	.46
21	.94	.83	.67	.42	.77	.88	.95	.89	5.7	.54	1.34	.46
22	.84	.67	.62	.36	.72	.83	.95	.83	1.65	.63	1.23	.42
23	.87	.69	.58	.38	.67	2.85	1.22	1.36	2.45	.97	.77	.42
24	.89	.88	.58	.51	.62	.89	1.01	.89	1.02	.76	1.53	.42
25	1.30	1.05	.85	.50	.62	.83	2.9	.83	.89	.71	.72	.46
26	1.48	.72	4.8	.92	.58	.77	1.71	.77	.77	.98	1.19	.46
27	1.03	.67	2.2	.62	.58	1.87	.83	1.17	.67	.88	.67	.46
28	.86	.95	1.08	.54	.54	2.65	1.87	1.46	.67	.58	.73	.42
29	.80	.95	.95	.54	.54	6.7	.77	-	.62	2.5	.62	.46
30	.70	.83	.96	.50	.50	4.3	1.04	-	.58	1.03	.62	.42
31	.60	1.27	-	.50	-	2.65	1.80	-	.84	-	.58	-
Month		Million gallons a day			Second-foot (mean)	Total run-off						
		Maximum	Minimum	Mean		Million gallons	Acre-feet					
July.....		1.48	0.49	0.737	1.14	22.9	70					
August.....		2.6	.50	.840	1.30	26.0	80					
September.....		4.8	.58	.945	1.46	28.4	87					
October.....		.97	.58	.690	1.11	21.5	55					
November.....		2.3	.50	.745	1.15	22.4	69					
December.....		6.7	.50	1.17	1.81	36.3	111					
Calendar year 1936		9.3	.34	.841	1.30	308	945					
January.....		5.3	.67	1.35	2.09	41.8	123					
February.....		5.6	.58	1.14	1.76	31.8	98					
March.....		10.3	.58	2.65	3.93	79.5	244					
April.....		2.5	.50	.716	1.11	21.5	66					
May.....		10.2	.58	1.53	2.37	47.4	145					
June.....		1.02	.42	.531	.822	15.9	49					
Fiscal year 1936-37		10.3	.38	1.07	1.66	392	1,200					

ISLAND OF MAUI

Paakea Stream near Nahiku

Location.- Water-stage recorder, lat. 20°49'25", long. 156°07'05", 3,000 feet below highway, 1½ miles west of Nahiku, and ¾ miles southeast of Keanae post office. Altitude, 650 feet, by barometer.

Drainage area.- 0.5 square mile.

Records available.- July 1932 to June 1937. Records at same site obtained by East Maui Irrigation Co. March 1927 to June 1932.

Extremes.- Maximum discharge during year, 234 million gallons a day (362 second-feet) May 2 (gage height, 5.45 feet), from rating curve extended above 25 million gallons a day; minimum, 2.1 million gallons a day (3.2 second-feet) Oct. 23, 24.
1932-37: Maximum discharge, that of May 2, 1937; minimum, 1.8 million gallons a day (2.8 second-feet) Feb. 18, 19, 1936.

Remarks.- Records good for ordinary stages and poor for medium and high stages; those for Jan. 8-19, Mar. 28-30, which were computed on basis of records for stations on Makapipi and Waiaka Streams, are fair. Koolau ditch diverts all low flow at altitude about 1,200 feet for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.4	1.6	.9	14.7	1.8	44
.5	3.0	1.0	18.0	2.0	52
.6	4.9	1.2	24	2.2	60
.7	7.4	1.4	30	2.5	72
.8	10.5	1.6	37		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.5	3.0	3.4	3.0	2.3	2.3	24	4.6	3.0	3.3	3.2	2.7
2	2.5	3.5	3.2	2.8	2.3	2.3	3.8	2.8	2.7	2.7	34	2.7
3	2.5	5.2	3.0	2.8	2.2	2.3	3.4	2.8	2.7	3.4	3.6	4.6
4	2.5	4.6	2.8	2.8	2.3	2.7	5.5	2.7	2.8	2.5	3.2	2.8
5	2.5	3.0	3.2	2.7	4.7	2.5	2.8	2.7	7.1	2.5	10.4	4.8
6	2.3	2.8	2.8	2.7	3.8	2.3	2.8	2.8	33	2.3	37.5	2.8
7	2.3	2.8	2.7	4.5	3.0	3.4	2.7	2.8	25.5	2.7	18.0	2.8
8	8.5	2.8	2.8	2.5	2.7	2.7	2.7	2.8	8.5	2.5	5.0	7.8
9	3.0	2.8	2.7	2.5	2.5	5.6	3.5	2.5	25.5	2.3	4.0	11.8
10	4.7	2.7	2.8	2.3	2.5	4.4	4.0	2.9	13.5	2.3	4.8	2.8
11	3.0	8.5	2.5	2.3	2.7	3.1	3.0	2.7	4.3	2.3	3.2	2.7
12	2.7	7.2	3.3	2.2	2.7	2.8	4.7	3.3	8.0	4.5	2.8	2.7
13	2.7	9.9	2.7	2.2	2.3	2.5	14.4	5.3	3.6	2.7	2.8	2.5
14	2.7	3.0	2.7	2.2	3.9	2.5	10.0	11.6	3.4	2.8	2.8	2.5
15	3.4	2.8	10.5	2.2	13.0	3.4	7.1	3.4	6.9	2.5	10.1	2.5
16	3.4	2.7	7.2	2.3	4.0	2.7	15.0	16.4	3.6	2.5	9.7	2.3
17	2.7	2.5	3.6	2.2	9.7	2.7	26	21.5	3.8	2.7	3.6	2.3
18	2.7	2.3	3.0	2.2	6.2	2.5	9.0	42	34	2.7	2.7	2.5
19	2.7	2.3	2.8	2.2	3.6	2.5	10.0	9.0	43	2.8	6.1	2.3
20	4.7	4.0	2.7	2.2	3.2	3.6	7.3	4.0	11.8	2.5	22	2.2
21	3.8	3.4	2.7	2.2	3.0	13.5	3.6	3.4	23.5	2.5	11.2	2.2
22	3.6	2.7	2.5	2.1	2.8	14.4	4.4	6.2	6.0	3.1	4.4	2.2
23	3.8	4.2	2.3	2.1	2.7	7.2	4.6	16.4	6.6	10.0	3.2	2.2
24	3.6	6.4	2.3	2.6	2.7	7.8	10.2	3.4	3.6	10.1	4.6	2.2
25	5.6	3.8	4.6	4.1	2.7	6.9	7.9	3.0	3.2	5.6	2.8	2.5
26	9.4	3.4	27.5	17.8	2.5	3.7	3.8	2.8	3.0	4.3	3.6	2.7
27	4.0	3.0	8.6	4.5	2.3	18.4	3.2	6.1	2.8	3.3	2.8	2.5
28	6.0	5.2	3.8	2.5	2.3	18.8	4.6	5.4	2.7	2.7	6.9	2.3
29	3.8	3.6	3.6	2.5	2.3	48	3.0	-	2.7	8.2	2.8	2.5
30	3.8	3.2	3.5	2.3	2.3	33	5.6	-	2.5	4.1	2.7	2.3
31	3.4	6.2	-	2.3	-	29.5	14.3	-	2.8	-	2.7	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	9.4	2.3	3.70	5.72	115	352
August.....	9.9	2.3	3.98	6.16	124	379
September.....	27.5	2.3	4.39	6.79	132	404
October.....	17.8	2.1	3.09	4.78	95.8	294
November.....	13.0	2.2	3.51	5.43	105	323
December.....	48	2.3	8.39	13.0	260	798
Calendar year 1936	49	1.8	4.26	6.59	1,560	4,780
January.....	26	2.7	7.42	11.5	230	706
February.....	42	2.5	6.97	10.8	195	599
March.....	43	2.5	9.97	15.4	309	949
April.....	10.1	2.3	3.61	5.59	108	333
May.....	37.5	2.7	7.65	11.8	237	728
June.....	11.8	2.2	3.12	4.83	93.7	288
Fiscal year 1936-37	48	2.1	5.49	8.49	2,000	6,150

Waiohuk Stream near Nahiku

Location.— Water-stage recorder, lat. 20°49'05", long. 156°07'40", 200 feet above intake to Koolau ditch, 300 feet above ditch trail, 2¼ miles southwest of Nahiku, and 3½ miles southeast of Keanae.

Drainage area.— 1.5 square miles.

Records available.— October 1921 to June 1937.

Average discharge.— 15 years (1922-37), 8.19 million gallons a day (12.7 second-feet).

Extremes.— Maximum discharge during year, 498 million gallons a day (771 second-feet).

Jan. 1 (gage height, 5.42 feet), from rating curve extended above 75 million gallons a day; minimum, 2.7 million gallons a day (4.2 second-feet) Oct. 22, 23.

1921-37: Maximum discharge, 609 million gallons a day (942 second-feet) Feb. 25, 1935 (gage height, 6.16 feet), from rating curve extended above 75 million gallons a day; minimum, 1.4 million gallons a day (2.2 second-feet) Nov. 25, 1933.

Remarks.— Records for ordinary stages are excellent; those for July 1-16, May 30 to June 2 computed on basis of records for stations on all nearby streams) and those for extremely high and low stages are poor. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.5	1.6	1.4	17.5
.6	2.2	1.6	25.5
.7	2.8	1.8	35
.8	3.7	2.0	47
.9	4.8	2.2	61
1.0	6.4	2.4	78
1.1	8.5	2.6	97
1.2	11.1	2.8	121

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.5	7.2	7.7	4.6	3.0	3.8	48	9.6	6.1	7.5	8.7	4.7
2	4.1	8.9	6.8	4.5	3.0	3.7	12.9	6.2	6.1	5.8	59	4.5
3	5.2	8.6	5.9	5.9	3.0	4.6	11.1	5.6	5.3	9.2	5.9	8.6
4	9.0	15.8	5.3	5.5	3.9	5.6	24.5	4.6	7.2	5.3	9.6	5.3
5	6.0	6.1	7.7	4.4	11.6	4.4	10.3	5.4	18.3	5.6	23	8.6
6	5.0	6.1	5.3	4.2	7.5	4.4	8.5	6.6	37	6.8	64	5.9
7	5.8	7.0	4.8	5.1	9.6	7.3	7.7	6.2	32	7.0	18.2	7.9
8	25	7.7	4.8	4.0	5.8	4.8	7.2	5.1	18.4	6.1	10.3	11.6
9	10	9.0	4.7	3.8	5.6	12.7	17.3	4.6	33.5	4.8	8.4	16.5
10	12	7.7	6.4	3.7	6.6	18.8	13.4	7.8	19.4	5.3	11.8	7.0
11	8.0	26.5	4.6	3.9	6.1	18.8	6.6	5.9	15.0	5.1	7.0	5.4
12	6.0	15.4	8.2	3.5	5.3	11.8	15.7	11.4	26	9.2	5.9	5.3
13	5.0	20.5	5.0	3.4	4.8	6.6	36	29.5	12.8	5.0	5.6	5.0
14	6.2	11.1	5.0	3.3	9.6	16.4	31.5	38	12.9	6.2	7.4	4.6
15	11	7.9	24.5	3.2	19.3	29.5	31.5	16.4	19.5	4.6	23.5	4.6
16	10	6.2	19.4	3.2	6.1	17.0	30	50	13.5	4.2	11.7	4.5
17	5.8	5.6	6.4	3.1	15.2	11.4	40	54	22.5	5.3	6.1	4.5
18	5.4	5.3	5.1	3.0	11.5	8.5	29	72	61	5.0	7.4	4.2
19	5.1	5.0	4.8	2.9	5.8	8.5	20.5	12.6	62	5.3	20.5	4.0
20	12.3	11.3	4.8	2.8	5.9	23.5	24	8.8	17.1	4.1	54	3.8
21	9.3	7.0	4.6	2.8	5.6	38.5	12.3	7.2	50	4.1	19.2	3.7
22	7.2	5.1	4.5	2.7	5.0	46	19.9	14.0	13.0	5.8	11.7	3.6
23	6.8	12.3	4.2	2.7	4.7	81	14.2	36	10.1	15.5	11.8	3.5
24	7.8	16.2	4.2	4.1	5.1	26.5	26.5	9.2	10.1	17.7	14.6	3.4
25	10.6	9.1	8.2	24	4.8	28	23	6.8	11.2	9.6	7.9	4.0
26	17.1	9.0	36.5	23.5	4.5	13.2	11.1	6.2	7.4	7.2	8.1	5.2
27	8.3	6.1	10.6	6.0	4.1	37	8.3	12.5	6.1	5.8	6.4	5.7
28	10.9	13.4	5.4	3.7	4.0	40	8.7	11.3	5.8	4.6	15.2	4.2
29	9.5	10.6	5.3	3.6	3.9	111	7.7	-	5.6	9.9	6.6	4.1
30	8.1	11.1	5.8	3.3	3.9	75	13.8	-	5.3	7.5	5.4	3.7
31	8.1	12.8	-	3.1	-	74	24.5	-	6.3	-	5.0	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	25	4.1	8.61	13.3	267	819
August.....	26.5	5.0	10.1	15.6	312	956
September.....	36.5	4.2	7.88	12.2	235	726
October.....	24	2.7	5.07	7.84	157	483
November.....	19.3	3.0	6.49	10.0	195	598
December.....	111	3.7	25.6	39.6	792	2,430
Calendar year 1936.....	111	1.6	8.83	13.7	3,250	9,290
January.....	48	6.6	19.2	29.7	596	1,830
February.....	72	4.6	15.8	24.4	444	1,360
March.....	62	5.3	18.3	28.3	566	1,740
April.....	17.7	4.1	6.84	10.6	205	629
May.....	64	5.0	15.5	24.0	480	1,470
June.....	16.5	3.4	5.59	8.66	168	514
Fiscal year 1936-37.....	111	2.7	12.1	18.7	4,420	13,560

West Kopiliula Stream near Keanae

Location.- Water-stage recorder, lat. 20°40'10", long. 156°08'15", 600 feet above Koolau ditch crossing and highway bridge and 3 miles southeast of Keanae post office.

Drainage area.- 3.9 square miles.

Records available.- January 1914 to September 1917, October 1921 to January 1935, December 1933 to June 1937. (January 1914 to September 1917 and October 1921 to December 1930 at site 300 feet downstream at different datum; February 1934 to January 1935 at site 50 feet upstream, at top of falls, at different datum).

Average discharge.- 13 years (1922-34, 1936-37), 19.2 million gallons a day (29.7 second-feet).

Extremes.- Maximum discharge recorded during year, 1,340 million gallons a day (2,070 second-feet) Mar. 21 (gage height, 5.65 feet), from rating curve extended above 100 million gallons a day; minimum discharge, 1.90 million gallons a day (2.94 second-feet) Oct. 21, 23.

1914-17, 1921-37: Maximum discharge, 2,800 million gallons a day (4,330 second-feet) July 6, 1934 (gage height, 9.25 feet), from rating curve extended above 100 million gallons a day; minimum, 0.6 million gallons a day (0.9 second-foot) Sept. 15-17, 1917.

Remarks.- Records excellent for ordinary stages and poor for high stages. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.5	0.60	1.2	25
.4	1.30	1.4	37
.6	4.2	1.7	60
.8	8.9	2.0	92
1.0	15.7	2.5	165

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.1	10.8	12.4	5.7	3.7	4.0	*220	29.5	8.9	12.6	11.0	6.6
2	5.5	10.7	11.7	5.2	3.2	4.2	*36	13.8	9.2	8.6	109	5.5
3	9.5	10.6	9.2	9.3	2.85	9.2	*20	9.8	8.4	15.4	10.8	15.5
4	14.6	39	8.1	6.1	8.2	13.1	*70	8.6	14.9	8.9	17.0	7.2
5	9.5	10.8	12.8	4.4	24.5	6.8	*20	7.9	31	9.5	74	11.9
6	7.9	9.5	7.3	4.2	17.9	6.1	†12.7	15.0	53	11.4	217	9.2
7	9.5	12.4	6.3	5.2	29	14.4	11.4	12.0	68	13.0	36.5	12.8
8	64	13.0	5.9	3.7	23	12.8	10.1	9.2	42	9.8	15.7	27
9	25	17.8	5.7	3.5	18.7	39.5	23	8.1	60	6.6	12.4	40
10	36	12.7	7.3	3.85	17.0	95	18.4	17.5	43	6.6	19.2	12.7
11	17.6	82	4.6	3.7	10.4	131	9.2	15.2	36.5	6.6	12.8	7.6
12	10.4	56	17.1	3.0	6.6	70	25	32	73	9.4	9.5	6.3
13	8.1	29.5	9.3	2.85	5.5	21	55	136	24.5	5.5	8.1	6.1
14	10.4	19.1	8.6	2.5	11.3	93	107	169	22	7.7	12.0	5.5
15	17.3	12.7	71	2.5	24.5	176	114	61	33	4.8	69	4.8
16	16.3	9.5	68	2.5	6.1	65	71	180	24.5	4.2	30	4.6
17	9.4	7.9	14.2	2.4	22.5	33.5	119	65	36	5.2	15.1	4.8
18	7.6	7.1	8.4	2.25	24	19.5	80	29.1	133	8.2	17.3	4.6
19	6.6	6.3	6.6	2.15	11.1	16.7	38.5	32.5	125	5.5	57	4.0
20	19.0	12.6	5.9	2.0	11.4	68	62	17.3	35.5	3.85	290	3.7
21	13.0	8.4	5.2	1.90	10.8	113	21.5	11.1	157	4.3	72	3.5
22	11.3	5.9	4.8	2.0	7.3	192	41	30.5	25.5	9.6	25	3.2
23	14.2	25	4.4	2.0	6.3	353	24.5	92	16.1	38	23	3.0
24	10.5	34.5	4.2	8.1	8.2	106	80	16.4	17.8	45	23.5	2.85
25	14.3	16.2	9.2	131	9.8	84	52	10.8	27	18.1	11.7	5.5
26	32	14.0	67	47	7.3	26	24	9.2	15.7	17.1	11.4	11.3
27	18.4	8.6	17.6	11.1	5.9	63	14.7	19.8	10.1	9.4	8.4	12.9
28	20	21	8.1	5.7	5.2	149	12.7	14.9	8.6	6.1	25	6.8
29	14.4	17.9	7.6	12.0	4.6	501	11.1	-	8.4	13.2	8.9	5.9
30	12.0	16.2	9.8	6.3	4.2	379	37	-	7.1	15.1	7.3	4.8
31	12.7	15.0	-	4.8	-	300	88	-	9.2	-	6.8	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	64	5.5	15.6	24.1	462	1,480
August.....	82	5.9	18.5	28.6	573	1,760
September.....	71	4.2	14.6	22.6	438	1,350
October.....	131	1.90	9.96	15.4	309	948
November.....	29	2.85	11.8	18.3	353	1,080
December.....	501	4.0	101	156	3,140	9,650
Calendar year 1936	501	.81	21.3	33.0	7,790	23,920
January.....	220	9.2	49.3	76.3	1,530	4,690
February.....	291	7.9	48.1	74.4	1,550	4,130
March.....	157	7.1	38.2	59.1	1,180	3,630
April.....	43	3.85	11.1	17.2	334	1,030
May.....	290	6.8	40.8	63.1	1,260	3,880
June.....	40	2.85	8.67	13.4	260	798
Fiscal year 1936-37	501	1.90	30.7	47.5	11,210	34,450

*Estimated.

†Partly estimated.

East Wailuaiki Stream near Keanae

Location.- Water-stage recorder, lat. 20°49'05", long. 156°08'25", 1,000 feet above 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 1937.

Average discharge.- 15 years (1922-37), 19.6 million gallons a day (30.3 second-feet).

Extremes.- Maximum discharge during year, 1,820 million gallons a day (2,820 second-feet) Jan. 1 (gage height, 7.87 feet); minimum, 2.8 million gallons a day (4.3 second-feet) Oct. 23.

1913-17, 1922-37: Maximum discharge, 2,020 million gallons a day (3,130 second-feet) Feb. 25, 1935 (gage height, 8.79 feet), from rating curve extended above 100 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, no data are available for this peak but owing to destruction of station.

Remarks.- Records good for ordinary stages; those for July 26 to Sept. 3 (computed on basis of records for stations on nearby streams) and those for high stages are poor. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.6	2.8	2.0	28.5
.8	4.3	2.4	47
1.0	6.3	2.6	75
1.2	9.1	3.2	112
1.4	12.6	3.6	159
1.6	16.9	4.0	215

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.7	12	13	6.1	3.9	4.1	229	31.5	10.5	17.5	14.4	8.4
2	6.2	11	11	5.9	3.6	4.1	31	15.8	9.4	10.8	126	7.2
3	9.6	10	9.5	10.3	3.4	8.3	19.4	11.9	9.0	19.1	12.6	19.8
4	16.9	45	8.5	6.8	7.8	13.6	69	10.3	13.8	9.8	9.1	9.6
5	9.0	12	13.2	5.2	30	6.3	19.4	10.0	42	10.6	33	16.2
6	7.8	10	8.4	4.9	23	5.3	14.6	14.8	70	13.6	240	12.4
7	9.1	12	7.2	5.5	30.5	14.6	12.6	13.6	83	17.0	47	16.0
8	74	14	6.6	4.6	21.5	12.1	11.3	10.0	54	12.7	19.4	39.5
9	25	18	6.2	4.4	18.2	42	29	9.0	75	8.6	13.6	57
10	39	13	8.4	4.6	16.9	94	26	15.8	52	8.5	23.5	15.8
11	17.8	110	5.8	4.5	11.0	130	11.3	14.0	37.5	8.0	16.4	9.6
12	10.0	70	24.5	4.0	6.6	69	42	33	95	11.4	11.5	8.0
13	7.9	32	10.1	3.8	5.4	16.9	95	136	30	7.5	9.6	7.6
14	10.5	19	9.0	3.7	11.2	96	117	177	22	10.1	13.0	7.1
15	18.2	13	84	3.5	31.5	178	123	73	42	6.8	78	6.6
16	19.0	10	80	3.6	9.6	67	102	176	30.5	6.6	37.5	6.2
17	8.8	8.5	15.2	3.4	28.5	34	112	86	42	7.2	14.6	6.1
18	7.6	7.5	8.8	3.3	32	18.2	101	314	127	6.7	16.9	5.9
19	6.7	7	7.2	3.2	10.5	15.8	45	31.5	133	7.3	53	5.2
20	24	12	6.3	3.1	10.0	74	81	16.9	37	5.6	250	5.0
21	14.1	8.5	6.0	3.1	9.1	131	25	12.6	137	6.7	91	4.8
22	11.5	6.4	5.5	2.9	6.6	206	47	34.5	28.5	12.3	28.5	4.7
23	15.8	29	5.2	2.9	5.6	265	34.5	107	19.4	59	27	4.5
24	11.5	37	5.0	8.8	5.8	112	82	19.6	20.5	68	29.5	4.4
25	18.2	16	9.7	141	7.9	102	58	12.4	33	25.5	14.6	6.8
26	35	14	100	71	6.7	31	27	10.6	18.2	24	13.6	13.6
27	20	10	21	13.4	5.1	71	16.9	21.5	12.6	11.5	10.1	16.9
28	21	23	8.6	6.0	4.6	122	14.6	21	10.6	7.5	37	7.5
29	15	19	7.5	10.4	4.3	330	13.6	-	10.0	17.3	11.2	6.6
30	13	16	9.7	6.2	4.1	330	325	-	9.1	15.0	9.1	5.4
31	14	15	-	4.7	-	271	87	-	10.8	-	8.6	-
Month				Million gallons a day			Second-feet (mean)	Total run-off				
				Maximum	Minimum	Mean		Million gallons	Acre-feet			
July.....				74	6.2	16.9	26.1	523	1,600			
August.....				110	6.4	20.6	31.9	640	1,960			
September.....				100	5.0	17.4	26.8	521	1,600			
October.....				141	2.9	11.8	18.3	365	1,120			
November.....				32	3.4	12.5	19.3	375	1,150			
December.....				330	4.1	92.7	143	2,870	8,820			
Calendar year 1936.....				330	1.3	22.7	35.1	8,310	25,520			
January.....				229	11.3	55.8	86.3	1,730	5,310			
February.....				314	9.0	51.4	79.5	1,440	4,420			
March.....				137	9.0	42.7	66.1	1,320	4,060			
April.....				68	5.6	15.1	23.4	452	1,390			
May.....				250	8.6	42.6	65.9	1,320	4,050			
June.....				57	4.4	11.5	17.8	344	1,060			
Fiscal year 1936-37.....				330	2.9	32.6	50.4	11,900	36,540			

West Wailuaiki Stream near Keanae

Location.- Water-stage recorder, lat. 20°49'20", long. 156°08'35", 500 feet above Koolau ditch crossing and trail bridge and $2\frac{1}{2}$ miles south of Keanae post office.

Drainage area.- 3.6 square miles.

Records available.- January 1914 to October 1917, November 1921 to June 1937.

Average discharge.- 15 years (1922-37), 25.2 million gallons a day (39.0 second-feet).

Extremes.- Maximum discharge during year, 2,640 million gallons a day (4,080 second-feet) Jan. 1 (gage height, 10.51 feet), from rating curve extended above 500 million gallons a day; minimum, 2.7 million gallons a day (4.2 second-feet) Oct. 22, 23.

1914-17, 1921-37: 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 500 million gallons a day; minimum, 0.3 million gallons a day (0.5 second-foot) July 26, 1922.

Remarks.- Records for ordinary stages are good; those for July 16-18, July 21 to Aug. 17, Sept. 7-29, Feb. 27 to Mar. 19 (computed on basis of records for stations on nearby streams) and those for extremely high stages are poor.

