

16759000 HAUANI GULCH NEAR KAMUELA

LOCATION.--Lat 20°02'28", long 155°39'05", Old Hawaiian Datum, Hydrologic Unit 20010000, on left bank 800 ft downstream from small tributary, and 1.8 mi northeast of Kamuela.

DRAINAGE AREA.--0.47 mi².

PERIOD OF RECORD.--March 1956 to Setember 2004 (discontinued). Prior to July 1960, published as Hauani Stream near Kamuela.

REVISED RECORDS.--WSP 1569: Drainage area. WSP 1937: 1948(M), 1949-51(P), 1952(M), 1954(M), 1955, 1956-57(P), 1958-60.

GAGE.--Water-stage recorder. Concrete control since February 27, 1963. Elevation of gage is 3,117.42 ft above mean sea level (Hawaii County Department of Water Supply benchmark).

REMARKS.--Records computed by Gary Sanchez. Records good. Diversion upstream for livestock and domestic use.

AVERAGE DISCHARGE.--48 years (water years 1957-2004), 1.74 ft³/s (1,260 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 980 ft³/s, March 14, 2004, gage height, 4.78 ft, from rating curve extended above 11 ft³/s on basis of slope-conveyance study; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 78 ft³/s and maximum (*):

| | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--|--------|------|-----------------------------------|---------------------|
| | Jan 26 | 1700 | 229 | 3.29 |
| | Feb 28 | 0245 | 82 | 2.57 |
| | Mar 14 | 1230 | *980 | *4.78 |
| | Mar 23 | 1300 | 232 | 3.30 |
| | Apr 11 | 0030 | 191 | 3.15 |

Minimum discharge, 0.06 ft³/s, on several days, gage height, 0.82 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 | 0.21 | 0.12 | 0.62 | 0.19 | 1.8 | 1.1 | 3.1 | 0.76 | 0.67 | 0.45 | 0.18 | 0.14 |
| 2 | 0.21 | 0.12 | 1.7 | 0.17 | 2.1 | 2.7 | 2.3 | 0.67 | 1.5 | 0.77 | 1.5 | 0.12 |
| 3 | 0.20 | 0.12 | 1.6 | 0.24 | 1.2 | 3.2 | 1.9 | 0.90 | 0.79 | 0.57 | 1.9 | 0.11 |
| 4 | 0.20 | 0.13 | 3.5 | 3.4 | 0.69 | 0.95 | 1.0 | 5.5 | 1.6 | 0.41 | 0.74 | 0.10 |
| 5 | 0.20 | 0.11 | 0.97 | 0.56 | 1.0 | 0.58 | 1.1 | 4.2 | 1.7 | 0.38 | 0.35 | 0.14 |
| 6 | 0.20 | 0.10 | 0.57 | 0.34 | 1.3 | 0.44 | 0.82 | 5.3 | 0.77 | 0.33 | 0.48 | 0.10 |
| 7 | 0.20 | 0.10 | 0.40 | 0.29 | 6.0 | 0.63 | 0.69 | 7.9 | 0.64 | 0.30 | 0.77 | 0.09 |
| 8 | 0.24 | 0.10 | 0.67 | 0.24 | 2.2 | 13 | 0.65 | 3.0 | 0.72 | 0.29 | 0.34 | 0.09 |
| 9 | 0.21 | 0.11 | 0.97 | 0.22 | 0.74 | 2.6 | 0.85 | 1.1 | 1.1 | 0.27 | 0.24 | 0.09 |
| 10 | 0.20 | 0.09 | 0.59 | 0.21 | 0.54 | 0.77 | 36 | 0.87 | 0.91 | 0.31 | 0.20 | 0.11 |
| 11 | 0.22 | 0.09 | 0.56 | 0.20 | 0.43 | 0.54 | 60 | 0.75 | 0.66 | 0.36 | 0.18 | 0.12 |
| 12 | 0.20 | 0.09 | 0.38 | 0.20 | 0.37 | 0.43 | 30 | 0.70 | 0.57 | 0.28 | 0.16 | 0.09 |
| 13 | 0.20 | 0.09 | 0.40 | 0.19 | 0.32 | 5.8 | 11 | 0.64 | 0.50 | 0.27 | 0.23 | 0.09 |
| 14 | 0.19 | 0.13 | 0.32 | 0.20 | 0.28 | 128 | 3.2 | 0.65 | 0.47 | 0.45 | 0.21 | 0.09 |
| 15 | 0.25 | 0.12 | 0.31 | 0.19 | 0.25 | 16 | 1.8 | 0.59 | 0.53 | 0.36 | 0.17 | 0.08 |
| 16 | 1.2 | 0.31 | 0.30 | 0.17 | 0.47 | 4.3 | 1.3 | 1.7 | 0.67 | 0.30 | 1.1 | 0.10 |
| 17 | 0.78 | 0.32 | 0.65 | 0.15 | 0.67 | 2.6 | 14 | 0.78 | 0.53 | 0.25 | 0.75 | 0.09 |
| 18 | 0.32 | 0.37 | 1.1 | 0.14 | 0.36 | 1.3 | 11 | 0.58 | 0.50 | 0.23 | 0.31 | 0.08 |
| 19 | 0.23 | 4.3 | 0.48 | 0.13 | 0.29 | 0.80 | 2.8 | 0.54 | 0.52 | 0.22 | 0.22 | 0.08 |
| 20 | 0.21 | 1.2 | 0.33 | 0.12 | 0.32 | 0.65 | 2.0 | 0.49 | 1.0 | 0.20 | 0.17 | 0.07 |
| 21 | 0.17 | 0.78 | 0.28 | 0.12 | 0.32 | 0.59 | 1.2 | 0.46 | 1.4 | 0.20 | 0.25 | 0.07 |
| 22 | 0.17 | 0.45 | 0.25 | 0.12 | 0.26 | 15 | 1.0 | 0.44 | 1.9 | 0.21 | 0.68 | 0.06 |
| 23 | 0.15 | 0.29 | 0.22 | 0.23 | 0.23 | 34 | 0.99 | 0.44 | 1.2 | 0.19 | 1.6 | 0.06 |
| 24 | 0.14 | 0.22 | 0.21 | 0.16 | 0.23 | 13 | 0.96 | 0.41 | 0.94 | 0.17 | 0.38 | 0.06 |
| 25 | 0.13 | 0.21 | 0.20 | 0.15 | 0.23 | 10 | 0.94 | 0.54 | 0.61 | 0.16 | 0.25 | 0.06 |
| 26 | 0.12 | 1.2 | 0.17 | 14 | 0.21 | 5.9 | 3.8 | 0.91 | 0.53 | 0.16 | 0.20 | 0.06 |
| 27 | 0.12 | 0.40 | 0.17 | 2.2 | 0.23 | 1.9 | 4.3 | 1.0 | 0.50 | 0.18 | 0.18 | 0.06 |
| 28 | 0.12 | 0.26 | 0.21 | 0.75 | 20 | 6.0 | 1.2 | 0.73 | 0.67 | 0.29 | 0.14 | 0.06 |
| 29 | 0.12 | 0.56 | 0.24 | 19 | 1.3 | 3.8 | 0.88 | 1.6 | 0.67 | 0.26 | 0.23 | 0.06 |
| 30 | 0.12 | 0.95 | 0.24 | 1.8 | --- | 15 | 0.77 | 1.6 | 0.53 | 0.18 | 0.28 | 0.06 |
| 31 | 0.12 | --- | 0.22 | 2.3 | --- | 7.6 | --- | 1.0 | --- | 0.15 | 0.16 | --- |
| TOTAL | 7.35 | 13.44 | 18.83 | 48.38 | 44.34 | 299.18 | 201.55 | 46.75 | 25.30 | 9.15 | 14.55 | 2.59 |
| MEAN | 0.24 | 0.45 | 0.61 | 1.56 | 1.53 | 9.65 | 6.72 | 1.51 | 0.84 | 0.30 | 0.47 | 0.09 |
| MAX | 1.2 | 4.3 | 3.5 | 19 | 20 | 128 | 60 | 7.9 | 1.9 | 0.77 | 1.9 | 0.14 |
| MIN | 0.12 | 0.09 | 0.17 | 0.12 | 0.21 | 0.43 | 0.65 | 0.41 | 0.47 | 0.15 | 0.14 | 0.06 |
| AC-FT | 15 | 27 | 37 | 96 | 88 | 593 | 400 | 93 | 50 | 18 | 29 | 5.1 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2004, BY WATER YEAR (WY)

