1973

Water Resources Data for Hawaii and other Pacific Areas

Part 1. Surface Water Records

Part 2. Water Quality Records

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Prepared in cooperation with the State of Hawaii, Trust Territory of the Pacific Islands, the Government of American Samoa, the Government of Guam, and with other State, county, and Federal agencies

CALENDAR FOR WATER YEAR 1973

1972

OCTOBER

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1973

JANUARY

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AUGUST

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SEPTEMBER

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Prepared in cooperation with

Hawaii Department of Land and Natural Resources,
Division of Water and Land Development
Hawaii Department of Transportation
Government of Guam
Government of American Samoa
Trust Territory of the Pacific Islands
City and County of Honolulu
Corps of Engineers, U.S. Army

Copies of this report may be obtained from
District Chief, Water Resources Division
U.S. Geological Survey
5th Floor, 1833 Kalakaua Avenue
Honolulu, Hawaii 96815

1974

CONTENTS

	Page
List of surface-water stations, in downstream order, for which records are published	VI
List of water-quality stations, in downstream order, for which records are published	XII
Introduction	1
Cooperation	2
Definition of terms	3
Special networks and programs	8
Downstream order and station number	9
Surface-water records	9
Collection and computation of data	9
Accuracy of data	13
Publications	14
Other data available	15
Water-quality records	16
Collection and examination of data	16
Solutes	17
Temperature	18
Sediment	18
Publications	19
Selected references	19
Part 1. Surface-water records	41
Part 2. Water-quality records	219
Index	261

ILLUSTRATIONS

		Page
Figure 1.	Map of Kauai showing locations of gaging, water-quality, and partial-record stations	23
2.	Map of Oahu showing locations of gaging, water-quality, and partial-record stations	24

Page

Figure 3. Map of Molokai showing locations of gaging, water quality, and partial-record stations..... 25
4. Map of Maui showing locations of gaging, water-quality, and partial-record stations..... 26
5. Map of Hawaii showing locations of gaging and water-quality stations..... 27
6. Map of Saipan, Mariana Islands, showing locations of gaging and partial-record stations..... 28
7. Map of Rota, Mariana Islands, showing locations of gaging and partial-record stations..... 29
8. Map of Guam, Mariana Islands, showing locations of gaging and partial-record stations..... 30
9. Map of Babelthuap, Palau Islands, showing locations of gaging and partial-record stations..... 31
10. Map of Arakabesan, Malakal, Palau Islands, showing locations of partial-record stations..... 32
11. Map of Yap Islands, showing locations of gaging and partial-record stations..... 33
12. Map of Moen, Truk Islands, showing locations of gaging stations..... 34
13. Map of Tol, Truk Islands, showing locations of gaging and partial-record stations..... 35
14. Map of Dublon Island, Truk Islands, showing locations of gaging stations..... 36
15. Map of Ponape, showing locations of gaging and partial-record stations..... 37
16. Map of Kusaie, showing locations of gaging and partial-record stations..... 38
17. Map of Tutuila, Samoa Islands, showing locations of gaging and partial-record stations..... 39

TABLES

		Page
Table 1.	Factors for conversion of chemical constituents in milligrams or micrograms per liter	6
2.	Factors for conversion of sediment concentration in milligrams per liter to parts per million	6
3.	Degrees Celsius (°C) to degrees Fahrenheit (°F)	17
4.	Factors for converting English units to International System (SI) units	22

VI SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

	Page
HAWAII	
ISLAND OF KAUAI	
Kawaikoi Stream (head of Waimea River) near Waimea	43
Poomau Stream (continuation of Kawaikoi Stream):	
Kokee ditch near Waimea	44
Waimea River:	
Waialae Stream at altitude 3,820 ft, near Waimea	45
Makaweli River near Waimea	46
Hanapepe River below Manuahi Stream, near Eleele	47
South Fork Wailua River near Lihue	48
North Fork Wailua River:	
North Wailua ditch near Lihue	49
North Wailua ditch below Waikoko Stream, near Lihue	50
Stable storm ditch near Lihue	51
North Fork Wailua River at altitude 650 ft, near Lihue	52
East Branch of North Fork Wailua River near Lihue	53
Wailua ditch near Kapaa	54
North Fork Wailua River near Kapaa	55
Wailua River:	
Opaekaa Stream:	
Left Branch Opaekaa Stream near Kapaa	56
Kapaa Stream:	
Makaleha Stream:	
Makaleha ditch near Kealia	57
Kapahi ditch near Kealia	58
Kapaa Stream at Kapahi ditch intake, near Kapaa	59
Anahola Stream:	
Anahola ditch:	
Anahola ditch wasteway near Kealia	60
Anahola ditch above Kaneha Reservoir, near Kealia	61
Anahola Stream near Kealia	62
Lower Anahola ditch near Kealia	63
Anahola Stream at Anahola	64
Kilauea Stream:	
Halaulani Stream at altitude 400 ft, near Kilauea	65
Hanalei River:	
Hanalei tunnel outlet near Lihue	66
Hanalei River near Hanalei	67
Wainiha River near Hanalei	68
ISLAND OF OAHU	
North Fork Kaukonahua Stream (head of Kiikii Stream) above Right Branch, near Wahiawa	69
South Fork Kaukonahua Stream at East Pump Reservoir, near Wahiawa	70

Page

HAWAII--Continued
ISLAND OF OAHU--Continued
Kaukonahua Stream:
Poamoho Stream:
Poamoho tunnel near Wahiawa..... 71
Poamoho Stream near Wahiawa..... 72
Makaha Stream near Makaha..... 73
Waikele Stream:
Kipapa Stream near Wahiawa..... 74
Waikele Stream at Waipahu..... 75
Waiawa Stream near Pearl City..... 76
Kalauao Stream at Moanalua Road, at Aiea..... 77
North Halawa Stream (head of Halawa Stream) near Aiea.. 78
Moanalua Stream near Kaneohe..... 79
Moanalua Stream tributary near Kaneohe..... 80
Moanalua Stream near Honolulu..... 81
Kalihi Stream near Honolulu..... 82
Kalihi Stream at Kalihi..... 83
Nuuanu Stream below reservoir 2 wasteway, near Honolulu..... 84
Waihi Stream (head of Manoa Stream) at Honolulu..... 85
Waiakeakua Stream at Honolulu..... 86
Pukele Stream (head of Palolo Stream) near Honolulu.. 87
Palolo Stream near Honolulu..... 88
Maunawili Stream:
Makawao Stream near Kailua..... 89
Kamooalii Stream (head of Kaneohe Stream) below Kuou Stream, near Kaneohe..... 90
Kamooalii Stream at Kaneohe..... 91
Haiku Stream (head of Heeia Stream) near Heeia..... 92
Kahaluu Stream:
South Fork Waihee Stream near Heeia..... 93
North Fork Waihee Stream near Heeia..... 94
Waihee Stream near Heeia..... 95
Waikane Stream at altitude 75 ft, at Waikane..... 96
Kahana Stream at altitude 30 ft, near Kahana..... 97
Punaluu Stream:
Punaluu ditch near Punaluu..... 98
Punaluu Stream near Punaluu..... 99
Kaluanui Stream near Punaluu..... 100
Kamananui Stream (head of Waimea River) at Pupukea Military Road, near Maunawai..... 101
Kamananui Stream at Maunawai..... 102
Helemano Stream (head of Paukauila Stream) at Haleiwa.. 103
Opaeula Stream near Wahiawa..... 104

Page

HAWAII--Continued
ISLAND OF MOLOKAI
Halawa Stream near Halawa..... 105
Kapuhi Stream (head of Pelekunu Stream):
Kawainui Stream near Pelekunu..... 106
Pelekunu Stream near Pelekunu..... 107
Pilipililau Stream near Pelekunu..... 108
Waikolu Stream:
Molokai tunnel at east portal..... 109
Molokai tunnel at west portal..... 110
Waikolu Stream at altitude 900 ft, near Kalaupapa..... 111
Waikolu Stream below pipeline crossing, near Kalaupapa. 112
Kaunakakai Gulch at Kaunakakai..... 113
Papio Gulch at Halawa..... 114
ISLAND OF MAUI
Palikea Stream (head of Oheo Gulch) below diversion dam, near Kipahulu..... 115
Hanawi Stream near Nahiku..... 116
Koolau ditch at Nahiku weir, near Nahiku..... 117
West Wailuaiki Stream near Keanae..... 118
Koolau ditch near Keanae..... 119
Haipuaena Stream:
Kula diversion from Haipuaena Stream near Olinda..... 120
Spreckels ditch at Haipuaena weir, near Huelo..... 121
Koolau ditch at Haipuaena, near Huelo..... 122
Manuel Luis ditch at Puohokamoa Gulch, near Huelo..... 123
Nailiilihaele Stream near Huelo..... 124
Honopou Stream near Huelo..... 125
Wailoa ditch at Honopou, near Huelo..... 126
New Hamakua ditch at Honopou, near Huelo..... 127
Lowrie ditch at Honopou Gulch, near Huelo..... 128
Haiku ditch at Honopou Gulch, near Kailua..... 129
Opana Gulch:
Opana tunnel at Kailiili..... 130
Honokohau Stream near Honokohau..... 131
Kahoma Stream at Lahaina..... 132
Olowalu Stream at Olowalu..... 133
ISLAND OF HAWAII
Waiakea Stream (head of Wailoa River) near Mountain View..... 134
Wailuku River near Humuula..... 135
Wailuku River near Kaumana..... 136
Wailuku River at Piihonua..... 137
Honolii Stream near Papaikou..... 138
Pohakupuka Stream near Papaaloa..... 139

Page

HAWAII--Continued
ISLAND OF HAWAII--Continued
Kawainui Stream (head of Wailoa Stream) near Kamuela... 140
Kawaiki Stream near Kamuela..... 141
Upper Hamakua ditch below Kawaiki Stream, near Kamuela. 142
Upper Hamakua ditch above Alakahi Stream, near Kamuela. 143
Waipio Stream (continuation of Kawainui Stream):
Alakahi Stream near Kamuela..... 144
Lower Hamakua ditch:
Lower Hamakua ditch wasteway near Kukuihaele..... 145
Lower Hamakua ditch below main weir, near Kukuihaele... 146
Honokaa diversion at Honokaa..... 147
Lower Hamakua ditch below Honokaa diversion, at Honokaa..... 148
Kohakohau Stream near Kamuela..... 149
Waikoloa Stream at Marine Dam, near Kamuela..... 150
Hauani Gulch (head of Lanimaumau Stream) near Kamuela..... 151
Waiaha Stream:
Right Branch Waiaha Stream near Holualoa..... 152
Kiilae Stream near Honaunau..... 153
Hilea Gulch:
Hilea Gulch tributary near Honuapo..... 154
Hilea Gulch tributary No. 2 near Honuapo..... 155
Ninole Gulch near Punaluu..... 156
Paauau Gulch at Pahala..... 157
MARIANA ISLANDS
ISLAND OF SAIPAN
Denni Spring (head of Denni Stream)..... 158
South Fork Talofofo Stream..... 159
Middle Fork Talofofo Stream..... 160
ISLAND OF ROTA
Lupug Spring..... 161
ISLAND OF GUAM
Finile Creek at Agat..... 162
Umatac River at Umatac..... 163
Geus River near Merizo..... 164
Inarajan River near Inarajan..... 165
Tinaga River near Inarajan..... 166
Tolaeyuus River (head of Talofofo River):
Imong River (head of Fena River) near Agat..... 167
Almagosa Springs near Agat..... 168
Almagosa River near Agat..... 169
Maulap River near Agat..... 170
Fena Dam spillway near Agat..... 171

Page

MARIANA ISLANDS--Continued
ISLAND OF GUAM--Continued
Ylig River near Yona..... 172
Pago River near Ordot..... 173
CAROLINE ISLANDS
PALAU ISLANDS
Adeiddo River, Babelthuap..... 174
Tabagaten River, Babelthuap..... 175
Gihmel River, Babelthuap..... 176
Gaden River (head of Geriiki River), Babelthuap..... 177
Ngardok River:
South Fork Ngardok River, Babelthuap..... 178
YAP ISLANDS
Aringel Stream, Yap..... 179
Dalolab Stream, Yap..... 180
Pemgoy Stream, Yap..... 181
Talagu Stream, Yap..... 182
Burong Stream, Yap..... 183
Bileiy Spring (head of Bileiy Stream), Gagil-Tomil..... 184
TRUK ISLANDS
Wichen River at altitude 55 m, Moen..... 185
Wichen River at altitude 18 m, Moen..... 186
Nachiponong Stream, Moen..... 187
Echapachik Stream, Tol..... 188
Chun Stream, Dublon Island..... 189
Tumunu Stream, Dublon Island..... 190
ISLAND OF PONAPE
Tawenjokola River:
Nanepil River..... 191
Lui River..... 192
Lui River at mouth..... 193
Tawannu River..... 194
Lupwor River..... 195
ISLAND OF KUSAIE
Mutunte River..... 196
Okat River (head of Wukat River)..... 197
Malem River..... 198
Tofol River..... 199
SAMOA ISLANDS
ISLAND OF TUTUILA
Pago Stream at Afono..... 200
Leele Stream at mouth, at Fagasa..... 201
Aasu Stream at Aasu..... 202
Atauloma Stream at Afao..... 203
Papa Stream at Nuuuli..... 204

Page

SAMOA ISLANDS--Continued
ISLAND OF TUTUILA--Continued
Afuelo Stream at Matuu..... 205
Alega Stream at Alega..... 206
Leafu Stream near Auasi..... 207

Discharge at partial-record stations and miscellaneous sites:
Low-flow partial-record stations..... 208
Crest-stage partial-record stations..... 216
Measurements at miscellaneous sites..... 217

WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

(Letters after station name designate type of data: (c), chemical; (t), water temperature; (s), sediment)

Page

HAWAII
ISLAND OF OAHU
Kipapa Stream near Wahiawa (cs)..... 221
Waikele Stream at Waipahu (cts)..... 223
Moanalua Stream near Kaneohe (s)..... 230
Kamooalii Stream below Kuou Stream near Kaneohe (cs)... 233
ISLAND OF HAWAII
Honolii Stream near Papaikou (cts)..... 236

Analyses of samples collected at water-quality partial-record stations (cst)..... 238
Analyses of samples collected at miscellaneous sites (cs)..... 259

WATER RESOURCES DATA FOR HAWAII AND OTHER PACIFIC AREAS, 1973

Part 1. Surface-Water Records
Part 2. Water-Quality Records

INTRODUCTION

Water resources data for the 1973 water year for Hawaii and other Pacific areas including records of streamflow or reservoir storage at gaging stations, partial-record stations, and miscellaneous sites, and records of water-quality data on the chemical and physical characteristics of surface water, are given in this report. The records were collected and computed by the Water Resources Division of the U.S. Geological Survey under the direction of W. L. Burnham, district chief. These data represent that portion of the National Water Data System collected by the U.S. Geological Survey and cooperating State, Territorial, and Federal agencies in Hawaii and other Pacific areas.

Through September 30, 1960 (June 30, 1960, for Hawaii and other Pacific areas), the records of discharge and stage of streams and contents and stage of lakes or reservoirs were published in an annual series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." The records in Hawaii were contained in the series as "Surface Water Supply of Hawaii." Records for other Pacific areas were contained in one volume entitled "Surface Water Supply of Mariana, Caroline, and Samoa Islands."

Beginning with the 1961 water year (fiscal year for Hawaii), streamflow records and related data have been released by the Geological Survey in annual reports on a State-boundary basis. The Hawaii reports have included records for other Pacific areas. Through June 1967, the Hawaii reports were on a fiscal-year basis (the 12-month period July 1 to June 30) and discharges (except for Guam and Okinawa) were published in million gallons a day.

Beginning with the 1967 water year, the Hawaii reports have been published on a water-year basis and with discharges entirely in cubic feet per second.

Distribution of these basic-data reports is limited; they are designed primarily for rapid release of data shortly after the end of the water year to meet local needs. The streamflow records for 1961-65 also are published in a Geological Survey water-supply series entitled, "Surface Water Supply of the United States 1961-65," and those for 1966-70 will be published in a similar series.

The Geological Survey has published records of chemical quality, water temperatures, and suspended sediment since 1941 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Beginning with the 1964 water year, water-quality records also have been released on a State-boundary basis in conjunction with streamflow records or in a separate volume.

COOPERATION

The U.S. Geological Survey and organizations of the State of Hawaii have had cooperative agreements for the systematic collection of streamflow records since 1909, and for water-quality records since 1967. Cooperative agreements with the Territory of Guam for the collection of streamflow records began in 1953, with the Territory of American Samoa in 1957, and with the Trust Territory of the Pacific Islands in 1968. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Hawaii Department of Land and Natural Resources, Division of Water and Land Development, R. T. Chuck, manager-chief engineer.
Hawaii Department of Transportation, Fujio Matsuda, director.
Trust Territory of the Pacific Islands, E. E. Johnston, high commissioner.
Government of American Samoa, J. M. Haydon, governor.
Government of Guam, C. G. D. Camacho, governor.
City and County of Honolulu, Board of Water Supply, G. A. L. Yuen, manager and chief engineer.
City and County of Honolulu, Division of Engineering, A. C. Zane, director and chief engineer.

Assistance in the form of funds or services are given by the Corps of Engineers, U.S. Army, in collecting records for 10 gaging stations and 3 water-quality stations published in this report.

The following organizations aided in collecting records:

Maui County Board of Water Supply; East Kauai Water Co., Ltd.; Grove Farm Co., Inc.; McBryde Sugar Co., Ltd.; East Maui Irrigation Co., Ltd.; B. P. Bishop Estate; and Hawaiian Irrigation Co., Ltd.

DEFINITION OF TERMS

Definition of terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined as follows:

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or 325,851 gallons.

Bed material is the shifting portion of fragmented material of which the streambed is composed.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.9835 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

Coliform organisms are a group of bacteria used as an indicator of the sanitary quality of the water. The number of coliform colonies per 100 milliliters is determed by the immediate or delayed incubation membrane filter method.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

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

Cubic foot per second (cfs) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute.

Discharge is the volume of water (or more broadly, total fluids), that passes a given point within a given period of time.

Mean discharge is the arithmetic average of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time. If this discharge is reported instead of the daily mean, the heading of the discharge column in the tables is "Discharge (cfs)."