Rating tables, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Jan. 1					Jan. 2 to June 30				
0.5	2.3	1.5	20	4.0	270	0.5	2.0	2.0	36
.7	4.0	2.0	40	5.0	510	.7	3.4	2.5	64
.9	6.4	2.5	73	6.0	835	1.0	7.3	3.0	106
1.2	12.0	3.0	121			1.3	13.7	4.0	262
						1.6	22	5.0	510

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.4	14	15.2	7.5	4.9	4.7	384	30	13	21	14.7	7.9
2	7.5	12	14.6	6.9	4.6	4.3	35	15.8	9.0	11.3	160	6.5
3	11.0	11	11.6	10.5	4.1	10.2	20.5	11.8	8.0	18.0	17.6	
4	19.5	56	11.4	7.4	9.4	17.9	65	9.7	11	10.3	9.5	10.2
5	11.0	15	17.6	6.0	33	8.6	22	8.9	38	10.9	69	16.1
6	9.5	12	10.7	5.6	27.5	6.7	15.5	12.6	85	12.3	322	14.2
7	11.0	14	7.6	6.3	37	14.9	12.7	10.9	100	16.1	58	16.8
8	92	17	6.4	5.0	29.5	14.2	10.7	9.1	60	12.0	23	37
9	32	20	5.6	5.0	24.5	51	25	7.5	85	8.5	15.5	65
10	48	14	10	5.0	21	128	23	10.7	56	7.9	23.5	19.2
11	23.5	130	7.0	4.9	15.2	171	10.5	14.6	55	7.0	18.3	10.9
12	13.2	76	25	4.2	9.5	88	23.5	29.5	120	10.1	14.2	8.7
13	9.7	38	11	3.9	7.7	22.5	86	173	38	6.5	10.7	7.3
14	12.0	24	11	3.65	13.0	108	125	211	32	8.5	13.9	6.5
15	19.7	15	110	3.45	36.5	246	135	110	46	5.7	92	5.7
16	21	11	100	3.45	14.5	85	103	213	32	5.2	41	5.5
17	9.0	9.0	25	3.35	34.5	42	137	79	50	5.5	18.0	5.3
18	8.5	8.4	10	3.45	42	25	111	226	140	5.2	19.1	5.1
19	7.7	7.5	6.4	3.1	15.1	22	49	37	150	5.6	63	4.4
20	26.5	14.1	5.2	2.95	14.8	90	91	20.5	47	4.4	354	4.1
21	17	9.3	4.5	3.1	13.2	147	27	14.2	150	5.4	108	4.0
22	15	7.0	4.2	2.85	9.1	278	51	17.3	29	10.8	32	3.6
23	18	42	4.1	2.7	7.7	397	32	130	19.1	55	30.5	3.4
24	15	54	4.0	11.7	7.7	159	104	24.5	22	71	32	3.2
25	25	21.5	9.6	203	9.5	121	61	14.2	49	33	16.9	4.4
26	40	18.5	110	77	9.0	40	27	11.3	20.5	26.5	14.8	14.9
27	22	11.2	21	17.6	6.6	75	17.1	24	14.2	12.6	10.5	18.6
28	24	23.5	9.4	9.6	5.8	159	14.5	24	11.1	8.3	34.5	9.9
29	17	23	8.6	12.5	5.1	531	13	-	10.1	17.8	12.7	7.0
30	15	21	11.4	7.5	4.9	498	33.5	-	8.7	15.8	9.9	5.5
31	16	18.6	-	6.0	-	435	104	-	10.3	-	8.5	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	92	7.5	20.2	31.3	625	1,920
August.....	130	7.0	25.0	38.7	774	2,370
September.....	110	4.0	20.3	31.4	608	1,870
October.....	205	2.7	14.6	22.6	454	1,390
November.....	42	4.1	15.9	24.6	477	1,460
December.....	531	4.7	129	200	4,000	12,270
Calendar year 1936	531	1.19	28.5	44.1	10,440	32,010
January.....	384	10.5	63.5	98.2	1,970	6,040
February.....	226	7.5	53.5	82.8	1,500	4,600
March.....	150	8.0	49.0	75.8	1,520	4,650
April.....	71	4.4	14.9	23.1	1,448	1,390
May.....	354	8.5	53.7	83.1	1,670	5,110
June.....	65	3.2	11.6	17.9	349	1,070
Fiscal year 1936-37	531	2.7	39.4	61.0	14,400	44,140

East Wailuanui Stream near Keanae

Location.— Water-stage recorder, lat. 20°49'25", long. 156°08'40", 125 feet above Koolau ditch intake, 250 feet above trail, and 2½ miles south of Keanae post office.

Drainage area.— 0.6 square mile.

Records available.— January 1914 to October 1917, November 1921 to June 1937.

Average discharge.— 15 years (1922-37), 5.76 million gallons a day (8.91 second-foot).

Extremes.— Maximum discharge during year, 487 million gallons a day (754 second-foot) Mar. 21 (gage height, 4.93 feet), from rating curve extended above 50 million gallons a day by velocity-area studies; minimum, 0.90 million gallons a day (1.39 second-foot) Oct. 23.

1914-17, 1921-37: Maximum discharge, 1,050 million gallons a day (1,620 second-foot) Feb. 12, 1925 (gage height, 6.96 feet), from rating curve extended above 120 million gallons a day; minimum, 0.1 million gallons a day (0.2 second-foot) Apr. 11, 1926.

Remarks.— Records good for ordinary stages and poor for high stages. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.40	1.0	17.0
.4	1.15	1.3	33
.5	2.5	1.6	52
.7	6.3	2.0	83

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.05	3.48	5.2	2.5	1.26	1.49	18.6	4.4	3.85	6.2	9.7	3.25
2	2.9	3.35	4.4	2.3	1.15	1.62	5.7	3.45	3.25	3.45	55	2.9
3	3.8	6.8	3.45	3.85	1.15	4.0	4.8	3.05	2.7	6.1	4.4	9.1
4	4.8	9.4	2.9	2.9	3.0	4.8	14.7	2.9	4.7	3.05	3.45	3.45
5	3.65	3.25	5.4	2.15	10.3	2.7	6.1	2.7	15.4	3.25	22.5	7.4
6	3.05	3.05	2.9	2.0	7.4	2.3	3.45	2.7	30	5.0	57	4.6
7	4.4	4.6	2.5	2.5	6.6	5.6	2.9	3.45	30	7.6	18.2	7.2
8	16.7	4.0	2.3	1.88	3.65	4.2	3.05	2.5	16.0	5.1	9.5	16.7
9	7.1	5.2	2.3	1.75	4.4	8.8	17.6	2.15	35	3.25	5.7	15.6
10	11.2	3.65	3.45	1.75	5.2	7.3	8.4	3.45	18.4	3.25	8.8	5.5
11	5.5	17.8	2.15	1.88	4.6	5.8	3.65	2.9	10.7	2.9	5.7	3.65
12	3.65	8.8	7.2	1.62	2.5	4.8	10.8	7.7	22	5.5	4.0	3.25
13	3.05	16.0	2.9	1.49	*2.1	3.45	20.5	13.2	6.7	3.25	4.0	3.05
14	4.0	6.6	3.25	1.49	7.5	5.2	17.6	21.5	7.2	5.2	5.7	2.7
15	7.6	4.4	19.9	1.37	17.7	10.2	18.6	8.6	15.0	3.05	16.0	2.3
16	7.9	3.05	13.1	1.37	4.4	8.6	29	29.5	10.0	2.9	9.7	2.15
17	3.45	2.7	4.2	1.37	12.7	6.3	34	34	17.2	2.7	4.6	2.15
18	2.9	2.3	3.05	1.26	11.1	5.4	20.5	48	39	2.7	5.2	2.15
19	2.5	2.0	2.7	1.26	3.85	4.9	14.7	6.6	53	2.9	12.1	1.88
20	9.9	6.7	2.3	*1.1	3.85	14.4	17.6	4.6	12.0	2.15	37.5	1.75
21	6.2	3.9	2.15	*1.1	3.25	30	8.0	4.2	35	2.9	16.3	1.75
22	4.8	2.5	2.0	*1.1	2.7	27.5	17.1	14.0	6.3	6.0	7.5	1.62
23	6.3	19.0	1.88	.98	2.3	52	7.6	31.5	4.6	19.4	9.8	1.62
24	5.5	10.7	1.75	4.0	2.15	11.0	18.6	5.5	5.2	20.5	9.2	1.49
25	10.3	5.5	3.95	11.0	2.15	22	10.5	4.0	5.0	9.0	4.6	2.6
26	15.7	8.5	41	28.5	2.15	6.7	5.0	3.45	3.45	7.2	4.6	4.4
27	4.6	4.0	9.0	5.2	1.75	27.5	3.85	10.2	3.05	4.4	3.85	4.5
28	9.9	12.3	3.45	2.3	1.75	28	4.0	8.0	2.7	3.45	17.7	2.15
29	5.2	7.2	3.45	2.0	1.62	67	3.45	-	2.9	8.4	4.4	2.15
30	4.0	7.8	3.65	1.75	1.49	46	6.3	-	2.5	7.8	3.85	2.0
31	5.0	8.1	-	1.49	-	54	10.8	-	3.65	-	3.45	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	16.7	2.5	6.08	9.41	189	579
August.....	17.8	2.0	6.45	9.98	200	614
September.....	41	1.75	5.59	8.65	168	515
October.....	28.5	.98	3.14	4.86	97.2	298
November.....	17.7	1.15	4.52	6.99	136	417
December.....	67	1.49	15.6	24.1	484	1,480
Calendar year 1936	82	.51	6.25	9.67	2,290	7,020
January.....	34	2.9	11.8	18.3	367	1,130
February.....	48	2.15	10.3	15.9	288	884
March.....	53	2.5	13.6	21.0	421	1,290
April.....	20.5	2.15	6.62	8.70	169	517
May.....	57	3.45	12.4	19.2	384	1,180
June.....	16.7	1.49	4.17	6.45	125	384
Fiscal year 1936-37	67	.98	8.29	12.8	3,030	9,290

*Estimated.

West Wailuanui Stream near Keanae

Location.- Water-stage recorder, lat. 20°49'40", long. 156°08'55", 150 feet above Koolau ditch crossing and intake and 2½ miles south of Keanae post office.

Drainage area.- 0.7 square mile.

Records available.- December 1913 to October 1917, July 1922 to June 1937.

Average discharge.- 15 years (1922-37), 9.41 million gallons a day (14.6 second-feet).

Extremes.- Maximum discharge recorded during year, 298 million gallons a day (458 second-foot) Aug. 11 (gage height, 3.65 feet), from rating curve extended above 100 million gallons a day; minimum discharge, 0.42 million gallons a day (0.65 second-foot) Oct. 23.

1913-17, 1922-37: Maximum discharge, 1,220 million gallons a day (1,890 second-foot) Jan. 14, 1923 (gage height, 7.70 feet), from rating curve extended above 100 million gallons a day; minimum, 0.2 million gallons a day (0.3 second-foot) July 16-21, 1922.

Remarks.- Records for Sept. 18-23 and Dec. 1 to May 12 (computed on basis of records for stations on nearby streams) and those for ordinary stages are fair; those for extremely high stages are poor. No diversions. Water used in central Maui for irrigation of sugarcane.

Rating tables, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)
July 1 to May 11 May 12 to June 30

0.4	0.34	1.2	13.2	2.5	1.75	3.3	45
.5	.72	1.4	22	2.6	4.6	3.6	70
.6	1.34	1.8	50	2.7	8.3	3.9	100
.7	2.2	2.2	91	2.8	12.5	4.2	132
.8	3.45	2.6	137	3.0	23		
1.0	7.2	3.0	191				

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.6	6.4	7.2	2.7	1.77	1.7	80	16.0	5.1	6.6	7.0	5.3
2	3.3	6.2	*6.9	2.7	1.60	1.7	16.5	10.0	4.7	5.2	45	4.3
3	4.6	7.9	*4.9	4.6	1.43	4.5	12.0	6.5	4.6	7.8	7.5	10.0
4	6.1	14.9	4.6	3.3	3.55	6.5	25	4.9	8.0	5.0	8.0	5.0
5	4.6	6.2	8.2	2.8	10.8	3.5	11.0	4.5	16.0	5.1	20	9.1
6	3.8	5.3	4.9	2.7	8.5	3.0	7.0	6.5	26	6.0	85	6.4
7	4.3	7.0	4.3	2.65	8.7	7.5	6.5	5.8	31	6.8	23	8.9
8	24.5	6.4	4.1	1.68	7.2	6.7	6.0	4.8	26	5.3	11.2	17.0
9	10.1	8.0	4.1	1.51	7.2	20	11.0	4.3	24	4.1	7.3	18.9
10	16.3	6.0	*4.8	1.68	7.5	45	10.5	7.5	22.5	3.5	10.2	7.9
11	9.1	46	*2.1	1.94	6.2	65	6.0	7.2	21.5	3.4	9.0	5.7
12	5.7	31	8.0	1.34	3.8	35	12.5	35	33	4.8	7.1	5.0
13	4.4	18.2	3.45	1.22	3.1	12.5	25	70	13.5	3.2	5.7	4.3
14	5.6	10.0	*3.45	1.15	7.6	40	50	85	11.5	3.9	7.5	4.0
15	9.0	7.0	*29	1.15	16.6	80	55	37	16.5	3.1	26.5	3.45
16	9.5	5.1	*37	.94	5.2	33	37	80	14.0	3.0	17.9	3.45
17	4.8	4.3	*9.2	.68	12.5	17.5	55	40	20.5	3.1	8.3	3.45
18	4.1	3.6	4.3	.64	13.6	10.0	36	95	62	2.9	8.3	3.2
19	3.8	3.45	2.7	.61	5.5	9.0	23	18.5	60	3.0	18.3	2.9
20	11.8	8.9	1.94	.57	5.4	30	33	9.5	32	2.5	122	2.9
21	7.7	5.5	1.68	.53	4.8	55	14.0	6.5	68	3.2	26.5	2.6
22	6.4	4.1	1.60	.53	3.6	90	19.0	13.0	14.5	6.5	16.7	2.3
23	7.9	13.4	1.51	.42	3.3	130	15.5	56	9.2	19.0	15.3	2.3
24	*6.6	13.6	*1.51	3.9	2.95	60	36	11.5	9.7	20	14.4	2.3
25	*10.9	8.2	4.1	65	3.1	50	26	6.8	12.5	10.5	8.3	3.3
26	19.3	*9.2	43	34	2.8	20	12.0	5.7	8.0	9.0	8.3	4.7
27	8.3	5.5	10.8	7.2	2.2	35	9.0	9.0	6.0	5.7	6.4	4.7
28	12.6	13.0	4.4	3.45	2.1	75	7.5	7.5	4.9	3.7	18.1	2.05
29	8.9	9.5	4.1	5.5	1.94	150	7.0	-	4.5	7.1	7.2	1.58
30	7.0	9.4	4.4	2.8	1.77	175	17.0	-	4.2	7.5	6.1	1.05
31	8.1	9.8	-	2.2	-	125	37	-	4.8	-	5.3	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	24.5	3.3	8.15	12.6	253	776
August.....	46	3.45	10.1	15.6	313	961
September.....	43	1.51	7.74	12.0	232	713
October.....	65	.42	5.23	8.09	162	497
November.....	16.6	1.43	5.54	8.57	166	510
December.....	175	1.7	45.1	69.8	1,400	4,290
Calendar year 1936.....	175	.42	10.7	16.6	3,930	12,060
January.....	80	6.0	23.2	35.9	718	2,200
February.....	95	4.3	23.0	35.6	643	1,970
March.....	68	4.2	19.3	29.9	599	1,840
April.....	20	2.5	6.02	9.31	180	554
May.....	122	5.3	18.9	29.2	587	1,900
June.....	18.9	1.05	5.27	8.15	168	485
Fiscal year 1936-37.....	175	.42	14.8	22.9	5,410	16,600

*Partly estimated.

Taro patch feeder ditch at Keanae

Location.- Water-stage recorder and Parshall flume, lat. 20°51'40", long. 156°09'00", 100 feet southeast of highway bridge over Piinaua Stream, 4½ miles northwest of Nahiku, and 4¼ miles southeast of Kailua.

Records available.- September 1934 to June 1937.

Extremes.- Maximum discharge during year, 5.2 million gallons a day (8.0 second-feet) Mar. 21 (gage height, 1.22 feet), from rating curve extended above 17.8 million gallons a day; minimum, 0.15 million gallons a day (0.23 second-foot) Jan. 5, 1934-37; Maximum discharge, 19.4 million gallons a day (30.0 second-foot) Feb. 25, 1935 (gage height, 2.86 feet), from rating curve computed by Parshall-flume formula between 3.5 and 17.8 million gallons a day and extended above; minimum, 0.05 million gallons a day (0.08 second-foot) Feb. 28, 1935.

Remarks.- Records good except those for Feb. 3-8, Mar. 1-4, May 20-24, June 28-30, which were computed on basis of records for stations on nearby streams and are poor. Water used in vicinity of Keanae for irrigation of taro.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.5	2.6	2.75	2.45	2.05	1.91	0.48	2.6	2.75	2.15	2.65	2.6
2	2.4	2.55	2.75	2.35	2.05	1.91	.17	2.55	2.7	2.1	2.6	2.55
3	2.35	2.6	2.7	2.4	2.0	1.96	.17	2.45	2.7	2.1	1.72	2.7
4	2.7	2.95	2.65	2.35	2.0	1.96	.17	2.4	2.7	2.0	2.55	2.6
5	2.45	2.65	2.7	2.25	2.25	1.91	.17	2.35	2.95	2.0	2.85	2.6
6	2.35	2.6	2.6	2.25	2.3	1.91	.17	2.35	3.2	1.96	3.85	2.65
7	2.35	2.65	2.55	2.35	2.1	1.96	.84	2.35	3.2	2.1	2.85	2.65
8	3.3	2.6	2.5	2.2	2.1	2.0	1.67	2.4	2.95	2.05	2.35	2.95
9	2.8	2.75	2.4	2.2	2.0	2.45	2.5	*2.45	3.2	1.96	2.3	3.1
10	3.1	2.65	2.6	2.15	2.00	2.8	2.75	2.5	3.0	1.96	2.55	2.7
11	2.85	3.0	2.45	2.15	2.05	2.7	2.6	2.5	2.85	1.91	2.35	2.6
12	2.6	2.65	2.7	2.15	2.0	2.7	2.75	2.55	3.3	2.05	2.2	2.6
13	2.5	2.85	2.55	2.15	2.0	2.3	3.0	3.0	2.85	2.1	2.2	2.55
14	2.45	2.6	2.45	2.15	2.05	2.55	3.15	3.2	2.8	2.55	2.4	2.55
15	2.7	2.45	3.15	2.15	2.6	3.2	3.2	2.75	3.0	2.5	2.65	2.55
16	2.85	2.35	3.15	2.15	2.2	2.8	3.25	3.25	2.9	2.55	3.2	2.5
17	2.55	2.25	2.7	2.15	2.25	2.7	3.2	3.0	2.95	2.6	2.3	2.5
18	2.5	2.25	2.55	2.15	2.55	2.5	3.2	3.35	3.3	2.6	2.4	2.45
19	2.4	2.20	2.45	2.15	2.2	2.4	2.95	2.65	3.3	2.6	2.7	2.45
20	2.75	2.35	2.4	2.15	2.1	2.95	3.0	2.6	3.1	2.55	3.8	2.45
21	2.65	2.3	2.4	2.1	2.05	3.25	2.75	2.6	2.85	2.55	3.25	2.45
22	2.6	2.25	2.4	2.1	2.0	3.6	2.85	2.7	2.55	2.55	3.0	2.45
23	2.6	3.0	2.35	2.1	2.0	3.8	2.75	3.1	2.55	3.15	2.9	2.5
24	2.5	3.0	2.35	2.2	2.0	3.2	2.9	2.7	2.4	3.2	2.85	2.5
25	2.7	2.8	2.35	2.9	2.0	3.3	2.8	2.75	2.5	2.8	*2.8	2.45
26	3.1	2.75	3.5	2.95	2.0	2.75	2.7	2.75	2.3	2.85	2.8	2.55
27	2.7	2.7	2.85	2.5	2.0	3.1	2.65	2.9	2.25	2.7	2.75	2.65
28	2.75	2.95	2.6	2.2	1.96	3.25	2.6	2.95	2.2	2.6	2.95	2.6
29	2.7	2.85	2.6	2.1	1.96	3.7	2.6	-	2.15	2.65	2.7	2.55
30	2.65	2.75	2.55	2.1	1.91	3.2	2.65	-	2.1	2.7	2.6	2.5
31	2.65	2.8	-	2.1	-	2.6	2.75	-	2.1	-	2.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	3.3	2.35	2.65	4.10	82.0	252
August.....	3.0	2.2	2.64	4.08	81.7	251
September.....	3.5	2.35	2.62	4.05	78.7	242
October.....	2.95	2.1	2.45	3.45	69.8	214
November.....	2.55	1.91	2.09	3.23	62.7	193
December.....	3.8	1.91	2.69	4.16	83.3	256
Calendar year 1936	3.8	1.58	2.45	3.79	897	2,750
January.....	3.25	.17	2.24	3.47	69.4	213
February.....	3.35	2.35	2.70	4.15	75.7	232
March.....	3.3	2.1	2.76	4.27	85.6	263
April.....	3.2	1.91	2.40	3.71	72.1	221
May.....	3.85	1.72	2.70	4.18	83.7	257
June.....	3.1	2.45	2.58	3.99	77.5	238
Fiscal year 1936-37	3.85	.17	2.53	3.91	922	2,830

*Partly estimated.

138628 O-39-6

Koolau ditch near Keanae

Location.- Water-stage recorder, lat. 20°49'55", long. 156°10'30", on west side of Keanae Valley, 2½ miles southwest of Keanae post office.

Records available.- January 1910 to December 1912 (staff gage), November 1917 to June 1937.

Average discharge.- 19 years (1918-37), 64.1 million gallons a day (99.2 second-feet).

Extremes.- Maximum discharge recorded during year, 172 million gallons a day (266 second-feet) Dec. 28 (gage height, 5.96 feet); minimum recorded, 31 million gallons a day (48 second-feet) Oct. 23.

1910-12, 1917-37: 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 good except those for Aug. 15 to Sept. 8, Nov. 9 to Dec. 13, which were computed on basis of records for Koolau ditch at Haipuaena and are fair. Flow regulated by gates and spillways. Koolau 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 diversion above station except that from several spillways.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	68	111	125	68	43	44	123	137	108	106	100	83
2	64	111	120	64	41	43	133	122	97	101	136	72
3	82	94	115	97	39.5	90	137	97	90	118	113	119
4	111	133	110	76	72	110	153	90	111	94	101	94
5	90	104	120	57	135	64	137	57	130	97	120	93
6	76	94	100	55	121	60	133	104	113	115	148	110
7	37	111	90	64	141	108	122	111	136	111	141	120
8	141	115	66	51	135	100	115	79	141	108	141	141
9	136	133	*62	49	131	130	147	68	148	83	129	144
10	144	125	83	49	133	140	140	81	141	83	136	128
11	134	119	59	49	106	145	111	101	139	76	122	97
12	97	144	112	43	72	145	138	100	144	102	108	83
13	83	148	94	41	59	120	148	144	137	76	94	76
14	97	141	87	39.5	78	*153	157	148	137	94	112	68
15	133	130	124	33	144	157	157	144	144	68	135	62
16	129	100	148	38	104	153	157	148	141	62	141	59
17	90	84	125	36	92	148	153	139	141	72	125	57
18	79	72	94	36	140	141	157	148	144	72	129	55
19	68	66	76	34.5	108	132	148	101	144	76	*134	49
20	116	120	68	33	104	157	153	124	121	55	148	47
21	122	90	59	33	97	157	141	111	123	62	153	45
22	118	130	55	33	72	161	144	110	110	101	144	43
23	129	140	51	31.5	62	161	141	144	135	141	144	41
24	115	140	51	76	68	157	138	133	132	144	141	41
25	125	150	76	145	76	157	144	115	137	117	129	58
26	141	120	148	157	68	148	137	104	133	126	122	99
27	133	135	138	118	53	153	135	121	111	108	101	103
28	125	145	97	68	49	157	125	135	101	79	132	68
29	133	145	94	85	47	161	118	-	94	93	111	64
30	125	140	101	57	45	148	113	-	90	116	94	51
31	125	130	-	49	-	144	141	-	101	-	87	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	144	64	110	170	3,420	10,480
August.....	148	66	119	184	3,700	11,350
September.....	143	51	94.6	146	2,840	8,710
October.....	157	31.5	60.3	95.3	1,870	5,740
November.....	144	59.5	87.8	136	2,640	8,090
December.....	161	43	130	201	4,020	12,340
Calendar year 1936	161	0	87.4	135	32,020	98,200
January.....	157	111	139	215	4,300	13,200
February.....	148	68	118	179	3,250	9,960
March.....	148	90	125	193	3,870	11,890
April.....	144	55	95.2	147	2,680	8,760
May.....	153	87	125	193	3,880	11,900
June.....	144	41	78.9	122	2,370	7,270
Fiscal year 1936-37	161	31.5	107	166	39,020	119,690

*Partly estimated.

Honomanu Stream near Keanae

Location.— Water-stage recorder, lat. 20°50'10", long. 156°11'20", 500 feet above Spreckels ditch intake and trail bridge and 3 miles by trail northwest of Keanae.

Drainage area.— 3.3 square miles.

Records available.— November 1913 to June 1937.

Average discharge.— 21 years (1913-37), 15.7 million gallons a day (24.3 second-feet).

Extremes.— Maximum discharge during year, 1,530 million gallons a day (2,370 second-feet) Jan. 1 (gage height, 8.82 feet), from rating curve extended above 30 million gallons a day; minimum, 1.25 million gallons a day (1.93 second-feet) Oct. 23.

1913-37: Maximum discharge, 1,580 million gallons a day (2,440 second-feet) Feb. 25, 1935 (gage height, 8.98 feet), from rating curve extended above 30 million gallons a day; minimum, 0.08 million gallons a day (0.12 second-foot) Mar. 24, 1928.

