

HAWAII, ISLAND OF OAHU

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16254000 MAKAWAO STREAM NEAR KAILUA

LOCATION.--Lat 21°21'49", long 157°46'02", Old Hawaiian Datum, Hydrologic Unit 20060000, on left bank 650 ft upstream of confluence with Maunawili Stream, 2.7 mi southwest of Kailua, and 4.3 mi southeast of Kaneohe Courthouse.

DRAINAGE AREA.--2.04 mi².

PERIOD OF RECORD.--November 1912 to June 1916, January 1958 to current year.

REVISED RECORDS.--WSP 1937: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 80 ft above mean sea level (from topographic map). Prior to January 1, 1958, nonrecording gage at sites about 200 ft upstream at different datums.

REMARKS.--Records computed by R. Taogoshi. Records fair. Maunawili ditch diverts ground and surface water 1.5 mi upstream of station at elevation 920 ft for irrigation in vicinity of Waimanalo.

AVERAGE DISCHARGE.--48 years (water years 1914-15, 1959-2004), 4.87 ft³/s (3,530 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,000 ft³/s, February 4, 1965, gage height, 12.41 ft, from rating curve extended above 470 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.43 ft³/s, September 8-12, 14, 16-20, 22, 23, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 390 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 2	1830	573	5.61				
Jan 23	0030	529	5.46	Feb 27	1315	*806	*6.29

Minimum discharge, 1.1 ft³/s, on Oct 29-31, Nov 3, Nov 6, Nov 26-28, gage height, 1.33 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.2	16	25	7.5	21	10	5.0	4.7	3.4	2.8	3.0
2	1.4	1.3	8.5	129	6.9	23	14	5.3	4.7	3.4	3.6	2.8
3	1.3	1.3	13	61	16	18	14	5.2	5.1	3.5	3.5	2.4
4	1.4	1.2	23	24	11	17	11	5.8	5.1	3.5	32	2.8
5	1.6	1.3	24	15	9.3	15	9.7	5.2	5.0	3.9	5.5	3.4
6	1.6	1.4	12	11	8.3	14	9.0	5.4	5.5	3.8	3.6	3.6
7	1.5	1.3	24	8.7	11	13	16	15	5.2	3.2	4.4	3.0
8	1.8	1.3	12	7.5	10	12	9.9	6.2	4.9	3.1	3.7	3.2
9	1.7	1.3	7.1	6.4	8.9	10	11	5.7	4.6	3.1	3.4	2.9
10	1.5	1.5	6.1	5.8	8.2	9.8	9.8	17	5.1	3.1	2.8	2.8
11	1.8	1.5	5.2	5.6	7.7	9.0	8.9	14	4.8	6.1	2.9	3.4
12	1.9	1.5	4.4	5.4	7.7	8.8	8.4	8.3	5.2	3.5	3.5	3.8
13	1.8	1.5	4.8	4.8	7.2	19	7.8	6.8	5.2	3.2	3.2	3.5
14	1.7	1.4	4.4	6.1	7.1	11	7.5	7.5	4.6	3.1	3.2	4.3
15	1.7	1.5	3.9	4.8	7.3	9.1	7.4	17	4.0	3.1	3.2	3.1
16	1.7	1.8	3.4	4.6	7.9	8.1	7.1	13	6.0	3.2	3.1	3.4
17	1.6	1.8	4.0	4.4	7.4	7.8	7.2	8.9	4.8	3.2	3.5	3.3
18	1.4	1.5	3.4	4.4	6.5	7.4	7.2	7.3	4.0	3.7	3.3	3.4
19	1.5	1.5	3.1	4.4	6.0	6.9	6.8	7.1	4.4	3.4	3.0	3.8
20	1.4	1.5	3.1	7.4	5.9	7.0	7.1	7.1	4.6	2.7	3.3	3.2
21	1.4	1.3	3.1	5.5	5.7	14	6.4	6.2	3.8	2.7	3.9	3.0
22	1.5	1.2	2.9	7.3	5.7	11	6.1	6.3	4.0	2.6	3.9	3.1
23	1.4	1.5	2.8	38	5.6	25	5.7	6.2	4.4	2.5	3.9	3.6
24	1.5	1.5	2.7	9.7	5.8	12	5.7	6.1	4.3	2.6	3.9	3.2
25	1.5	1.6	2.7	32	5.9	10	5.8	5.8	3.5	2.7	3.4	3.3
26	1.5	1.3	2.7	20	34	15	7.7	5.2	3.5	2.8	6.9	3.9
27	1.5	1.2	2.6	12	119	11	5.8	5.0	3.7	2.6	4.2	3.8
28	1.3	1.2	11	9.5	39	10	5.3	4.9	3.6	2.9	3.6	3.3
29	1.3	12	4.5	8.5	24	13	5.5	4.7	3.8	2.6	3.5	3.0
30	1.2	12	16	8.9	---	18	5.3	4.7	4.1	2.5	3.2	3.6
31	1.2	---	21	7.9	---	11	---	4.8	---	2.5	3.1	---
TOTAL	47.0	63.4	257.4	504.6	412.5	396.9	249.1	232.7	136.2	98.2	141.0	98.9
MEAN	1.52	2.11	8.30	16.3	14.2	12.8	8.30	7.51	4.54	3.17	4.55	3.30
MAX	1.9	12	24	129	119	25	16	17	6.0	6.1	32	4.3
MIN	1.2	1.2	2.6	4.4	5.6	6.9	5.3	4.7	3.5	2.5	2.8	2.4
AC-FT	93	126	511	1,000	818	787	494	462	270	195	280	196

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2004, BY WATER YEAR (WY)

MEAN	2.84	5.26	6.57	8.15	6.86	7.30	6.31	5.13	3.22	2.64	2.52	2.43
MAX	8.43	38.2	34.8	39.2	27.2	24.3	31.4	17.2	11.3	6.66	8.52	15.1
(WY)	(1966)	(1966)	(1988)	(1916)	(1979)	(1958)	(1963)	(1981)	(1982)	(1982)	(1982)	(1914)
MIN	1.06	0.99	1.22	1.24	1.11	1.25	1.17	1.40	1.15	1.16	1.10	1.00
(WY)	(1976)	(1963)	(1978)	(1973)	(1978)	(1978)	(2001)	(1973)	(1973)	(2001)	(2001)	(1975)

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16254000 MAKAWAO STREAM NEAR KAILUA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR	FOR 2004 WATER YEAR	WATER YEARS 1913 - 2004
ANNUAL TOTAL	1,130.0	2,637.9	
ANNUAL MEAN	3.10	7.21	
HIGHEST ANNUAL MEAN			4.87
LOWEST ANNUAL MEAN			11.1 1.31
HIGHEST DAILY MEAN	68	Feb 14	1982
LOWEST DAILY MEAN	1.2	Aug 26	1973
ANNUAL SEVEN-DAY MINIMUM	1.2	Oct 29	518 0.50 0.67
ANNUAL RUNOFF (AC-FT)	2,240	5,230	Dec 31, 1987 Sep 8, 1964 Sep 8, 1964
10 PERCENT EXCEEDS	4.4	14	8.4
50 PERCENT EXCEEDS	2.0	4.6	2.7
90 PERCENT EXCEEDS	1.4	1.5	1.4