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

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the general term "stage," although gage height is more appropriate when used with a reading on a gage.

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

Hardness of water is a physical-chemical characteristic attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Micrograms per liter (µg/l, UG/L) is a more precise unit for expressing the concentration of chemical constituents

in solution as the weight (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (mg/l, MG/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the weight of solute per unit volume of water. Milligrams or micrograms per liter may be converted to milliequivalents (one thousandth of a gram-equivalent weight of a constituent) per liter by multiplying by the factors in table 1, page 6. Concentration of suspended sediment also is expressed in mg/l, and is based on the weight of sediment per liter of water-sediment mixture. Sediment concentrations are determined in the laboratory as parts per million (ppm) and are converted to mg/l by using the factors in table 2, page 6.

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

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by sieve and sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling) (Guy, 1969).

Particle-size classification, used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay.....	0.00024 - 0.004	Sedimentation.
Silt.....	.004 - .062	Sedimentation.
Sand.....	.062 - 2.0	Sedimentation or sieve.
Gravel.....	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of the particle sizes of sediment in transport in the natural stream. Most of the organic

Table 1.--Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3})*...	0.11119	Iodide (I^{-1}).....	0.00788
Ammonia as NH_4^{+1}...	.05544	Iron (Fe^{+3})*.....	.05372
Barium (Ba^{+2}).....	.01456	Lead (Pb^{+2})*.....	.00965
Bicarbonate (HCO_3^{-1})	.01639	Lithium (Li^{+1})*...	.14411
Bromide (Br^{-1}).....	.01251	Magnesium (Mg^{+2})..	.08226
Calcium (Ca^{+2}).....	.04990	Manganese (Mn^{+2})*.	.03640
Carbonate (CO_3^{-2})..	.03333	Nickel (Ni^{+2})*....	.03406
Chloride (Cl^{-1})....	.02821	Nitrate (NO_3^{-1})...	.01613
Chromium (Cr^{+6})*...	.11539	Nitrite (NO_2^{-1})...	.02174
Cobalt (Co^{+2})*.....	.03394	Phosphate (PO_4^{-3}).	.03159
Copper (Cu^{+2})*.....	.03148	Potassium (K^{+1})...	.02557
Cyanide (CN^{-1})	.03844	Sodium (Na^{+1}).....	.04350
Fluoride (F^{-1}).....	.05264	Strontium (Sr^{+2})*.	.02283
Hydrogen (H^{+1}).....	.99209	Sulfate (SO_4^{-2})...	.02082
Hydroxide (OH^{-1})...	.05880	Zinc (Zn^{+2})*.....	.03060

*Constituent reported in micrograms per liter; multiply by factor and divide results by 1,000.

Table 2.--Factors for conversion of sediment concentration in milligrams per liter to parts per million*
(All values calculated to three significant figures)

Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by
0 - 8	1.00	201-217	1.13	411-424	1.26	619-634	1.39
8.05- 24	1.01	218-232	1.14	427-440	1.27	636-650	1.40
24.2 - 40	1.02	234-248	1.15	443-457	1.28	652-666	1.41
40.5 - 56	1.03	250-264	1.16	460-473	1.29	668-682	1.42
56.5 - 72	1.04	266-280	1.17	476-489	1.30	684-698	1.43
72.5 - 88	1.05	282-297	1.18	492-506	1.31	700-715	1.44
88.5 -104	1.06	299-313	1.19	508-522	1.32	717-730	1.45
105 -120	1.07	315-329	1.20	524-538	1.33	732-747	1.46
121 -136	1.08	331-345	1.21	540-554	1.34	749-762	1.47
137 -152	1.09	347-361	1.22	556-570	1.35	765-780	1.48
153 -169	1.10	363-378	1.23	572-585	1.36	782-796	1.49
170 -185	1.11	380-393	1.24	587-602	1.37	798-810	1.50
186 -200	1.12	395-409	1.25	604-617	1.38		

*Based on water density of 1.000 g/ml and a specific gravity of sediment of 2.65.

matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis of the silt and clay.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment discharge is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time. It is computed by multiplying discharge times mg/l times 0.0027.

Total sediment discharge or total sediment load is the sum of the suspended-sediment discharge and the bedload discharge. It is the total quantity of sediment, as measured by dry weight or volume, that is discharged during a given time (Colby and Hembree, 1955).

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/l).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil.

This ratio should be known especially for water used for irrigating farmland.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimeter at 25°C. Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the dissolved-solids content in the water. Commonly, the amount of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream or from well to well, and it may even vary in the same source with changes in the composition of the water.

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

Tons per acre-foot indicates the dry weight of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration of milligrams per liter by 0.00136.

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour day.

WRD is used as an abbreviation for "Water-Resources Data" in the summary REVISIONS paragraph to refer to previously published state annual basic-data reports.

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

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate,

and geology are similar to those in the undeveloped bench-mark basin.

DOWNSTREAM ORDER AND STATION NUMBER

Records are listed in a downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all mainstream stations are listed before the first mainstream station. Stations on tributaries to tributaries are listed in a similar manner. In the lists of gaging stations and water-quality stations in the front of this report the rank of tributaries is indicated by indention, each indention representing one rank.

As an added means of identification, each gaging station, partial-record station, and water-quality station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and continuous-record gaging stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station, such as 16884600 which appears just to the left of the station name includes the 2-digit number "16" plus the 6-digit downstream order number "884600." In this report, the records are listed in downstream order by islands.

SURFACE WATER RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation,

weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from direct reading on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at 5-, 15-, 30-, or 60-minute intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6. Surface areas of lakes or reservoirs are determined from instrument surveys using standard methods. The configuration of the reservoir bottom is determined by sounding at many points.

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

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, or for

various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other stations records from the same or nearby basins.

The data in this report generally comprise a description of the station and tabulations of basic data. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents is given. Records are published for the water year, which begins on October 1 and ends on September 30. A calendar for the 1973 water year is shown on the reverse side of the front cover to facilitate finding the day of the week for any date.

The description of the gaging stations gives the location, drainage area, period of record, type and history of gages, average discharge, extremes of discharge or contents, notations of revisions of previously published records, and general remarks. The location of the gaging station and the drainage area are obtained from the most accurate maps available. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD." The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey unless otherwise qualified. The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE;" it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. The maximum discharge (or contents), the maximum gage height, and the minimum discharge if there is little or no regulation (or minimum contents) are given under "EXTREMES." The maximum and minimum daily discharge are given if there is extensive regulation. In the first paragraph headed "Current year," the data given are for the complete current water year unless

otherwise specified. In the second paragraph under "EXTREMES" headed "Period of record:" the data given are for the period of record given in "PERIOD OF RECORD" paragraph. Reliable information concerning major floods or abnormally low flows that occurred outside the period of record is given in the third or last paragraph under "EXTREMES." Unless otherwise qualified, the maximum discharge (or contents) corresponds to the crest stage obtained by use of a water-stage recorder (graphic or digital) or crest-stage gage. If the maximum gage height did not occur at the same time as the maximum discharge (or contents), it is given separately. Information pertaining to the accuracy of the discharge records, to conditions that affect the natural flow at the gaging station, and availability of Water Quality records, is given under "REMARKS".

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

The daily table for stream-gaging stations gives the discharge corresponding to the daily mean gage height unless there are large or rapid changes in the discharge during a day. For days having large or rapid changes, discharge for the day is computed by averaging the mean discharge for several parts of a day. For digital recorders, the daily mean discharge is always the average of the discharges at each punched reading.

The monthly summary is given below the daily table. For stream-gaging stations the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX." and "MIN." give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month is also expressed in acre-feet (line headed "AC-FT").

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges for the calendar and water years; likewise, the minimums in this summary are minimum daily discharges.

Peak discharges and their times of occurrence and corresponding gage heights for many stations are listed below the yearly summary. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year can be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330.

In a general footnote, introduced by the word "NOTE," certain periods are indicated for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage are indicated only if they are a month or more in length and the accuracy of the records is affected. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

Accuracy of data

The accuracy of discharge data depends primarily on (1) the stability of the stage-discharge relation, or if the control is unstable, the frequency of discharge measurements,

and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges is within 5 percent; "good" within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversions, comsumptive use, regulation, evaporation or other factors.

Publications

In each water-supply paper entitled, "Surface Water Supply of the United States" there is a list of numbers of preceding water-supply papers containing streamflow information for the area covered by that report. In addition, there is a list of numbers of water-supply papers containing detailed information on major floods in the area. Records for stations in Hawaii and other Pacific areas for the period October 1959 to September 1965 are in Water-Supply Paper 1937.

Two series of summary reports entitled, "Compilation of Records of Surface Waters of the United States" have been published; the first series covers the entire period of record through September 1950 (June 1950 for Hawaii) and the second series covers the period October 1950 to September 1960 (July 1950 to June 1960 for Hawaii and other Pacific areas). These reports contain summaries of monthly and annual discharge and monthend storage for all previously published records, as well as some records not contained in the annual series of water-supply papers. All records were

reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical. The yearly summary table for each gaging station lists the numbers of the water-supply papers in which daily records were published for that station. Records for stations in Hawaii and other Pacific areas are compiled in Water-Supply Paper 1319 through June 1950, and in 1739 and 1851 for July 1950 to June 1960.

Special reports on major floods or droughts or of other hydrologic studies for the area have been issued in publications other than water-supply papers. Information relative to these reports may be obtained from the district office.

Other Data Available

Data collected at partial-record stations and at miscellaneous sites are given in three tables at the end of the surface-water records in this report. The first is a table of discharge measurements at low-flow partial-record stations, the second is a table of annual maximum stage and discharge at crest-stage stations, and the third is a table of discharge measurements of miscellaneous sites. Data for crest-stage partial-record stations in the State of Hawaii are not included in this report. They are included in an annual progress report entitled "An Investigation of Floods in Hawaii," copies of which may be obtained from the district office.

Information of a more detailed nature than that published for most of the gaging stations, such as discharge measurements, gage-height records, and rating tables, is on file in the district office. Also, most gaging-station records are available in computer-usable form and many statistical analyses have been made.

WATER QUALITY RECORDS

Collection and examination of data

Water samples for analyses usually are collected at or near gaging stations. The discharge records at these stations are used in conjunction with the computations of the chemical constituents and sediment loads in this report.

Descriptive statements are given for water-quality stations located at or near streamflow stations. Given are location, drainage area, periods of record for the various water-quality data, extremes of pertinent data, and general remarks, in a format similar to that used for streamflow gaging stations.

Data on the quality of surface water were collected daily at some sites and less frequently at others. Water-quality information is presented for chemical quality, microbiological, water temperature, and fluvial sediment. Chemical quality includes concentrations of individual dissolved constituents and certain properties or characteristics such as hardness, sodium adsorption ratio, specific conductance, and pH. Microbiological information includes quantitative identification of certain bacteriological indicator organisms. Water-temperature data represent once-daily observations. Fluvial-sediment information is given for suspended-sediment discharges and concentrations and for particle-size distribution of suspended sediment and bed material.

Prior to the 1968 water year, data for chemical constituents and concentration of suspended sediment were reported in parts per million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). In October 1967 the U.S. Geological Survey began to use the metric system; data for chemical constituents and concentrations of suspended sediment are now reported in milligrams per liter (mg/l) and water temperatures are given in degrees Celsius (centigrade, °C). In waters with a density of 1.000 g/ml (grams per milliliter), parts per million and milligrams per liter can be considered equal. In waters with a density greater than 1.000 g/ml, values in parts per million should be multiplied by the density to convert to milligrams per liter. To convert temperatures in degrees Fahrenheit to degrees Celsius, see table 3 on the following page.

In October 1968, the Geological Survey began reporting many of the chemical constituents as well as the minor elements in micrograms per liter instead of milligrams per liter. (See "Definition of Terms," p. 3.)

Solutes

The methods of collecting and analyzing water samples for determining the kinds and concentrations of solutes are described by Brown, Skougstad, and Fishman (1970). One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled at several verticals across the channel to determine accurately the solute load.

Table 3.--Degrees Celsius (°C) to degrees Fahrenheit (°F)
(Temperature reported to nearest 0.5°C)

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
0.0	32	10.0	50	20.0	68	30.0	86	40.0	104
.5	33	10.5	51	20.5	69	30.5	87	40.5	105
1.0	34	11.0	52	21.0	70	31.0	88	41.0	106
1.5	35	11.5	53	21.5	71	31.5	89	41.5	107
2.0	36	12.0	54	22.0	72	32.0	90	42.0	108
2.5	36	12.5	54	22.5	72	32.5	90	42.5	108
3.0	37	13.0	55	23.0	73	33.0	91	43.0	109
3.5	38	13.5	56	23.5	74	33.5	92	43.5	110
4.0	39	14.0	57	24.0	74	34.0	93	44.0	111
4.5	40	14.5	58	24.5	75	34.5	94	44.5	112
5.0	41	15.0	59	25.0	77	35.0	95	45.0	113
5.5	42	15.5	60	25.5	78	35.5	96	45.5	114
6.0	43	16.0	61	26.0	79	36.0	97	46.0	115
6.5	44	16.5	62	26.5	80	36.5	98	46.5	116
7.0	45	17.0	63	27.0	81	37.0	99	47.0	117
7.5	45	17.5	63	27.5	81	37.5	99	47.5	117
8.0	46	18.0	64	28.0	82	38.0	100	48.0	118
8.5	47	18.5	65	28.5	83	38.5	101	48.5	119
9.0	48	19.0	66	29.0	84	39.0	102	49.0	120
9.5	49	19.5	67	29.5	85	39.5	103	49.5	121

$C = 5/9\ (°F - 32)$ or $°F = 9/5\ (°C) + 32$.

Temperature

Water temperatures are measured at most of the water-quality stations. For daily stations, the water temperatures are taken about the same time each day when sample is collected. Large streams have a small diurnal temperature change while small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the sub-divided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the sub-divided day method. For periods when no samples are collected, daily loads of suspended sediment are estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples are collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observation, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

Publications

The annual series of water-supply papers that contain information on quality of surface waters in Hawaii and other Pacific areas are listed below.

Water year	WSP No.	Water year	WSP No.	Water year	WSP No.
1964	1966	1967	2016	1970	A2160
1965	1966	1968	2016	1971	A2170
1966	1996	1969	A2150		

A In preparation.

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_____1959, Federal Inter-agency Sedimentation instruments and report: Rept. AA.

_____1961, The single stage sampler for suspended sediment: Rept. 13.

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Table 4.--Factors for converting English units to International System (SI) units

The following factors may be used to convert the English units published herein to the International System of Units (SI). Subsequent reports will contain both the English and SI unit equivalents in the station manuscript descriptions until such time that all data will be published in SI units.

Multiply English units	By	To obtain SI units
Length		
inches (in)	25.4	millimeters (mm)
	.0254	meters (m)
feet (ft)	.3048	meters (m)
yards (yd)	.9144	meters (m)
rods	5.0292	meters (m)
miles (mi)	1.609	kilometers (km)
Area		
acres	4047	square meters (m^2)
	.4047	*hectares (ha)
	.4047	square hectometer (hm^2)
	.004047	square kilometers (km^2)
square miles (mi^2)	2.590	square kilometers (km^2)
Volume		
gallons (gal)	3.785	**liters (l)
	3.785	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons (10^6 gal)	3785	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	28.32	cubic decimeters (dm^3)
	.02832	cubic meters (m^3)
cfs-day (ft^3/s-day)	2447	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1233	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
Flow		
cubic feet per second (ft^3/s)	28.32	liters per second (l/3)
	28.32	cubic decimeters per second (dm^3/s)
	.02832	cubic meters per second (m^3/s)
gallons per minute (gpm)	.06309	liters per second (l/s)
	.06309	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day (mgd)	43.81	cubic decimeters per second (dm^3/s)
	.04381	cubic meters per second (m^3/s)
Mass		
ton (short)	.9072	tonne (t)

*The unit hectare is approved for use with the International System (SI) for a limited time. See NBS Special Bulletin 330, p. 15, 1972 edition.

**The unit liter is accepted for use with the International System (SI). See NBS Special Bulletin 330, p. 13, 1972 edition.

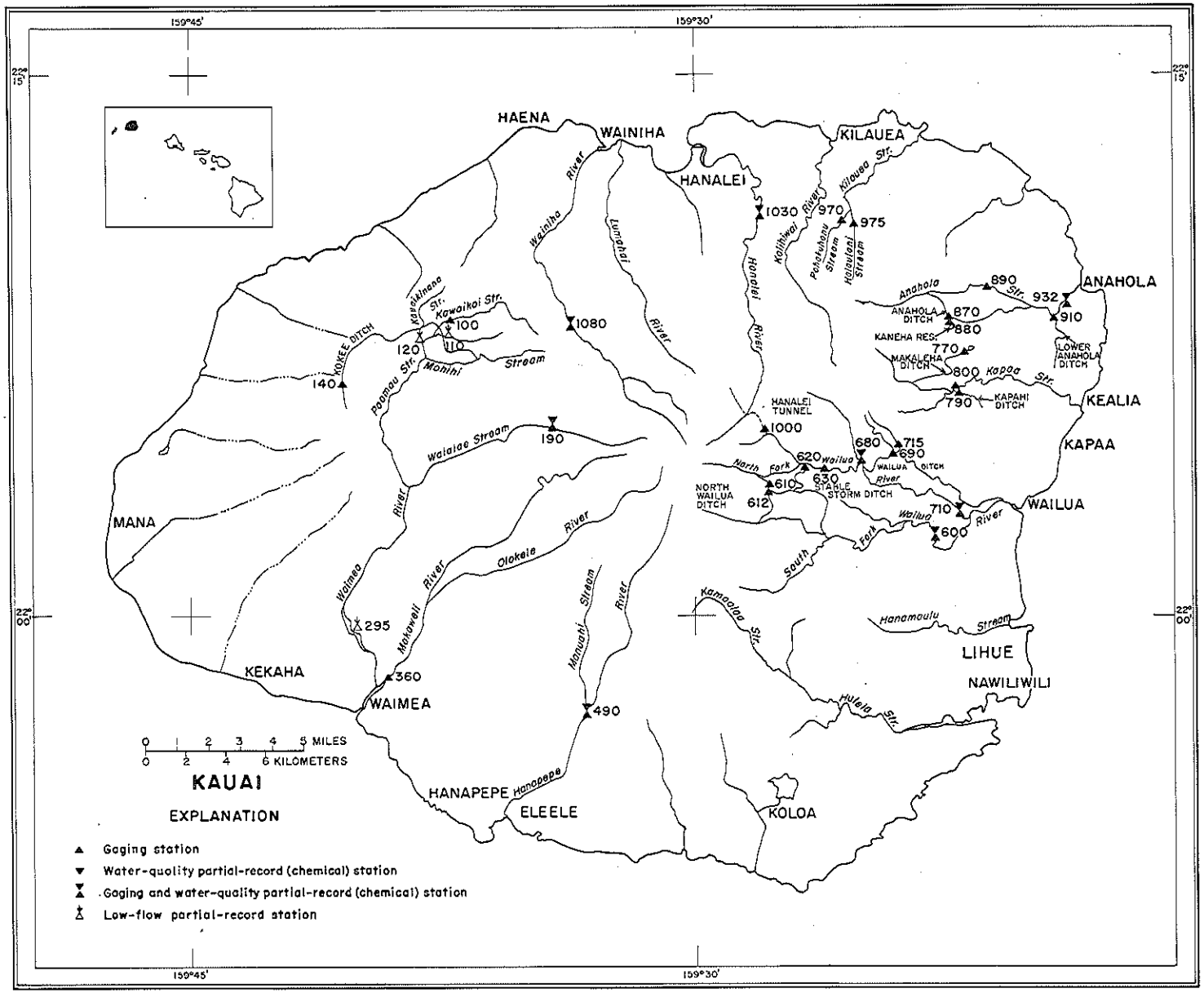

Figure 1.--Map of Kauai showing locations of gaging, water-quality, and partial-record stations.