Remarks.— Records good for ordinary stages and poor for high stages; those for Feb. 11 to Mar. 1 were computed on basis of records for stations on all nearby streams and are fair. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.5	0.35	2.4	16.8
1.6	.65	2.6	26
1.8	2.15	2.8	37.5
2.0	5.2	3.0	52
2.2	10.0	3.2	70

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.8	7.4	9.2	4.2	2.8	2.4	198	11.7	7.0	9.7	14.4	3.2
2	3.45	5.6	5.0	3.45	2.4	2.65	20.5	6.3	*4.5	7.6	120	2.55
3	6.7	9.9	4.8	7.1	2.15	11.4	11.9	4.7	4.0	9.7	12.2	11.2
4	11.6	16.8	6.1	5.0	6.1	9.7	35.5	5.7	6.5	5.2	6.3	6.6
5	7.0	5.6	9.5	7.8	19.6	4.5	11.3	4.5	25.5	5.9	45	11.2
6	5.6	4.8	4.7	6.6	16.0	3.45	7.7	5.4	42	6.3	186	11.6
7	5.0	7.8	4.0	4.5	16.7	8.2	6.3	11.2	64	12.2	33.5	10.3
8	51	9.4	3.45	3.3	14.9	8.0	5.0	5.9	35.5	7.4	11.2	24.5
9	18.5	11.8	3.45	3.6	13.2	27	20.5	4.5	47	4.8	6.1	39.5
10	27.5	6.8	3.8	3.6	10.0	63	12.0	4.9	34.5	4.3	10.2	9.4
11	14.1	83	2.95	4.5	8.2	88	5.2	6.0	24	3.8	4.8	5.6
12	6.3	25	19.0	2.95	4.8	44	10.5	16	72	4.8	3.8	5.4
13	4.7	13.6	7.4	2.55	3.6	12.8	36	70	20.5	3.6	3.6	3.45
14	6.7	10.6	5.5	2.15	6.4	77	53	110	15.9	5.0	6.0	3.05
15	15.5	7.9	65	2.05	19.8	110	80	50	24.5	3.2	47	2.8
16	13.6	5.2	47	5.7	8.5	39.5	59	150	16.4	2.8	22.5	2.55
17	5.6	4.2	8.4	3.5	15.4	17.2	78	55	20.5	2.55	7.2	2.8
18	4.3	3.45	4.8	2.15	26	13.6	71	170	51	4.0	10.5	2.4
19	3.8	3.2	3.8	1.85	7.9	12.2	39.5	20	58	4.5	39	2.15
20	19.0	10.1	3.2	1.55	7.7	44	56	11	58	2.55	165	2.05
21	9.6	6.7	3.05	1.85	6.3	82	15.4	7.5	54	3.05	59	1.95
22	9.8	4.0	3.6	1.65	4.5	146	21.5	20	19.7	7.7	20	1.75
23	12.9	30	3.45	1.45	3.6	211	12.1	120	15.1	43	18.0	1.55
24	9.9	32	2.8	12.4	3.6	72	27	16	9.5	48	14.6	1.55
25	16.1	10.5	5.1	102	4.2	53	20.5	7.5	15.0	19.7	7.2	2.7
26	38	8.9	90	45	4.3	17.1	12.9	5.8	16.1	17.8	6.3	12.5
27	11.6	5.5	21.5	10.0	2.95	36.5	10.2	18	8.9	7.7	4.2	14.9
28	10.5	7.0	7.6	4.7	2.55	79	8.2	20	5.9	4.5	20.5	6.5
29	8.8	5.2	5.0	4.7	2.55	310	9.2	-	5.6	15.9	7.0	4.5
30	6.5	9.2	6.5	4.2	2.4	311	13.0	-	4.3	17.8	4.3	3.3
31	7.4	8.2	-	4.2	-	258	21	-	6.6	-	3.3	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	51	3.45	12.1	18.7	375	1,150
August.....	83	3.2	12.2	18.9	379	1,160
September.....	90	2.8	12.3	19.0	370	1,130
October.....	102	1.45	8.72	15.5	270	828
November.....	26	2.15	6.30	12.8	249	764
December.....	311	2.4	70.1	108	2,170	6,670
Calendar year 1936	311	.44	15.9	24.6	5,610	17,820
January.....	198	5.0	31.9	49.4	990	3,040
February.....	170	4.5	35.5	51.8	936	2,880
March.....	72	4.0	25.3	39.6	794	2,440
April.....	48	2.55	9.84	15.2	295	905
May.....	186	3.3	29.6	45.8	919	2,820
June.....	39.5	1.65	7.12	11.0	214	655
Fiscal year 1936-37	311	1.45	21.8	33.7	7,960	24,440

*Partly estimated.

Haipuaena Stream near Huelo

Location.- Water-stage recorder, lat. 20°51'05", long. 156°11'30", 200 feet above inflow of Spreckels ditch and $\frac{3}{4}$ miles southeast of Kailua.

Drainage area.- 1.1 square miles.

Records available.- October 1913 to June 1937.

Average discharge.- 21 years (1916-37), 10.4 million gallons a day (16.1 second-foot).

Extremes.- Maximum discharge during year, 439 million gallons a day (679 second-foot)

Jan. 1 (gage height, 5.33 feet), from rating curve extended above 160 million gallons a day; minimum, 1.65 million gallons a day (2.55 second-foot) Oct. 24.

1913-37: Maximum discharge, 582 million gallons a day (900 second-foot) Feb. 17, 1929 (gage height, 6.25 feet), from rating curve extended above 160 million gallons a day; minimum, 0.3 million gallons a day (0.5 second-foot) frequently during December 1919 and Oct. 27-29, 1933.

Remarks.- Records excellent for ordinary stages and poor for high stages; those for Aug. 17-28, which were computed on basis of records for station on Puohokamoa Stream, are fair. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.5	1.5	1.6	22
.6	2.2	1.9	34.5
.8	4.0	2.2	51
1.0	6.9	2.5	71
1.2	10.7	3.0	115
1.4	15.7	3.5	175

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.5	7.3	8.4	4.4	3.0	2.2	74	8.5	6.2	9.3	17.5	4.3
2	4.2	6.0	7.5	4.1	2.7	2.3	14.4	4.9	4.8	6.7	70	3.5
3	6.0	9.1	19.2	7.6	2.55	9.7	8.2	4.1	4.2	9.6	8.7	10.4
4	10.7	17.6	13.3	6.1	5.4	9.0	25.5	4.3	7.2	5.2	5.4	6.6
5	6.5	5.7	11.2	6.0	20.5	4.3	8.6	3.7	24.5	5.4	25.5	11.2
6	5.1	5.0	5.9	5.6	14.5	3.5	5.9	4.5	40	7.0	107	10.6
7	5.4	7.9	4.8	4.5	14.4	7.8	4.9	9.9	47	12.0	25	11.3
8	39.5	10.5	4.5	3.5	11.4	6.4	4.4	4.8	27	7.8	13.0	24.5
9	15.3	13.8	3.95	3.5	11.5	21.5	26	4.1	40	4.9	8.2	36
10	24.5	7.4	5.2	3.95	11.3	35	15.2	4.1	27.5	3.9	12.0	10.0
11	15.4	55	3.35	4.1	8.7	46	5.7	5.2	22	4.3	6.3	6.4
12	7.2	20.5	16.1	3.0	5.0	28	12.3	16.7	54	7.3	5.3	5.5
13	5.3	13.5	7.1	2.6	4.1	9.5	30.5	49	15.4	4.4	4.9	4.1
14	6.1	12.2	6.0	2.45	8.0	39	43	55	15.5	6.8	7.8	3.7
15	17.1	8.4	48	2.3	19.1	61	54	27	24	3.8	36	3.25
16	15.5	5.7	36.5	3.7	8.0	28	50	71	18.0	3.5	22.5	3.25
17	6.5	4.5	9.1	3.05	18.4	15.0	51	35	21	3.25	8.7	3.5
18	4.8	4.0	5.4	2.2	23.5	12.0	50	82	45	4.9	10.8	2.9
19	4.2	3.5	4.2	2.0	7.7	11.4	30	12.6	45	4.3	31.5	2.45
20	18.2	14	3.7	1.86	7.7	35.5	46	7.3	42	2.8	95	2.5
21	11.0	9.0	3.6	1.95	6.2	62	14.0	5.2	38	3.0	44	2.3
22	10.5	5.5	3.5	2.0	4.2	86	21	15.7	16.6	7.4	18.7	2.15
23	13.7	26	3.25	1.79	3.6	113	13.9	58	14.4	38.5	18.2	1.93
24	9.6	30	3.0	9.1	3.8	44	17.0	10.6	9.1	42	16.1	1.93
25	15.8	12	7.4	57	3.95	46	18.9	6.0	11.4	17.5	8.2	3.3
26	36.5	12	67	43	3.8	16.3	10.7	4.9	10.6	16.6	8.2	11.3
27	12.6	8.0	19.0	10.6	2.9	34	7.5	15.2	6.7	8.1	5.6	12.3
28	13.2	21	7.6	5.0	2.6	51	6.2	16.9	4.9	4.9	20.5	4.9
29	12.7	15.8	5.9	4.4	2.35	165	10.8	-	4.9	16.1	8.4	4.1
30	7.6	13.8	7.2	5.3	2.3	131	9.9	-	4.3	10.9	5.3	3.25
31	8.4	10.7	-	4.6	-	102	15.0	-	6.4	-	4.4	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	39.5	4.2	12.1	18.7	374	1,150
August.....	55	3.5	12.9	20.0	400	1,250
September.....	67	3.0	11.7	18.1	351	1,090
October.....	57	1.79	7.14	11.0	221	679
November.....	23.5	2.3	8.10	12.5	243	746
December.....	163	2.2	39.9	61.7	1,240	3,790
Calendar year 1936	163	.9	12.7	19.6	4,670	14,350
January.....	74	4.4	22.7	35.1	704	2,160
February.....	82	3.7	19.8	30.8	554	1,700
March.....	54	4.2	21.2	32.6	657	2,020
April.....	42	2.8	9.44	14.6	235	869
May.....	107	4.4	21.9	33.9	679	2,080
June.....	36	1.93	7.11	11.0	213	654
Fiscal year 1936-37	163	1.79	16.2	25.1	5,920	18,160

Spreckels ditch at Haipuaena weir, near Huelo

Location.— Water-stage recorder and sharp-crested weir, lat. 20°51'20", long. 156°11'25", on Spreckels ditch trail between Haipuaena and Puohokamoa Streams, $\frac{3}{4}$ miles southeast of Kailua.

Records available.— April 1922 to June 1937. February 1930 to October 1935 at site 100 feet upstream.

Average discharge.— 14 years (1922-29, 1930-37), 14.8 million gallons a day (22.9 second-feet).

Extremes.— Maximum discharge during year, 93 million gallons a day (144 second-feet) Dec. 29 (gage height, 2.25 feet); minimum, 1.40 million gallons a day (2.17 second-feet) Oct. 23.

1922-37: Maximum discharge, 139 million gallons a day (215 second-feet) Mar. 5, 1933 (gage height, 5.03 feet); no flow when water was turned out of ditch.

Remarks.— Records excellent. Flow regulated by gates and spillways. Spreckels ditch diverts from all streams between the Nuaailua and the Kailua, above Koolau ditch east of the Puohokamoa and below Koolau ditch west of Puohokamoa. About 4 million gallons a day is diverted from 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 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.1	19.6	21	8.8	4.5	3.5	12.3	22.5	15.4	20	42	10.4
2	9.0	17.5	18.3	8.0	3.65	4.4	21	13.3	11.6	16.7	50	8.2
3	16.0	16.0	27.5	16.4	2.95	23.5	23.5	10.4	10.1	22.5	20	23.5
4	26	35.5	26	13.5	12.3	23	40	12.8	19.8	13.6	15.4	15.5
5	18.8	14.7	26	10.9	30	11.3	23	9.8	43	14.7	31.5	21.5
6	13.8	13.3	14.4	12.0	24.5	8.4	15.4	13.3	46	20	71	22
7	15.8	20	11.3	9.8	24.5	19.4	13.3	23.5	48	25	40	24.5
8	53	23.5	10.4	6.0	22	17.5	11.9	13.0	40	21	26.5	42
9	31	28.5	8.9	5.8	22.5	37.5	37.5	9.8	48	12.6	24	52
10	3	18.3	15.8	7.5	22	50	29.5	11.9	40	13.0	28	23
11	30	34	7.7	8.9	17.4	58	14.4	13.3	34.5	11.9	18.8	15.0
12	17.6	35	28	4.3	10.5	46	27	24.5	49	19.9	15.4	11.9
13	13.0	35.5	16.9	3.65	8.0	23.5	38.5	46	29.5	11.3	14.7	9.2
14	18.8	26.5	16.2	2.95	14.4	46	48	49	30	18.4	21	7.9
15	34.5	20.5	55	2.7	31.5	70	49	37	42	9.8	48	6.7
16	30.5	14.0	55	7.0	18.3	39.5	48	52	35.5	8.7	40	7.1
17	15.8	11.0	21.5	4.3	31.5	27.5	46	48	37.5	8.9	23	8.0
18	11.6	8.7	13.0	2.2	40	23.5	48	48	47	10.4	26	5.7
19	9.5	7.9	9.8	1.98	18.8	22	41	25	44	12.3	49	3.85
20	33	26	8.2	1.86	19.2	48	47	19.6	41	6.5	71	3.15
21	26	18.3	7.8	1.98	15.8	58	30.5	14.0	37.5	8.0	56	2.95
22	24	10.4	8.0	1.74	10.7	62	37	19.7	29	21.5	34.5	2.25
23	29	44	6.9	1.40	8.2	70	29.5	46	27.5	49	35.5	2.0
24	23	43	6.0	14.9	8.4	55	28.5	21.5	24	56	31.5	2.2
25	33	26	12.6	46	9.8	58	33.5	15.4	27	31	22	8.0
26	52	25.5	61	42	10.0	27.5	26	13.0	24.5	35.5	23	20.5
27	25.5	17.5	30	18.0	5.9	48	21	30	17.9	21.5	14.4	22
28	28	37	15.5	9.0	4.6	46	18.8	32	13.0	13.0	37	13.2
29	27	30.5	13.0	9.0	3.85	74	26	-	13.6	16.6	20	9.8
30	21	29	15.2	8.2	3.85	66	22	-	11.0	27	13.0	7.1
31	22	25.5	-	8.2	-	39	31.5	-	16.9	-	11.0	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	53	9.0	24.6	38.1	761	2,340
August.....	44	7.9	23.6	36.5	733	2,250
September.....	61	6.0	19.6	30.3	587	1,800
October.....	46	1.40	9.64	14.9	299	917
November.....	40	2.95	15.3	23.7	460	1,410
December.....	74	3.5	38.9	60.2	1,210	3,700
Calendar year 1936.....	74	.66	20.3	31.4	7,460	22,860
January.....	49	11.9	30.3	46.9	939	2,880
February.....	52	9.8	24.9	38.5	696	2,140
March.....	49	10.1	30.8	47.7	954	2,930
April.....	56	6.5	19.2	29.7	576	1,770
May.....	71	11.0	31.4	48.6	973	2,990
June.....	52	2.0	13.7	21.2	411	1,260
Fiscal year 1936-37.....	74	1.40	23.5	36.4	8,600	26,390

ISLAND OF MAUI

Koolau ditch at Haipuaena, near Huelo

Location.- Water-stage recorder and Parshall flume, lat. 20°51'15", long. 156°11'15", 1,000 feet above intake from Puohokamoa Stream and 3½ miles southeast of Kailua.

Records available.- April 1932 to June 1937.

Extremes.- Maximum discharge during year, 199 million gallons a day (308 second-feet) Aug. 4 (gauge height, 4.93 feet); minimum, 18.9 million gallons a day (29.2 second-feet) Dec. 30.

1932-37: Maximum discharge, 200 million gallons a day (309 second-feet) Nov. 18, 1935 (gauge height, 5.11 feet); no flow when water was shut out of ditch.

Remarks.- Records good except those for Aug. 12-17, 24-28, Sept. 21 to Oct. 9, which were computed on basis of records for Koolau ditch at Keanae, which are fair. Flow regulated by flood gates. No diversions. Water used for domestic supply and irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	72	113	131	70	46	46	143	149	108	119	122	85
2	67	108	119	68	42	46	155	125	99	108	167	76
3	58	99	121	110	41	95	149	105	94	130	125	131
4	124	156	103	85	76	120	169	99	124	94	103	100
5	94	103	134	64	163	67	149	94	176	99	136	107
6	80	94	89	60	134	63	137	108	149	119	183	122
7	89	117	76	70	155	108	125	131	176	129	155	130
8	173	125	72	56	149	103	119	65	169	118	155	169
9	165	149	67	55	143	168	165	76	183	85	137	176
10	176	112	93	55	143	176	155	90	162	65	149	137
11	146	139	63	55	115	176	113	105	162	80	125	99
12	99	170	137	48	76	176	149	118	169	117	108	85
13	85	175	99	44	63	137	169	183	149	60	94	76
14	98	170	94	42	95	155	176	183	162	103	120	72
15	162	150	168	41	176	183	183	178	176	72	162	67
16	152	110	176	42	112	169	176	176	169	67	169	63
17	89	90	131	39	109	169	176	169	169	76	131	63
18	80	76	99	37	163	155	183	176	166	72	137	59
19	72	72	80	35.5	108	143	169	108	169	79	162	52
20	136	142	72	34	108	183	176	130	141	59	183	50
21	134	108	64	35.5	99	183	162	115	144	64	183	48
22	123	169	58	32.5	76	183	169	121	134	107	169	46
23	149	162	56	32.5	67	183	155	169	155	173	169	44
24	119	165	54	94	67	169	155	137	143	176	162	42
25	149	160	90	176	76	176	169	119	155	133	131	51
26	183	150	175	176	67	162	149	108	149	145	131	119
27	143	160	170	129	55	176	143	149	115	115	103	113
28	139	160	120	72	52	176	131	162	105	80	155	72
29	149	162	115	67	50	163	131	-	99	121	117	67
30	125	162	120	59	48	169	124	-	94	132	94	55
31	131	143	-	52	-	155	162	-	108	-	69	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	183	67	122	189	3,780	11,610
August.....	175	72	135	209	4,170	12,800
September.....	176	54	105	162	3,140	9,620
October.....	176	32.5	66.3	103	2,060	6,310
November.....	176	41	95.8	148	2,870	8,620
December.....	183	46	146	226	4,530	13,910
Calendar year 1936.....	183	4	98.3	152	35,970	110,400
January.....	183	113	154	238	4,790	14,690
February.....	183	76	131	203	3,660	11,240
March.....	183	94	144	223	4,470	13,710
April.....	176	59	105	162	3,140	9,630
May.....	183	89	139	215	4,320	13,250
June.....	176	42	85.9	133	2,580	7,910
Fiscal year 1936-37.....	183	32.5	119	184	45,510	135,500

Puohokamoa Stream near Huelo

Location.- Water-stage recorder, lat. 20°51'20", long. 156°11'25", just above Spreckels ditch inflow and trail crossing, 3 miles southeast of Kailua.

Drainage area.- 2.6 square miles.

Records available.- December 1910 to June 1937. December 1910 to June 1913 from staff gage at site 550 feet downstream, June 1913 to May 1934 from recorder at site 500 feet downstream.

Average discharge.- 20 years (1917-37), 21.5 million gallons a day (33.3 second-feet).

Extremes.- Maximum discharge recorded during year, 1,200 million gallons a day (1,980 second-feet) Jan. 1 (gage height, 6.76 feet), from rating curve extended above 500 million gallons a day; minimum discharge, 3.7 million gallons a day (5.7 second-feet) Oct. 23, 24.

1910-37: Maximum discharge, 1,250 million gallons a day (1,930 second-feet) Feb. 28, 1935 (gage height, 7.09 feet), from rating curve extended above 500 million gallons a day; minimum, 0.1 million gallons a day (0.2 second-feet) Nov. 17, 1929, former site and datum.

Remarks.- Records good for ordinary stages and poor for high stages. Kula pipe line diverts small amount of water above station at altitude 4,300 feet for domestic use.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.8	2.4	1.2	14.4	2.1	100	3.5	340
.9	4.3	1.5	32	2.5	165	4.0	440
1.0	6.9	1.6	61	3.0	252		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.2	15.4	18.0	10.2	6.9	5.6	168	20	18.0	22	35.5	10.6
2	9.2	12.7	15.9	9.2	6.1	5.3	34	13.6	13.6	16.4	142	8.9
3	13.3	15.9	44	16.9	5.6	19.0	23	11.5	11.9	22	19.8	21.5
4	23	39	20.5	14.0	11.6	19.4	54	11.0	17.6	12.7	15.4	14.4
5	14.4	12.3	21.5	11.8	43	9.2	22.5	9.9	58	13.1	54	24
6	11.5	10.6	13.6	12.3	32.5	7.6	17.0	12.3	95	15.9	250	21.5
7	11.9	16.8	11.0	10.2	29	16.5	14.4	24	100	26	55	26.5
8	83	21	10.2	8.2	22.5	13.5	12.7	13.6	59	18.1	28	57
9	27.5	27	9.3	7.9	23.5	42	57	11.5	88	11.5	20	78
10	46	15.4	11.9	8.1	24	54	36.5	11.2	65	11.2	28	23
11	28	111	7.9	8.9	19.6	78	14.9	14.0	45	10.2	15.9	14.4
12	14.4	42	32	6.4	11.5	47	25.5	37	136	16.8	15.6	12.7
13	11.0	35.5	15.0	5.6	9.2	19.0	72	83	41	9.9	12.8	10.2
14	14.2	25.5	13.6	5.1	14.0	62	92	127	31.5	15.2	18.1	9.5
15	36	18.5	104	4.8	36.5	136	130	54	52	8.6	76	8.2
16	30.5	12.7	74	5.9	17.8	52	116	171	43	7.6	48	7.9
17	14.0	10.2	19.5	6.6	42	30.5	89	80	50	7.9	20	8.2
18	10.6	8.9	12.7	4.8	50	25	114	211	109	6.9	27	6.6
19	9.2	8.2	10.6	4.3	17.5	23.5	64	32	107	9.2	63	5.9
20	37	28	9.2	4.3	17.0	73	108	20.5	101	6.4	191	5.6
21	23.5	18.0	8.6	4.3	14.4	138	32	15.9	92	6.6	98	5.3
22	19.8	11.0	8.6	4.1	10.2	189	48	36.5	39	16.0	38.5	5.1
23	27	55	8.2	3.7	8.9	244	34	144	37.5	97	38.5	4.5
24	19.8	60	7.2	16.2	9.2	92	35	27	23	97	34.5	4.6
25	33.5	25	12.1	102	10.2	114	36	17.5	24.5	33.5	19.6	7.6
26	74	26	154	88	9.9	37	23	14.9	19.8	39.5	20	25
27	24	16.3	38	22	6.9	86	15.8	35	15.4	19.6	14.4	24
28	25.5	42	17.0	11.0	6.1	112	16.4	41	12.3	12.3	47	11.0
29	26.5	31.5	14.4	9.9	5.9	376	27	-	12.3	31.5	18.7	9.5
30	16.4	29	16.6	11.3	5.6	297	22	-	11.0	19.9	12.7	6.9
31	17.7	22.5	-	10.2	-	217	29.5	-	14.7	-	11.0	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	83	9.2	24.6	38.1	763	2,340
August.....	111	6.2	28.5	41.0	821	2,580
September.....	154	7.2	25.3	39.1	759	2,330
October.....	102	3.7	14.5	22.4	448	1,380
November.....	50	5.6	17.6	27.2	527	1,620
December.....	376	5.3	85.2	132	2,640	8,100
Calendar year 1936.....	376	1.9	27.3	42.2	9,990	30,870
January.....	159	12.7	51.2	79.2	1,590	4,870
February.....	211	9.9	46.4	71.8	1,300	3,990
March.....	136	11.0	49.8	77.1	1,540	4,740
April.....	97	6.4	21.5	33.0	640	1,960
May.....	250	11.0	47.9	74.1	1,490	4,560
June.....	78	4.5	15.9	24.6	478	1,470
Fiscal year 1936-37.....	376	3.7	35.6	55.1	13,000	39,880

Manuel Luis ditch at Puohokamoa Gulch, near Huelo

Location.- Water-stage recorder and 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.

Records available.- December 1917 to June 1937.

Average discharge.- 18 years (1918-24, 1926-37), 6.05 million gallons a day (9.36 second-feet).

Extremes.- Maximum discharge during year, 84 million gallons a day (130 second-feet) Jan. 1 (gage height, 3.49 feet); no flow Jan. 8.
1917-37: 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 submerged-orifice formulas; no flow Jan. 8, 1937.