| | | | | | | | | | | | | |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| MEAN | 0.99 | 1.58 | 1.77 | 1.72 | 1.49 | 2.29 | 2.71 | 1.44 | 1.51 | 2.28 | 2.11 | 0.97 |
| (WY) | (1984) | (1980) | (1960) | (1979) | (1960) | (1980) | (1986) | (1998) | (1998) | (2002) | (1958) | (1992) |
| MAX | 3.86 | 8.31 | 7.01 | 11.9 | 6.69 | 15.7 | 10.5 | 4.89 | 7.07 | 6.78 | 8.13 | 5.93 |
| (WY) | (1985) | (1963) | (1996) | (1962) | (1983) | (1983) | (1981) | (1966) | (1981) | (1961) | (1965) | (1965) |
| MIN | 0.01 | 0.00 | 0.07 | 0.05 | 0.09 | 0.10 | 0.20 | 0.20 | 0.16 | 0.15 | 0.12 | 0.00 |

HAWAII, ISLAND OF HAWAII

16759000 HAUANI GULCH NEAR KAMUELA—Continued

| SUMMARY STATISTICS | FOR 2003 CALENDAR YEAR | FOR 2004 WATER YEAR | WATER YEARS 1956 - 2004 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL | 396.53 | 731.41 | |
| ANNUAL MEAN | 1.09 | 2.00 | |
| HIGHEST ANNUAL MEAN | | | 1.74 |
| LOWEST ANNUAL MEAN | | | 3.66 1998 |
| HIGHEST DAILY MEAN | 39 | Sep 1 | 0.48 1981 |
| LOWEST DAILY MEAN | 0.09 | Nov 10 | 128 Mar 14, 2004 |
| ANNUAL SEVEN-DAY MINIMUM | 0.10 | Nov 7 | 0.06 Jul 29, 1961 |
| ANNUAL RUNOFF (AC-FT) | 787 | | 0.06 Sep 8, 1961 |
| 10 PERCENT EXCEEDS | 2.0 | 3.0 | 1,260 |
| 50 PERCENT EXCEEDS | 0.40 | 0.40 | 3.9 |
| 90 PERCENT EXCEEDS | 0.13 | 0.12 | 0.53 |
| | | | 0.09 |