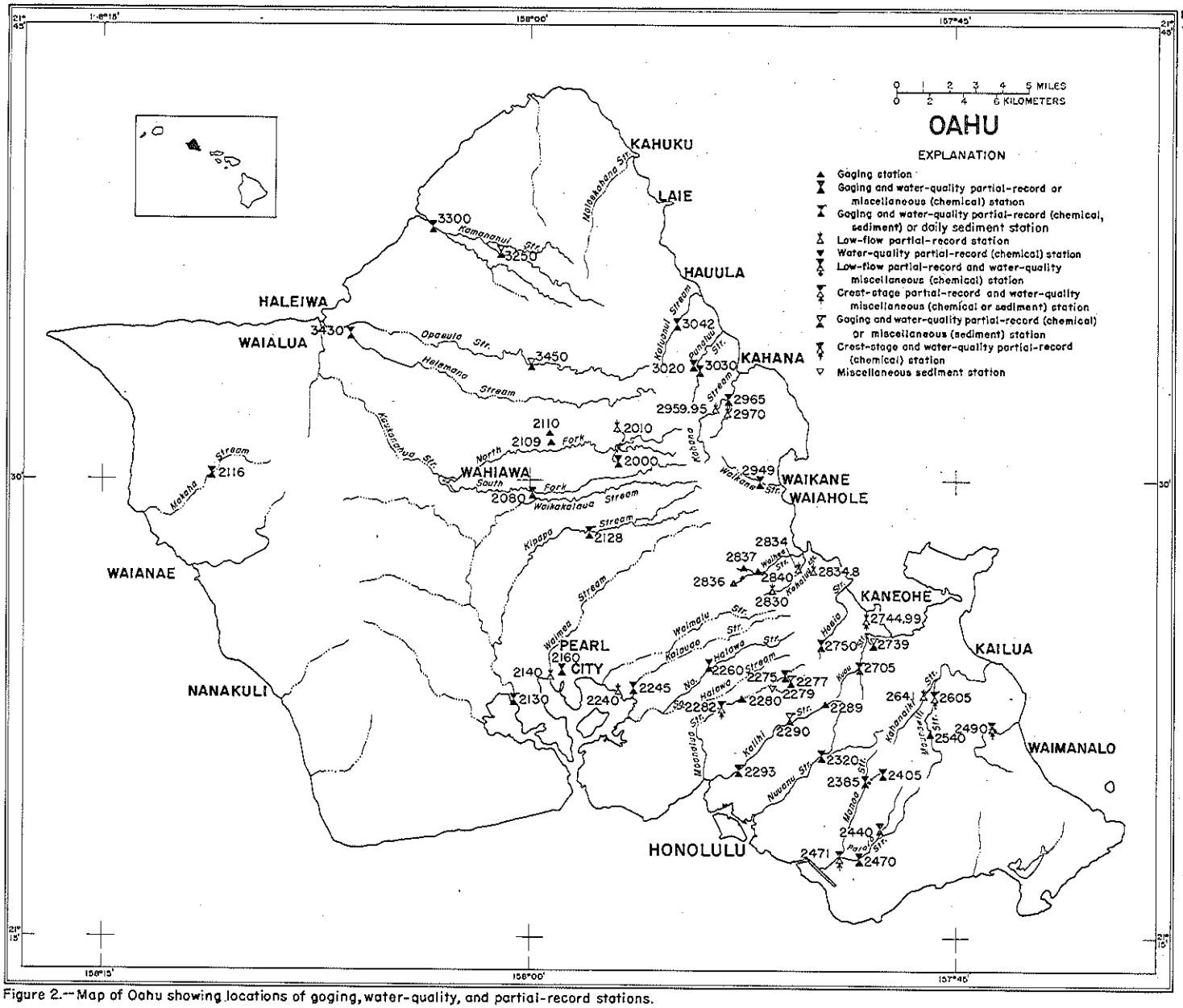

Figure 2.--Map of Oahu showing locations of gaging, water-quality, and partial-record stations.

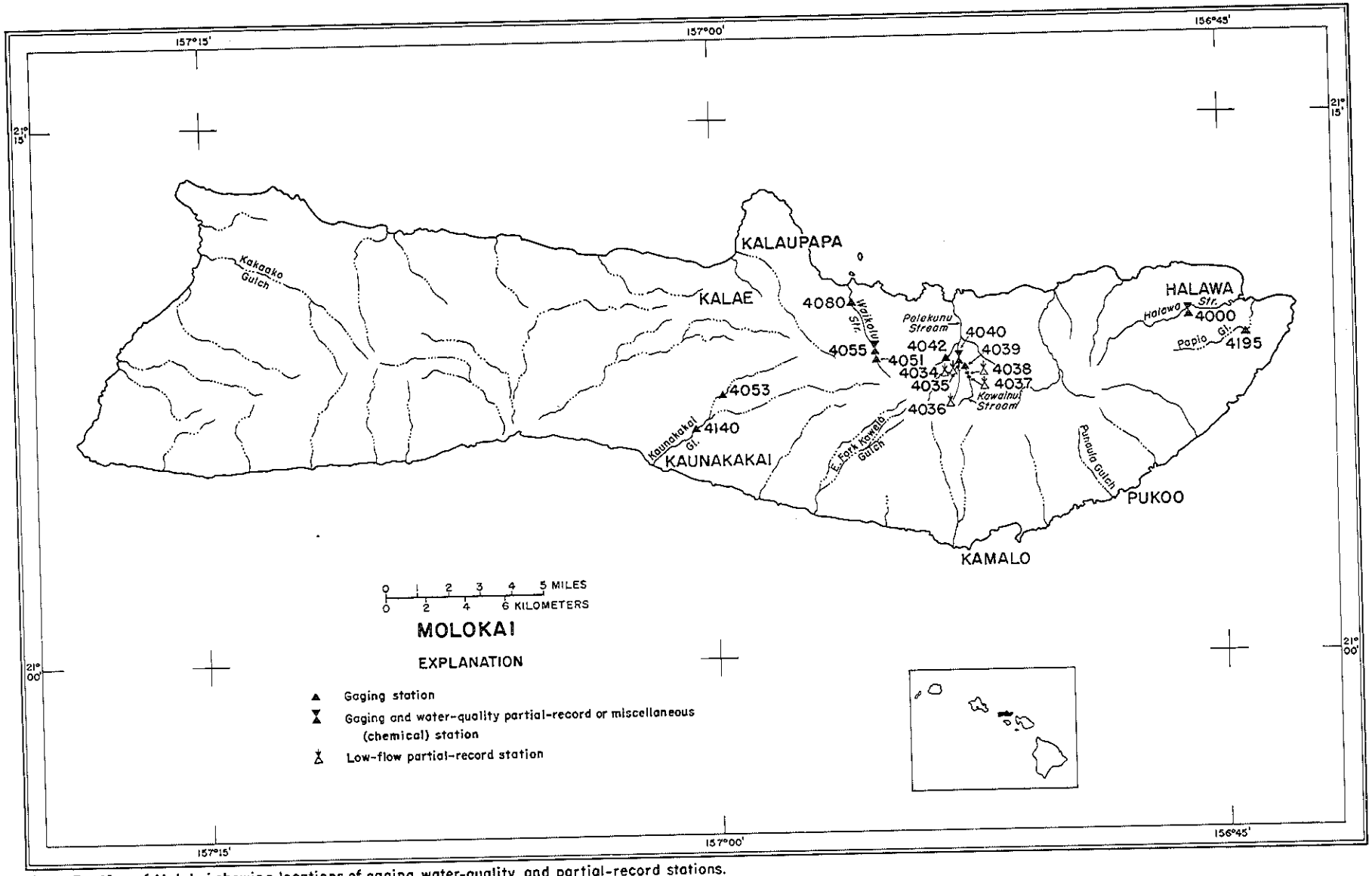

Figure 3.--Map of Molokai showing locations of gaging, water-quality, and partial-record stations.

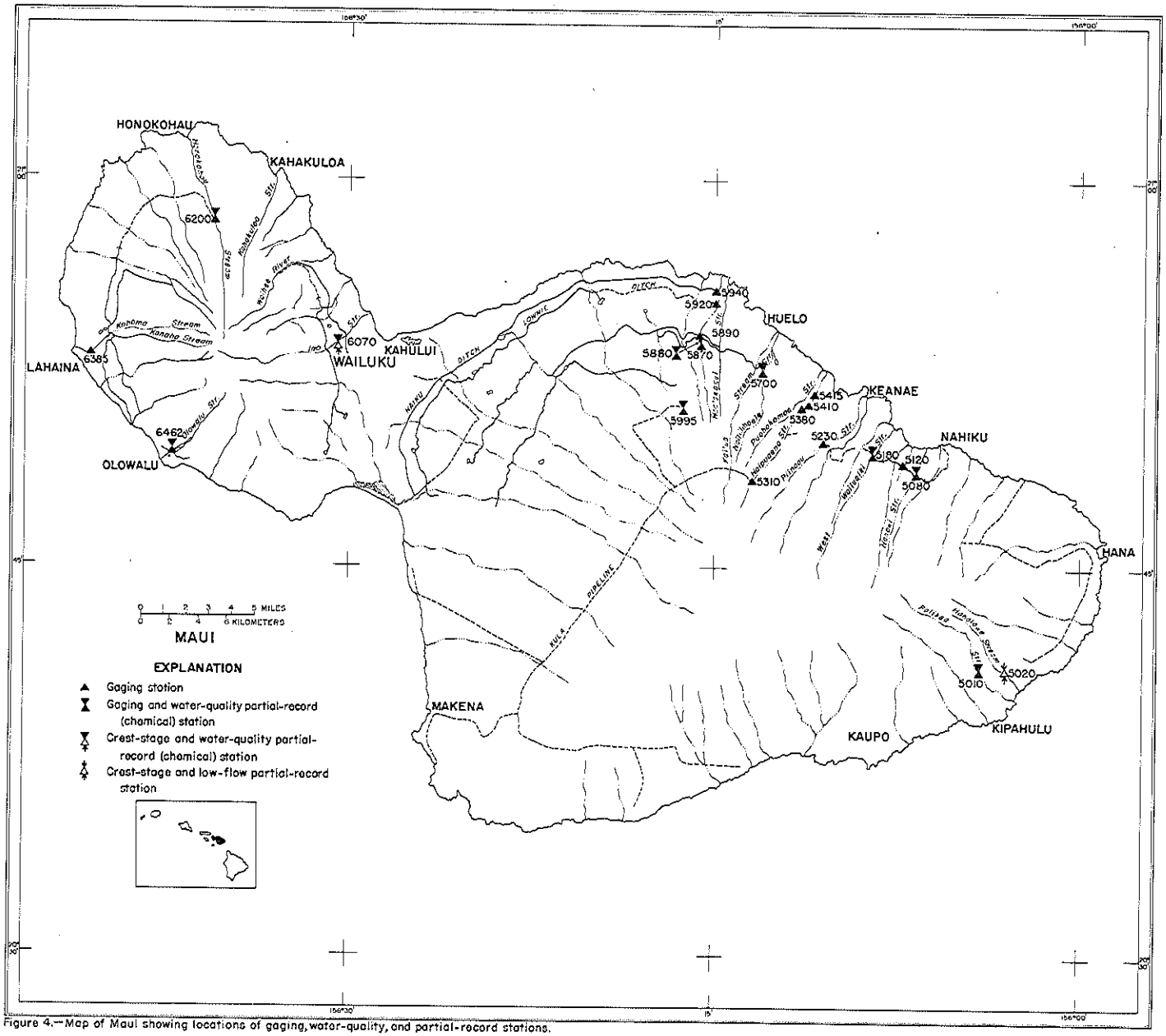

Figure 4.—Map of Maui showing locations of gaging, water-quality, and partial-record stations.

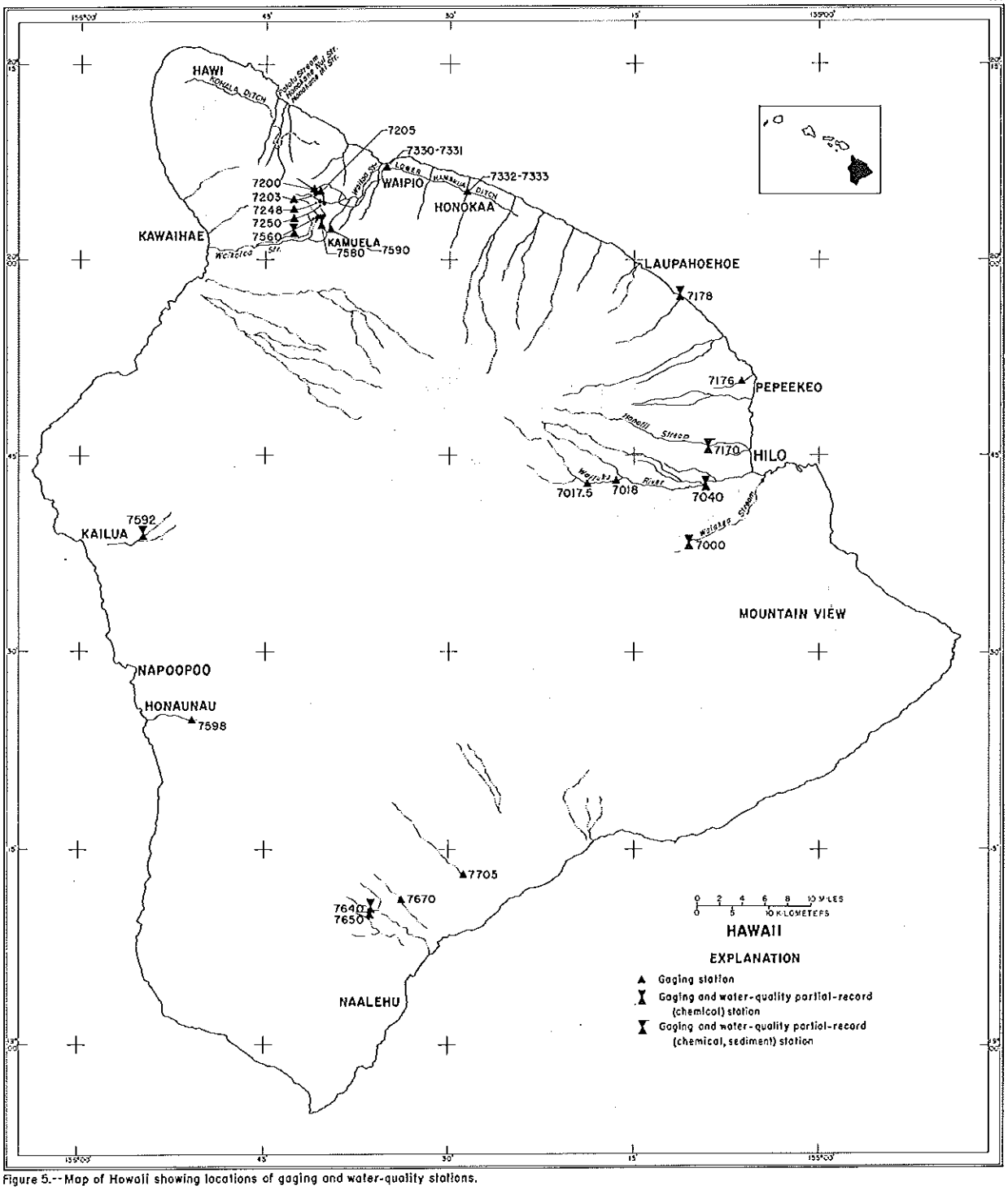

Figure 5.--Map of Hawaii showing locations of gaging and water-quality stations.