Remarks.- Records for low stages are good; those for July 1-10, Oct. 1-24, Apr. 6 (computed on basis of records for station on nearby ditches) and those for high stages are poor. Manuel Luis ditch is extension of Center ditch and picks up water at altitude 500 feet between the Kolea and the Waikamoi. Flow regulated by gates. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.5	1.68	6.5	1.8	0.73	0.62	50	2.05	3.25	3.85	7.7	1.37
2	1.0	2.7	2.5	1.5	.67	.62	18.3	1.53	2.15	2.15	37	1.14
3	1.6	5.1	6.5	3.6	.62	.91	.91	1.37	1.77	2.5	3.25	4.4
4	4.5	9.1	2.05	2.3	1.14	2.15	7.1	2.4	2.95	1.77	2.25	1.96
5	2.2	1.77	6.5	1.2	6.4	1.22	1.37	1.53	8.5	1.68	18.3	5.9
6	1.5	1.53	1.96	1.5	7.2	.99	1.06	2.3	21.5	2.0	64	3.25
7	1.5	2.25	1.68	1.2	2.25	1.37	.47	6.4	24	*2.5	18.8	3.1
8	19.0	3.75	1.68	1.0	1.86	.85	.05	1.96	9.8	*2.5	5.9	8.1
9	5.0	4.4	1.66	.95	2.55	5.7	16.0	1.53	20.5	*1.5	4.3	13.4
10	11.0	2.3	4.2	1.4	2.9	11.1	15.7	2.35	11.4	*1.45	5.0	2.4
11	3.55	15.8	1.30	2.2	2.7	19.3	1.45	1.96	4.2	2.05	2.5	1.77
12	1.53	9.8	3.55	1.0	1.45	11.0	4.7	12.8	24	8.7	2.25	1.77
13	1.80	11.0	1.45	.85	1.06	1.14	20	31.5	4.7	1.96	2.5	1.55
14	1.65	2.8	1.86	.75	4.3	16.7	27.5	36	4.6	3.2	2.4	1.77
15	5.4	1.68	24.5	.65	18.7	31.5	22	11.4	13.6	1.53	22.5	1.37
16	5.4	1.37	23	1.3	3.9	8.5	33.5	37.5	4.6	1.45	5.7	1.37
17	1.77	1.14	2.8	.60	16.5	3.55	30	23	11.3	1.68	1.77	1.96
18	1.60	.99	1.77	.45	18.0	1.68	36	37.5	27	1.60	1.60	1.3
19	1.37	.91	1.45	.40	3.56	1.22	15.0	5.6	27.5	2.3	14.4	1.14
20	5.4	5.4	1.22	.36	5.1	14.9	28.5	3.1	19.0	1.50	64	.99
21	3.95	2.5	1.06	.55	2.5	28	4.2	2.15	16.4	1.14	25.5	.91
22	3.25	1.22	1.22	.34	1.60	33	15.9	6.3	3.95	3.1	3.0	.79
23	5.8	5.7	1.14	.33	1.37	42	9.9	28.5	13.1	18.3	6.5	.73
24	3.0	13.4	1.14	1.5	1.14	34	10.2	1.96	5.6	24	5.3	.62
25	9.1	2.3	3.35	27.5	1.06	36.5	5.0	1.22	6.2	5.3	1.96	1.45
26	18.8	4.1	46	27.5	.99	6.7	2.15	1.30	3.25	7.5	3.35	2.25
27	3.35	1.86	22.5	4.6	.91	12.0	3.6	11.1	2.4	2.4	1.68	2.3
28	7.1	11.6	3.65	1.22	.79	22	2.25	13.2	1.77	1.68	9.9	1.06
29	3.95	5.6	3.9	1.14	.67	60	3.65	-	1.60	9.8	1.60	1.06
30	2.4	4.9	4.0	.85	.62	52	3.6	-	1.68	4.3	1.37	.79
31	1.96	6.3	-	1.30	-	45	3.9	-	3.6	-	1.22	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	19.0	1.0	4.63	7.16	145	440
August.....	15.8	.91	4.68	7.24	145	445
September.....	46	1.06	6.20	9.69	186	571
October.....	27.5	.33	2.96	4.68	91.6	281
November.....	18.7	.62	3.53	5.46	106	325
December.....	60	.62	16.3	25.2	506	1,550
Calendar year 1936.....	60	.2	4.87	7.54	1,780	5,460
January.....	50	.05	12.7	19.6	394	1,210
February.....	37.5	1.22	10.3	15.9	290	888
March.....	27.5	1.60	9.67	15.3	306	939
April.....	24	1.14	4.17	6.45	125	384
May.....	64	1.22	11.2	17.3	348	1,070
June.....	13.4	.62	2.40	3.71	72.0	221
Fiscal year 1936-37.....	64	.05	7.43	11.5	2,710	8,520

*Partly estimated.

Spreckels ditch at Wahinepee, near Huelo

Location.- Water-stage recorder and Parshall flume, lat. 20°51'25", long. 156°11'20", between Puohokamoa and Alo Streams, 700 feet below intake at Puohokamoa Stream, 2½ miles west of Keanae, and 3¼ miles southeast of Kailua.

Records available.- August 1928 to June 1937. August 1928 to May 1934 at site 300 feet downstream.

Extremes.- Maximum discharge during year, 128 million gallons a day (195 second-feet) Dec. 29 (gage height, 3.71 feet); minimum, 0.03 million gallons a day (0.05 second-foot) June 1, 2.

1928-37: Maximum discharge, that of Dec. 29, 1936; no flow at times, due to regulation.

Remarks.- Records good except those for Aug. 18-28, Dec. 2-4, June 4-8 which were computed on basis of records for stations on nearby streams and are poor. Intake of Spreckels ditch is on Puohokamoa Stream just below intake of Koolau ditch, and for ordinary stages it takes all water which passes Koolau ditch intake. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.13	0.22	0.84	0.13	0.09	0.09	3.35	3.65	0.40	5.6	14.4	0.06
2	.13	.28	.33	.17	.09	.10	9.9	.17	.22	.56	.46	.06
3	.13	1.69	15.6	.28	.09	.50	16.7	.13	.13	4.4	.53	14.9
4	2.65	16.3	1.01	.22	.17	5.0	32.5	.17	5.8	.17	.17	8.0
5	.17	.22	3.45	.13	33.5	.17	11.8	.13	.45	.13	17.4	12.0
6	.13	.22	.22	.13	8.4	.13	.28	.22	36	.66	49	15.0
7	.13	.40	.22	.17	13.4	1.71	.17	5.8	28.5	11.0	27	25
8	42	1.05	.22	.13	.62	.17	.17	.17	29.5	2.15	12.2	45
9	14.2	3.95	.28	.13	.46	19.0	38	.13	34.5	.13	.96	63
10	33	.40	.46	.13	2.8	33.5	24.5	.22	29.5	.13	12.7	8.7
11	9.9	21	.22	.13	1.09	46	.22	.22	13.6	.17	.28	.09
12	.22	21.5	17.5	.13	.13	34	16.1	16.8	33	5.6	.17	.06
13	.13	24.5	.86	.13	.13	.17	34	65	30.5	.22	.17	.06
14	.22	2.65	.13	.09	11.7	28.5	51	59	25	2.65	2.6	.06
15	18.2	.22	45	.09	32	63	55	39	36	.17	24.5	.06
16	11.2	.17	53	.09	.33	31.5	59	63	33	.17	33	.06
17	.22	.17	.40	.09	30.5	10.5	55	45	28	.17	.89	.06
18	.17	.15	.13	.09	23	1.79	55	28.5	38	.17	9.8	.06
19	.17	.15	.13	.09	.22	.40	41	4.6	27	.22	34	.06
20	19.5	10.0	.13	.09	.28	65	51	.66	18.8	.13	55	.06
21	7.9	.50	.13	.09	.17	71	22.5	.22	14.8	.13	55	.06
22	3.0	.20	.17	.09	.13	63	33	10.7	8.4	.50	36	.06
23	3.75	30	.13	.09	.13	59	15.5	46	7.1	46	35.5	.09
24	1.66	25	.13	8.3	.13	55	16.6	4.5	3.05	51	28	.09
25	9.8	.50	2.8	61	.13	71	25	.28	6.4	13.1	.60	.62
26	41	.45	72	56	.13	9.2	4.2	.13	3.15	21	2.3	15.5
27	2.9	.35	25	1.84	.09	47	2.9	25	.33	4.7	.13	13.0
28	6.7	20	.22	.13	.09	43	.40	27.5	.17	.13	16.2	.09
29	6.5	13.7	.22	.13	.09	60	7.6	-	.17	17.2	1.47	.09
30	.28	10.4	.77	.13	.09	46	10.0	-	.17	10.5	.09	.06
31	.33	6.3	-	.09	-	12.7	21.5	-	1.27	-	.06	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	42	0.13	7.69	11.9	238	732
August.....	30	.15	6.99	10.9	217	665
September.....	72	.13	8.06	12.5	242	749
October.....	61	.09	4.21	6.51	131	401
November.....	33.5	.09	5.34	6.26	160	492
December.....	60	.09	28.9	44.7	895	2,750
Calendar year 1936	60	0	9.63	15.2	3,600	11,050
January.....	59	.17	23.0	35.6	713	2,190
February.....	63	.13	15.6	24.1	437	1,340
March.....	45	.13	17.3	26.9	535	1,640
April.....	51	.13	6.64	10.3	199	611
May.....	55	.06	16.6	25.7	516	1,580
June.....	63	.06	7.40	11.4	222	661
Fiscal year 1936-37	80	.06	12.3	19.0	4,500	13,820

Waikamoi Stream above Wailoa ditch, near Huelo

Location.- Water-stage recorder, lat. 20°51'45", long. 156°11'55", 500 feet above intake of Wailoa ditch, a quarter of a mile above Spreckels ditch trail, and $\frac{3}{4}$ miles south-east of Kailua.

Drainage area.- 4.4 square miles.

Records available.- January 1922 to June 1937.

Average discharge.- 15 years (1922-37), 15.7 million gallons a day (24.3 second-feet).

Extremes.- Maximum discharge during year, 3,380 million gallons a day (5,230 second-feet) Jan. 1 (gage height, 8.53 feet), from rating curve extended above 300 million gallons a day; minimum, 1.36 million gallons a day (2.10 second-feet) Oct. 23.

1922-37: 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 300 million gallons a day; minimum, 0.4 million gallons a day (0.6 second-feet) Nov. 16, 1929.

Remarks.- Records for ordinary stages are good; those for July 3-20 (computed on basis of records for stations on Alo, Kaaiea, and Oopuola Streams) and those for high stages are poor. Haleakala ranch and Kula pipe lines divert small quantities of water above station. Water used for irrigation in central Maui.

Rating tables, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Aug. 25						Aug. 26 to June 30					
0.6	0.6	1.2	4.5	2.4	44	1.0	1.12	2.4	46		
.7	.9	1.4	7.6	2.8	75	1.2	2.25	2.8	80		
.8	1.3	1.6	12.0	3.2	118	1.4	4.5	3.2	129		
.9	1.8	1.8	17.5			1.6	8.7	3.6	195		
1.0	2.5	2.0	24			1.8	14.5	4.0	277		
						2.0	23	4.5	410		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.9	7.4	9.5	5.8	3.7	2.6	390	18.3	9.2	11.9	11.2	4.9
2	4.4	6.3	10.0	4.5	2.9	2.5	31	7.5	6.4	10.6	108	3.96
3	*7.0	6.7	48	7.6	2.5	10.0	15.6	5.4	5.4	13.4	14.3	10.6
4	*10.0	26.5	20.5	7.3	5.1	12.0	35.5	4.9	8.0	6.9	7.1	10.2
5	*8.0	7.8	16.4	6.6	23	5.6	13.6	4.5	32.5	6.6	32	12.7
6	*4.5	5.5	9.0	9.2	25	3.8	9.0	5.6	58	8.0	208	19.4
7	*8.0	8.5	8.0	6.4	19.6	8.5	7.1	20	69	11.3	36	12.7
8	*35	13.3	6.0	4.1	20.5	7.8	6.0	8.7	43	8.7	16.2	29
9	*15.0	18.1	4.9	3.5	17.5	36.5	24.5	7.3	50	5.4	10.6	63
10	*30	10.4	6.0	3.95	14.5	73	16.9	5.8	47	5.1	15.1	14.7
11	*14.0	102	3.8	4.7	10.6	126	6.4	9.5	30.5	4.7	8.2	7.6
12	*9.0	36.6	21.6	3.15	5.8	69	9.5	32.5	90	8.5	6.4	9.0
13	*5.4	19.0	13.2	2.8	4.4	16.3	47	109	27	4.7	5.8	5.4
14	*10.0	14.1	7.3	2.6	6.2	91	78	146	20	6.5	7.6	4.2
15	*25	9.5	92	2.25	17.5	167	101	66	30	4.1	66	3.7
16	*23	6.6	80	3.45	9.2	53	71	162	24.5	3.55	37	3.55
17	*9.5	5.1	13.8	3.9	30	26	80	45	27	3.55	12.6	3.7
18	*6.0	4.3	7.6	2.35	40	18.2	85	151	67	3.15	16.1	2.95
19	*4.5	4.0	5.4	1.92	11.7	17.5	49	19.8	79	4.7	54	2.6
20	*30	11.2	4.5	1.66	11.1	65	72	11.1	78	3.3	234	2.35
21	18.0	18.0	4.1	1.66	9.2	114	17.8	8.0	75	2.9	97	2.35
22	14.3	14.2	3.95	1.66	5.6	197	26.5	21	27	6.9	29.5	2.05
23	18.4	*26.5	4.1	1.46	4.2	278	18.9	106	23.5	60	23	1.80
24	13.8	*41	3.55	8.6	7.6	91	16.2	16.5	13.0	68	22	1.80
25	21.5	*16.9	4.8	127	8.0	78	19.8	8.7	15.2	17.4	11.4	2.95
26	54	13.0	116	56	5.6	26	14.2	7.1	18.9	33	9.8	16.3
27	18.5	9.0	29	15.0	3.7	47	9.5	19.3	11.7	10.8	6.9	17.4
28	12.4	26	11.1	6.2	3.05	96	9.9	27	7.3	6.0	22	8.2
29	12.2	23.5	8.0	5.3	2.8	355	19.6	-	7.1	26	11.0	6.4
30	8.0	17.5	9.2	5.3	2.6	380	16.1	-	5.4	16.1	6.4	3.8
31	8.4	12.8	-	7.4	-	347	29	-	8.2	-	5.1	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	54	4.4	14.9	23.1	463	1,420
August.....	102	4.0	16.8	26.0	522	1,600
September.....	116	3.65	19.3	29.9	579	1,780
October.....	127	1.46	10.4	16.1	324	993
November.....	40	2.5	11.1	17.2	333	1,020
December.....	380	2.5	91.0	141	2,820	8,660
Calendar year 1936	390	.8	21.0	32.5	7,670	23,540
January.....	390	6.0	43.4	67.1	1,340	4,130
February.....	162	4.6	37.6	58.2	1,050	3,230
March.....	90	5.4	32.7	50.6	1,010	3,110
April.....	68	2.9	12.7	19.6	382	1,170
May.....	234	5.1	37.0	57.2	1,150	3,520
June.....	63	1.80	9.64	14.9	289	888
Fiscal year 1936-37	390	1.46	28.1	43.5	10,260	31,620

*Estimated.

†Partly estimated.

Alo Stream near Huelo

Location.- Water-stage recorder, lat. 20°51'50", long. 156°11'45", just above Spreckels ditch inflow and trail crossing, 2½ miles southeast of Kailua.

Drainage area.- 0.2 square mile.

Records available.- December 1910 to June 1937.

Average discharge.- 26 years (1911-37), 5.04 million gallons a day (7.80 second-feet).

Extremes.- Maximum discharge during year, 280 million gallons a day (433 second-feet) May 2 (gage height, 3.28 feet), from rating curve extended above 50 million gallons a day; minimum, 0.65 million gallons a day (1.01 second-feet) Oct. 23.

1910-37: 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 for ordinary stages are good; those for July 18-21, Aug. 9-20 (computed on basis of records for stations on nearby streams and those for high stages are poor.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.25	1.4	15.0
.6	.73	1.6	25
.8	1.00	1.9	46
1.0	3.5	2.2	76
1.2	8.0		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.0	3.0	6.0	2.4	1.15	0.92	25.5	3.3	3.8	5.9	17.5	2.0
2	1.68	3.85	3.6	2.55	1.01	.92	5.8	2.5	2.85	2.85	35	1.62
3	2.15	5.2	5.9	5.6	.92	2.85	4.4	2.0	2.25	5.0	3.2	5.5
4	3.15	9.7	2.95	5.6	2.6	5.6	11.7	2.15	6.3	3.05	2.4	2.15
5	2.7	2.85	8.0	2.3	12.7	2.3	5.3	1.68	17.4	2.75	16.9	6.2
6	1.80	2.5	2.65	2.15	6.4	1.74	2.75	3.0	41	6.5	52	3.55
7	2.8	4.0	2.5	2.7	4.5	3.9	2.25	9.1	27	5.8	16.9	4.5
8	14.5	7.3	2.1	1.68	3.2	2.45	2.1	2.95	12.2	4.5	6.6	10.1
9	5.3	7.0	3.3	1.44	5.2	5.5	31	2.1	27.5	2.85	6.6	10.9
10	10.3	3.5	6.8	2.6	7.9	3.65	15.7	2.6	13.7	2.95	4.6	4.0
11	5.2	22	2.0	2.3	5.3	6.3	2.95	2.5	10.3	3.2	3.1	2.65
12	2.85	7.6	5.0	1.38	2.5	5.7	10.0	6.1	17.5	12.2	3.15	2.1
13	2.4	16	2.4	1.15	1.95	2.5	19.7	5.8	5.8	3.1	2.85	1.95
14	3.55	7.0	3.8	1.06	6.9	3.15	12.4	11.7	7.7	6.6	4.2	2.0
15	9.7	3.5	18.3	1.01	17.8	6.5	11.0	5.3	15.3	2.5	10.6	1.68
16	8.3	2.5	14.3	1.06	4.2	4.3	25	19.4	8.5	2.3	6.0	2.05
17	2.85	2.1	4.0	.87	21	8.6	30.5	33.5	15.9	2.75	3.0	2.7
18	1.9	1.9	2.75	.82	9.5	4.7	19.3	54	25.5	2.25	3.1	1.55
19	1.8	1.8	2.2	.73	3.3	3.4	14.1	5.9	46	3.05	16.5	1.95
20	9.5	12	1.95	.70	3.95	9.6	14.7	3.65	25.5	1.62	20	1.15
21	7.0	4.6	1.68	.70	3.45	25	7.3	2.95	21.5	1.50	6.9	1.15
22	5.3	2.2	1.62	.67	2.1	14.4	10.9	10.3	6.0	5.9	4.5	1.01
23	8.3	8.4	1.38	.65	1.80	48	7.6	32	22	12.4	12.0	.92
24	3.8	14.7	1.44	3.9	1.68	10.0	6.0	4.8	6.2	16.7	7.2	.92
25	12.2	6.6	7.9	10.1	2.0	16.6	6.8	3.1	4.8	5.5	3.3	3.05
26	17.2	7.6	43	14.6	1.44	6.0	3.5	2.55	3.1	6.9	4.8	4.8
27	4.0	5.8	12.0	4.5	1.20	25	5.85	15.6	2.55	3.25	2.55	3.9
28	8.0	12.2	3.65	1.88	1.11	20.5	3.0	17.4	2.3	2.25	12.2	1.79
29	8.1	8.4	4.4	1.68	.96	79	6.3	-	2.65	7.9	2.95	1.68
30	4.0	8.1	6.7	2.1	.96	45	4.5	-	2.45	3.15	2.3	1.50
31	4.0	11.6	-	1.92	-	34	6.0	-	5.2	-	2.1	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	17.2	1.68	5.68	8.79	176	541
August.....	22	1.8	6.91	10.7	214	657
September.....	43	1.38	6.14	9.50	184	566
October.....	14.6	.65	2.67	4.13	32.8	102
November.....	21	.92	4.52	7.15	139	428
December.....	79	.92	13.2	20.4	408	1,250
Calendar year 1936.....	79	.28	5.43	8.40	1,080	6,080
January.....	31	2.1	10.6	16.4	330	1,010
February.....	54	1.68	9.87	14.8	268	822
March.....	45	2.25	13.2	20.4	411	1,260
April.....	16.7	1.50	4.90	7.58	147	451
May.....	52	2.1	9.45	14.6	293	899
June.....	10.9	.92	3.01	4.66	90.3	277
Fiscal year 1936-37.....	79	.65	7.51	11.6	2,740	8,410

Kaaiea Stream near Huelo

Location.- Water-stage recorder and concrete control, lat. 20°52'05", long. 156°12'15", 700 feet above Hamakua ditch trail crossing, 2 miles southeast of Kailua, and 3½ miles southeast of Huelo.

Drainage area.- 0.5 square mile.

Records available.- December 1921 to June 1937.

Average discharge.- 15 years (1922-37), 4.84 million gallons a day (7.49 second-feet).

Extremes.- Maximum discharge during year, 428 million gallons a day (662 second-feet) Dec.

29 (gage height, 4.00 feet, from floodmarks), from rating curve extended above 150

million gallons a day; minimum, 0.60 million gallons a day (0.93 second-foot) Oct. 23.

1921-37: Maximum discharge, 2,300 million gallons a day (3,560 second-feet) Nov.

18, 1930 (gage height, 7.93 feet, former site and datum), from rating curve extended

above 50 million gallons a day; minimum, 0.3 million gallons a day (0.5 second-foot)

July 17, 1922. Mar. 22, 1927. Nov. 16, 1929, Oct. 28, 1933.

Remarks.- Records good for ordinary stages and poor for stages above 3.1 feet gage height. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.26	0.8	9.7
.3	.60	9	11.5
.4	1.30	1.0	15.2
.5	2.4	1.3	30.5
.6	4.0	1.6	49
.7	6.1		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.58	3.15	5.5	2.15	1.20	0.95	*30	3.3	3.65	4.9	15.9	1.80
2	1.39	3.6	3.5	2.25	1.04	.95	5.9	2.3	2.4	3.0	36	1.39
3	1.91	4.9	5.0	5.5	.95	3.6	3.65	1.80	1.91	5.4	3.3	4.4
4	3.15	9.6	2.8	5.2	2.95	5.8	11.7	1.80	5.6	3.0	2.3	2.15
5	2.4	2.8	6.1	2.15	12.3	2.3	3.3	1.47	16.2	3.0	8.8	5.3
6	1.68	2.4	2.4	2.15	7.4	1.68	2.4	2.55	34	5.8	52	3.65
7	2.4	4.1	2.15	2.15	5.0	4.3	2.0	6.4	24.5	6.5	14.4	5.6
8	13.4	5.7	1.91	1.47	3.5	2.75	1.80	11.6	4.8	4.8	7.0	11.9
9	4.8	7.7	2.1	1.30	5.4	6.0	30.5	1.91	23.5	2.55	4.2	12
10	9.3	3.3	5.4	2.55	7.7	3.8	14.4	2.25	12.9	2.7	5.4	4.4
11	5.2	21	1.80	2.3	5.8	7.6	2.8	2.25	13.1	3.0	2.7	2.55
12	2.4	7.6	5.8	1.30	2.4	5.0	9.2	4.9	16.7	9.9	2.7	1.91
13	1.91	15.5	2.4	1.12	1.91	2.55	18.9	6.6	5.6	3.15	2.8	1.80
14	2.9	6.4	3.5	.95	6.0	3.9	14.2	11.6	7.5	6.3	4.6	1.91
15	8.7	3.5	17.6	.88	14.5	5.0	12.4	5.8	13.8	2.4	9.1	1.47
16	7.8	2.55	14.1	.95	4.1	5.2	25.5	19.5	8.8	2.0	8.8	1.68
17	2.55	2.0	3.8	.81	18.0	7.8	32.5	27	15.0	2.4	3.15	2.45
18	1.91	1.68	2.4	.75	9.7	5.4	20.5	52	23.5	2.0	3.5	1.39
19	1.58	1.58	1.91	.70	3.5	3.8	13.9	5.5	38	2.7	10.8	1.20
20	6.9	11.2	1.68	.70	3.65	11.4	15.6	3.3	29	1.58	23.5	1.04
21	6.7	4.6	1.47	.70	3.3	28.5	6.4	2.3	23.5	1.39	8.6	.95
22	5.0	2.15	1.39	.65	2.0	21	12.8	10.6	5.5	6.2	4.6	.81
23	7.6	9.2	1.30	.60	1.68	43	7.4	30	16.0	15.6	10.6	.75
24	3.65	13.5	1.39	2.75	1.58	10.3	4.9	4.6	6.0	18.3	7.3	.75
25	10.5	6.3	4.4	10.3	2.3	18.2	5.6	2.7	4.2	5.6	3.3	2.55
26	17.0	8.0	41	24	1.68	6.2	3.5	2.15	3.0	8.6	4.3	5.0
27	4.4	3.6	10.5	4.6	1.20	23	3.25	12.2	2.4	3.65	2.4	11.2
28	7.2	12.0	3.4	1.91	1.04	20	2.7	14.3	2.0	2.3	11.4	1.68
29	8.2	7.6	4.0	1.68	.95	*79	6.0	-	2.0	6.4	2.8	1.68
30	4.0	7.9	5.8	1.68	.95	*44	4.0	-	2.55	3.4	2.15	1.20
31	4.4	10.2	-	1.68	-	*32	5.3	-	4.4	-	1.80	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	17.0	1.39	6.31	8.22	165	505
August.....	21	1.58	6.62	10.2	205	630
September.....	13	1.30	5.58	6.65	167	513
October.....	24	.60	2.83	4.38	87.9	270
November.....	18.0	.95	4.45	6.89	134	410
December.....	79	.95	13.5	20.9	419	1,290
Calendar year 1936	79	.27	5.54	8.57	2,030	6,230
January.....	32.5	1.80	10.7	16.6	353	1,020
February.....	52	1.47	8.78	13.6	246	755
March.....	30	1.91	12.2	18.9	380	1,160
April.....	18.3	1.39	4.95	7.66	149	456
May.....	52	1.80	9.04	14.0	280	860
June.....	12.0	.75	3.21	4.97	96.4	296
Fiscal year 1936-37	79	.60	7.29	11.3	2,660	8,160

*Partly estimated.

Opuola Stream near Huelo

Location.- Water-stage recorder and concrete control, lat. 20°52'15", long. 156°12'30", between Kaalea and Maillilihaele Streams, 100 feet above Wailoa ditch intake, 300 feet above ditch trail, and 4 miles southeast of Huelo.

Drainage area.- 0.2 square mile.

Records available.- August 1930 to June 1937. December 1910 to June 1915 at site half a mile downstream; records not equivalent.

Extremes.- Maximum discharge during year, 276 million gallons a day (427 second-feet) Mar. 20 (gage height, 4.50 feet), from rating curve extended above 120 million gallons a day by tests on model of station site; minimum, 0.22 million gallons a day (0.34 second-foot) Oct. 24.

1930-37: Maximum discharge, 324 million gallons a day (501 second-feet) Jan. 18, 1932 (gage height, 5.12 feet), from rating curve extended above 120 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 excellent for ordinary stages and fair for high stages. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.6	0.06	2.4	11.2
1.7	.25	2.6	18.8
1.8	.76	2.6	30
2.0	2.6	3.0	45
2.2	5.8		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.59	1.17	2.3	0.95	0.40	0.40	10.8	1.26	1.90	2.1	1.48	0.59
2	.48	2.06	1.43	.97	.35	.40	2.5	.88	1.26	1.26	13.7	.53
3	.59	2.5	1.73	2.05	.28	.98	1.80	.70	1.02	1.68	1.35	1.88
4	.64	4.0	1.10	2.3	.72	2.45	3.9	.76	2.05	1.31	.95	.88
5	.76	1.26	3.2	.95	4.0	1.10	1.35	.76	6.3	.95	3.15	2.05
6	.59	.95	1.10	1.08	2.85	.76	1.10	1.30	20	2.35	22	1.58
7	.88	1.42	.95	1.16	1.52	1.39	.76	4.8	1.59	5.8	1.32	
8	4.1	2.2	.88	.70	1.35	.86	.70	1.35	4.0	1.52	2.1	2.1
9	1.86	2.85	1.28	.64	1.92	1.96	6.8	.95	9.0	.95	1.91	3.55
10	3.65	1.41	3.05	1.03	3.05	1.28	5.9	.93	5.3	1.02	2.2	1.35
11	2.25	4.7	.82	.95	1.97	1.88	1.10	1.11	2.8	1.65	1.10	.95
12	1.10	2.5	2.15	.53	.82	1.43	2.8	1.45	4.6	5.5	1.12	.76
13	.82	5.5	1.02	.48	.70	.76	7.1	2.65	2.15	1.35	1.45	.64
14	1.35	2.2	1.57	.48	2.0	.98	3.45	2.55	2.5	2	1.41	.76
15	3.8	1.17	6.3	.40	7.4	1.84	3.0	*2.2	4.9	1.02	2.75	.69
16	3.45	.88	4.5	.35	1.60	1.06	6.0	6.4	2.5	.58	1.97	.64
17	1.10	.76	1.60	.32	†9.5	3.05	13.5	11.3	5.4	1.02	1.10	1.08
18	.95	.70	.95	.28	†4.2	1.80	6.7	18.5	9.2	.95	.88	.63
19	.76	.59	.82	.28	†1.30	1.26	5.4	2.6	21	1.26	3.15	.48
20	4.4	4.3	.76	.28	1.43	2.8	4.2	1.60	16.4	.76	6.8	.44
21	2.8	2.0	.59	.28	1.26	8.7	2.5	1.17	11.4	.64	2.65	.40
22	2.3	.88	.64	.25	.76	4.9	5.5	2.45	2.35	1.85	1.35	.35
23	3.6	2.9	.53	.25	.64	14.9	2.8	8.4	10.9	3.05	3.1	.35
24	1.59	4.2	.70	1.06	.69	2.6	1.52	2.1	3.4	3.75	2.85	.35
25	4.2	2.9	1.87	2.95	1.02	4.5	2.2	1.35	2.0	1.64	1.17	.85
26	5.8	1.90	14.6	6.0	.53	2.05	1.35	1.10	1.52	1.82	1.80	1.42
27	1.66	1.28	4.9	1.54	.48	9.5	1.17	6.3	1.35	1.24	.95	1.49
28	2.0	3.55	1.51	.64	.44	8.2	.95	7.8	1.17	.76	3.25	.70
29	2.55	3.5	1.90	.64	.44	33	3.05	-	1.10	2.05	1.02	.70
30	1.43	2.75	2.55	.53	.40	15.4	1.66	-	1.26	1.25	.82	.64
31	1.35	4.5	-	.69	-	10.5	2.25	-	2.6	-	.64	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	5.8	0.48	2.05	3.17	63.4	195
August.....	5.5	.59	2.37	3.67	73.5	225
September.....	14.6	.53	2.24	3.47	67.3	207
October.....	6.0	.25	.997	1.54	30.9	95
November.....	9.5	.28	1.80	2.79	54.1	166
December.....	33	.40	4.60	7.12	143	438
Calendar year 1936.....	33	.10	2.08	3.22	762	2,340
January.....	13.5	.70	3.67	5.68	114	349
February.....	18.5	.70	3.36	8.23	94.5	290
March.....	21	1.02	5.51	8.53	171	524
April.....	5.5	.64	1.64	2.54	49.2	151
May.....	22	.64	3.10	4.80	96.0	295
June.....	3.55	.55	.998	1.54	30.0	92
Fiscal year 1936-37.....	33	.25	2.70	4.18	987	3,030

*Partly estimated.

†Estimated.

Naililihaele Stream near Huelo

Location.- Water-stage recorder, lat. 20°52'30", long. 156°13'05", 200 feet above Wailoa ditch intake, 700 feet above New Hamakua ditch trail, and 1½ miles south of Kailua.

Drainage area.- 2.8 square miles.

Records available.- December 1910 to June 1918, August 1919 to June 1937. December 1910 to December 1912 at site 300 feet downstream.

Average discharge.- 16 years (1920-24, 1925-37), 21.6 million gallons a day (33.4 second-foot).

Extremes.- Maximum discharge during year, 2,670 million gallons a day (4,130 second-foot) Dec. 29 (gage height, 7.25 feet), from rating curve extended above 150 million gallons a day; minimum, 4.2 million gallons a day (6.5 second-foot) Oct. 23.
1910-18, 1919-37: Maximum discharge, that of Dec. 29, 1936; minimum, 0.45 million gallons a day (0.70 second-foot) July 14, 1920.

Remarks.- Records good for ordinary stages and poor for high stages. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.8	1.2	2.6	31	3.6	181
2.0	4.4	2.8	50	4.0	290
2.2	10.0	3.0	73	4.5	470
2.4	18.6	3.3	120	5.0	710

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.6	17.2	23.5	12.0	6.8	6.6	248	17.7	18.6	25	60	12.0
2	10.4	18.4	18.6	11.2	6.6	6.6	38	13.5	15.3	17.9	259	10.0
3	14.4	25	47	23	6.1	19.4	25.5	12.3	13.1	30	17.7	22
4	22	46	17.2	21	14.1	27	61	12.3	26.5	16.2	13.5	13.1
5	15.6	14.8	38	11.6	62	12.0	22	11.2	87	15.8	58	46
6	12.0	13.1	13.5	11.6	37	9.7	17.7	13.9	205	25	358	20.5
7	15.3	20.6	12.7	10.8	27.5	22	15.3	52	141	37.5	62	34
8	79	28	11.2	9.0	20	15.1	13.5	19.4	60	25	31.5	76
9	25.5	39	11.6	8.1	24	35.5	131	13.9	129	14.8	21	80
10	53	16.7	19.0	11.6	34	28	65	14.6	77	14.8	28	23.5
11	29.5	147	10.0	10.8	26.5	62	17.2	14.8	37	14.4	15.8	14.8
12	14.8	36.5	36.5	7.4	13.1	36	50	35.5	145	41	15.0	12.7
13	12.7	62	15.6	6.8	11.2	18.7	112	61	34.5	14.8	14.4	11.2
14	15.8	32	17.5	6.3	23	34.5	83	121	39.5	25.5	22	11.2
15	62	21	106	6.1	56	71	99	59	67	12.7	67	9.7
16	43	14.6	77	6.1	19.3	46	155	197	49	11.6	51	10.0
17	15.3	12.7	19.7	5.8	90	43	196	160	76	12.0	18.6	11.6
18	12.3	11.6	13.9	5.4	55	35	120	435	170	10.8	26.5	8.4
19	10.8	10.0	12.0	5.1	18.1	27	78	35	215	12.0	71	7.8
20	45	46	10.4	4.9	17.7	83	92	23	130	8.7	190	7.1
21	31.5	21	9.7	4.6	16.2	178	35	17.7	166	8.4	71	6.8
22	24.5	11.6	9.4	4.4	12.0	157	61	91	37.5	23	29.5	6.6
23	36.5	57	8.4	4.2	10.8	271	34.5	221	82	140	49	6.1
24	20.5	70	6.4	10.6	11.2	81	32	25.5	33.5	130	37.5	5.8
25	47	28.5	15.3	62	13.1	133	31.5	17.7	24	31.6	19.1	11.1
26	88	32.5	227	134	11.2	41	21	14.8	19.1	51	23	30.5
27	24.5	18.8	44	22	8.7	138	17.7	66	15.8	22	14.8	23
28	28.5	54	16.2	10.8	7.8	161	16.2	57	13.9	13.1	62	10.8
29	36.5	36.5	18.2	9.7	7.1	671	48	-	13.1	46	17.7	9.7
30	20	35	23	10.0	6.8	394	23	-	14.4	18.1	13.5	8.1
31	22.5	42	-	9.0	-	276	29.5	-	20.5	-	12.0	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-foot
July.....	88	10.4	28.7	44.4	890	2,730
August.....	147	10.0	35.6	52.0	1,040	3,200
September.....	435	8.4	30.4	47.0	91	2,790
October.....	134	4.2	15.4	23.8	476	1,460
November.....	90	6.1	22.4	34.7	673	2,070
December.....	671	6.6	101	156	3,140	9,630
Calendar year 1936.....	671	2.2	32.4	50.1	11,840	36,340
January.....	248	13.5	64.1	99.2	1,990	6,100
February.....	215	11.2	65.5	101	1,850	5,630
March.....	215	13.1	73.4	114	2,280	6,980
April.....	140	8.4	29.0	44.9	869	2,670
May.....	358	12.0	56.4	87.3	1,750	5,370
June.....	80	5.8	18.7	28.9	560	1,720
Fiscal year 1936-37.....	671	4.2	44.9	69.5	16,410	50,350

Kailua Stream near Huelo

Location.- Water-stage recorder, lat. 20°52'35", long. 156°13'25", above Wailoa ditch intake, 1½ miles southwest of Kailua and 2½ miles south of Huelo.

Drainage area.- 3.0 square miles.

Records available.- December 1910 to June 1918, July 1919 to June 1937.

Average discharge.- 18 years (1919-37), 18.0 million gallons a day (27.9 second-feet).

Extremes.- Maximum discharge, 3,980 million gallons a day (6,160 second-feet) Jan. 1 (gage height, 8.80 feet), from rating curve extended above 150 million gallons a day; minimum, 2.25 million gallons a day (3.48 second-feet) Oct. 23.

1910-18, 1919-37: Maximum discharge, that of Jan. 1, 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 for ordinary stages are excellent; those for Aug. 9-14, Nov. 19 to Dec. 15, Dec. 20-28, Jan. 17 to Feb. 1 (computed on basis of records for stations on six nearby streams) and those for high stages are poor. No diversions above station. Water used for irrigation in central Maui.

Rating tables, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Dec. 31						Jan. 1 to June 30					
1.6	0.45	2.4	15.6	1.6	0.55	2.4	16.5	1.7	1.07	2.7	29
1.7	1.07	2.7	29.5	1.7	1.30	2.7	29	1.8	2.0	3.0	48
1.8	2.0	3.0	47	1.8	2.35	3.0	48	1.9	3.3	3.5	76
1.9	3.3	3.5	70	1.9	3.75	3.5	76	2.0	4.9	3.6	95
2.0	4.9	3.6	95	2.0	5.5	3.6	109	2.2	9.4		
2.2	9.4			2.2	10.2						

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.2	10.0	9.2	7.0	4.3	4.4	356	13	11.6	15.1	12.9	7.2
2	6.6	9.2	6.2	6.0	3.6	4.0	44	9.9	9.7	10.8	107	6.3
3	9.1	17.7	30	10.0	3.45	11	23	8.4	6.1	19.3	18.2	10.5
4	16.7	33	14.6	9.2	6.5	13	45	7.9	11.6	8.6	8.1	9.3
5	10.8	11.1	15.6	6.6	34	6.0	17.7	*7.4	43	9.9	26.5	17.3
6	8.0	6.7	9.2	7.9	24	5.0	12.8	*8.4	73	11.1	222	18.4
7	9.4	*11.7	7.5	6.2	23	6.0	10.8	45	74	20.5	59.5	19.4
8	75	*19.5	6.6	5.1	18.3	6.0	9.4	20	49	12.8	16.1	47
9	29.5	27	6.2	4.6	17.6	16	44	14	57	7.4	12.2	74
10	44	11	6.6	4.9	16.6	13	30.5	14.6	56	6.8	17.1	19.3
11	23.5	60	4.9	4.9	13.0	30	9.7	13.3	38.5	6.6	9.7	10.2
12	11.4	21	24	4.1	7.0	22	13.5	27.5	106	12.0	8.1	8.9
13	6.7	31	12.0	3.6	5.5	11	55	104	34.5	6.3	7.6	7.2
14	9.2	22	6.7	3.45	7.7	12	92	162	24.5	9.6	10.5	6.6
15	34	*12.0	96	3.3	18.7	60	115	72	38	5.9	64	5.9
16	31	6.4	79	3.3	8.9	55	104	221	34.5	5.7	45	5.5
17	10.8	7.2	18.2	3.3	42	34.5	200	71	39.5	5.7	14.1	5.3
18	8.2	6.2	9.7	3.05	44	26.5	140	264	84	5.5	23.5	4.6
19	6.6	5.3	7.5	2.6	13	22	60	35.5	92	5.5	67	4.3
20	27.5	16.6	6.4	2.65	12	70	70	17.7	104	5.3	236	3.9
21	16.6	9.2	5.7	2.65	11	150	30	12.2	106	5.5	94	3.75
22	16.0	6.0	5.3	2.4	6.0	150	46	31	42	7.7	32.5	3.6
23	*19.5	40	4.9	2.4	7.0	250	25	132	37.5	89	28	3.35
24	13.6	43	4.6	3.6	7.5	70	24	24	24	76	24.5	3.35
25	26	17.2	4.9	98	8.5	100	23	12.8	16.5	21	13.1	4.3
26	62	15.0	122	68	7.0	35	13	10.5	17.9	36.5	12.2	22
27	21	8.9	33.5	17.2	6.4	130	11	27.5	13.4	13.9	9.2	19.9
28	14.0	22	11.1	7.0	6.0	170	10	32	9.9	7.6	31.5	7.6
29	16.2	20.5	9.7	6.2	5.2	725	30	-	8.9	39.5	11.6	6.6
30	10.6	18.7	10.6	6.2	4.5	432	17	-	7.6	15.4	8.4	4.8
31	12.0	12.0	-	6.0	-	338	22	-	9.7	-	7.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	75	6.6	19.9	30.8	617	1,890
August.....	80	5.3	16.6	29.1	581	1,760
September.....	122	4.6	19.7	30.5	592	1,820
October.....	98	2.4	10.4	16.1	321	986
November.....	44	3.45	13.2	20.4	395	1,210
December.....	725	4.0	96.1	149	2,980	9,140
Calendar year 1936.....	725	.64	23.9	37.0	8,760	26,850
January.....	356	9.4	54.9	84.9	1,700	5,220
February.....	264	7.4	50.7	78.4	1,420	4,350
March.....	106	7.6	41.4	64.1	1,260	3,940
April.....	89	5.3	16.7	25.8	500	1,540
May.....	236	7.6	40.0	61.9	1,240	3,600
June.....	74	3.35	12.3	19.0	370	1,140
Fiscal year 1936-37.....	725	2.4	32.9	50.9	12,000	36,820

*Partly estimated.

Hoolawalilili Stream near Huelo

Location.- Water-stage recorder, lat. 20°53'15", long. 156°14'35", just above Wailoa ditch intake, 2 miles west of Kailua and 2 miles southwest of Huelo.

Records available.- April 1911 to June 1937.

Average discharge.- 25 years (1911-15, 1916-37), 5.12 million gallons a day (7.92 second-foot).

Extremes.- Maximum discharge during year, 514 million gallons a day (795 second-foot) Dec. 29 (gage height, 485 feet), from rating curve extended above 250 million gallons a day; minimum, 1.50 million gallons a day (2.32 second-foot) Oct. 23.
1911-37: Maximum discharge, 657 million gallons a day (1,020 second-foot) Nov. 18, 1930 (gage height, 6.74 feet), from rating curve extended above 20 million gallons a day; minimum, 0.2 million gallons a day (0.3 second-foot) June 8, 1926.

Remarks.- Records good for ordinary stages and poor for high stages. No diversions.
Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

1.4	1.50	2.0	15.2
1.5	2.7	2.2	24.5
1.6	4.2	2.5	43
1.8	8.7	3.0	88

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.3	3.75	5.6	3.9	2.55	2.55	31.5	4.2	6.0	4.0	3.6	3.0
2	3.15	4.2	5.0	3.9	2.2	2.55	11.1	3.6	5.2	3.6	18.3	2.7
3	3.3	4.5	5.8	4.4	2.2	2.85	7.7	3.15	4.4	4.0	4.6	3.3
4	3.15	7.2	4.4	4.4	2.6	3.75	8.9	3.95	4.9	3.6	3.9	2.85
5	3.0	4.0	5.8	5.6	5.7	2.7	5.6	3.15	9.9	3.3	5.7	3.6
6	2.85	3.75	3.9	3.45	5.1	2.2	4.8	3.3	30.5	4.4	36.5	3.3
7	3.15	3.9	3.6	3.45	3.6	2.7	4.2	11.9	19.5	4.2	11.0	3.3
8	3.7	4.3	3.3	3.15	3.9	2.85	5.9	5.0	11.6	4.4	7.6	4.7
9	4.1	5.4	3.15	3.0	3.9	3.45	18.4	4.4	15.6	3.6	6.2	6.4
10	8.1	3.75	3.85	5.1	4.8	3.45	13.4	3.9	13.6	3.45	5.6	3.9
11	5.0	7.8	3.0	2.85	4.7	4.4	5.4	3.75	9.5	3.45	4.4	3.45
12	3.9	5.8	3.9	2.7	3.6	4.2	6.9	4.2	12.3	8.3	4.0	3.15
13	3.6	8.9	3.15	2.6	3.3	3.15	18.0	5.7	7.7	4.0	4.1	3.0
14	3.9	5.6	3.45	2.45	3.85	3.15	9.3	5.8	7.2	4.7	4.1	2.85
15	6.8	4.6	9.6	2.55	6.6	5.2	8.4	5.3	9.0	3.6	4.9	2.6
16	7.4	3.9	8.8	2.55	4.8	3.6	15.1	12.7	8.1	3.45	5.2	2.6
17	4.4	3.6	5.0	2.2	13.5	7.1	23	17.5	10.7	3.3	3.9	2.6
18	3.9	3.3	4.0	2.1	10.9	5.2	18.6	43	18.4	3.15	3.6	2.35
19	3.6	3.0	3.6	1.98	5.8	4.2	12.4	11.0	24	3.15	6.5	2.2
20	5.5	4.6	3.3	1.86	5.0	5.5	12.5	7.2	26	2.85	12.9	2.1
21	5.0	3.75	3.15	1.86	4.4	14.3	8.2	5.6	27.5	2.7	8.6	1.98
22	4.7	3.0	3.0	1.74	3.75	14.0	13.9	7.3	10.6	3.5	5.4	1.86
23	6.0	5.0	2.7	1.62	3.75	31.5	10.4	19.2	21	7.6	6.8	1.74
24	4.4	7.4	2.7	2.1	5.6	11.1	6.7	7.4	9.4	9.9	5.8	1.74
25	6.3	5.4	2.65	3.45	3.3	13.0	5.6	5.6	6.7	4.5	4.4	2.1
26	10.5	4.2	18.0	8.2	3.15	8.4	4.8	4.8	5.6	5.5	4.4	2.2
27	5.2	3.75	7.5	3.95	5.0	16.9	4.2	12.1	4.8	4.4	3.75	2.6
28	4.8	3.75	4.8	2.85	2.7	18.3	3.9	12.7	4.2	3.6	6.4	1.98
29	5.3	5.8	5.0	2.7	2.6	83	9.0	-	3.9	4.0	3.9	1.86
30	4.2	5.8	4.6	2.7	2.45	35.5	5.6	-	3.75	3.45	3.3	1.74
31	3.9	8.8	-	2.6	-	33	6.0	-	4.3	-	3.15	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	10.5	2.85	4.81	7.44	149	458
August.....	8.9	3.0	4.92	7.61	152	468
September.....	18.0	2.65	4.88	7.55	146	449
October.....	8.2	1.62	3.02	4.87	93.6	297
November.....	13.5	2.2	4.44	6.87	133	408
December.....	83	2.2	11.4	17.6	353	1,080
Calendar year 1936	83	1.15	5.13	7.94	1,860	5,760
January.....	31.5	3.9	10.1	15.6	312	959
February.....	43	3.15	8.47	13.1	237	728
March.....	30.5	3.75	11.5	17.8	356	1,090
April.....	9.9	2.7	4.26	6.69	128	392
May.....	36.5	3.15	6.85	10.6	212	652
June.....	6.4	1.74	2.79	4.32	83.8	257
Fiscal year 1936-37	83	1.62	6.46	10.0	2,360	7,230

Hoolawamui Stream near Huelo

Location.- Water-stage recorder, lat. 20°53'15", long. 156°14'55", just above intake of Wailoa ditch, 2 miles west of Kailua and 2 miles southwest of Huelo. Altitude, 1,240 feet.

Records available.- December 1910 to June 1937.

Average discharge.- 25 years (1911-15, 1916-37) 7.89 million gallons a day (12.2 second-feet).

Extremes.- Maximum discharge during year, 580 million gallons a day (897 second-feet) Feb. 18 (gage height, 3.28 feet), from rating curve extended above 150 million gallons a day; minimum, 1.66 million gallons a day (2.57 second-feet) Oct. 23.

1910-37: Maximum discharge, 584 million gallons a day (904 second-feet) Nov. 18, 1930 (gage height, 9.37 feet, former datum), from rating curve extended above 20 million gallons a day; minimum, 0.15 million gallons a day (0.23 second-foot) Oct. 25, 1917.

Remarks.- Records good for ordinary stages and poor for high stages. Discharge for Dec. 14 to Feb. 14, May 5-21 computed on basis of records for station on Hoolawallilili Stream. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.48	0.8	9.5
.4	1.13	.9	13.5
.5	2.2	1.0	18.3
.6	3.9	1.2	31
.7	6.3	1.4	48

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.6	6.3	8.9	5.3	2.7	2.9	63	6.5	9.5	6.3	6.4	4.9
2	5.1	6.3	7.3	5.1	2.55	2.9	20	5.5	8.2	5.8	36	4.4
3	5.6	6.7	9.7	6.1	2.2	4.1	13	5.0	6.9	8.0	8.5	5.3
4	6.3	12.9	6.9	5.6	3.4	5.0	16	6.0	8.2	5.8	6.6	4.4
5	5.3	6.3	8.1	4.6	9.5	*3.55	9.4	5.0	15.9	5.6	5.1	5.8
6	4.6	5.8	5.8	4.4	9.0	3.05	8.8	5.2	41	6.9	75	5.7
7	5.6	6.3	5.6	4.1	6.1	4.6	7.2	22	38.5	9.2	20	7.0
8	17.6	7.6	4.9	3.55	6.3	3.9	7.0	8.0	20	7.9	14	14.6
9	8.9	9.5	4.6	3.4	6.6	7.0	35	6.2	24	5.6	11	18.4
10	15.4	6.1	4.9	3.75	7.3	7.3	25	6.0	23	5.3	9.5	8.9
11	9.5	33.5	3.9	3.2	6.6	16.0	9.0	5.5	21.5	5.1	7.0	6.3
12	6.9	14.1	7.4	2.9	5.1	13.5	12	6.5	37	9.3	6.0	5.3
13	6.1	14.9	5.1	2.7	4.4	8.2	24	9.4	17.3	5.3	6.2	5.1
14	6.3	10.7	5.1	2.55	5.6	9.0	17	9.8	14.9	6.9	6.2	4.4
15	12.3	8.5	23.5	2.55	9.5	17	15	*18	17.3	4.9	8.0	4.1
16	12.3	6.9	21.5	2.55	5.6	8.0	19	57	16.9	4.6	8.5	3.75
17	6.9	6.1	9.9	2.2	23	20	45	32.5	20.5	4.4	6.0	3.55
18	6.1	5.3	7.3	1.99	17.8	11.5	31	140	34	3.9	5.3	3.05
19	5.3	4.9	6.1	1.88	8.5	8.5	25	22.5	34.5	3.75	11	2.9
20	9.1	7.9	5.3	1.88	7.6	12.5	24	14.0	43	5.4	19	2.55
21	7.6	6.1	4.6	1.88	6.6	27	15	10.7	53	3.2	16	2.55
22	7.3	4.6	4.4	1.77	5.6	26	21	19.4	21	4.9	14.9	2.2
23	8.5	9.6	3.9	1.66	5.3	64	19	55	24.5	27.5	14.0	2.1
24	6.6	15.0	3.75	2.3	5.1	21	11.5	14.9	14.5	23.5	11.9	1.99
25	9.5	9.9	3.75	7.5	4.9	24	9.5	11.5	11.5	9.0	8.5	2.55
26	20.5	7.9	37	19.5	4.1	15	7.8	9.2	9.5	13.3	7.9	4.8
27	9.9	7.3	11.5	6.6	3.75	32	6.5	17.4	8.2	7.9	6.6	4.5
28	8.5	9.5	7.3	3.9	3.4	35	3.0	15.6	7.3	6.1	11.6	2.7
29	8.9	9.5	6.9	3.55	3.2	220	16	-	6.6	8.8	6.9	2.35
30	6.9	9.9	6.6	3.55	3.05	82	9.5	-	5.8	6.3	5.8	2.1
31	7.3	11.8	-	3.05	-	67	10	-	6.3	-	5.3	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	20.5	4.6	8.46	13.1	262	805
August.....	33.5	4.6	9.28	14.4	288	883
September.....	37	3.75	8.58	13.0	252	772
October.....	19.5	1.86	4.06	6.27	126	395
November.....	23	2.2	6.48	19.0	194	596
December.....	220	2.9	25.2	39.0	752	2,400
Calendar year 1936.....	220	.64	8.80	13.6	3,220	9,980
January.....	63	6.0	17.9	27.7	555	1,700
February.....	140	5.0	19.4	30.0	544	1,670
March.....	53	5.8	19.7	30.5	610	1,870
April.....	27.5	3.2	7.62	11.8	226	701
May.....	75	5.1	12.4	19.2	355	1,180
June.....	18.4	1.99	4.94	7.64	148	455
Fiscal year 1936-37.....	220	1.66	12.0	18.6	4,370	13,420

*Partly estimated.

Honopou Stream near Huelo

Location.- Water-stage recorder, lat. 20°53'20", long. 156°15'05", just above Wailoa ditch intake, 2½ miles west of Huelo, and 2½ miles west of Kaiua. Altitude, about 1,250 feet.

Drainage area.- 1.0 square mile.

Records available.- December 1910 to June 1937.

Average discharge.- 24 years (1911-14, 1916-37), 3.16 million gallons a day (4.89 second-foot).

Extremes.- Maximum discharge during year, 251 million gallons a day (388 second-foot) Dec. 29 (gage height, 3.83 feet), from rating curve extended above 70 million gallons a day; minimum, 0.70 million gallons a day (1.08 second-foot) Oct. 23, 24.