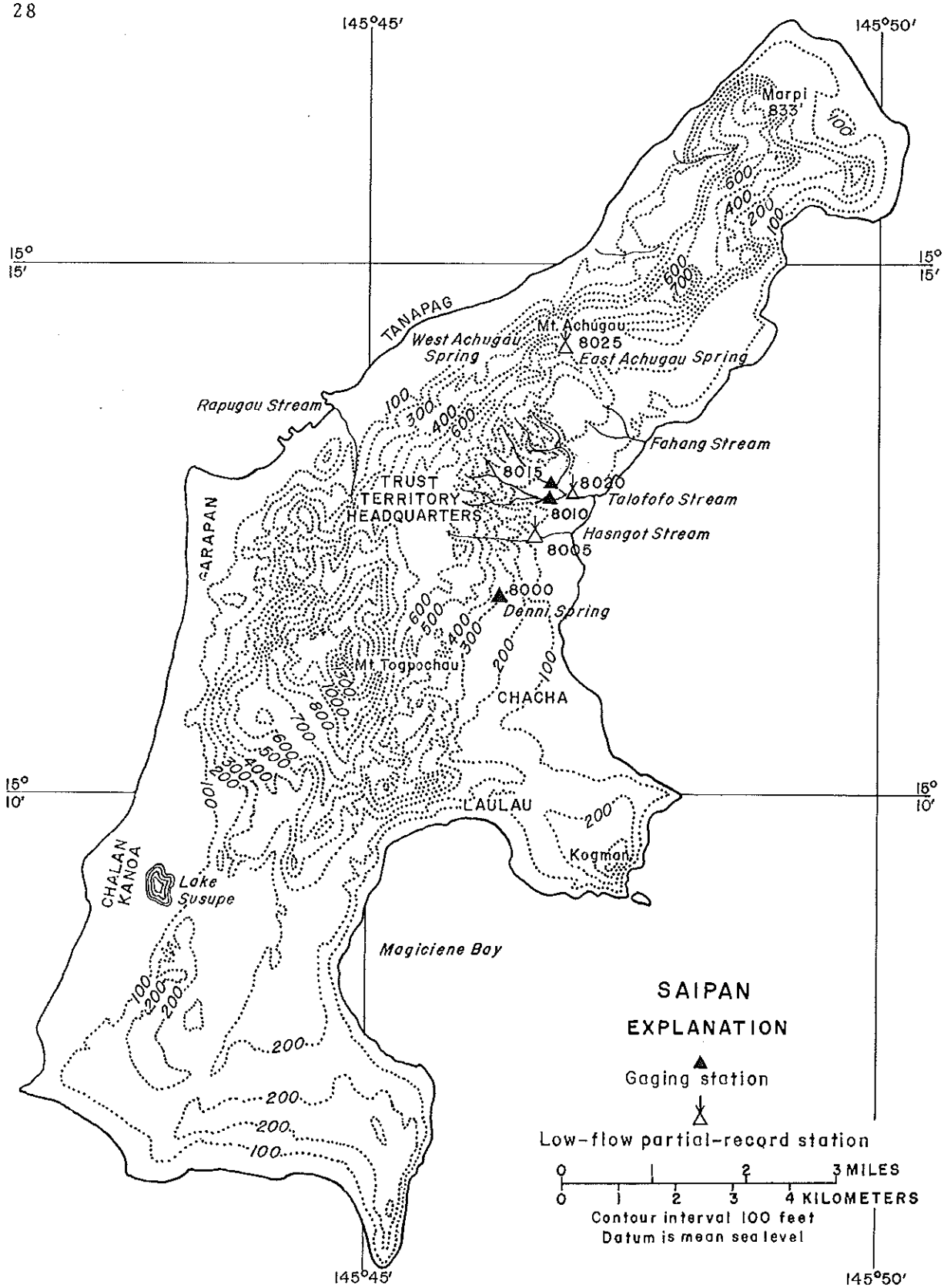

Figure 6.--Map of Saipan, Mariana Islands, showing locations of gaging and partial-record stations.

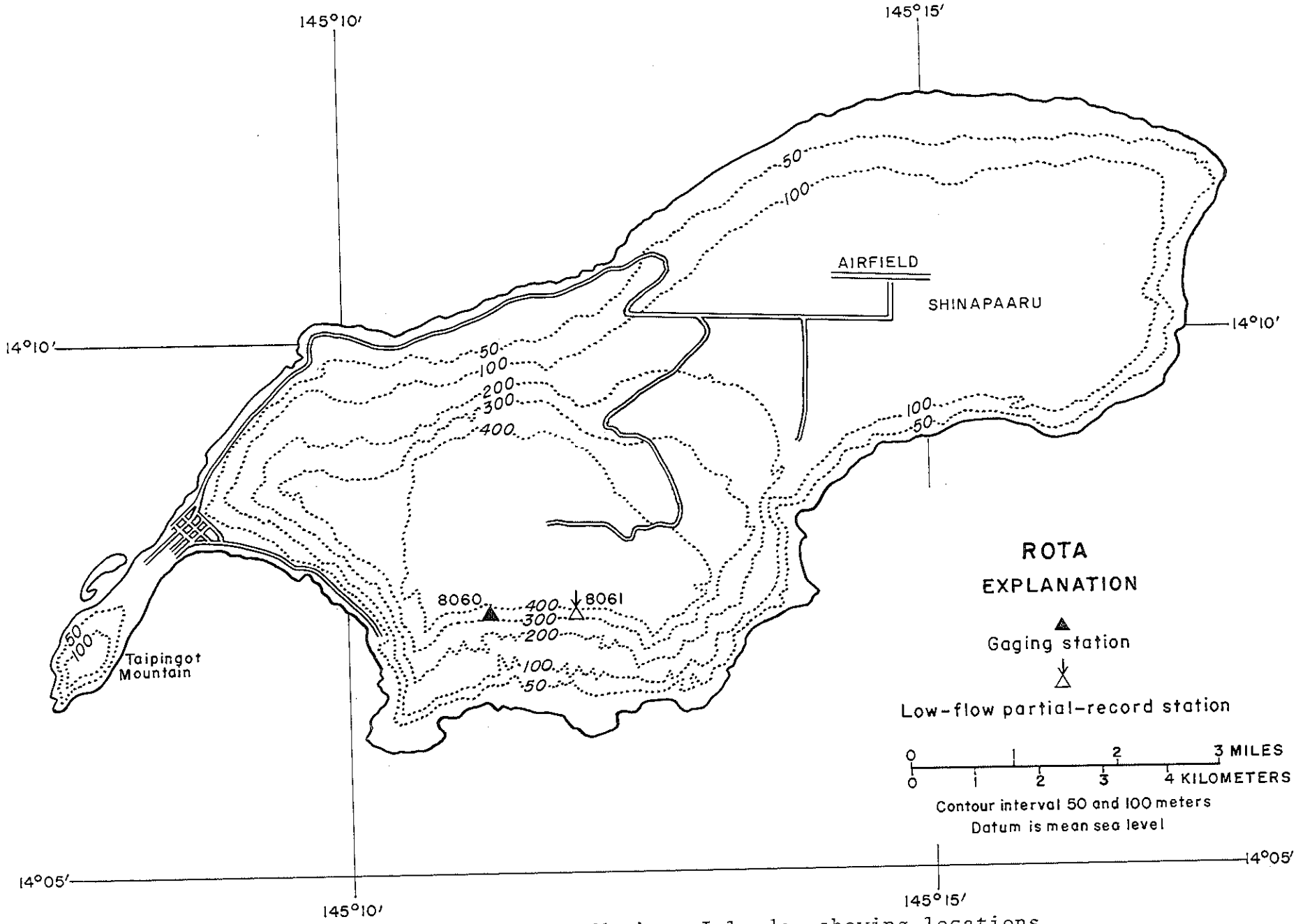

Figure 7.--Map of Rota, Mariana Islands, showing locations of gaging and partial-record stations.

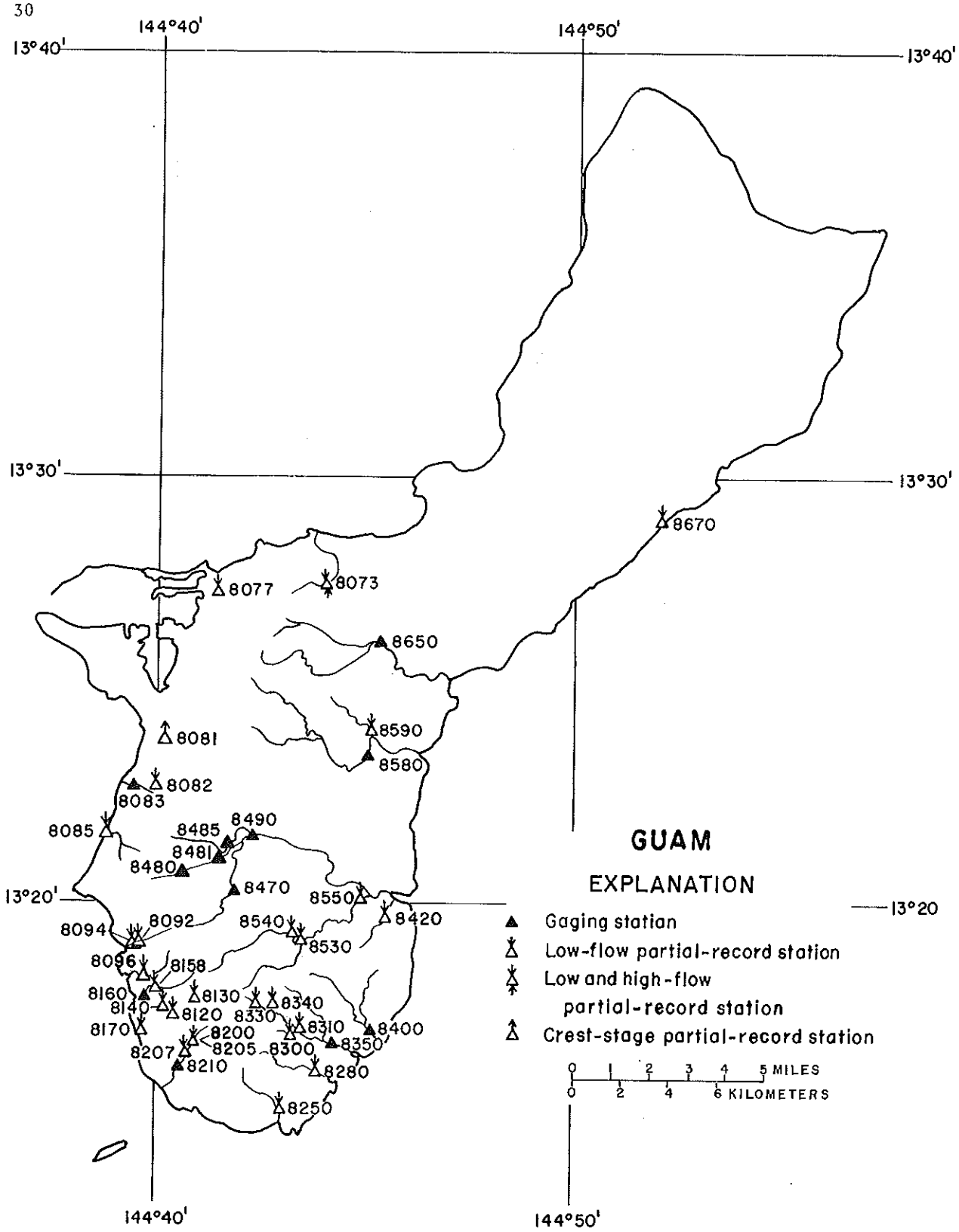

Figure 8.--Map of Guam, Mariona Islands, showing locations of goging and partial-record stations.

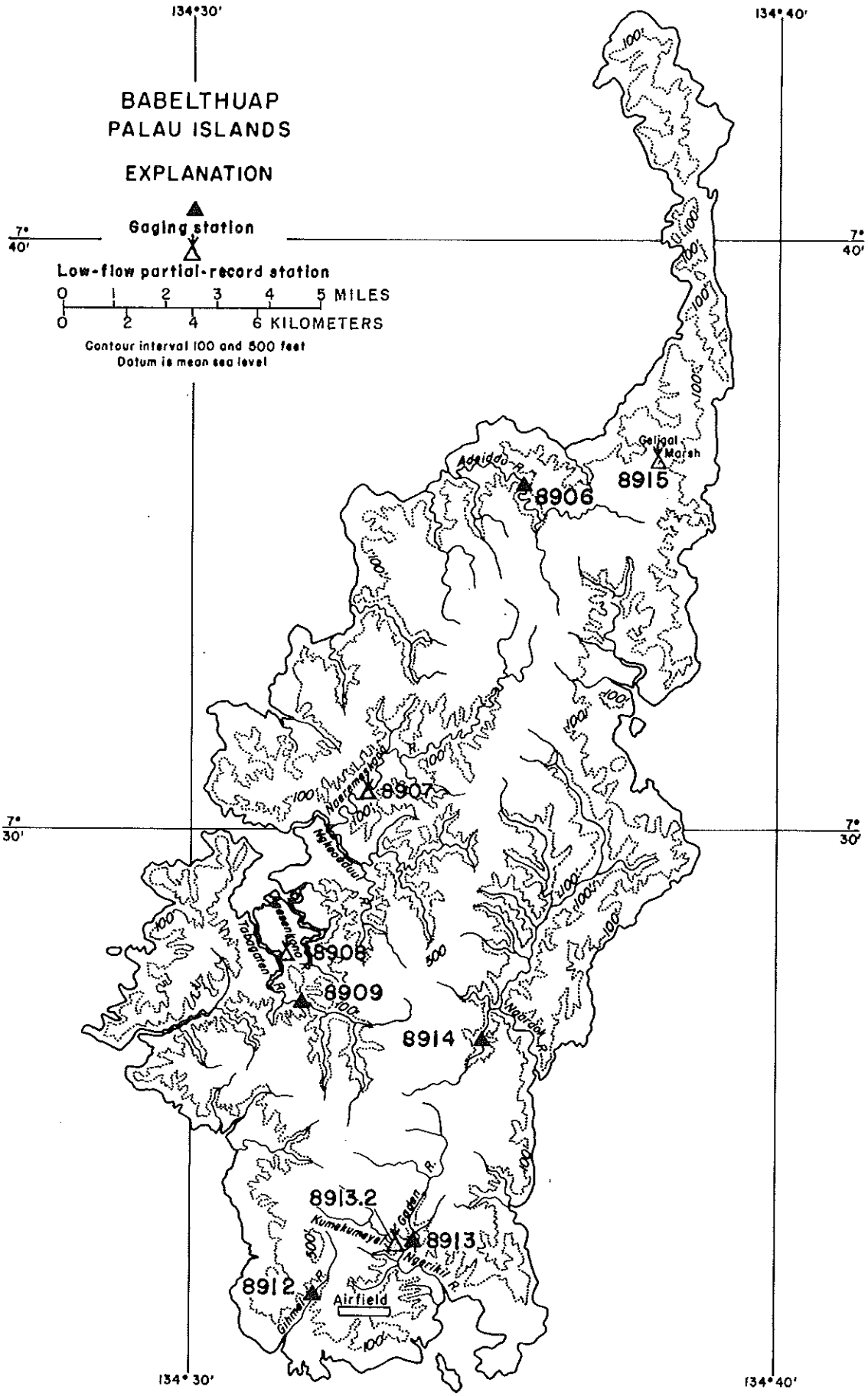

Figure 9.--Map of Babelthuap, Palau Islands, showing locations of gaging and partial-record stations.

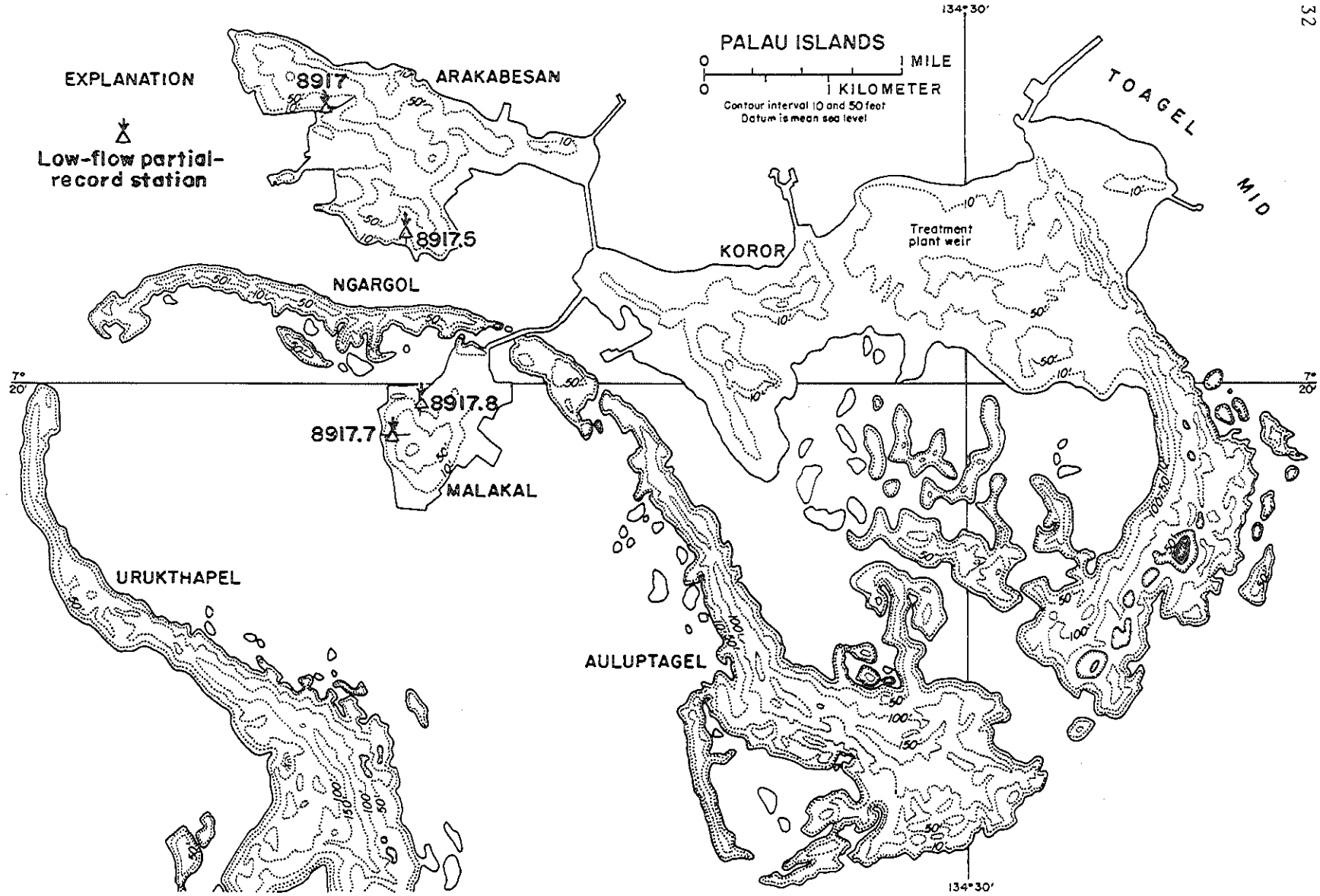

Figure 10.--Map of Arakabesan, Malakal, Palau Islands, showing locations of partial-record stations.

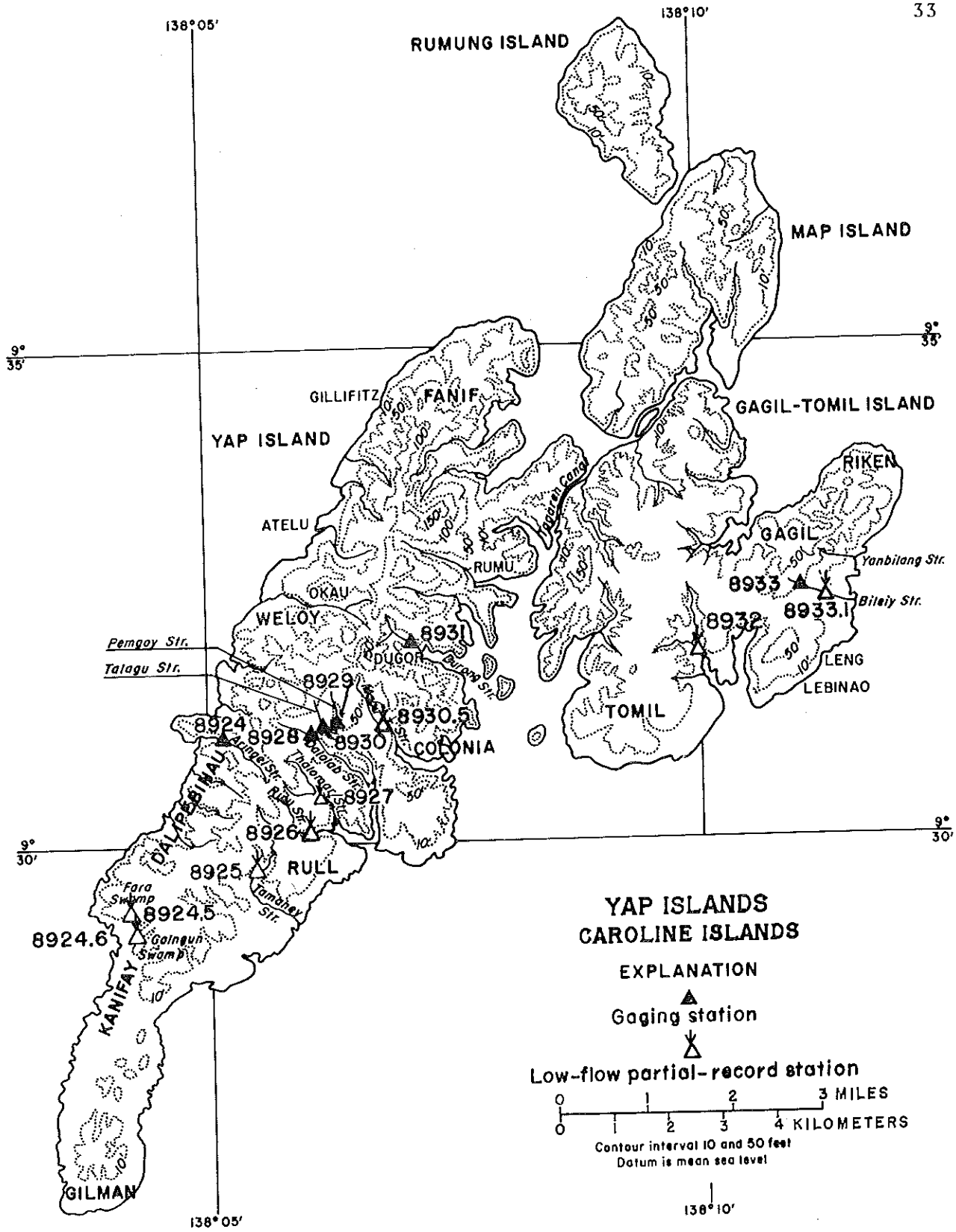

Figure 11.--Map of Yap Islands, showing locations of gaging and partial-record stations.

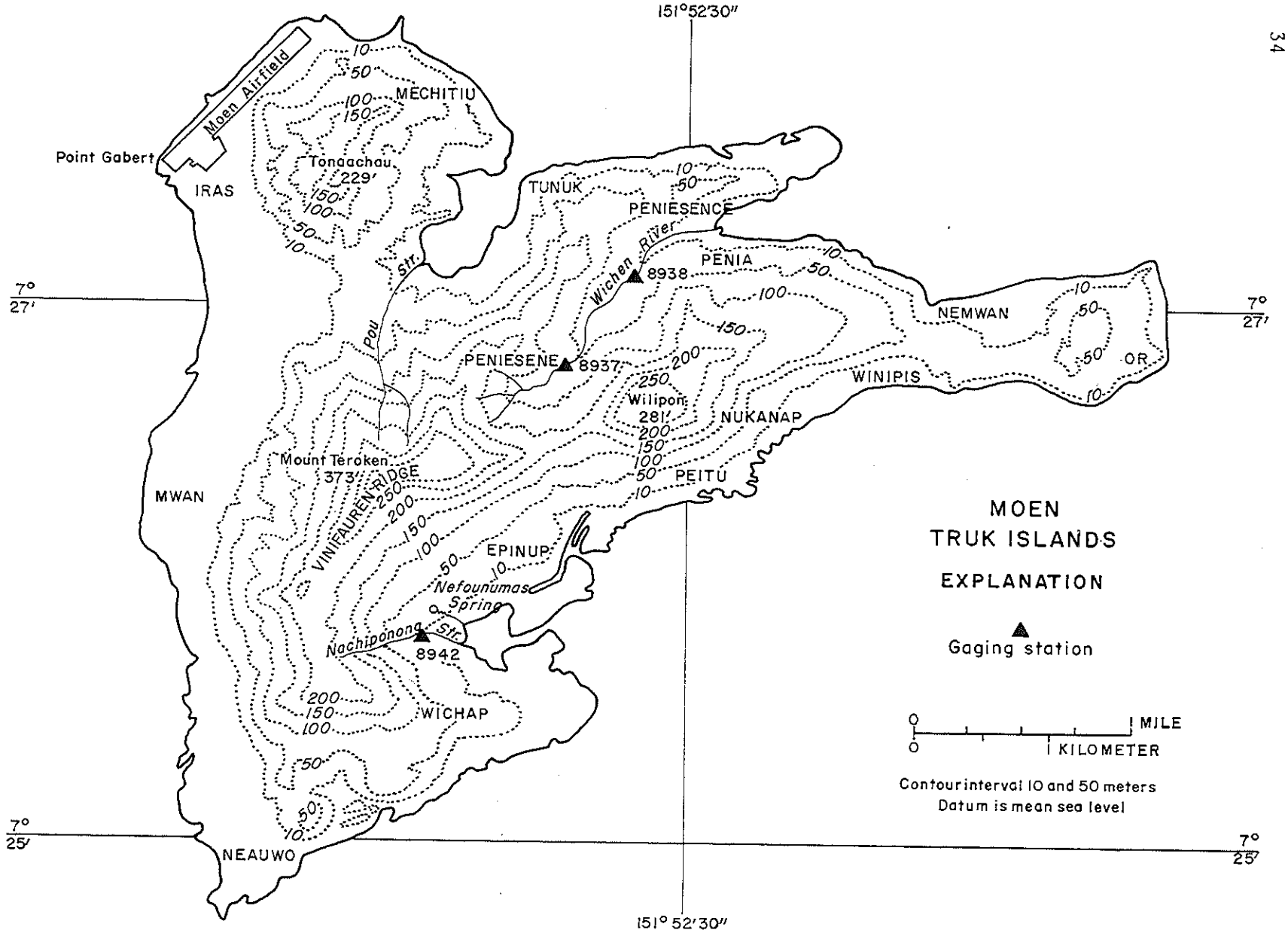

Figure 12.--Map of Moen, Truk Islands, showing locations of gaging stations.

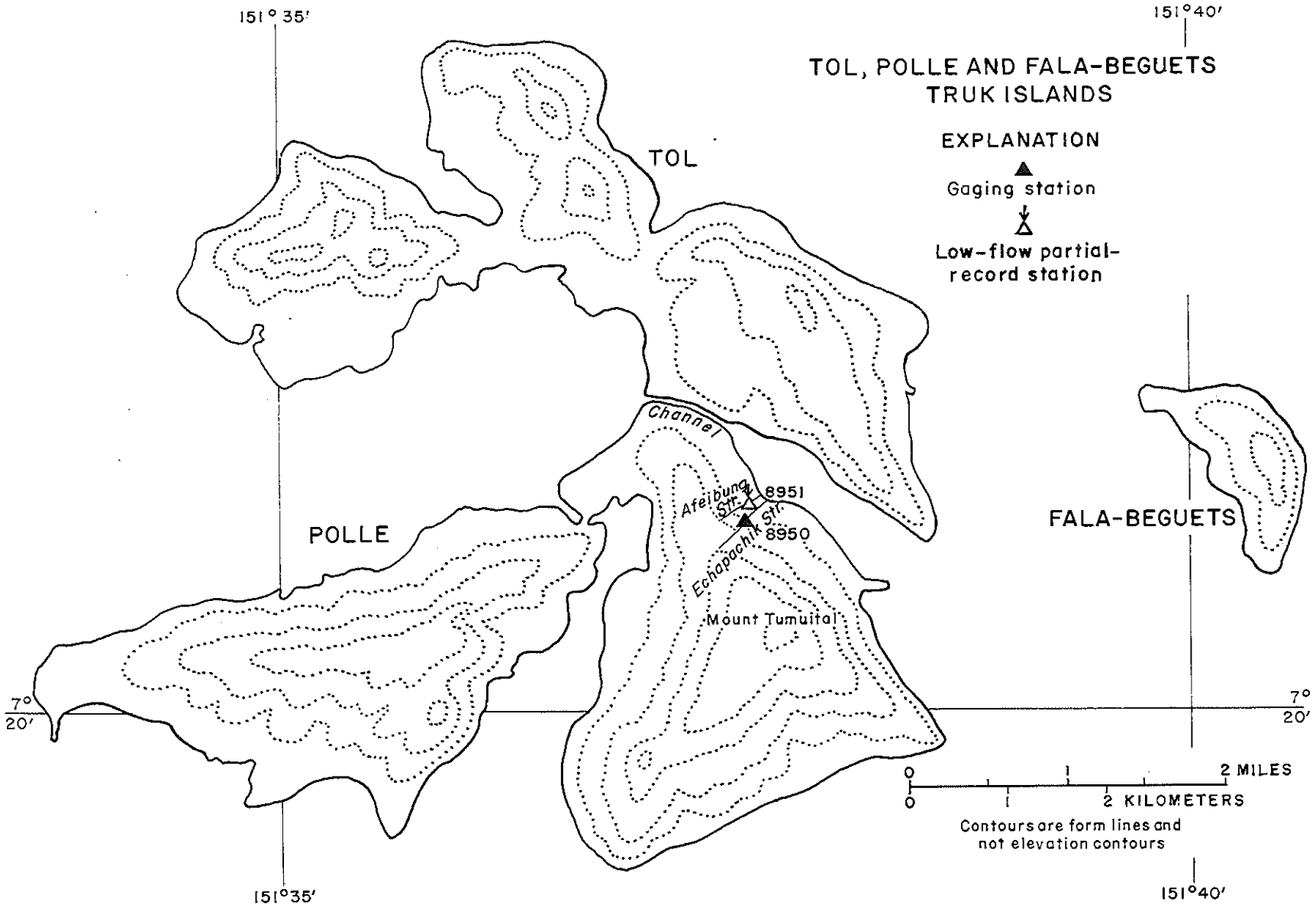

Figure 13.--Map of Tol, Truk Islands, showing locations of gaging and partial-record stations.

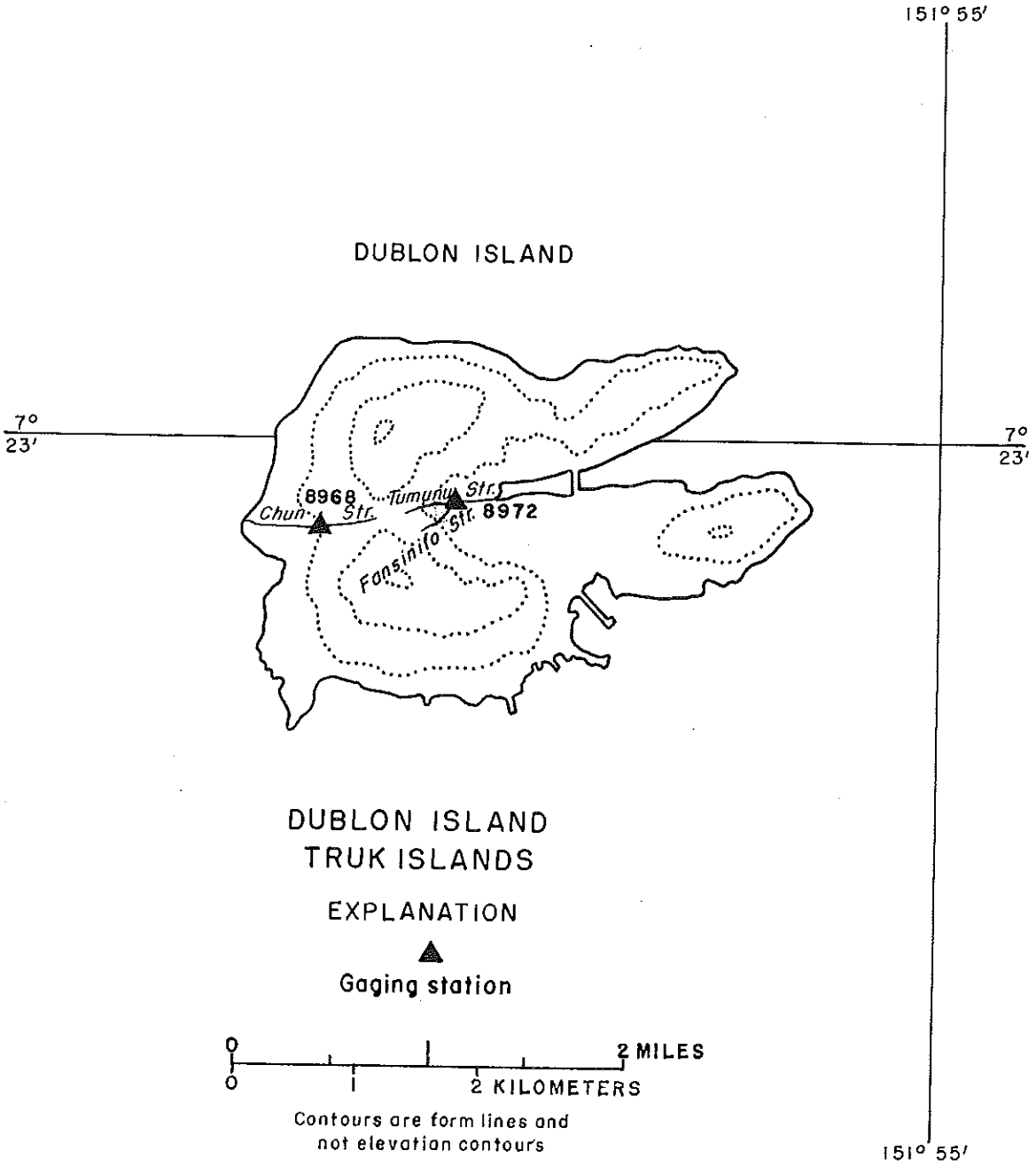

Figure 14.--Map of Dublon Island, Truk Islands, showing locations of gaging stations.

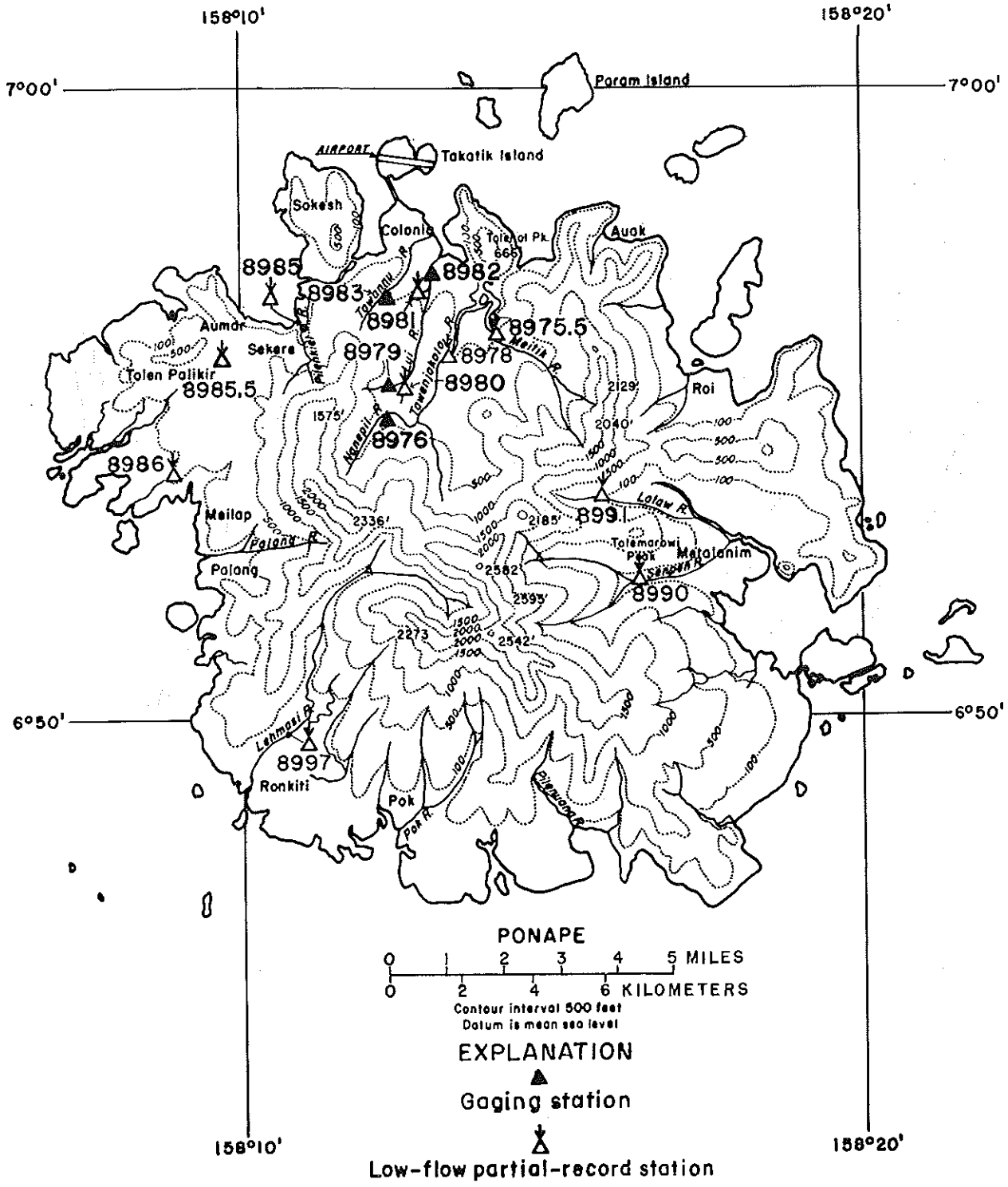

Figure 15.--Map of Ponape, showing locations of gaging and partial-record stations.