1910-37: Maximum discharge, 1,220 million gallons a day (1,890 second-foot) 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 for ordinary stages are good; those estimated and those for high stages are poor. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.5	0.65	1.4	16.5
.6	1.45	1.7	25
.7	2.65	2.0	37
.9	5.4	2.3	54
1.1	9.2	2.6	80

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.35	2.2	4.0	2.45	1.00	1.45	32	3.35	5.2	3.35	4.4	2.55
2	2.1	2.45	3.5	2.45	1.00	1.45	14.7	2.7	4.8	2.95	10.3	2.35
3	2.2	2.95	3.95	2.95	.92	2.0	10.1	2.55	4.0	3.35	3.5	2.7
4	2.0	4.9	2.95	2.55	1.35	2.5	10.1	3.55	4.5	2.8	3.1	2.1
5	1.89	2.2	4.3	2.0	4.1	1.45	6.6	2.45	7.9	2.55	5.1	3.0
6	1.78	2.0	2.7	1.89	2.75	1.35	5.4	2.55	18.2	3.65	27.5	2.45
7	2.0	2.35	2.45	1.89	1.78	1.78	4.5	10.9	16.0	3.55	9.0	2.2
8	4.8	2.55	2.35	1.78	2.1	1.45	4.0	3.75	10.2	3.5	6.4	3.35
9	2.9	3.6	2.2	1.55	2.2	2.2	15.0	3.35	13.1	2.8	5.6	4.8
10	5.9	2.1	2.55	1.78	2.7	2.0	12.6	3.1	11.3	2.7	5.1	2.85
11	3.1	3.9	2.0	1.67	2.55	2.8	5.6	3.1	9.0	2.95	4.0	2.45
12	2.55	4.0	3.0	1.45	1.78	2.7	6.2	4.1	11.2	7.0	4.1	2.2
13	2.35	5.9	2.1	1.35	1.67	1.78	11.3	4.0	7.5	2.95	3.8	2.1
14	2.6	3.75	2.35	1.25	2.45	1.78	8.2	4.2	6.9	3.75	3.8	2.0
15	5.1	3.2	7.3	1.25	5.0	4.4	7.8	4.4	7.7	2.8	4.4	1.89
16	4.7	2.8	6.1	1.25	2.35	2.45	14.5	11.3	6.9	2.7	4.0	1.78
17	2.55	2.55	3.5	1.17	10.7	6.1	20	13.1	9.2	2.55	3.2	1.67
18	2.35	2.35	3.1	1.08	6.2	3.5	16.7	4.1	14.2	2.45	3.1	1.55
19	2.1	2.1	2.7	.92	3.75	2.95	12.1	12.2	15.5	2.45	6.1	1.35
20	3.6	3.35	2.55	.84	3.5	4.4	11.0	6.2	16.1	2.1	12.0	1.35
21	3.05	2.55	2.35	.84	2.95	11.6	6.2	6.2	22	2.0	7.8	1.25
22	2.7	2.0	2.2	.77	2.55	12.3	11.7	7.7	11.6	12.4	5.4	1.17
23	3.6	3.35	2.0	.70	2.45	26	8.0	19.7	16.6	6.4	6.4	1.08
24	2.45	4.7	1.89	1.08	2.45	12.0	6.1	8.4	9.0	7.5	5.4	1.00
25	4.0	3.9	2.0	2.65	2.1	14.0	5.3	6.2	6.6	3.75	4.2	1.17
26	6.2	2.95	11.5	5.3	*1.9	5.4	4.5	5.4	5.4	4.4	4.0	1.45
27	2.95	2.7	4.5	2.1	*1.8	14.6	4.0	11.5	4.8	3.35	3.35	1.77
28	2.95	3.5	3.1	1.45	*1.7	16.2	3.65	9.9	4.4	2.8	5.2	1.08
29	3.1	3.9	3.35	1.25	*1.6	59	4.5	-	3.75	2.6	3.2	1.00
30	2.55	4.0	2.95	1.25	1.55	39	5.0	-	3.5	2.45	2.6	.92
31	2.45	6.2	-	1.17	-	37	5.3	-	4.0	-	2.7	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	6.2	1.78	3.06	4.73	94.9	391
August.....	6.2	2.0	3.28	5.04	101	210
September.....	11.5	1.89	3.58	6.33	102	311
October.....	5.3	.70	1.68	2.60	52.1	150
November.....	10.7	.92	2.70	4.18	60.9	248
December.....	59	1.35	9.74	15.1	302	926
Calendar year 1936.....	59	.40	3.61	5.59	1,320	4,060
January.....	32	3.65	9.50	14.7	295	904
February.....	41	2.45	7.62	12.1	219	672
March.....	22	3.5	9.36	14.5	291	893
April.....	12.4	2.0	3.66	5.69	111	339
May.....	27.5	2.7	5.77	8.93	179	549
June.....	4.8	.92	1.95	3.02	58.6	180
Fiscal year 1936-37.....	59	.70	5.16	7.98	1,890	5,780

*Estimated.

Honopou Stream at Lowrie ditch siphon, near Huelo

Location.— Water-stage recorder and concrete control, lat. 20°54'50", long. 156°15'10", half a mile above Government Road and 1.7 miles west of Huelo.

Drainage area.— 2.0 square miles.

Records available.— July 1932 to June 1937. Records at same site obtained by East Maui Irrigation Co. April 1930 to June 1932.

Extremes.— Maximum discharge during year, 744 million gallons a day (1,150 second-feet) Mar. 21 (gage height, 4.51 feet), from rating curve extended above 100 million gallons a day; minimum, 0.07 million gallons a day (0.11 second-foot) July 4, 6, 7.
1932-37: Maximum discharge, that of Mar. 21, 1937; minimum, 0.04 million gallons a day (0.06 second-foot) Oct. 31, 1933.

Remarks.— Records good for ordinary stages and poor for high stages. Wailoa and New Hamakua ditches divert most of flow above this station. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.03	0.6	4.5	1.3	32.5
.2	.20	.7	6.6	1.6	52
.3	.60	.8	9.3	2.0	92
.4	1.58	.9	12.4	2.4	146
.5	2.6	1.0	17.0		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.11	0.20	0.20	0.20	0.13	0.18	48	0.18	0.26	0.20	0.13	0.11
2	.11	.23	.18	.20	.11	.18	4.6	.18	1.18	.18	2.95	.11
3	.11	.20	.18	.20	.11	.18	1.20	.16	.23	1.10	.11	.11
4	.09	.86	.18	.20	.11	.23	.94	.16	.26	.16	.11	.11
5	.11	.20	.23	.18	.13	.20	.60	.18	1.67	.15	2.3	.11
6	.09	.20	.16	.16	.18	.18	.44	.28	39	.86	32.5	.11
7	.09	.16	.13	.18	.15	.18	.36	15.9	10.6	*1.10	.56	.11
8	.16	.16	.13	.18	.13	.16	.29	.26	1.55	*.70	.13	.11
9	.09	.20	.13	.18	.11	.20	4.4	.23	13.3	*.35	.13	.27
10	.13	.16	.15	.18	.11	.20	4.6	.23	1.95	*.40	.11	.15
11	.11	.23	.13	.18	.18	.20	.26	.23	1.14	*.45	.11	.13
12	.09	1.02	.13	.13	.13	.20	.66	.23	3.05	*1.50	.11	.11
13	.09	.26	.13	.36	.13	.20	6.7	.26	.86	*.25	.11	.11
14	.11	.20	.11	.54	.15	.18	.49	.23	.32	*.15	.11	.11
15	.15	.18	.62	.60	2.55	.18	.40	.26	.67	*.13	.11	.11
16	.20	.15	.29	.26	.23	.15	4.8	5.9	.23	*.13	.11	.11
17	.15	.15	.20	.18	13.6	1.44	16.0	9.2	2.0	*.13	.11	.11
18	.13	.15	.20	.18	3.55	.20	5.6	52	8.4	*.13	.11	.11
19	.13	.15	.16	.13	.26	.16	1.55	.56	16.0	*.13	.67	.11
20	.22	.15	.15	.13	.32	.15	1.24	.32	19.3	.13	5.25	.11
21	.15	.15	.13	.11	.29	4.7	.54	.29	32	.13	.15	.11
22	.13	.15	.13	.11	.26	1.55	6.5	.97	3.0	.28	.13	.11
23	.37	.13	.13	.11	.23	22	2.4	9.4	26.5	.34	.13	.11
24	.15	.13	.13	.15	.23	.32	.44	.29	1.36	.97	.43	.11
25	.29	.11	.15	.20	.23	.40	.36	.26	.26	.18	.13	.11
26	1.56	.13	4.5	2.05	.23	.18	.36	.23	.23	.13	.11	.11
27	.23	.13	.46	.20	.23	3.2	.29	7.5	.23	.13	.11	.11
28	.23	.15	.20	.15	.20	6.0	.23	9.1	.20	.13	.11	.11
29	.23	.18	.20	.15	.23	109	.38	-	.18	.13	.11	.11
30	.23	.26	.20	.15	.18	53	1.82	-	.18	.13	.11	.11
31	.23	.29	-	.13	-	44	1.30	-	.20	-	.11	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	1.56	0.09	0.202	0.313	6.26	19
August.....	1.02	.11	.228	.353	7.06	22
September.....	4.5	.11	.342	.529	10.3	31
October.....	2.05	.11	.261	.404	8.08	25
November.....	13.6	.11	.819	1.27	24.6	75
December.....	109	.15	8.11	12.5	251	771
Calendar year 1936	109	.06	1.24	1.92	454	1,390
January.....	43	.23	3.80	5.68	118	361
February.....	52	.18	4.11	6.36	115	353
March.....	39	.18	6.01	9.30	186	572
April.....	1.50	.13	.363	.562	10.9	33
May.....	32.5	.11	1.47	2.27	45.5	140
June.....	.27	.11	.117	.181	3.52	11
Fiscal year 1936-37	109	.09	2.15	3.33	786	2,410

*Estimated.

†Partly estimated.

Honopou Stream above Haiku ditch, near Huelo

Location.— Water-stage recorder and concrete control, lat. 20°55'05", long. 156°14'55", 150 feet below Government Road and 1½ miles west of Huelo.

Drainage area.— 2.2 square miles.

Records available.— July 1932 to June 1937. Records at same site obtained by East Maui Irrigation Co. November 1926 to June 1932.

Extremes.— Maximum discharge during year, 250 million gallons a day (387 second-feet) Dec. 29 (gage height, 2.78 feet), from rating curve extended above 20 million gallons a day; minimum, 0.26 million gallons a day (0.40 second-foot) June 29-30.

1932-37: Maximum discharge, that of Dec. 29, 1936; minimum, 0.08 million gallons a day (0.12 second-foot) Dec. 1, 2, 1933.

Remarks.— Records for ordinary stages are good except those for July 15-20, 23-27, Aug. 29-31, Sept. 16-28, Sept. 30 to Oct. 5, Nov. 12-16, Jan. 10, 11, Feb. 11-15, which were computed on basis of records for Honopou Stream below Haiku ditch and at Lowrie ditch siphon and are fair; those for high stages are poor. Wailoa and New Hamakua ditches divert most of flow above this station. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.05	0.4	1.29	0.8	8.8	1.4	40
.2	.20	.5	2.4	1.0	16.3	1.6	57
.3	.59	.6	4.0	1.2	27	1.8	78

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.40	0.64	0.75	0.65	0.36	0.49	41	1.05	0.81	0.64	0.44	0.40
2	.36	.64	.64	.30	.32	.49	13.9	.69	.2	.84	4.4	.40
3	.36	.73	.59	1.65	.32	.60	2.1	.64	.75	1.81	.44	.40
4	.40	1.36	.49	1.20	.36	.81	2.5	.69	.81	.59	.44	.44
5	.32	.69	.91	.65	.60	.54	1.69	.59	2.55	.54	2.75	.47
6	.29	.64	.59	.49	.64	.54	1.20	4.2	31	1.50	.31	.90
7	.32	.64	.54	.49	.54	.54	1.05	15.6	12.4	.59	2.9	.52
8	.75	.64	.44	.44	.64	.54	.88	.83	2.15	.69	1.20	1.16
9	.49	.39	.44	.54	.54	.81	6.2	.61	14.2	.44	1.05	2.25
10	.59	.69	.54	.44	.54	.81	5.0	.90	2.7	.44	1.05	1.30
11	.64	.64	.40	.40	.64	.88	1.0	1.70	2.15	.40	.49	.44
12	.49	1.78	.54	.40	.50	.95	1.50	2.2	4.2	4.0	.49	.40
13	.40	.81	.49	.54	.40	.64	8.1	2.5	1.39	.44	.44	.36
14	.40	.69	.40	.81	.40	.59	1.11	1.90	1.20	.44	.64	.32
15	.70	.64	1.64	1.20	3.5	.95	.88	2.2	2.05	.44	.75	.32
16	1.10	.59	.90	.79	1.30	.88	6.6	9.0	1.05	.40	1.59	.32
17	1.00	.49	.56	.40	15.0	2.4	16.4	11.4	3.0	.40	.64	.32
18	.74	.40	.51	.40	5.7	1.11	6.7	41	10.6	.40	.59	.29
19	.68	.44	.47	.36	1.29	.81	3.2	1.30	16.6	.40	1.58	.29
20	.64	.54	.45	.36	1.05	.95	2.8	.83	18.6	.40	5.4	.29
21	.59	.54	.50	.36	.88	6.7	1.89	.75	24	.40	1.69	.29
22	.54	.40	.50	.36	.81	3.0	10.8	1.09	4.7	.60	1.59	.29
23	.90	.49	.50	.36	.69	22	2.8	10.6	20.5	1.32	1.59	.29
24	.58	.59	.49	.44	.69	1.19	1.29	.75	4.3	3.15	2.35	.29
25	.74	.69	.46	.59	.64	1.73	1.39	.69	1.29	.88	.81	.29
26	2.5	.54	2.8	2.45	.59	1.20	1.20	.64	.81	.90	.75	.39
27	1.10	.49	1.60	.75	.54	4.7	.89	8.2	.75	.96	.49	.40
28	.95	.54	1.00	.59	.49	11.1	.75	9.6	.6	.49	1.15	.29
29	.95	.67	.98	.54	.49	72	1.43	-	.69	.52	.66	.26
30	.88	.61	.95	.40	.49	45	2.9	-	.69	.69	.44	.29
31	.69	1.20	-	.36	-	39	3.15	-	.69	-	.44	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	2.5	0.29	0.693	1.07	21.5	66
August.....	1.86	.40	.704	1.09	21.8	67
September.....	2.8	.40	.729	1.13	21.9	67
October.....	2.45	.36	.649	1.00	20.1	62
November.....	15.0	.32	1.36	2.10	41.0	126
December.....	72	.49	7.22	11.2	224	687
Calendar year 1936	72	.13	1.51	2.34	553	1,700
January.....	41	.75	4.91	7.60	152	467
February.....	31	.59	4.75	7.32	132	406
March.....	31	.69	6.11	9.45	190	582
April.....	4.0	.40	.950	1.32	25.5	78
May.....	31	.44	2.27	3.51	70.4	216
June.....	2.25	.26	.469	.757	14.7	45
Fiscal year 1936-37	72	.26	2.56	3.96	935	2,870

*Partly estimated

Honopou Stream below Haiku ditch, near Huelo

Location.- Water-stage recorder and concrete control, lat. 25°55'05", long. 156°14'50", an eighth of a mile below Government Road and $1\frac{1}{2}$ miles west of Huelo.

Drainage area.- 2.3 square miles.

Records available.- July 1932 to June 1937. Records at same site obtained by East Maui Irrigation Co. November 1926 to June 1932.

Extremes.- Maximum discharge during year not determined due to faulty gage-height record; minimum, 0.08 million gallons a day (0.12 second-foot) Apr. 25.

1932-37: Maximum discharge recorded, 345 million gallons a day (534 second-feet) Dec. 31, 1932 (gage height, 3.43 feet), from rating curve extended above 50 million gallons a day; minimum discharge, 0.02 million gallons a day (0.03 second-foot) Nov. 27, 1933.

Remarks.- Records good for ordinary stages and poor for high stages. Wailoa, New Hamakua, and Haiku ditches divert most of flow above this station. Water used for irrigation in central Maui.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.05	0.6	4.4	1.5	45
.2	.25	.7	6.6	2.0	87
.3	.75	.8	9.3	2.5	142
.4	1.55	.9	12.5		
.5	2.75	1.0	17.0		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.90	1.04	1.21	0.90	0.82	0.42	116	2.45	1.94	0.29	0.73	0.69
2	.90	1.12	1.21	.90	.75	.42	23.5	.75	1.78	.22	26	.75
3	.82	.97	2.1	.90	.75	.46	2.95	.69	1.47	.65	1.40	1.04
4	1.04	13.0	1.43	.90	.75	.83	2.0	.69	1.47	.60	.90	1.04
5	.82	1.04	3.5	.90	1.90	.69	.62	.62	19.6	1.04	6.9	1.58
6	.75	1.04	1.12	.90	6.8	.62	.46	.69	59	1.38	70	2.25
7	.75	1.04	.90	.90	.97	.62	.52	32.5	27.5	1.92	3.95	1.24
8	9.3	1.12	.82	.90	1.30	.62	.56	.22	1.68	1.37	2.15	.49
9	1.09	3.2	.82	.90	.90	1.82	26.5	.22	25.5	.90	.97	23
10	11.9	1.38	1.04	.90	1.12	2.85	19.4	.26	4.5	1.04	1.04	2.3
11	3.05	5.4	.82	.90	1.77	5.9	.54	.49	8.7	.90	.75	.46
12	.97	12.9	1.01	.82	.90	5.5	3.25	2.6	17.2	8.4	.90	.42
13	.82	10.6	1.32	1.04	.75	1.21	26.5	6.6	1.02	.82	.90	.52
14	.82	1.98	.90	1.21	.75	1.51	33	4.6	.25	.82	1.20	.75
15	2.2	1.12	17.1	1.21	30.5	11.2	26.5	5.0	18.9	.69	4.1	.75
16	*8.0	.90	22	1.04	2.4	2.2	45	27	3.3	.69	5.8	.75
17	*7.0	.82	1.71	.82	20.5	11.0	63	14.3	22	.62	1.16	.75
18	*2.0	.82	.90	.82	23.5	3.05	33.5	88	34.5	.62	1.16	.75
19	*1.0	.82	.75	.75	1.03	1.30	22.5	*2.7	38	.56	8.8	.75
20	*.8	1.46	.69	.75	.75	5.6	32	*1.0	32.5	.62	37.5	.75
21	1.27	1.44	.82	.75	.69	26.5	14.2	*.9	34.5	.69	18.6	.75
22	2.45	.90	.82	.75	.69	33	37	*1.0	5.8	.69	2.95	.75
23	5.8	2.75	.82	.75	.56	46	25.5	25.5	31	13.1	4.3	.75
24	1.12	6.0	.82	.75	.56	6.5	1.93	.66	1.25	29.5	9.6	.75
25	1.96	4.4	.82	2.4	.82	27	5.1	1.04	.28	.64	1.12	.75
26	25.5	1.21	27	15.8	.52	5.1	.54	.97	.62	2.45	1.04	1.04
27	2.75	1.43	12.9	2.65	.82	33	1.40	15.5	.46	2.45	.90	1.04
28	.97	3.1	1.38	1.04	.46	35	1.04	20	.29	.56	3.5	.75
29	2.5	5.4	1.12	.90	.46	136	10.8	-	.33	1.41	1.06	.62
30	.82	3.4	1.21	.82	.52	136	2.45	-	.29	.62	.75	.62
31	1.00	10.0	-	.82	-	116	16.3	-	.31	-	.69	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	25.5	0.75	3.23	5.00	100	307
August.....	13.0	.82	3.28	5.07	102	312
September.....	27	.69	3.64	5.63	109	335
October.....	15.8	.75	1.48	2.29	46.0	141
November.....	30.5	.46	3.48	5.38	104	320
December.....	136	.42	21.2	32.8	658	2,020
Calendar year 1936	136	.19	5.49	8.49	2,010	6,170
January.....	116	.40	19.1	29.6	594	1,820
February.....	27	.22	1.16	1.8	257	759
March.....	59	.25	12.8	19.8	396	1,220
April.....	29.5	.22	2.54	3.93	76.2	234
May.....	70	.69	7.12	11.0	221	678
June.....	23	.42	1.78	2.75	53.3	163
Fiscal year 1936-37	136	.22	7.44	11.5	2,720	8,340

*Estimated.

Wailoa ditch at Honopou, near Huelo

Location.— Water-stage recorder, lat. 20°53'20", long. 156°15'05", 100 feet below intake at Honopou Stream, half a mile west of Lupi, and $2\frac{1}{2}$ miles west of Kailua.

Records available.— November 1922 to June 1937.

Average discharge.— 14 years (1923-37), 113 million gallons a day (175 second-feet).

Extremes.— Maximum discharge during year, 171 million gallon gallons a day (265 second-feet) Aug. 11 (gage height, 5.62 feet); minimum recorded, 54 million gallons a day (84 second-feet) Oct. 23, 24.

1922-37: Maximum discharge, 173 million gallons a day (268 second-feet) Nov. 23, 1930 (gage height, 5.77 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, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	146	162	166	138	87	83	162	166	166	162	162	146
2	130	162	166	130	79	83	162	162	162	162	170	126
3	154	162	166	162	72	148	162	158	162	166	166	154
4	162	166	166	162	126	162	162	158	162	162	162	162
5	162	162	166	138	162	130	162	150	166	162	162	146
6	148	158	162	142	158	118	162	158	166	166	166	166
7	158	162	154	138	158	141	162	166	166	162	166	166
8	166	162	146	110	158	158	162	162	166	166	162	170
9	166	166	130	102	158	166	162	150	166	158	162	170
10	170	162	162	110	158	166	162	141	166	154	162	166
11	166	166	122	122	158	166	162	162	166	154	162	162
12	162	166	154	94	146	166	162	162	166	162	162	158
13	158	166	162	83	122	162	162	166	166	158	162	166
14	162	166	158	79	126	162	162	166	166	162	162	138
15	170	166	166	75	166	166	162	166	166	138	166	122
16	166	162	170	83	162	166	162	166	166	130	166	118
17	162	158	166	79	154	166	162	166	166	158	162	126
18	158	142	162	68	166	166	166	166	166	154	162	106
19	138	130	154	64	162	166	166	166	166	146	166	94
20	158	158	138	61	162	166	166	166	166	110	166	87
21	166	162	126	61	162	166	166	166	162	110	162	87
22	166	142	122	57	138	166	166	166	162	162	162	79
23	166	166	110	54	122	166	166	166	162	170	162	75
24	166	166	110	115	126	166	166	166	166	166	162	75
25	166	166	118	166	142	166	166	166	162	166	162	94
26	170	166	170	166	126	166	166	162	158	166	158	158
27	166	162	166	162	98	166	166	166	154	166	158	162
28	166	166	162	138	94	166	166	166	166	158	158	138
29	166	166	162	138	90	166	166	-	162	154	154	130
30	166	166	162	118	87	162	166	-	158	166	146	106
31	162	170	-	114	-	162	166	-	158	-	142	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	170	130	161	249	4,990	15,310
August.....	170	130	161	249	5,000	15,350
September.....	170	110	151	234	4,540	13,950
October.....	166	54	111	172	3,430	10,520
November.....	166	72	134	207	4,020	12,550
December.....	166	85	156	241	4,820	14,810
Calendar year 1936.....	170	25	133	206	48,640	149,300
January.....	166	162	164	254	5,080	15,580
February.....	166	141	162	251	4,540	13,940
March.....	166	154	164	254	5,050	15,580
April.....	170	110	155	240	4,640	14,230
May.....	170	142	161	249	5,000	15,350
June.....	170	75	132	204	3,950	12,130
Fiscal year 1936-37.....	170	54	151	254	55,090	169,100

New Hamakua ditch at Honopou, near Huelo

Location.- Water-stage recorder and sharp-crested weir, lat. 20°53'30", long. 156°15'10", 15 feet above tunnel portal, 600 feet below Honopu Stream crossing, and 2½ miles west of Kailua.

Records available.- January 1918 to June 1937. January 1918 to May 1921 at site 300 feet upstream.

Average discharge.- 19 years (1918-37), 28.3 million gallons a day (43.8 second-feet).

Extremes.- Maximum discharge during year, 114 million gallons a day (176 second-feet) Dec. 29 (gage height, 6.07 feet); minimum, 0.76 million gallons a day (1.18 second-feet) Oct. 24.

1918-37: Maximum discharge, 143 million gallons a day (221 second-feet) Feb. 27, 1932 (gage height, 5.90 feet); no flow when water was shut out of ditch.