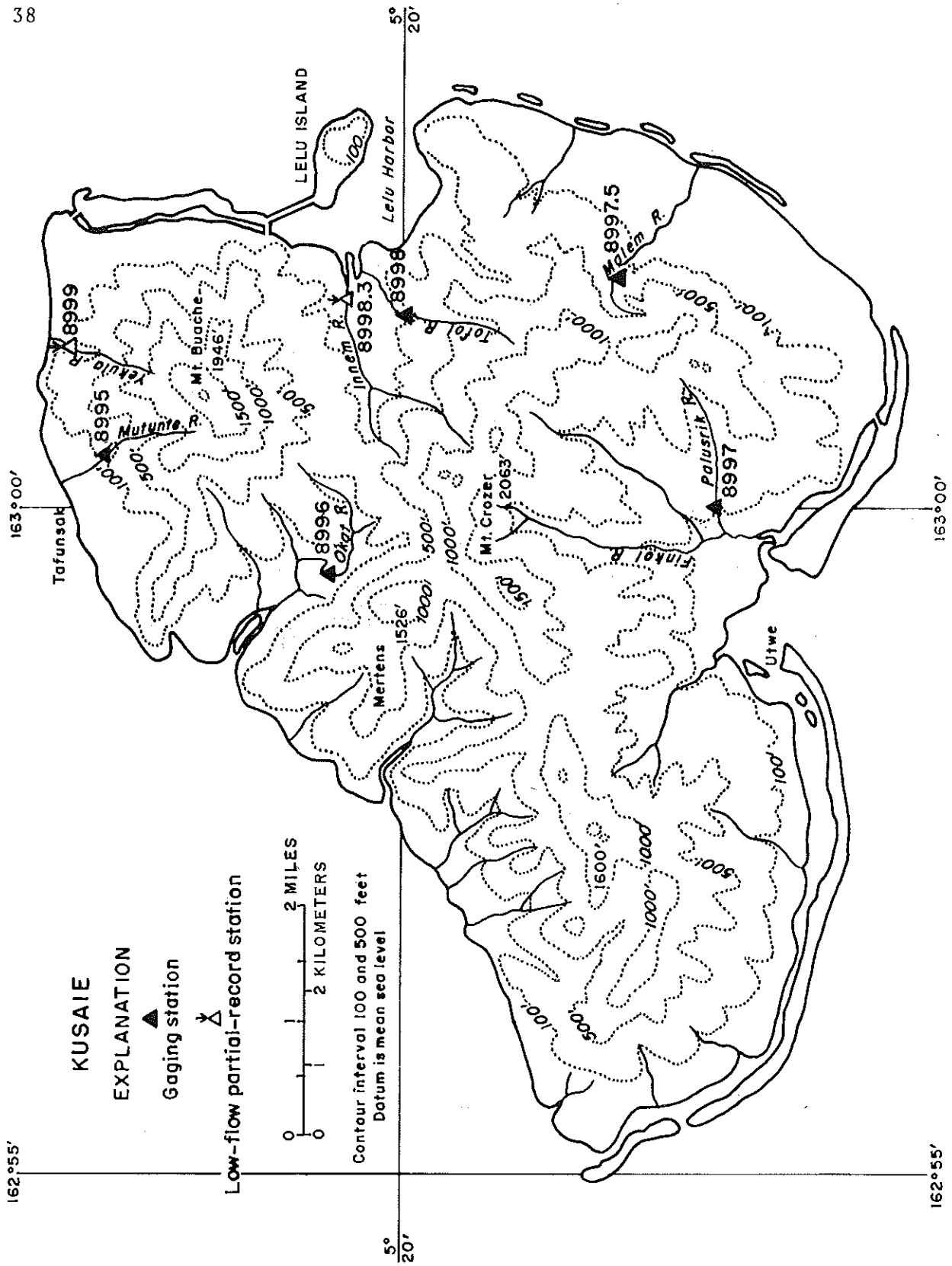

Figure 16.--Map of Kusaie, showing locations of gaging and partial-record stations.

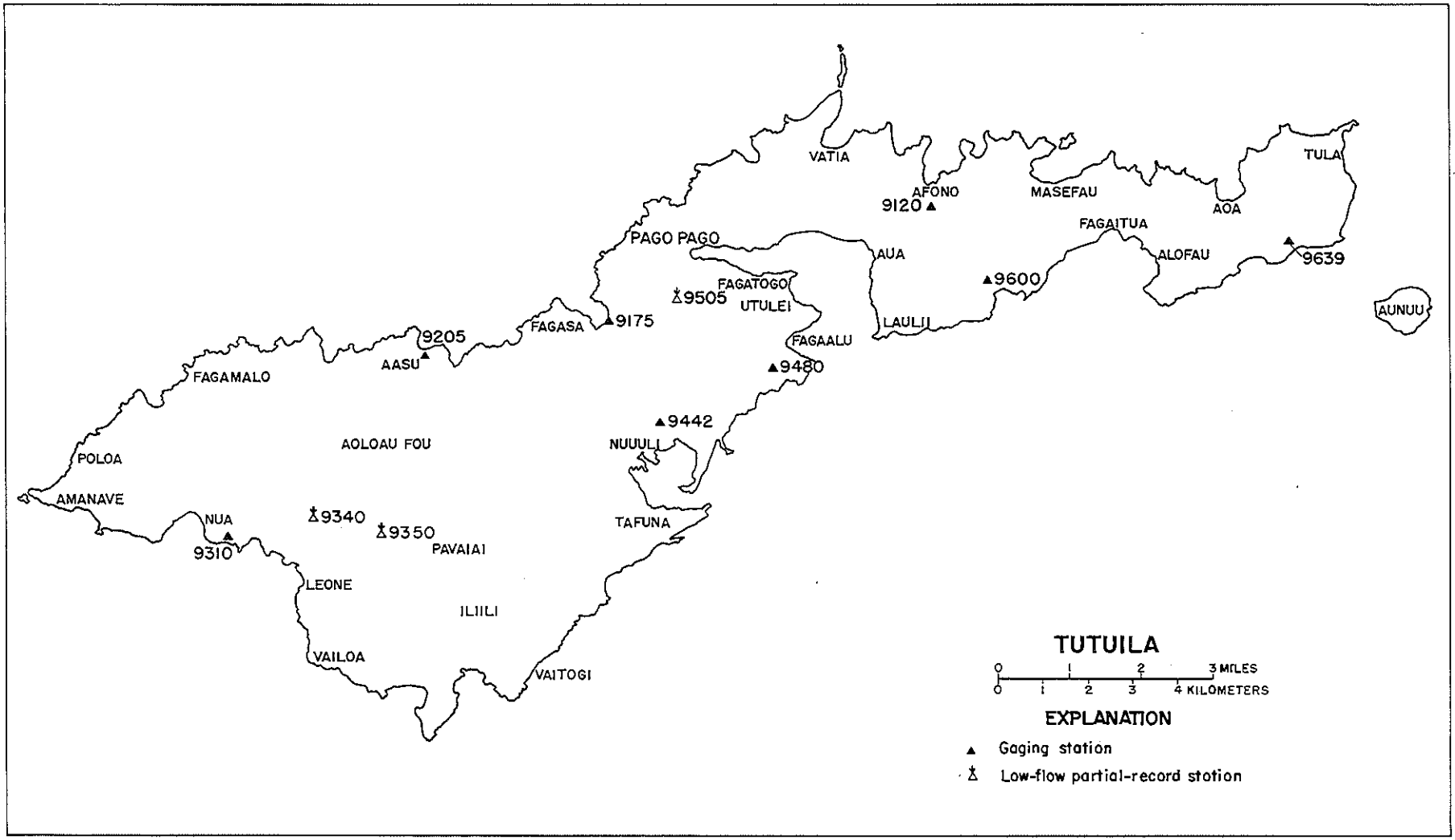

Figure 17 --Map of Tutuila, Samoa Islands, showing locations of gaging and partial-record stations.

PART 1. SURFACE WATER RECORDS

HAWAII, ISLAND OF KAUAI

16010000 Kawaikoi Stream near Waimea

LOCATION.--Lat 22°08'09", long 159°37'22", on left bank 0.2 mi (0.3 km) upstream from Kokee-Mohihi Road crossing, 2.5 mi (4.0 km) east of Kokee Lodge, and 12.5 mi (20.1 km) north of Waimea.

DRAINAGE AREA.--3.95 mi^2 (10.23 km^2).

PERIOD OF RECORD.--April 1909 to October 1912, December 1912 to March 1913, May 1913 to June 1915, August 1915 to May 1916, July to December 1916, July 1919 to current year. Monthly discharge only for some periods, published in WSP 1319.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,420 ft (1,042 m), by barometer. Prior to May 26, 1910, nonrecording gage at site 300 ft (91 m) downstream at different datum.

AVERAGE DISCHARGE.--56 years (1911-12, 1913-14, 1919-73), 34.7 ft^3/s (0.983 m^3/s), 25,140 acre-ft/yr (31.0 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,500 ft^3/s (42.5 m^3/s) Feb. 20, gage height, 7.15 ft (2.179 m), from rating curve extended as explained below; minimum, 2.2 ft^3/s (0.062 m^3/s) Oct. 26.
Period of record: Maximum discharge, 11,300 ft^3/s (320 m^3/s) Jan. 13, 1967, gage height, 15.33 ft (4.673 m), from rating curve extended above 470 ft^3/s (13.3 m^3/s) on basis of slope-area measurements at gage heights 12.12 (3.694) and 13.43 ft (4.093 m); minimum, 1.14 ft^3/s (0.032 m^3/s) Sept. 21, 22, 1953.

REMARKS.--Records good. No diversion above station.

REVISIONS (FISCAL YEARS).--WSP 555: 1920-21. WSP 1185: 1914-17(M), 1920-38(M), 1940-43(M), 1947(M). WSP 1719: 1912, 1921-25, 1927-32, 1936. WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	5.0	7.2	15	13	18	15	19	10	116	4.4	23
2	4.7	4.2	18	10	16	15	12	15	9.6	23	4.4	18
3	4.1	3.8	20	9.0	13	13	25	40	13	87	4.1	20
4	137	39	9.1	8.2	10	11	43	21	20	59	35	41
5	20	39	7.0	7.8	8.5	41	16	35	17	50	7.7	21
6	7.9	248	6.3	90	7.2	25	15	89	11	29	10	9.5
7	5.4	134	6.2	40	6.5	12	26	188	12	17	40	11
8	4.5	98	133	20	72	27	52	115	12	11	12	7.9
9	3.9	76	19	14	24	30	32	47	10	13	9.5	5.8
10	5.6	67	10	11	10	74	26	41	8.6	30	7.8	4.9
11	4.7	26	9.0	10	7.9	232	26	54	9.4	12	5.0	4.4
12	5.0	19	7.2	9.0	7.0	60	15	45	26	9.1	4.2	4.2
13	4.4	25	6.8	8.0	6.3	21	18	21	37	7.4	3.8	4.0
14	3.6	57	6.2	7.0	6.2	15	12	15	80	6.7	3.6	4.2
15	3.2	24	6.0	6.4	5.9	26	10	13	22	9.6	3.9	4.3
16	3.1	14	50	6.0	5.8	146	12	15	22	79	4.1	3.8
17	3.0	11	250	5.6	5.8	237	59	21	21	25	12	3.8
18	2.9	9.7	100	5.2	5.5	69	17	99	11	11	10	8.9
19	5.2	8.7	50	5.2	5.2	40	11	54	8.8	8.3	13	9.0
20	4.1	7.8	20	5.0	368	26	9.4	110	7.9	7.4	7.8	23
21	5.2	7.1	12	5.0	40	23	8.8	177	7.4	6.7	5.3	6.4
22	5.0	6.6	10	5.2	18	40	8.6	68	6.9	6.3	4.2	4.6
23	2.8	6.3	9.0	5.9	115	45	8.3	31	6.6	5.9	3.8	4.2
24	2.8	6.0	8.2	10	394	26	7.7	29	6.3	5.9	3.6	4.0
25	2.7	13	8.0	7.6	63	21	7.4	20	6.1	6.3	3.3	4.1
26	2.5	24	9.4	75	26	56	18	16	5.9	5.9	3.4	3.8
27	2.7	9.3	8.0	81	19	55	20	15	5.8	5.4	14	3.4
28	3.5	9.4	7.6	94	15	17	9.6	20	5.6	5.0	6.6	3.2
29	106	18	7.2	90	------	65	7.9	13	5.5	4.8	5.9	3.2
30	21	11	7.0	36	------	50	8.1	11	12	4.7	11	4.8
31	7.4	------	9.0	16	------	31	------	10	------	4.5	20	------
TOTAL	392.3	1,022.9	836.4	718.1	1,293.6	1,567	555.8	1,467	436.4	671.9	283.4	273.4
MEAN	12.7	34.1	27.0	23.2	46.2	50.5	18.5	47.3	14.5	21.7	9.14	9.11
MAX	137	248	250	94	394	237	59	188	80	116	40	41
MIN	2.5	3.8	6.0	5.0	5.2	11	7.4	10	5.5	4.5	3.3	3.2
AC-FT	778	2,030	1,660	1,420	2,570	3,110	1,100	2,910	866	1,330	562	542

CAL YR 1972 TOTAL 8,295.1 MEAN 22.7 MAX 528 MIN 2.5 AC-FT 16,450
WTR YR 1973 TOTAL 9,518.2 MEAN 26.1 MAX 394 MIN 2.5 AC-FT 18,880

PEAK DISCHARGE (BASE, 2,100 CFS).--No peak above base.

NOTE.--No gage-height record Dec. 11 to Jan. 18.

16014000 Kokee ditch near Waimea

LOCATION.--Lat 22°06'42", long 159°40'43", on left bank, 0.3 mi (0.5 km) west of Highway 55, 1.9 mi (3.1 km) south of Kokee Lodge, and 10.5 mi (16.9 km) north of Waimea.

PERIOD OF RECORD.--September 1926 to current year.

GAGE.--Water-stage recorder and suppressed weir. Altitude of gage is 3,310 ft (1,009 m), by barometer. Prior to July 1, 1962, at datum 0.07 ft (0.021 m) higher.

AVERAGE DISCHARGE.--47 years, 24.2 ft^3/s (0.685 m^3/s), 17,530 acre-ft/yr (21.6 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 105 ft^3/s (2.97 m^3/s) Dec. 2, 1929, Mar. 4, 1933; no flow at times.

REMARKS.--Records good. Ditch diverts at altitude 3,400 ft (1,040 m) from Mohihi Stream and all streams west which are tributary to Waimea River, for irrigation in vicinity of Kekaha.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	9.6	10	49	22	30	28	22	9.9	65	5.6	26
2	5.3	7.6	21	20	24	26	23	24	9.4	31	5.3	24
3	4.7	6.5	30	16	23	24	22	33	11	57	4.5	23
4	56	22	15	13	17	21	55	32	19	59	33	42
5	32	44	11	13	15	37	29	32	17	40	13	30
6	14	80	9.4	48	12	45	26	67	10	41	14	15
7	9.2	82	8.9	27	11	23	38	78	11	23	42	15
8	6.9	77	56	19	40	23	58	78	12	16	20	12
9	6.0	77	33	19	41	51	44	58	9.2	16	15	8.6
10	5.3	70	18	17	20	30	37	52	7.6	31	13	6.9
11	6.5	40	16	15	15	83	37	55	6.7	17	8.6	6.2
12	7.4	26	16	14	13	70	27	56	17	13	7.4	5.6
13	6.7	32	14	13	12	39	29	32	40	11	6.5	5.3
14	5.3	58	11	12	11	30	23	24	65	9.6	6.0	5.3
15	4.7	35	9.9	11	10	30	20	20	32	11	6.2	5.8
16	4.3	22	26	11	9.6	78	20	22	27	35	6.2	5.1
17	4.2	17	80	10	9.4	60	54	26	31	36	14	4.7
18	4.0	14	67	9.9	9.4	35	30	76	18	17	13	9.4
19	5.8	13	56	9.6	9.2	41	20	63	16	13	18	9.2
20	5.8	11	29	9.4	51	39	18	78	13	10	13	26
21	4.5	9.9	22	9.4	62	40	17	70	12	9.6	8.9	11
22	4.2	9.2	19	9.2	31	36	16	53	11	8.9	6.7	6.9
23	3.8	8.6	18	9.6	75	62	15	38	10	8.4	6.0	6.2
24	3.6	7.9	17	13	87	40	14	39	9.6	8.2	5.6	5.8
25	3.6	13	15	12	77	33	13	29	9.4	8.4	5.1	5.6
26	3.4	39	15	36	46	55	20	25	8.9	7.9	4.9	5.3
27	3.2	15	16	65	35	61	29	23	8.6	7.4	14	4.9
28	4.3	13	14	61	29	30	17	31	8.4	6.7	9.9	4.7
29	46	25	13	81	------	50	14	22	8.2	6.2	7.6	4.5
30	39	17	12	50	------	55	13	17	10	6.0	13	6.0
31	15	------	46	27	------	48	------	10	------	5.8	18	------
TOTAL	330.0	901.3	744.2	729.1	816.6	1,327	806	1,285	477.9	635.1	364.0	346.0
MEAN	10.6	30.0	24.0	23.5	29.2	42.8	26.9	41.5	15.9	20.5	11.7	11.5
MAX	56	82	80	81	87	83	58	78	65	65	42	42
MIN	3.2	6.5	8.9	9.2	9.2	21	13	10	6.7	5.8	4.5	4.5
AC-FT	655	1,790	1,480	1,450	1,620	2,630	1,600	2,550	948	1,260	722	686

CAL YR 1972 TOTAL 8,307.1 MEAN 22.7 MAX 91 MIN 3.2 AC-FT 16,480
WTR YR 1973 TOTAL 8,762.2 MEAN 24.0 MAX 87 MIN 3.2 AC-FT 17,380

16019000 Waialae Stream at altitude 3,820 ft (1,164 m) near Waimea

LOCATION.--Lat 22°05'20", long 159°34'18", on left bank 5.0 mi (8.0 km) northeast of mouth, 6.4 mi (10.3 km) southeast of Kokee Lodge, and 11 mi (18 km) northeast of Waimea.