Remarks.- Records good. Discharge, Aug. 14-29, Sept. 18-30, Oct. 9-18, Dec. 5, 6 computed on basis of records for stations on nearby streams and gage heights at point below station, which are poor. New Hamakua ditch diverts water from streams between the Waikamoi 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 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.13	59	76	12.3	1.02	1.25	5.8	88	74	34.5	40	6.7
2	1.02	58	69	7.8	.97	1.25	10.3	56	35	58	101	2.0
3	11.8	13.1	44	60	.92	36	32	21	16.2	75	73	48
4	64	93	64	39	11.8	*60	66	22.5	50	32.5	31	41
5	28.5	51	86	3.3	82	20	68	10.7	101	32.5	49	22
6	11.5	19.8	35	4.8	76	10	74	34	102	69	103	68
7	16.6	52	3.35	10.2	83	*40	50	96	102	61	101	61
8	82	68	2.25	1.85	87	23.5	32.5	40	101	76	98	93
9	85	89	2.1	1.60	87	85	93	18.5	102	18.4	92	97
10	95	68	50	1.50	89	85	99	14.6	102	12.8	94	84
11	85	46	2.25	1.40	63	92	60	44	101	19.6	66	35
12	42	95	43	1.30	8.1	91	87	32.5	102	70	45	14.1
13	6.9	97	57	1.20	1.58	70	99	97	101	9.7	34.5	1.38
14	29.5	80	19.2	1.10	13.8	77	101	98	99	49	55	1.80
15	90	58	70	1.00	93	97	101	98	101	5.3	92	1.25
16	91	10.0	98	.95	60	91	102	102	99	1.85	88	1.13
17	36.5	3.5	52	.92	31	95	102	102	101	1.85	82	1.94
18	4.3	2.0	26.5	.90	97	91	102	103	102	1.85	86	1.05
19	1.72	1.8	3.5	*.87	71	83	102	101	102	13.8	93	.92
20	55	80	2.8	.87	62	97	101	95	102	1.72	102	.87
21	74	10.0	2.2	.87	44	101	98	59	103	1.65	101	.92
22	70	2.5	1.95	.82	9.0	102	101	43	102	40	95	.92
23	89	4.5	1.9	.82	7.6	103	98	102	102	98	97	.87
24	62	95	1.8	20	10.1	102	95	99	102	99	95	.82
25	88	91	1.7	89	11.6	102	95	71	99	80	80	2.9
26	96	56	50	95	10.3	101	91	45	93	93	86	61
27	89	20	80	71	6.6	102	83	73	71	71	41	50
28	75	13.0	65	5.1	3.7	101	69	99	35	10.6	77	1.40
29	88	83	44	7.5	1.38	100	88	-	24.5	31	70	1.61
30	76	89	18.5	1.31	1.25	64	69	-	27	78	25	.92
31	77	91	-	1.18	-	48	76	-	48	-	4.8	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	98	1.02	55.7	86.2	1,730	5,300
August.....	97	1.8	51.6	79.8	1,600	4,910
September.....	98	1.7	35.8	55.4	1,070	3,290
October.....	95	.82	14.4	22.3	445	1,370
November.....	97	.92	37.5	56.0	1,120	3,450
December.....	103	1.25	75.3	113	2,270	6,970
Calendar year 1936	103	.32	40.6	62.8	14,850	45,580
January.....	102	5.8	79.1	122	2,450	7,520
February.....	103	10.7	66.6	103	1,860	5,720
March.....	103	16.2	83.9	150	2,600	7,980
April.....	99	1.65	41.6	64.4	1,250	3,850
May.....	103	4.8	74.1	115	2,300	7,050
June.....	97	.82	23.4	36.2	704	2,160
Fiscal year 1936-37	103	.82	53.2	82.3	19,400	59,550

*Partly estimated.

Lowrie ditch at Honopou Gulch, near Huelo

Location.- Water-stage recorder and concrete control, lat. 20°54'55", long. 156°15'05", a quarter of a mile below siphon across Honopou Stream and $1\frac{1}{2}$ miles northwest of Kaihā.

Records available.- February 1930 to June 1937. January 1910 to March 1927 at site $1\frac{1}{2}$ miles downstream.

Average discharge.- 23 years (1910-26, 1930-37), 34.5 million gallons a day (53.4 second-feet).

Extremes.- Maximum discharge during year, 68 million gallons a day (136 second-feet) Mar. 21 (gage height, 5.44 feet); no flow Oct. 13-17.
1930-37: Maximum discharge, that of Mar. 21, 1937; no flow at times.

Remarks.- Records excellent except those for Oct. 9-17, 21, 22, 29-31, Nov. 3 to Dec. 16, which were computed on basis of records for stations on nearby streams and daily gage readings and are poor. Lowrie ditch diverts water at altitude of about 500 feet from all streams between the Kaihā and the Halehaku. Flow regulated by gates. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.9	23.5	53	22.5	9.1	11	35	51	41	16.6	38	16.3
2	7.4	31	50	18.3	8.5	12	38	24	32.5	51	57	11.5
3	7.4	18.9	27.5	25.5	8.0	15	43	20	18.8	25	46	35
4	24	59	48	28.5	20	40	57	24.5	17.5	12.9	38	41
5	9.2	39.5	56	16.2	40	15	54	20	54	14.6	28.5	19.6
6	7.4	37	39.5	15.4	50	12	24	23	57	24	63	43
7	9.2	31	19.3	20.5	30	20	26.5	58	48	23	57	46
8	44	34.5	16.2	12.8	40	25	21.5	41	46	48	54	51
9	50	56	14.5	10.5	35	50	51	24	57	38	51	57
10	56	48	55.5	12.0	40	60	57	23	46	22.5	51	51
11	53	30.5	15.4	12.5	30	60	24	31	57	32.5	38	23
12	42	56	31.5	11.0	20	60	43	31	57	19.7	38	31
13	14.9	56	48	4.0	15	50	54	57	57	31.5	18.8	20
14	15.4	56	26.5	0	50	60	54	57	57	8.8	17.6	10.2
15	48	50	37	0	57	59	54	57	57	8.8	38	9.5
16	56	34.5	56	0	57	58	57	60	57	9.2	57	8.9
17	39.5	12.8	56	5.0	57	57	57	60	57	10.8	48	9.7
18	29	11.2	53	8.9	57	57	57	63	60	11.5	46	8.5
19	12.0	10.5	37	*8.5	30	46	57	35	57	12.3	48	8.3
20	39	33.5	16.3	*7.6	28	57	57	18.8	57	8.5	60	7.6
21	50	48	14.5	8.5	20	57	57	15.9	50	7.3	57	7.4
22	50	33.5	13.6	7.5	18	60	57	22	57	9.9	57	6.7
23	59	39	12.0	9.4	17	60	57	54	47	55	57	6.7
24	50	56	12.8	42	16	57	54	41	9.5	60	60	6.6
25	56	56	12.8	57	17	57	57	18.8	7.2	43	41	7.6
26	59	39.5	56	51	17	57	57	20	6.8	51	35	35
27	56	48	59	35	15	60	41	43	15.1	41	28	35
28	56	42	56	*20	13	60	41	51	25	24	48	8.5
29	56	56	50	14	12	52	49	-	16.2	35	35	8.0
30	53	56	45	14	11	35	51	-	14.6	50	13.6	7.4
31	49	56	-	10.5	-	46	60	-	24.5	-	35	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	59	7.4	37.6	58.2	1,170	3,580
August.....	59	10.5	40.6	62.8	1,260	3,860
September.....	59	12.0	35.7	55.2	1,070	3,280
October.....	57	0	16.3	25.2	506	1,550
November.....	57	8.0	27.9	43.2	838	2,570
December.....	60	11	46.0	71.2	1,420	4,370
Calendar year 1936.....	60	0	30.7	47.5	11,240	34,470
January.....	60	21.5	48.5	75.0	1,500	4,610
February.....	63	15.9	37.3	57.7	1,040	3,200
March.....	60	8.8	40.8	63.1	1,260	3,890
April.....	60	7.3	26.8	41.5	805	2,470
May.....	63	13.6	43.9	87.9	1,960	4,170
June.....	57	6.6	21.2	32.8	637	1,950
Fiscal year 1936-37.....	63	0	35.3	54.6	12,870	39,490

*Partly estimated.

Haiku ditch at Kapalalaea Gulch, near Huelo

Location.- Water-stage recorder, lat. 20°55'25", long. 156°15'35", in open section of ditch just below tunnel between Honopou and Kapalalaea Gulches, 1½ miles northwest of Kailua.

Records available.- January 1910 to December 1928, February 1930 to June 1937. (January 1910 to October 1914 at site at Peahi weir on Old Haiku ditch; October 1914 to December 1928 at site at Manawai Gulch 2 miles downstream.)

Average discharge.- 25 years (1910-1928, 1930-37), 27.5 million gallons a day (42.5 second-feet).

Extremes.- Maximum discharge during year, 195 million gallons a day (302 second-feet) Mar. 23 (gage height, 5.80 feet); minimum, 0.45 million gallons a day (0.70 second-foot) June 24, 25.

1910-28, 1930-37: Maximum discharge, that of Mar. 23, 1937; no flow occasionally.

Remarks.- Records good except those for July 26 to Sept. 8, Sept. 12 to Oct. 26, Mar. 11, which were computed on basis of records for stations on nearby streams and are poor. Haiku ditch diverts water at altitude of about 250 feet from all streams between Kailua Stream and Maliko Gulch. Flow regulated by gates. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.65	2.0	8.2	2.0	0.70	1.50	66	42	9.8	22.5	7.1	1.20
2	.60	3.0	2.3	2.8	.65	1.60	48	2.95	15.3	19.9	91	1.39
3	.60	17.0	48	5.0	.65	2.65	42	2.7	3.55	27	17.50	4.2
4	4.1	70	6.0	3.0	.75	20	62	3.1	5.6	2.5	1.4	9.0
5	.65	2.0	20	1.8	37.5	3.2	24	2.5	91	7.6	14.4	4.4
6	.60	2.0	1.6	2.1	48	1.80	5.6	2.85	93	22.5	122	34.5
7	.65	3.9	1.4	1.8	5.2	5.5	8.0	95	86	35	98	13.7
8	66	8.0	1.1	1.8	22	2.0	8.3	6.0	55	17.5	52	44
9	29	14.0	.90	1.8	3.4	32.5	86	4.3	85	2.0	17.4	91
10	92	5.8	4.7	1.8	12.4	59	76	4.8	76	5.4	36.5	41
11	62	82	.95	1.8	31	58	3.2	4.3	60	1.60	2.35	3.55
12	2.35	94	48	1.8	2.1	81	31	19.8	89	29	1.70	2.0
13	1.00	85	8.4	1.8	.75	8.8	77	85	41	20	1.20	1.20
14	.95	21	1.5	1.6	.75	21.5	104	90	60	11.6	13.0	.80
15	55	5.0	90	1.6	91	99	99	82	100	5.4	31	.75
16	89	1.5	95	1.4	37.5	57	130	98	95	4.9	85	.70
17	2.75	1.2	4.8	1.4	31.5	69	118	78	104	5.3	9.6	.65
18	1.20	1.1	1.0	1.3	98	44	120	122	120	2.0	11.7	.60
19	.90	1.1	1.0	1.3	12.0	23	97	43	97	2.0	50	.55
20	46	32	.9	1.3	5.2	78	110	29	99	3.95	100	.55
21	15.9	3.5	.9	1.3	3.2	93	81	9.0	88	4.5	97	.55
22	30.5	1.2	1.3	1.3	2.6	80	91	8.4	58	6.3	88	.55
23	78	85	.9	1.5	2.35	74	96	106	67	81	71	.50
24	36.5	80	.9	42	2.6	44	23	13.1	75	95	77	.48
25	60	5.7	15.5	68	2.1	77	66	2.1	58	24.5	6.1	.50
26	80	3.3	84	60	1.90	36	31	2.1	47	47	5.4	13.8
27	35	2.3	23	39	1.80	63	3.75	58	24	28	1.30	10.6
28	50	50	1.4	2.35	1.80	65	2.6	79	5.0	1.50	43	1.77
29	40	45	1.4	1.10	1.60	125	34	-	11.0	22.5	12.0	.60
30	2.6	40	6.6	.75	2.35	39	25.5	-	11.9	27.5	1.30	.55
31	2.9	30	-	.70	-	63	114	-	26	-	1.20	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	92	0.50	28.6	44.3	887	2,720
August.....	86	1.1	25.4	39.2	787	2,410
September.....	95	.90	16.1	24.9	492	1,491
October.....	68	.70	8.29	12.8	257	789
November.....	98	.65	15.4	23.8	463	1,420
December.....	125	1.50	45.7	70.7	1,420	4,350
Calendar year 1936	125	.18	23.1	55.7	8,440	25,910
January.....	130	2.6	60.7	83.9	1,880	5,780
February.....	122	2.1	39.2	60.7	1,100	3,370
March.....	120	3.55	59.9	92.7	1,860	5,700
April.....	95	1.50	19.5	30.2	585	1,800
May.....	122	1.20	37.3	57.7	1,160	3,550
June.....	91	.48	9.52	14.7	286	877
Fiscal year 1936-37	130	.48	30.6	47.3	11,170	34,280

Waiakea Stream at middle flume house, near Mountain View

Location.- Water-stage recorder, lat. 19°36'25", long. 155°10'35", at middle flume house, 800 feet above Olaa Sugar Co.'s main flume and 7½ miles northwest of Mountain View.

Records available.- September 1930 to June 1937.

Extremes.- Maximum discharge during year, 144 million gallons a day (223 second-feet)

Feb. 16 (gage height, 4.67 feet), from rating curve based on weir formulas; minimum, 2.15 million gallons a day (3.33 second-feet) Dec. 7.

1930-37: Maximum discharge, 149 million gallons a day (231 second-feet) July 21, 1931 (gage height, 4.70 feet), from rating curve based on weir formulas; no flow when tunnels and stream dry up.

Remarks.- Records for ordinary stages are good; those for July 1-19, (computed on basis of records for stations on all nearby streams) and those for high stages are poor.

No diversions. Large part of flow comes from three tunnels. Water is used for fluming sugarcane.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

0.8	1.58	2.2	7.2	3.0	19.0
1.2	3.15	2.4	8.2	3.2	23.5
1.6	4.9	2.5	9.5	3.5	35.5
2.0	6.8	2.6	11.2	4.0	59
2.1	6.8	2.8	15.0	4.5	115

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.2	17.0	9.5	12.2	10.4	2.95	50	12.0	11.5	7.8	18.2	6.8
2	6.0	17.0	8.2	11.2	8.7	2.75	41	10.7	10.7	6.8	21.5	6.5
3	6.0	16.0	8.2	12.2	8.2	2.95	31	10.7	9.4	6.3	19.2	6.8
4	6.8	19.4	7.7	13.1	7.2	2.75	25	10.7	8.1	6.3	18.2	6.3
5	6.8	16.0	7.2	11.2	6.8	2.5	20.5	9.4	7.8	5.6	16.1	5.9
6	6.2	15.0	7.2	10.4	8.9	2.25	16.1	8.9	14.9	5.4	20.5	5.6
7	6.2	14.0	6.8	10.4	7.7	3.35	14.2	8.1	17.1	5.2	18.2	6.9
8	7.4	13.1	6.8	11.7	7.2	3.15	11.5	7.2	17.1	4.9	17.1	8.0
9	7.2	13.1	6.8	11.2	7.2	3.55	9.9	6.3	18.2	4.6	17.1	8.2
10	6.4	16.0	7.6	12.2	7.7	6.1	8.9	6.3	19.2	4.4	16.1	7.8
11	6.6	17.5	6.9	11.2	7.7	5.6	8.1	5.9	18.2	4.2	14.2	7.4
12	6.8	18.0	7.4	10.4	7.2	6.3	13.4	5.4	18.2	4.0	12.4	6.8
13	6.8	20	7.7	9.5	7.2	6.3	23	4.9	16.1	3.8	11.5	6.3
14	6.6	19.0	8.2	9.5	7.2	5.9	32.5	7.2	14.2	3.55	10.7	6.3
15	7.0	20	8.2	8.7	6.5	5.9	41	7.6	13.2	3.35	9.4	5.9
16	7.8	19.0	8.7	9.5	6.3	6.3	43	17	12.4	3.15	8.9	5.6
17	7.4	18.0	12.2	8.2	5.9	6.8	39	50	13.2	4.2	7.4	5.4
18	9.0	17.0	10.4	7.7	5.4	6.8	32.5	82	27.5	6.0	7.8	4.9
19	8.6	15.0	10.4	7.2	4.9	6.8	29.5	76	25	8.9	13.7	4.6
20	8.2	23.5	11.2	8.4	4.6	7.4	43	62	26.5	7.8	11.5	4.2
21	8.2	22	11.2	6.8	4.4	9.8	41	50	29.5	7.8	12.4	4.0
22	8.7	22	10.4	6.4	4.2	16.1	41	32.5	24	8.9	12.4	3.8
23	9.5	23.5	10.4	6.1	4.0	35.5	35.5	28	20.5	8.8	19.4	3.55
24	8.7	21	9.5	7.9	3.8	39	26.5	21.5	17.1	12.4	15.3	3.15
25	8.7	19.0	9.6	18.3	3.55	39	20.5	18.2	14.2	10.7	12.4	3.15
26	12.0	17.0	15.7	11.2	3.35	37	16.1	16.1	12.4	12.4	12.4	3.35
27	13.0	15.0	13.1	13.1	3.15	31	14.2	14.2	11.5	16.1	10.7	3.35
28	12.2	14.0	12.2	14.0	3.95	25	12.4	13.2	10.7	16.1	9.9	3.15
29	14.0	12.2	13.1	14.0	3.15	36.5	10.7	-	9.0	17.1	8.9	2.95
30	15.0	11.2	13.1	13.1	2.95	52	9.9	-	9.4	19.2	8.5	2.95
31	16.0	10.4	-	11.2	-	50	11.6	-	8.5	-	7.4	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	16.0	6.0	8.58	13.3	266	816
August.....	23.5	10.4	17.1	26.5	531	1,630
September.....	15.7	6.8	9.52	14.7	236	876
October.....	15.3	6.1	10.6	16.4	358	1,010
November.....	10.4	2.95	5.98	9.25	179	551
December.....	52	2.25	15.1	23.4	467	1,430
Calendar year 1936	52	.10	8.25	12.8	3,020	9,260
January.....	50	8.1	24.9	38.5	772	2,370
February.....	82	4.9	21.5	33.3	602	1,850
March.....	29.5	7.8	15.7	24.3	465	1,490
April.....	19.2	3.15	7.98	12.2	236	726
May.....	21.5	7.4	13.3	20.6	412	1,270
June.....	8.2	2.95	5.31	8.22	159	469
Fiscal year 1936-37	82	2.25	12.9	20.0	4,720	14,510

Wailuku River at Pukamaui, near Hilo

Location.-- Water-stage recorder, lat. 19°42'45", long. 155°09'40", three-quarters of a mile above intake of Hilo Boarding School ditch and 4½ miles west of Hilo.

Drainage area.-- 97.2 square miles.

Records available.-- April 1923 to June 1928, July 1929 to March 1937 (discontinued).

Extremes.-- Maximum discharge during period, 16,900 million gallons a day (26,100 second-feet) Feb. 17 (gage height, 16.2 feet, from floodmarks), from rating curve extended above 2,000 million gallons a day; minimum, 5.8 million gallons a day (9.0 second-feet) Dec. 7.

1923-28, 1929-37: Maximum discharge, that of Feb. 17, 1937; no flow when all water was diverted.

Remarks.-- Records for ordinary stages are good except those for Dec. 24 to Jan. 4, Jan. 14-15, Feb. 14 to Mar. 5, which were computed on basis of records for Wailuku River above Hilo Boarding School ditch and are poor; those for high stages are also poor. Hilo Waterworks diverts water for domestic supply from pool at control. Flow regulated by this diversion.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

3.0	2.7	4.5	11.4	7.0	990
3.2	8.6	5.0	213	7.5	1,290
3.4	12.2	5.5	346	8.0	1,640
3.6	20.5	6.0	520	9.0	2,490
3.8	31.5	6.5	735	10.0	3,530
4.0	49				

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	15.9	54	23.5	49	25.5	9.2	290	246	32			
2	14.0	37	25	64	21.5	7.9	125	114	28			
3	15.9	30	21	61	25	8.2	180	76	23			
4	24.5	372	18.7	82	31.5	9.2	120	48	20			
5	24.5	85	60	39.5	24.5	7.4	*72	33	20			
6	16.8	46	64	31	58	6.0	53	28	79			
7	14.4	38	26.5	37	45	16.5	38	27.5	370			
8	31	37	22	44	45	28	28.5	24	202			
9	64	78	23	52	25.5	17.3	24	19.6	73			
10	29.5	213	28.5	31.5	45	41	22.5	18.2	54			
11	37	114	60	72	29.5	27.5	25	16.4	39.5			
12	23	124	44	57	23.5	33	226	14.4	66			
13	18.2	213	40	31	21	22.5	1,650	13.7	34.5			
14	15.9	140	32.5	26	27.6	19.1	400	40	25.5			
15	18.7	213	28.5	22	18.7	23.5	1,100	75	23			
16	27.5	88	61	41	18.2	36.5	690	1,800	23			
17	22	49	92	34	15.2	88	295	3,100	70			
18	94	36.5	64	26.5	13.3	32.5	160	3,150	1,260			
19	37	33	42	21.5	12.9	24	381	1,000	505			
20	35.6	653	56	21.5	12.6	27.5	1,170	310	268			
21	27.5	435	45	21.5	13.3	185	427	130	283			
22	27.5	108	38	16.8	12.6	772	405	115	93			
23	51	140	31	69	11.3	2,640	140	168	56			
24	29	114	26	75	10.7	1,350	86	130	39.5			
25	22.6	73	*68	564	11.9	300	78	80	-			
26	42	47	*180	114	10.7	185	57	62	-			
27	95	38.5	125	84	8.9	175	42	50	-			
28	44	47	67	54	15.4	210	37	41	-			
29	54	64	44	38.5	14.8	1,650	72	-	-			
30	93	50	88	65	11.0	2,200	66	-	-			
31	75	36.5	-	52	-	1,450	199	-	-			

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acres-feet
July.....	98	14.0	37.8	58.5	1,170	3,600
August.....	653	30	123	190	3,800	11,680
September.....	180	18.7	51.3	79.4	1,640	4,720
October.....	564	16.8	64.4	99.6	2,000	6,130
November.....	58	8.9	22.2	54.3	866	2,050
December.....	2,640	6.0	374	579	11,600	35,600
Calendar year 1936	2,640	0	70.4	109	25,770	79,100
January.....	1,650	22.5	279	432	8,660	26,570
February.....	3,150	13.7	390	603	10,920	33,520
March 1-24.....	1,280	20	154	238	3,690	11,310
April.....	-	-	-	-	-	-
May.....	-	-	-	-	-	-
June.....	-	-	-	-	-	-
The period						135,200

*Partly estimated.

Wailuku River above Hilo Boarding School ditch intake, near Hilo

Location.- Water-stage recorder, lat. 19°42'55", long. 155°09'10", 1,000 feet above intake of Hilo Boarding School ditch, three-quarters of a mile west of Reservoir 1, and 4 miles west of Hilo.

Drainage area.- 124.5 square miles.

Records available.- July 1928 to June 1937.

Extremes.- Maximum discharge during year, 19,000 million gallons a day (29,400 second-feet) Feb. 17 (gage height, 22.2 feet), from rating curve extended above 3,500 million gallons a day; minimum, 13.8 million gallons a day (21.4 second-feet) Dec. 7, 1928-37; Maximum discharge, 21,000 million gallons a day (32,500 second-feet), estimated, July 21, 1931, from rating curve extended above 400 million gallons a day; minimum, 1.1 million gallons a day (1.7 second-feet) Jan. 9, 1934.

Remarks.- Records for ordinary stages are good; those for Dec. 30 to Jan. 7, Jan. 13-19, Mar. 30 to Apr. 16, June 17-25 (computed on basis of records for Wailuku River at Pukamau) and those for high stages are poor. Flow regulated by head gates. Hilo Waterworks diverts about 1 million gallons a day for domestic supply from pool at Pukamau, three-quarters of a mile upstream, and water passing station is used for power by Hilo Electric Light Co.

Rating table, fiscal year 1936-37 (gage height, in feet, and discharge, in million gallons a day)

2.0	10.0	10.0	1,490
3.0	53	12.0	2,690
4.0	130	14.0	4,460
5.0	233	16.0	6,840
6.0	370	18.0	9,960
8.0	774		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	42	199	100	149	64	20.5	800	636	112	110	368	44
2	34	149	84	179	66	18.0	400	355	96	110	562	36.5
3	47	145	66	189	90	19.0	540	235	80	100	311	34
4	64	726	56	245	92	21	350	169	70	100	311	44
5	76	233	189	149	73	16.3	200	130	60	90	179	31.5
6	47	159	169	116	165	15.0	180	108	295	90	525	29.5
7	34	139	96	116	153	51	130	100	914	80	440	47
8	165	130	76	154	130	81	*80	88	522	80	271	96
9	168	273	76	172	96	50	*69	73	297	70	233	80
10	100	591	109	136	139	144	*47	66	245	70	179	56
11	121	455	159	218	104	96	*42	59	169	60	130	39
12	73	425	149	169	76	121	*534	50	271	*80	104	36.5
13	53	574	130	112	66	80	2,200	44	179	56	84	31
14	44	442	116	92	73	70	1,000	137	130	110	80	29
15	56	632	108	73	53	96	1,700	248	108	100	70	26.5
16	92	311	207	149	71	127	1,400	2,710	100	90	116	26
17	66	210	267	108	47	252	800	9,420	270	80	76	25
18	315	159	210	80	36.5	104	490	9,500	2,170	175	84	24
19	130	130	149	66	34	80	990	1,670	1,160	360	309	22
20	121	1,780	169	66	29.5	92	2,690	834	662	224	267	21
21	100	766	149	59	31.5	389	1,070	516	700	133	317	20
22	96	355	116	47	29	1,360	1,170	370	464	355	278	19
23	169	464	104	100	24	4,420	498	503	221	169	149	19
24	108	370	84	236	23	1,910	340	416	169	390	233	18
25	80	258	85	1,270	26	804	297	271	169	210	130	17
26	162	179	532	311	22.5	554	221	210	149	498	106	117
27	317	149	345	258	20	534	169	169	192	589	80	132
28	179	174	189	179	40	622	149	139	151	433	62	66
29	199	188	149	139	42	2,260	254	-	172	521	66	50
30	297	159	245	150	24.5	4,000	223	-	120	600	66	34
31	258	121	-	130	-	2,000	538	-	120	-	47	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	317	34	125	193	3,970	11,890
August.....	1,720	121	354	548	10,990	33,710
September.....	532	56	156	241	4,680	14,370
October.....	1,270	47	181	280	5,620	17,240
November.....	165	20	65.0	101	1,950	5,990
December.....	4,420	15.0	660	1,020	20,460	62,780
Calendar year 1936.....	4,420	2.1	172	266	62,940	193,200
January.....	2,690	42	631	976	19,560	60,030
February.....	9,500	44	1,040	1,610	29,220	89,690
March.....	2,170	70	341	528	10,580	32,480
April.....	600	56	203	314	6,090	18,700
May.....	562	47	201	311	6,220	19,060
June.....	132	17	42.4	65.6	1,270	3,900
Fiscal year 1936-37.....	9,500	15.0	330	511	120,500	369,900

*Partly estimated.

Hilo Boarding School ditch at intake, near Hilo

Location.- Water-stage recorder and Parshall flume, lat. 19°43'00", long. 155°08'55", 200 feet below intake diversion dam on Wailuku River and 3½ miles northwest of Hilo.