DRAINAGE AREA.--1.79 mi^2 (4.64 km^2).

PERIOD OF RECORD.--January 1920 to July 1932, June 1952 to current year. Prior to July 1954, published as Waialae River at altitude 3,700 ft (1,128 m) near Waimea.

GAGE.--Water-stage recorder. Altitude of gage is 3,820 ft (1,164 m), from topographic map.

AVERAGE DISCHARGE.--32 years (1920-31, 1952-73), 22.2 ft^3/s (0.629 m^3/s), 16,080 acre-ft/yr (19.8 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 843 ft^3/s (23.9 m^3/s) Oct. 29, gage height, 3.68 ft (1.122 m); minimum, 1.7 ft^3/s (0.048 m^3/s) Oct. 26.
Period of record: Maximum discharge, 4,530 ft^3/s ((128 m^3/s) Jan. 16, 1921, gage height, 8.44 ft (2.573 m), from rating curve extended above 1,100 ft^3/s (31.2 m^3/s) on basis of slope-area measurement at gage height 4.60 ft (1.402 m); minimum, 0.99 ft^3/s (0.028 m^3/s) May 17, 18, May 30 to June 2, 1966.

REMARKS.--Records fair. No diversion above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1937: 1921, 1922-32(M), 1953(M), 1954. WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	4.0	3.2	6.4	8.1	6.6	13	16	7.2	37	3.0	5.0
2	4.0	3.4	4.4	5.0	49	6.4	10	16	6.6	11	3.0	5.8
3	3.6	3.6	4.7	5.0	11	6.9	9.0	50	6.4	60	3.2	6.4
4	104	27	3.6	4.2	6.9	6.6	8.6	18	6.6	54	9.6	6.9
5	12	17	3.2	4.0	5.5	80	8.6	18	5.8	22	7.2	6.6
6	5.8	116	2.8	73	4.7	18	7.7	27	5.5	20	29	5.2
7	3.6	50	2.6	12	4.2	8.6	7.7	52	12	11	38	5.0
8	3.0	24	4.7	7.7	29	74	9.5	25	14	8.1	8.6	4.4
9	2.4	26	5.2	6.1	12	23	9.5	32	9.0	6.9	6.4	4.0
10	2.3	87	3.6	5.0	6.9	59	15	27	6.1	6.9	5.0	3.6
11	2.6	22	3.2	4.7	5.5	378	13	19	6.1	6.6	4.4	3.4
12	11	17	2.8	4.2	4.7	85	10	21	13	6.1	4.2	3.2
13	5.2	26	2.4	4.0	4.4	22	25	12	23	5.5	3.8	3.0
14	3.4	38	2.3	3.8	4.2	13	19	9.5	115	5.2	3.6	9.2
15	2.6	14	2.2	3.6	4.0	11	11	8.1	47	5.0	3.4	7.2
16	2.3	8.1	129	3.4	4.0	67	17	8.1	47	5.8	3.8	5.0
17	2.1	6.4	98	3.2	4.7	156	112	7.7	31	6.4	5.8	5.2
18	2.2	9.5	53	3.2	5.0	25	18	45	9.0	5.5	6.1	10
19	2.3	6.6	12	3.2	4.7	19	10	31	6.9	5.0	5.5	9.3
20	1.9	5.0	7.2	3.0	30	29	8.6	59	6.1	4.4	5.2	16
21	1.9	4.2	5.8	3.2	17	17	24	100	5.5	4.0	4.4	7.7
22	1.8	3.8	5.0	3.2	8.6	13	34	40	5.2	4.0	4.0	6.4
23	1.8	3.6	4.7	3.4	22	23	12	16	4.7	3.8	6.1	7.2
24	1.8	3.4	4.2	3.6	61	34	10	12	4.4	3.8	5.8	11
25	1.8	5.2	4.0	4.0	20	34	10	10	4.2	3.8	4.4	7.7
26	1.7	9.0	30	4.7	9.0	89	11	9.0	4.0	3.6	4.0	5.8
27	3.4	5.8	8.1	12	6.9	52	14	84	3.8	3.4	6.4	4.4
28	11	4.7	5.8	18	6.4	13	11	20	3.8	3.4	6.6	3.8
29	136	4.0	4.4	27	------	20	12	9.5	3.4	3.4	6.4	10
30	16	3.6	4.0	22	------	74	12	7.7	6.6	3.2	6.6	12
31	5.8	------	7.7	10	------	27	------	6.6	------	3.2	5.5	------
TOTAL	364.0	557.9	434.0	275.8	359.4	1,490.1	492.2	816.2	428.9	332.0	219.0	200.4
MEAN	11.7	18.6	14.0	8.90	12.8	48.1	16.4	26.3	14.3	10.7	7.06	6.68
MAX	136	116	129	73	61	378	112	100	115	60	38	16
MIN	1.7	3.4	2.2	3.0	4.0	6.4	7.7	6.6	3.4	3.2	3.0	3.0
AC-FT	722	1,110	861	547	713	2,960	976	1,620	851	659	434	397

CAL YR 1972 TOTAL 6,015.5 MEAN 16.4 MAX 332 MIN 1.4 AC-FT 11,930
WTR YR 1973 TOTAL 5,969.9 MEAN 16.4 MAX 378 MIN 1.7 AC-FT 11,840

PEAK DISCHARGE (BASE, 1,300 CFS).--No peak above base.

16036000 Makaweli River near Waimea

LOCATION.--Lat 21°58'31", long 159°38'55", on left bank 0.7 mi (1.1 km) upstream from mouth and 1.9 mi (3.1 km) northeast of Waimea.

DRAINAGE AREA.--26.0 mi^2 (67.3 km^2).

PERIOD OF RECORD.--July 1943 to current year. Records for October 1911 to June 1917 at site 0.2 mi (0.3 km) downstream not equivalent owing to intervening diversion.

GAGE.--Water-stage recorder. Datum of gage is 18.2 ft (5.55 m) above mean sea level (by stadia survey). Prior to June 16, 1959, at datum 1.00 ft (0.305 m) higher.

AVERAGE DISCHARGE.--30 years, 88.3 ft^3/s (2.501 m^3/s), 63,970 acre-ft/yr (78.9 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 2,760 ft^3/s (78.2 m^3/s) Oct. 29, gage height, 5.55 ft (1.692 m), from rating curve extended as explained below; minimum, 9.6 ft^3/s (0.27 m^3/s) Aug. 14.
Period of record: Maximum discharge, 15,900 ft^3/s (450 m^3/s) Apr. 15, 1963, gage height, 12.25 ft (3.733 m), from rating curve extended above 3,200 ft^3/s (90.6 m^3/s) on basis of slope-area measurement at gage height 10.65 ft. (3.246 m); minimum, 3.15 ft^3/s (0.089 m^3/s) July 19, 1951.

REMARKS.--Records good. Olokele ditch diverts all low flow from Olokele River 9 mi (14.5 km) above station for irrigation in vicinity of Makaweli.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	40	21	32	32	17	44	39	40	73	12	12
2	26	41	21	28	214	16	32	30	38	27	12	13
3	16	34	26	27	45	17	28	101	20	49	12	13
4	490	121	22	22	24	16	26	44	21	148	16	13
5	99	86	19	21	20	177	24	40	19	64	19	13
6	35	404	18	210	19	61	24	52	17	48	64	13
7	25	219	18	52	17	21	23	112	35	24	40	13
8	22	74	18	35	28	103	22	58	31	19	21	13
9	20	72	19	29	29	82	21	65	28	17	16	12
10	19	262	18	26	19	125	48	110	20	16	14	12
11	22	91	17	24	16	1,040	45	52	19	16	13	12
12	72	54	17	22	16	523	33	47	30	17	13	12
13	31	80	16	21	16	145	121	28	49	15	13	12
14	24	89	16	20	16	84	39	24	252	14	12	59
15	21	49	16	20	16	43	27	22	97	14	11	19
16	21	37	270	19	16	153	35	21	228	14	12	12
17	19	33	339	19	18	370	256	21	118	19	20	11
18	18	68	223	18	18	68	64	105	39	14	13	12
19	17	32	79	18	16	56	34	59	28	14	12	13
20	16	28	58	17	19	59	27	103	23	13	12	34
21	15	26	45	19	30	55	65	183	21	13	12	47
22	14	24	39	18	20	55	105	105	19	13	11	14
23	14	24	37	19	19	68	36	44	18	13	39	14
24	14	27	32	23	30	116	29	31	14	13	15	54
25	14	48	30	19	35	88	25	32	16	13	12	15
26	18	54	180	18	21	201	24	25	15	13	12	12
27	83	35	49	49	19	183	27	61	15	13	14	12
28	46	24	34	34	18	48	50	68	15	13	13	17
29	518	24	29	67	------	58	36	31	15	13	13	49
30	149	23	28	76	------	266	23	26	16	12	13	35
31	58	------	36	29	------	105	------	22	------	12	13	------
TOTAL	1,976	2,223	1,790	1,051	806	4,419	1,393	1,761	1,316	776	526	592
MEAN	63.7	74.1	57.7	33.9	28.8	143	46.4	56.8	43.9	25.0	17.0	19.7
MAX	518	404	339	210	214	1,040	256	183	252	148	64	59
MIN	14	23	16	17	16	16	21	21	14	12	11	11
AC-FT	3,920	4,410	3,550	2,080	1,600	8,770	2,760	3,490	2,610	1,540	1,040	1,170

CAL YR 1972 TOTAL 33,653 MEAN 91.9 MAX 1,510 MIN 12 AC-FT 66,750
WTR YR 1973 TOTAL 18,629 MEAN 51.0 MAX 1,040 MIN 11 AC-FT 36,950

PEAK DISCHARGE (BASE, 4,700 CFS).--No peak above base.

16049000 Hanapepe River below Manuahi Stream, near Eleele

LOCATION.--Lat 21°57'29", long 159°33'13", on left bank 200 ft (61 m) downstream from Manuahi Stream and 4.0 mi (6.4 km) northeast of Eleele.

DRAINAGE AREA.--18.5 mi² (47.9 km²).

PERIOD OF RECORD.--July 1917 to January 1921, December 1926 to current year. Prior to July 1952, published as "at Koula, near Eleele." Records for August 1910 to December 1916 at site 0.5 mi (0.8 km) upstream not equivalent owing to intervening inflow.

GAGE.--Water-stage recorder. Datum of gage is 222 ft (67.67 m) above mean sea level (by stadia survey). July 1, 1917, to Jan. 22, 1921, nonrecording gage and Dec. 16, 1926, to June 30, 1951, water-stage recorder, at same site at datum 1.00 ft (0.305 m) higher.

AVERAGE DISCHARGE.--49 years (1917-20, 1927-73), 86.9 ft³/s (2.461 m³/s), 62,960 acre-ft/yr (77.6 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 3,950 ft³/s (112 m³/s) Mar. 12, gage height, 6.40 ft (1.951 m); minimum, 19 ft³/s (0.54 m³/s) Aug. 25, 26.
Period of record: Maximum discharge, 39,000 ft³/s (1,100 m³/s) Apr. 15, 1963, gage height, 14.87 ft (4.532 m), from rating curve extended above 7,600 ft³/s (215 m³/s) on basis of slope-area measurement of peak flow; minimum, 5.1 ft³/s (0.14 m³/s) May 21, 1954.

REMARKS.--Records good. Hanapepe ditch diverts 3.0 mi (4.8 km) above station for irrigation in vicinity of Makaweli. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 740: 1931. WSP 1719: 1929-31(M). WSP 1937: 1918, 1919(M), 1920, 1921(M), 1927-28(M), 1930, 1936-37(M), 1941(P), 1943-46(P), 1947(M), 1948-52(P), 1955(M), 1956-57(P), 1958(M), 1960(M). WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	36	26	24	30	23	76	57	51	72	21	21
2	28	45	26	23	215	22	54	42	44	42	21	21
3	26	57	26	22	40	22	46	92	38	96	22	21
4	840	160	25	22	26	22	42	50	33	122	28	20
5	134	78	25	22	23	120	38	51	29	76	25	21
6	50	380	25	122	22	36	35	96	29	50	42	20
7	36	245	25	33	21	23	32	160	65	35	31	22
8	31	84	25	26	21	89	31	82	50	28	22	20
9	29	79	24	24	20	61	33	106	51	26	21	20
10	35	221	24	23	19	120	57	183	33	26	22	20
11	70	84	24	22	19	775	61	105	35	35	21	20
12	203	58	24	22	20	670	108	81	49	26	22	21
13	52	81	24	22	21	212	116	45	82	28	22	20
14	34	92	23	22	19	165	69	38	236	24	22	49
15	32	51	24	21	20	68	38	34	84	25	21	27
16	29	40	158	21	22	203	48	33	353	24	28	20
17	26	37	153	21	26	408	239	33	165	24	52	21
18	29	58	78	22	24	92	68	99	61	23	22	29
19	26	36	38	22	22	58	40	63	43	22	21	26
20	24	31	29	22	22	87	35	128	34	22	22	33
21	23	30	26	27	21	63	103	190	30	22	21	24
22	22	29	26	22	21	84	89	132	28	22	21	22
23	22	29	26	23	22	81	50	56	26	22	26	26
24	22	29	25	25	22	126	39	43	26	22	27	160
25	22	38	25	22	22	118	36	52	25	22	22	29
26	22	31	173	21	21	236	34	36	24	22	20	22
27	65	28	35	23	21	185	33	55	24	22	23	21
28	173	27	27	32	22	70	62	46	23	21	21	35
29	400	27	24	36	------	103	58	37	22	22	26	51
30	105	26	24	46	------	308	39	31	35	21	24	45
31	44	------	27	29	------	153	------	33	------	21	21	------
TOTAL	2,682	2,247	1,264	864	824	4,803	1,809	2,289	1,828	1,065	760	902
MEAN	86.5	74.9	40.8	27.9	29.4	155	60.3	73.8	60.9	34.4	24.5	30.1
MAX	840	380	173	122	215	775	239	190	353	122	52	160
MIN	22	26	23	21	19	22	31	31	22	21	20	20
AC-FT	5,320	4,460	2,510	1,710	1,630	9,530	3,590	4,540	3,630	2,110	1,510	1,790

CAL YR 1972 TOTAL 27,004 MEAN 73.8 MAX 1,130 MIN 17 AC-FT 53,560
WTR YR 1973 TOTAL 21,337 MEAN 58.5 MAX 840 MIN 19 AC-FT 42,320

PEAK DISCHARGE (BASE, 3,600 CFS).--Oct. 4 (0300) 3,650 cfs (6.20 ft); Mar. 12 (0400) 3,950 cfs (6.40 ft).

16060000 South Fork Wailua River near Lihue

LOCATION.--Lat 22°02'24", long 159°22'58", on right bank 0.2 mi (0.3 km) upstream from Wailua Falls and 4.3 mi (6.9 km) north of Lihue.

DRAINAGE AREA.--22.4 mi^2 (58.0 km^2).

PERIOD OF RECORD.--December 1911 to April 1919, June 1919 to March 1921, May 1921 to June 1957, August, September 1957, November 1957 to February 1958, June 1958 to current year. Monthly discharge only for some periods, published in WSP 1319. Published as "above Waiehu Falls, near Lihue" 1912-13.

GAGE.--Water-stage recorder. Altitude of gage is 240 ft (73 m), from topographic map. Prior to Nov. 18, 1918, at site 0.3 mi (0.5 km) upstream at different datum. Nov. 18, 1918, to June 30, 1957, at site 10 ft (3 m) downstream from present site at datum 2.50 ft (0.762 m) higher and July 1, 1957, to June 23, 1958, at present datum.

AVERAGE DISCHARGE.--56 years (1912-18, 1919-20, 1921-24, 1925-56, 1958-73), 117 ft^3/s (3.313 m^3/s), 84,770 acre-ft/yr (105 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 4,210 ft^3/s (119 m^3/s) Oct. 4, gage height, 13.71 ft (4.178 m); minimum, 2.7 ft^3/s (0.076 m^3/s) July 26-28.
Period of record: Maximum discharge, 87,300 ft^3/s (2,470 m^3/s) Apr. 15, 1963, gage height, 22.90 ft (6.980 m), from rating curve extended above 13,000 ft^3/s (368 m^3/s) on basis of slope-area measurement of peak flow; minimum, 1.69 ft^3/s (0.048 m^3/s) Sept. 21, 1953.