Records available.- October 1931 to June 1937.

Extremes.- Maximum gage height during year, 8.62 feet (discharge greater than 21.5 million gallons a day, or 33.3 second-feet) Feb. 18; minimum discharge, 6.9 million gallons a day (10.7 second-feet) Nov. 24.

1931-37: Maximum discharge is beyond measuring capacity of station; no flow when water was shut out of ditch Nov. 23, 24, 1933.

Remarks.- Records of discharge below maximum capacity of Parshall-flume control (21.5 million gallons a day at gage height 2.5 feet) are excellent; those for May 25 to June 11, which were computed on basis of records for stations on Wailuku River, are good. Above gage height 2.5 feet the control is drowned by overflow from Wailuku river. Water is used for power by Hilo Electric Light Co.

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.2	10.7	10.7	11.2	8.2	7.8	12.3	11.2	10.2	9.7	11.2	9.2
2	8.7	10.2	10.7	11.8	8.2	7.8	10.7	10.2	10.2	9.2	12.3	9.2
3	9.2	10.2	10.2	11.2	8.2	7.8	10.2	9.7	10.2	9.7	11.8	8.7
4	9.7	12.3	10.2	11.8	8.2	7.8	10.2	9.2	9.7	9.2	11.2	8.7
5	9.7	11.2	11.2	11.2	8.2	7.8	9.7	9.2	9.7	9.2	10.7	8.2
6	9.2	10.7	11.2	10.7	8.7	7.3	9.7	8.7	11.2	9.2	11.8	8.2
7	9.2	10.7	10.7	10.7	8.7	7.8	9.2	8.7	13.4	8.7	11.8	8.2
8	10.2	10.2	10.7	11.2	8.7	9.2	8.7	8.2	12.3	8.7	11.2	11.8
9	10.7	11.2	10.7	11.2	8.7	8.7	8.7	8.2	11.2	8.7	10.7	9.7
10	10.2	12.3	10.7	10.7	8.7	9.2	8.7	7.8	11.2	8.2	10.7	9.2
11	10.2	11.8	11.2	11.8	8.7	9.2	8.2	7.8	10.7	8.2	10.2	8.7
12	9.7	11.8	11.2	11.2	8.2	9.7	10.7	7.3	11.2	8.2	9.7	8.7
13	9.2	12.3	11.2	10.7	8.2	9.2	*16.4+	6.9	10.7	8.2	9.7	8.2
14	9.2	11.8	11.2	10.7	8.7	9.2	*20+	8.7	10.7	7.8	9.7	8.2
15	9.7	12.3	11.2	10.2	8.2	9.2	*18.8+	9.2	10.2	7.8	9.7	7.8
16	10.2	11.2	11.8	10.7	8.2	9.7	14.0	*17.6+	10.2	7.8	10.2	8.2
17	9.7	10.7	11.8	10.7	8.2	10.2	11.8	*20+	10.7	9.7	9.7	7.8
18	11.2	10.7	11.8	10.2	7.8	9.2	10.7	*21.5+	*17.6+	10.7	9.7	7.8
19	10.7	10.2	11.2	10.2	7.8	9.2	*12.3+	*17.6+	*14.0+	11.8	11.2	8.2
20	10.2	*15.1+	11.8	10.2	7.8	9.2	*20+	13.4	12.9	10.7	11.2	8.2
21	10.2	13.4	11.2	10.2	7.3	10.2	12.9	12.3	12.9	10.2	11.2	7.8
22	10.2	12.3	11.2	9.7	7.3	12.9	13.4	11.8	11.2	11.2	11.2	7.8
23	10.7	12.3	11.2	9.7	6.9	*17.6+	10.7	12.3	11.2	10.7	10.7	7.8
24	10.2	12.3	10.7	9.7	7.3	*15.1+	10.2	11.8	10.7	11.8	11.2	8.2
25	9.7	11.8	10.7	12.3	7.8	11.2	10.2	11.2	10.7	11.2	10.2	8.2
26	10.7	11.2	12.9	9.7	7.8	10.7	9.7	11.2	10.7	11.2	10.2	10.2
27	11.2	11.2	12.3	9.7	7.8	11.2	9.7	10.7	10.7	12.3	9.7	10.7
28	11.2	11.2	11.8	9.2	8.2	11.2	9.2	10.7	10.2	11.8	9.7	10.2
29	10.7	11.2	11.8	9.2	8.2	*15.1+	9.7	-	10.7	11.8	9.7	9.7
30	11.2	11.2	11.8	8.7	7.8	*21.5+	9.7	-	10.2	12.3	10.2	9.2
31	11.2	10.7	-	8.7	-	*16.4+	10.7	-	9.7	-	9.7	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	11.2	8.7	10.1	15.6	313	961
August.....	*15.1+	10.2	11.5	17.8	356	1,090
September.....	12.9	10.2	11.2	17.3	337	1,030
October.....	12.3	8.7	10.5	16.2	325	998
November.....	8.7	6.9	8.09	12.5	243	745
December.....	*21.5+	7.3	10.6	16.4	328	1,010
Calendar year 1936	*21.5+	2.3	9.12	14.1	3,340	10,240
January.....	*20+	8.2	11.5	17.8	357	1,100
February.....	*21.5+	6.9	11.2	17.3	313	961
March.....	*17.6+	9.7	11.2	17.3	347	1,070
April.....	12.3	7.8	9.86	15.3	296	908
May.....	12.3	9.7	10.6	16.4	328	1,010
June.....	11.8	7.8	8.76	13.6	263	806
Fiscal year 1936-37	*21.5+	6.9	10.4	16.1	3,810	11,690

*Control drowned by overflow from Wailuku River for part of day.

†Control drowned by overflow from Wailuku River for entire day.

Kapehu Stream at Pihoenua, near Hilo

Location.— Water-stage recorder, lat. 19°43'15", long. 155°08'30", a quarter of a mile above confluence with Wailuku River and 3 miles west of Hilo.

Drainage area.— 4.9 square miles.

Records available.— November 1928 to January 1937 (discontinued).

Extremes.— Maximum discharge during period July 1936 to January 1917, 3,620 million gallons a day (5,600 second-feet) Dec. 23 (gauge height 10.80 feet), from rating curve extended above 400 million gallons a day; minimum, 9.5 million gallons a day (14.7 second-feet) Dec. 7.
1928-37: Maximum discharge, 3,640 million gallons a day (5,630 second-feet) Aug. 12, 1930 (gauge height, 9.98 feet), from rating curve extended above 400 million gallons a day; minimum, 1.2 million gallons a day (1.9 second-feet) Feb. 17, 1931.

Remarks.— Records good for low and medium stages and poor for extremely high stages. One small diversion above station for fluming sugarcane. Water passing station is used for power by Hilo Electric Light Co.

Rating table, fiscal year 1936-37 (gauge height, in feet, and discharge, in million gallons a day)

July 1 to Jan. 18					
1.3	7.2	3.0	103	5.0	421
1.6	14.5	3.5	157	6.0	705
2.0	29	4.0	225	7.0	1,090
2.5	59	4.5	311		

Discharge, in million gallons, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	18.2	55	28	39	26.5	12.1	140					
2	16.9	42	25	50	24	11.3	93					
3	20	39	21.5	67	28.5	11.8	71					
4	24.5	137	21	74	27.5	12.5	109					
5	20.5	51	62	45	24	10.9	55					
6	13.7	35.5	37.5	36	50	10.0	48					
7	10.9	34.5	21.5	35.5	43	28.5	39					
8	46	34.5	20	58	36	24.5	32.5					
9	30	85	22	53	29.5	20.5	28.5					
10	20.5	150	32.5	48	42	59	28					
11	26	185	40	63	30.5	33	26.5					
12	16.0	122	35	51	26	44	151					
13	13.7	137	32.5	34.5	24	30	431					
14	12.9	103	30.5	31.5	23	30	314					
15	16.9	128	28	28.5	20.5	42	362					
16	29.5	67	50	52	69	47	210					
17	24	45	65	34	25.5	64	123					
18	80	39	56	29	21	33	93					
19	30	33	39	25.5	19.2	28	-					
20	31	246	42	24	17.8	33.5	-					
21	24.5	130	42	22	20.5	91	-					
22	24	67	37.5	20	17.9	210	-					
23	46	116	33.5	19.2	16.3	828	-					
24	24.5	75	27.5	47	15.1	211	-					
25	23	51	37	293	14.5	128	-					
26	62	38.5	180	67	13.2	103	-					
27	104	35	102	59	12.9	124	-					
28	58	48	55	42	20.5	126	-					
29	57	42	47	345	16.9	486	-					
30	73	39	65	32	13.4	809	-					
31	73	32	-	34.5	-	228	-					

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	104	10.9	34.7	53.7	1,080	3,300
August.....	246	32	78.7	122	2,440	7,490
September.....	180	20	44.5	68.9	1,340	4,100
October.....	293	19.2	50.0	77.4	1,550	4,750
November.....	69	12.9	25.6	39.6	769	2,360
December.....	828	10.0	127	196	3,930	12,060
Calendar year 1936	828	1.4	42.7	66.1	15,620	47,900
January 1-18.....	431	26.5	131	203	2,350	7,230
February.....						
March.....						
April.....						
May.....						
June.....						
The period						41,290

Awini ditch at East Honokaneiki Gulch, near Niuli

Location.— Water-stage recorder, lat. 20°09'55", long. 155°43'10", on Awini ditch at Flume across East Honokaneiki Gulch, 4½ miles southeast of Niuli.

Records available.— October 1927 to June 1937.

Extremes.— Maximum discharge during year, 30.5 million gallons a day (47.2 second-feet) Aug. 3 (gage height, 3.57 feet); no flow for several periods during year.

1927-37: 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 fair except those for Sept. 21, Jan. 2-4, Jan. 16 to Feb. 1, Feb. 16-18, 20-26, Mar. 6-11, 20-26, Apr. 10-12, June 24-30, which were computed on basis of records for stations on all nearby streams and are poor. Awini ditch diverts water at altitude of about 2,000 feet from all streams between the Waikalua 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 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	17.6	23	21	8.7	0.03	15.4	0.28	18	16.2	20	8.2	12.5
2	13.9	19.2	16.2	23	.01	9.9	.3	*18.4	13.9	17.6	10.6	6.2
3	13.9	23	9.9	22	0	16.2	.3	14.6	13.9	16.2	8.7	8.5
4	13.9	24	9.9	21	.01	15.4	1.0	11.8	13.9	14.6	8.2	13.9
5	20	20	10.6	16.9	.03	11.8	2.05	10.6	*23	16.2	7.6	19.2
6	20	20	13.9	17.6	.01	11.2	2.1	10.6	21	*20	22	21
7	15.4	23	13.9	16.9	0	11.2	2.1	14.6	22	*16.4	22	20
8	16.9	25	15.4	13.2	0	11.2	2.2	15.4	18	*18.4	20	21
9	22	27	13.9	15.4	0	10.6	3.2	10.6	15	*16.9	15.4	3.9
10	22	27	13.2	16.2	0	10.6	2.9	8.7	10	16	11.8	.18
11	23.5	25	11.8	20	0	10.6	2.7	*11.2	7.0	17	9.9	0
12	15.4	25	18.4	16.9	0	10.6	2.7	15.4	*5.2	15	9.3	0
13	11.2	29	18.4	12.5	5.6	11.8	3.95	23.5	9.3	16.9	7.6	0
14	9.3	27	13.2	10.6	6.1	5.0	4.2	24	23	9.9	6.8	0
15	14.6	25	23	8.2	5.6	0	3.95	24	23.5	7.6	6.3	0
16	24	23	24	12.5	3.8	0	4.0	21	23.5	6.7	11.8	0
17	18.4	18.4	20	13.9	12.4	0	4.0	18	24	11.8	13.2	0
18	22	16.9	15.4	8.2	19.2	0	4.0	18	23.5	13.9	11.2	0
19	12.5	17.6	11.2	6.3	18.4	0	4.0	22	21	8.2	27	0
20	17.6	27	9.3	5.7	22	0	4.0	20	15	6.5	27	0
21	25	23.5	*8.7	5.4	22	.03	4.0	18	11	5.6	23.5	.40
22	25	20	8.2	4.9	16.2	.07	4.0	17	9.0	7.0	21	.79
23	24	20	8.7	6.0	13.2	.28	4.0	25	8.0	8.7	15.4	.62
24	22	20	12.5	11.2	20	.26	4.0	23	7.0	21	16.2	1.0
25	23.5	20	13.2	22	20	.26	3.5	21	6.0	12.5	12.5	1.5
26	24	19.2	18.4	6.9	20	.26	3.0	20	16	7.6	9.9	6.0
27	23.5	19.2	14.6	.32	15.4	.26	1.5	*18.4	16.9	6.0	9.9	7.0
28	19.2	19.2	17.6	.11	13.9	.26	1.5	*21	16.9	5.1	9.9	6.0
29	19.2	22	16.2	.07	9.3	.32	3.5	-	19.2	5.1	8.7	6.0
30	23	23	11.2	.05	9.9	.30	12	-	16.2	6.4	8.7	6.0
31	27	20	-	.04	-	.28	17	-	14.6	-	8.4	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	27	9.3	19.3	29.9	600	1,840
August.....	29	16.9	22.3	34.5	691	2,120
September.....	24	8.2	14.4	22.3	432	1,330
October.....	23	.04	11.1	17.2	343	1,050
November.....	22	0	8.47	13.1	264	780
December.....	16.2	0	5.29	8.18	164	504
Calendar year 1936	31	0	13.5	20.9	4,960	15,220
January.....	17	.28	3.61	5.59	112	344
February.....	25	8.7	17.7	27.4	496	1,520
March.....	24	5.2	15.6	24.1	483	1,480
April.....	21	5.1	12.4	19.2	375	1,140
May.....	27	6.3	13.2	20.4	409	1,250
June.....	21	0	6.39	8.34	162	496
Fiscal year 1936-37	29	0	12.4	19.2	4,520	13,850

*Partly estimated.

East Honokaneiki intake to Awini ditch at East Honokaneiki Gulch, near Niulii

Location.- Water-stage recorder, 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, 4½ miles southeast of Niulii.

Records available.- October 1927 to December 1936.

Extremes.- Maximum discharge during period, 6.4 million gallons a day (9.9 second-feet) Aug. 3 (gage height, 1.25 feet); minimum, not known (record missing).

1927-37: Maximum discharge, 10.6 million gallons a day (16.7 second-feet) Mar. 27, Apr. 2, 1930 (gage height, 1.35 feet); no flow occasionally.

Remarks.- Records fair except those for Sept. 26 to Oct. 2, Oct. 27 to Nov. 17, which were computed on basis of records for Awini ditch at East Honokaneiki Gulch and are poor. Data insufficient to compute discharge after Dec. 21. 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 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.72	1.33	1.75	0.3	0.5	1.15						
2	.55	.87	1.15	.8	.3	.58						
3	.95	2.15	.83	1.20	.4	2.4						
4	1.49	.89	1.07	.79	.6	1.42						
5	3.3	.38	.72	.79	1.7	.58						
6	2.35	.48	.65	.79	2.0	.61						
7	1.11	.65	.41	.65	.8	1.25						
8	1.80	3.0	.61	.61	.6	2.95						
9	2.0	3.85	.41	.51	.9	1.85						
10	2.0	2.7	.41	.88	1.7	3.8						
11	3.45	2.2	.29	.40	1.2	3.05						
12	.72	2.5	.26	.20	.3	2.35						
13	.44	3.9	.22	.26	.5	3.8						
14	.32	3.1	.22	.22	.7	1.80						
15	.86	2.9	.38	.14	.5	1.46						
16	4.0	1.46	.48	.68	.4	1.38						
17	1.20	.68	.83	.58	.9	1.33						
18	1.73	.48	.72	.32	2.8	1.28						
19	.58	1.91	.35	.26	2.75	1.24						
20	1.99	2.55	.38	.24	3.05	1.24						
21	3.8	.91	.32	.22	4.6	1.28						
22	3.4	.43	.26	.20	1.60	-						
23	3.2	1.66	.24	1.01	1.38	-						
24	2.05	2.25	.32	1.09	3.2	-						
25	2.6	.56	.41	2.5	2.8	-						
26	3.2	.26	.7	.99	2.65	-						
27	2.8	.08	.5	3.0	.99	-						
28	.99	2.35	.4	1.0	.83	-						
29	.83	1.24	.4	.5	.55	-						
30	1.81	2.3	.3	1.2	.51	-						
31	4.4	2.0	-	1.4	-	-						
Month				Million gallons a day			Second-foot (mean)	Total run-off				
				Maximum	Minimum	Mean		Million gallons	Acre-feet			
July.....				4.0	0.32	1.96	3.03	60.6	186			
August.....				3.9	.08	1.67	2.58	51.8	159			
September.....				1.75	.22	.530	.920	15.9	49			
October.....				3.0	.14	.765	1.18	23.7	75			
November.....				4.6	.3	1.39	2.15	41.7	128			
December 1-21.....				3.8	.58	1.75	2.71	36.8	113			
The period.....									708			
January.....												
February.....												
March.....												
April.....												
May.....												
June.....												
Fiscal year												

Kohala ditch at Pololu, near Niulii

Location.- Water-stage recorder, lat. 20°10'20", long. 155°44'15", on open section of ditch in Pololu Valley just below boundary between Bishop Estate land of Honokane and Territorial land of Pololu, 2½ miles above mouth of Pololu Stream and 4 miles south of Niulii.

Records available.- August 1927 to June 1937.

Extremes.- Maximum discharge during year, 70 million gallons a day (108 second-feet) Aug. 3 (gage height, 4.06 feet); no flow Oct. 10-12, Jan. 12, 13.

1927-37: 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. Flow regulated by head gates. Kohala ditch receives flow of Awini ditch and diverts 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 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	29	36.5	43	24	12.2	32.5	20	25	30	27	26	36.5
2	27	32.5	36.5	41	12.2	29	19.2	24	31	28	28	28
3	31	38.5	28	43	12.2	29	18.3	24	31	27	31	28
4	34.5	48	28	34.5	12.2	34.5	22	27	31	26	27	36.5
5	32.5	34.5	27	28	15.6	27	19.2	27	34.5	27	26	39
6	34.5	34.5	30	33	34	27	18.5	27	30	28	36.5	34.5
7	32.5	39	28	39	19.2	29	17.4	27	34.5	29	41	46
8	41	48	30	34.5	19.2	34.5	16.5	25	29	27	36.5	48
9	41	58	29	27.5	15.6	34.5	17.4	25	27	27	32.5	48
10	39	55	29	13.8	25	32.5	16.5	26	29	26	31	29
11	46	46	27	0	16.5	25.5	16.5	27	28	26	28	17.4
12	32.5	48	32.5	17.1	15.6	30	1.4	32.5	27	26	27	16.5
13	26	53	39	32.5	17.4	30	8.3	24.5	25	28	26	16.5
14	23	50	31	31	21	29	22	31	25	25	24	20
15	28	50	46	27	21	34.5	24	30	25	26	24	16.5
16	50	39	50	28	19.2	22	22	31	26	26	32.5	20
17	34.5	34.5	36.5	34.5	24	23	23	31	28	31	34	20
18	36.5	32.5	34.5	26	50	27	21	30	26	31	32.5	19.2
19	27	32.5	26	24	39	24	27	28	27	29	55	16.5
20	39	43	27	23	36.5	34.5	32.5	29	27	28	48	15.6
21	48	46	24	22	41	34.5	26	27	26	27	48	14.1
22	46	36.5	23	21	34.5	39	29	29	28	29	46	16.5
23	46	34.5	23	27	32.5	36.5	22	30	28	31	39	22
24	39	46	25	36.5	39	26	20	27	27	55	46	22
25	48	39	25	36.5	32.5	22	21	28	27	36.5	36.5	23
26	48	34.5	41	21	29	22	26	30	28	30	34.5	43
27	48	30	36.5	16.5	30	20	26	28	26	28	31	50
28	34.5	39	30	15.6	31	19.2	20	29	26	26	29	46
29	32.5	43	31	14.1	26	24	22	-	27	26	30	46
30	34.5	36.5	27	23	25	27	25	-	26	28	30	46
31	53	39	-	14.1	-	24	28	-	25	-	29	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	53	23	37.5	58.0	1,160	3,570
August.....	58	30	41.2	63.7	1,280	3,920
September.....	60	23	31.4	48.6	944	2,900
October.....	49	20	26.1	40.4	809	2,480
November.....	50	12.2	26.3	39.1	758	2,330
December.....	39	19.2	28.5	44.1	833	2,710
Calendar year 1936	58	0	29.1	45.0	10,660	32,720
January.....	32.5	1.4	20.7	32.0	642	1,970
February.....	34.5	24	28.2	43.6	790	2,420
March.....	34.5	25	27.9	43.2	865	2,650
April.....	55	25	28.8	44.6	864	2,650
May.....	55	24	33.7	52.1	1,050	3,210
June.....	50	14.1	29.3	45.3	880	2,700
Fiscal year 1936-37	58	0	29.9	46.3	10,920	33,510

Kehena ditch near Kohala

Location.- Water-stage recorder, lat. 20°07'25", long. 155°45'05", at old Honokane weir, near head of West Branch of Honokanenui Gulch, 8½ miles southeast of Kohala.

Records available.- December 1917 to November 1919, April 1928 to June 1937.

Extremes.- Maximum discharge during year, 39 million gallons a day (60 second-feet) Oct. 25 (gage height, 1.04 feet); no flow occasionally, when water was shut out of ditch. 1917-19, 1928-37: Maximum discharge, 86 million gallons a day (133 second-feet) Jan. 27, 1918 (gage height, 2.16 feet, former datum); no flow during dry periods.

Remarks.- Records good. Flow regulated by several gates above station. Intake is on Honokanenui Stream 2 miles above 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 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.2	8.9	15.9	1.2	3.4	8.9	4.4	11.3	1.7	6.4	1.7	8.2
2	2.3	4.2	8.7	13.4	2.1	3.7	2.3	5.7	3.7	10.6	3.2	2.3
3	5.7	13.5	4.4	15.6	3.0	7.9	1.2	2.3	2.3	11.7	4.2	4.0
4	21	20	4.4	9.3	3.4	14.0	4.0	1.4	3.7	8.9	7.0	13.9
5	17.9	3.9	3.7	3.2	12.6	4.2	3.0	.9	9.9	11.7	4.9	14.5
6	8.6	3.4	3.9	9.4	15.9	5.4	1.0	2.9	9.9	11.0	17.4	21.5
7	6.2	6.2	2.5	7.9	5.0	12.9	.5	9.5	11.0	13.8	18.8	17.4
8	20.5	11.7	2.1	7.8	4.4	15.2	.2	7.5	10.6	12.9	5.4	25.5
9	16.1	14.4	1.5	12.4	6.1	14.4	.2	3.0	10.3	11.0	2.3	29.5
10	12.9	14.0	2.3	9.1	14.1	17.2	.2	1.4	10.6	9.3	1.9	9.6
11	18.3	8.9	2.5	10.3	1.4	9.9	.2	1.2	11.0	9.6	1.4	3.4
12	5.4	10.1	8.4	6.0	.04	9.6	.2	3.9	11.0	4.9	.9	2.1
13	2.5	14.4	17.3	1.4	.4	9.9	11.0	15.2	10.3	7.1	.5	2.1
14	1.5	11.0	5.9	.6	2.1	9.3	14.4	15.2	6.2	3.2	.4	9.6
15	8.2	6.2	14.6	.3	1.4	9.3	10.6	11.7	5.7	2.1	.7	3.7
16	25.5	5.4	21.5	.1	.9	4.4	10.3	5.7	5.7	1.5	11.8	12.5
17	7.3	4.2	10.6	.1	2.8	3.9	9.6	4.9	9.3	5.3	4.4	11.6
18	5.9	2.8	8.5	.04	29	8.2	6.2	4.9	7.1	9.6	9.0	11.1
19	3.4	2.3	3.0	0	19.2	8.2	7.6	5.1	6.2	6.8	31	3.4
20	18.6	10.3	3.0	0	14.6	9.3	8.1	4.4	3.2	4.4	28.5	1.5
21	22	12.9	2.1	0	25.5	9.6	7.1	2.8	2.1	2.1	20.5	1.4
22	17.0	6.5	1.7	0	6.3	9.9	8.9	2.3	1.4	5.7	13.8	.9
23	14.4	14.1	1.4	0	10.4	9.9	8.0	5.7	1.0	5.0	10.8	.7
24	8.2	13.8	2.8	.8	24.5	7.9	1.2	5.4	.9	24.5	15.2	.6
25	10.3	4.4	2.5	28	6.5	6.8	2.0	4.9	.6	7.1	5.4	1.4
26	15.3	3.4	12.5	13.6	4.9	5.9	2.1	4.7	5.0	2.8	3.0	22.5
27	6.8	2.5	6.4	39	3.4	3.7	1.9	3.2	6.3	2.1	2.1	21
28	4.4	9.8	3.4	1.0	2.3	2.5	1.7	2.5	6.1	2.1	1.4	12.9
29	4.2	18.3	3.4	1.5	1.5	2.1	1.5	-	9.2	1.7	1.4	4.4
30	8.4	20.5	1.9	9.8	2.0	9.5	4.5	-	4.7	1.7	1.4	2.1
31	25.5	13.3	-	11.6	-	5.2	14.4	-	3.0	-	2.8	-

Month	Million gallons a day			Second-foot (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July.....	25.5	1.5	11.2	17.3	348	1,070
August.....	20.5	2.3	9.53	14.7	295	906
September.....	21.5	1.4	6.09	9.42	183	561
October.....	39	0	6.89	10.7	213	655
November.....	29	.04	7.64	11.8	229	703
December.....	17.2	2.1	8.55	12.9	259	794
Calendar year 1936	43	0	9.29	14.4	3,400	10,430
January.....	14.4	.2	4.69	7.25	146	447
February.....	15.2	.9	5.34	8.26	150	459
March.....	11.0	.6	6.11	9.45	190	582
April.....	24.5	1.5	7.21	11.2	216	684
May.....	31	.4	7.52	11.6	233	716
June.....	29.5	.6	9.18	14.2	275	845
Fiscal year 1936-37	39	.04	7.50	11.6	2,740	8,400

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