REMARKS.--Records good. Lihue and Hanamaulu ditches divert upstream for irrigation of sugarcane in vicinity of Lihue. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1249: 1941-47(M), 1948-51(P). WSP 1719: 1943-49. WSP 1937: 1958-60.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	56	7.6	59	7.0	4.8	34	7.0	7.6	9.9	2.8	3.6
2	6.2	81	7.3	56	179	4.6	11	11	8.2	6.8	2.8	3.6
3	5.5	124	7.3	49	45	4.5	8.2	38	7.3	23	2.8	3.8
4	898	280	7.0	9.0	11	4.3	6.8	10	7.0	50	3.4	3.6
5	294	141	6.8	7.3	8.2	40	6.2	14	8.2	15	3.9	3.8
6	90	445	6.6	44	8.2	35	6.2	50	8.2	24	4.3	3.4
7	67	302	6.6	9.8	7.3	5.5	6.6	158	13	14	4.5	3.6
8	50	144	6.6	6.6	7.3	5.1	6.6	41	11	11	3.8	3.6
9	44	114	6.4	6.2	6.2	26	6.8	54	14	7.3	3.6	3.4
10	67	255	6.4	5.9	5.2	32	10	196	12	4.3	3.4	5.0
11	62	161	6.2	6.2	4.8	357	24	227	7.9	4.6	3.2	3.8
12	229	126	5.9	6.2	5.0	800	13	264	7.3	9.0	3.2	3.6
13	69	161	5.9	6.2	4.8	168	83	70	7.3	5.5	3.4	3.6
14	51	158	5.9	5.9	4.8	212	11	10	55	4.5	3.4	5.7
15	45	112	5.7	5.9	4.8	54	14	9.0	27	3.8	2.9	8.4
16	41	77	42	5.2	4.8	186	14	9.0	193	4.1	3.4	4.5
17	38	51	104	4.5	5.5	271	67	8.4	134	4.5	31	4.5
18	38	107	15	4.3	6.4	46	43	9.0	46	3.9	6.6	6.4
19	33	69	9.0	4.3	5.7	18	31	10	8.2	3.4	4.5	6.8
20	8.4	43	8.4	4.1	13	8.2	42	40	5.7	3.2	3.8	6.8
21	7.6	34	7.6	4.8	8.8	15	59	57	5.9	3.2	3.6	6.6
22	7.0	34	7.3	6.4	5.5	39	95	125	6.4	3.2	3.2	5.5
23	6.8	42	7.3	4.8	5.0	56	43	49	5.9	2.9	3.6	4.8
24	6.6	46	7.3	5.2	6.4	50	7.0	18	5.5	2.9	6.2	129
25	6.4	44	7.6	5.2	7.6	16	6.2	59	5.5	2.9	6.8	24
26	6.4	48	118	4.6	5.7	94	6.6	64	5.2	2.7	4.5	4.5
27	73	28	58	5.0	4.6	83	6.4	60	5.0	2.7	4.3	3.4
28	204	9.0	66	6.2	4.6	12	8.4	58	4.6	2.7	3.9	2.8
29	600	9.4	63	6.8	------	15	14	14	4.3	3.1	3.6	17
30	172	9.0	64	20	------	146	6.8	9.2	5.0	3.2	3.6	22
31	64	------	63	7.9	------	90	------	7.9	------	2.9	3.6	------
TOTAL	3,294.7	3,310.4	745.7	382.5	392.2	2,898.0	696.8	1,756.5	641.2	244.2	147.6	311.1
MEAN	106	110	24.1	12.3	14.0	93.5	23.2	56.7	21.4	7.88	4.76	10.4
MAX	898	445	118	59	179	800	95	264	193	50	31	129
MIN	4.8	9.0	5.7	4.1	4.6	4.3	6.2	7.0	4.3	2.7	2.8	2.8
AC-FT	6,540	6,570	1,480	759	778	5,750	1,380	3,480	1,270	484	293	617

CAL YR 1972 TOTAL 36,897.3 MEAN 101 MAX 2,000 MIN 4.3 AC-FT 73,190
WTR YR 1973 TOTAL 14,820.9 MEAN 40.6 MAX 898 MIN 2.7 AC-FT 29,400

PEAK DISCHARGE (BASE, 5,800 CFS).--No peak above base.

16061000 North Wailua ditch near Lihue

LOCATION.--Lat 22°03'56", long 159°28'14", on left bank 300 ft (91 m) downstream from intake, 7.9 mi (12.7 km) west of Wailua House Lots, and 8.8 mi (14.2 km) northwest of Lihue.

PERIOD OF RECORD.--July 1932 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,105.45 ft (336.941 m) above mean sea level (levels by Lihue Plantation Co.).

AVERAGE DISCHARGE.--41 years, 18.9 ft^3/s (0.535 m^3/s), 13,690 acre-ft/yr (16.9 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 59 ft^3/s (1.67 m^3/s) Dec. 21, 1933, Apr. 24, 1934; no flow at times.

REMARKS.--Records good. Ditch diverts from North Fork Wailua River for power and irrigation in vicinity of Lihue.

REVISIONS (FISCAL YEAR).--WSP 770: 1933.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	22	17	16	19	21	24	24	22	21	15	16
2	20	21	17	16	24	20	22	23	20	21	15	16
3	21	23	17	18	20	19	22	24	20	22	15	16
4	27	24	16	16	19	19	22	23	20	22	17	16
5	21	23	16	18	17	25	21	24	20	22	17	16
6	18	25	17	21	17	22	20	24	20	20	17	15
7	17	23	16	17	17	21	20	25	21	20	17	16
8	16	21	19	16	19	24	21	23	21	20	16	15
9	18	22	17	16	17	22	22	25	20	20	16	15
10	17	24	16	16	16	24	26	25	20	20	17	14
11	19	21	16	16	16	28	25	25	20	20	16	15
12	22	21	16	15	16	28	26	23	21	19	17	15
13	18	22	16	15	16	28	24	21	22	19	16	14
14	17	22	16	15	17	27	24	21	23	18	16	16
15	17	20	16	15	16	25	23	21	21	18	15	15
16	17	20	21	15	17	27	23	21	26	19	18	15
17	17	20	22	15	20	25	26	20	22	18	18	15
18	19	24	21	15	19	23	23	23	21	17	17	16
19	18	21	19	15	16	23	22	22	20	17	16	17
20	18	20	18	16	24	24	22	22	20	17	16	18
21	17	19	17	18	21	23	25	23	20	17	16	17
22	17	19	16	18	20	26	23	23	20	17	16	16
23	18	20	18	18	22	25	23	21	19	17	18	17
24	18	19	17	19	25	24	22	21	19	17	18	18
25	17	19	18	16	22	25	22	23	19	17	17	16
26	19	18	19	20	20	25	22	21	18	16	17	16
27	23	18	19	20	20	24	22	22	18	16	17	16
28	22	18	17	20	21	22	25	20	18	16	17	16
29	25	17	18	21	------	22	23	21	18	17	17	17
30	21	17	17	21	------	27	23	20	20	16	16	17
31	21	------	17	19	------	25	------	21	------	16	16	------
TOTAL	596	623	542	532	533	743	688	695	609	572	512	477
MEAN	19.2	20.8	17.5	17.2	19.0	24.0	22.9	22.4	20.3	18.5	16.5	15.9
MAX	27	25	22	21	25	28	26	25	26	22	18	18
MIN	16	17	16	15	16	19	20	20	18	16	15	14
AC-FT	1,180	1,240	1,080	1,060	1,060	1,470	1,360	1,380	1,210	1,130	1,020	946

CAL YR 1972 TOTAL 6,781.8 MEAN 18.5 MAX 29 MIN 5.5 AC-FT 13,450
WTR YR 1973 TOTAL 7,122 MEAN 19.5 MAX 28 MIN 14 AC-FT 14,130

16061200 North Wailua ditch below Waikoko Stream, near Lihue

LOCATION.--Lat 22°03'34", long 159°28'00", on left bank 380 ft (116 m) downstream from Waikoko Stream, 8.1 mi (13.0 km) west of Wailua, and 8.4 mi (13.5 km) northwest of Lihue.

PERIOD OF RECORD.--January 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,070 ft (326 m), from topographic map.

AVERAGE DISCHARGE.--8 years, 25.8 ft^3/s (0.731 m^3/s), 18,690 acre-ft/yr (23.0 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 58 ft^3/s (1.64 m^3/s) Oct. 11, 1966; no flow Jan. 1-18, 1965.

REMARKS.--Records good. Ditch diverts from North Fork Wailua River and Waikoko Stream for power and irrigation in vicinity of Lihue.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	27	21	19	21	21	25	24	24	24	17	19
2	24	26	21	18	27	20	24	24	23	24	17	19
3	24	28	20	20	22	20	23	26	22	25	17	20
4	36	30	20	18	21	19	22	24	22	26	19	18
5	27	28	20	18	20	25	22	25	22	25	20	18
6	25	32	20	23	19	23	22	24	22	24	21	17
7	24	29	19	20	19	22	22	27	23	23	20	19
8	23	27	23	19	20	24	22	24	23	22	18	17
9	24	27	20	18	19	23	22	28	23	22	19	17
10	24	30	19	18	18	26	25	29	23	22	20	16
11	26	26	19	17	17	31	26	29	23	23	19	17
12	28	26	19	17	17	32	27	27	23	23	21	17
13	24	26	18	16	17	30	25	24	24	24	19	16
14	24	27	18	16	17	29	25	23	27	22	18	22
15	23	25	18	16	16	27	24	22	24	22	18	18
16	22	24	26	16	18	29	24	22	30	22	21	18
17	22	24	27	16	21	28	27	22	26	21	25	18
18	23	28	25	16	20	24	24	23	24	20	22	21
19	23	25	23	16	18	24	23	23	23	20	19	22
20	22	24	22	15	25	24	22	25	23	20	19	24
21	22	24	21	21	22	24	25	25	22	19	18	22
22	22	24	20	17	20	27	24	27	22	20	18	21
23	22	24	22	20	22	26	24	23	22	20	23	22
24	22	24	20	20	24	25	23	23	22	20	24	31
25	21	24	21	18	22	26	23	26	21	19	22	24
26	23	23	25	20	21	27	22	23	20	18	21	22
27	30	22	22	20	20	26	22	24	20	18	22	21
28	29	22	20	21	21	24	25	23	20	18	20	24
29	32	22	20	22	------	24	24	23	19	19	21	27
30	27	22	20	24	------	28	23	22	22	18	19	26
31	26	------	20	21	------	26	------	23	------	17	19	------
TOTAL	768	770	649	576	564	784	711	757	684	660	616	613
MEAN	24.8	25.7	20.9	18.6	20.1	25.3	23.7	24.4	22.8	21.3	19.9	20.4
MAX	36	32	27	24	27	32	27	29	30	26	25	31
MIN	21	22	18	15	16	19	22	22	19	17	17	16
AC-FT	1,520	1,530	1,290	1,140	1,120	1,560	1,410	1,500	1,360	1,310	1,220	1,220

CAL YR 1972 TOTAL 8,476 MEAN 23.2 MAX 43 MIN 14 AC-FT 16,810
WTR YR 1973 TOTAL 8,152 MEAN 22.3 MAX 36 MIN 15 AC-FT 16,170

16062000 Stable storm ditch near Lihue

LOCATION.--Lat 22°04'09", long 159°26'46", on left bank 100 ft (30 m) downstream from intake, 7.8 mi (12.6 km) northwest of Lihue, and 7.9 mi (12.7 km) west of Kapaa.

PERIOD OF RECORD.--December 1936 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 710 ft (216 m), by barometer.

AVERAGE DISCHARGE.--36 years (1937-73), 11.1 ft^3/s (0.314 m^3/s), 8,040 acre-ft/yr (9.91 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 71 ft^3/s (2.01 m^3/s) Apr. 3, 1948; no flow at times each year.

REMARKS.--Records good. Ditch diverts from North Fork Wailua River for irrigation of sugarcane in vicinity of Lihue.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	.45	.45	.33	27	36	.22	38	.45	12	28	23
2	25	.45	.45	.33	41	35	.22	37	.33	28	28	24
3	30	.45	.45	.33	34	32	.33	32	.33	22	29	23
4	14	.45	.45	.33	27	31	.33	28	24	.59	37	23
5	.22	.45	.45	.33	24	46	17	39	37	.59	35	23
6	.22	.45	.45	.33	22	39	36	39	37	.59	37	22
7	.22	.45	.45	.33	21	34	35	21	32	.69	36	25
8	.22	.45	.59	.33	31	45	36	.45	15	.59	29	22
9	.22	.45	.59	.33	22	39	36	.45	.59	.59	30	22
10	.22	.45	.45	7.4	24	45	13	.45	.59	23	31	22
11	.22	.45	.45	16	26	59	.45	.45	.59	39	28	22
12	.33	.45	.45	15	26	29	.45	.45	.59	37	26	22
13	.22	.45	.45	15	26	.59	.33	.45	.59	14	23	22
14	.22	.45	.45	15	26	.59	.33	18	.59	.59	22	37
15	.22	.45	9.3	15	25	.59	.33	38	.59	.45	22	33
16	.22	.45	15	15	26	.59	.33	37	.59	20	29	30
17	.22	.45	.33	14	33	.59	.33	37	.45	20	32	30
18	.22	.45	.33	15	30	.59	.33	40	.45	18	25	34
19	.22	.45	.33	14	25	.59	.33	39	.45	17	21	34
20	16	.45	.33	14	26	.45	.22	41	14	17	23	40
21	22	.45	.33	23	31	.45	.22	13	34	16	23	37
22	22	.45	.33	16	37	.45	.22	.59	32	16	25	34
23	22	.45	.33	20	44	.45	.22	.59	31	19	31	37
24	21	.45	.33	21	52	.33	14	.59	31	17	32	48
25	21	.45	.33	16	45	.33	32	.59	30	16	25	40
26	26	.45	.33	25	40	.33	32	.59	29	16	24	38
27	45	.45	.33	29	36	.33	32	.59	28	22	27	34
28	9.9	.45	.33	29	38	.33	35	.45	28	29	23	38
29	.73	.45	.33	32	------	.33	33	.45	28	32	25	42
30	.45	.45	.33	35	------	.33	36	.45	34	29	22	42
31	.45	------	.33	22	------	.22	------	.45	------	29	22	------
TOTAL	309.94	13.50	35.83	426.37	865	478.46	392.19	505.04	471.18	512.58	850	923
MEAN	10.0	.45	1.16	13.8	30.9	15.4	13.1	16.3	15.7	16.5	27.4	30.8
MAX	45	.45	15	35	52	59	36	41	37	39	37	48
MIN	.22	.45	.33	.33	21	.22	.22	.45	.33	.45	21	22
AC-FT	615	27	71	846	1,720	949	778	1,000	935	1,020	1,690	1,830

CAL YR 1972 TOTAL 3,077.86 MEAN 8.41 MAX 45 MIN 0 AC-FT 6,100
WTR YR 1973 TOTAL 5,783.09 MEAN 15.8 MAX 59 MIN .22 AC-FT 11,470

16063000 North Fork Wailua River at altitude 650 ft (198 m), near Lihue

LOCATION.--Lat 22°04'02", long 159°26'21", on right bank 0.5 mi (0.8 km) downstream from intake of Stable storm ditch and 7.6 mi (12.2 km) northwest of Lihue.

DRAINAGE AREA.--5.29 mi^2 (13.70 km^2).

PERIOD OF RECORD.--September 1914 to March 1915, May 1915 to October 1918, December 1918, March 1919, June 1919 to current year. Monthly discharge only for some periods, published in WSP 1319.

GAGE.--Water-stage recorder. Altitude of gage is 650 ft (198 m), from topographic map. Prior to Sept. 9, 1944, at datum 2.0 ft (0.61 m) higher.

AVERAGE DISCHARGE.--57 years (1915-18, 1919-73), 72.9 ft^3/s (2.065 m^3/s), 52,820 acre-ft/yr (65.1 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 2,520 ft^3/s (71.4 m^3/s) Oct. 29, gage height, 7.10 ft (2.164 m); minimum recorded, 0.58 ft^3/s (0.016 m^3/s) Sept. 16, 17 but may have been less during period of no gage-height record June 21-26.
Period of record: Maximum discharge, 13,200 ft^3/s (374 m^3/s) Nov. 12, 1955, gage height, 13.53 ft (4.124 m), from rating curve extended above 2,300 ft^3/s (65.1 m^3/s) on basis of slope-area measurement at gage height 10.65 ft (3.246 m); minimum, 0.23 ft^3/s (0.007 m^3/s) June 5, 1968.

REMARKS.--Records fair. Since 1925, Hanalei tunnel (see sta 16100000) has diverted from Hanalei River basin into North Fork Wailua River above station; North Wailua and Stable storm ditches (see sta 16061000 and 16062000) divert water above station for power development and irrigation in vicinity of Lihue.

REVISIONS (FISCAL YEARS).--WSP 555: 1921. WSP 1569: 1915-27(M), 1943-47(M), 1948-56(P). WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	73	19	17	3.0	2.0	80	20	77	30	.97	.78
2	3.4	59	20	17	124	1.4	51	14	54	20	.97	.78
3	3.1	91	19	19	5.7	1.3	48	41	49	26	.97	.82
4	440	152	19	17	2.1	1.3	46	24	25	55	3.4	.82
5	98	90	18	18	1.5	74	27	28	2.9	52	1.8	.82
6	54	229	18	56	1.5	4.4	2.4	23	3.3	33	9.6	.78
7	44	122	18	21	1.5	1.5	2.3	105	28	29	4.0	.87
8	38	81	44	17	4.3	20	2.4	67	36	24	1.4	.78
9	53	82	19	16	1.7	3.3	2.6	111	46	24	1.4	.74
10	44	166	18	11	1.5	41	69	193	41	16	1.8	.74
11	56	73	17	1.3	1.7	294	90	191	42	13	1.4	.78
12	142	62	17	1.3	1.7	337	131	128	49	2.2	1.3	.78
13	48	75	17	1.3	1.7	323	106	72	61	24	1.1	.78
14	40	74	16	1.2	1.7	204	82	43	110	24	1.1	51
15	38	52	8.9	1.1	1.7	113	58	12	56	18	1.1	1.6
16	36	44	69	1.1	1.7	208	62	9.8	245	7.6	2.0	.62
17	35	44	79	1.1	3.2	139	117	7.7	98	1.1	5.9	.62
18	39	109	43	1.2	1.8	74	62	32	56	.92	1.3	4.2
19	37	34	21	1.1	1.5	60	50	22	43	.92	.97	9.8
20	14	26	18	1.1	227	72	46	35	26	.87	.78	37
21	2.1	24	18	3.6	37	52	116	86	1.1	.82	.78	8.8
22	2.2	23	17	1.2	1.8	112	68	121	.92	.87	1.8	1.2
23	2.3	26	18	1.2	8.6	98	62	58	.92	.87	1.5	13
24	2.3	24	17	1.2	90	83	44	55	.97	.92	6.2	150
25	2.3	23	17	1.1	19	90	12	80	1.0	.87	.78	18
26	4.3	23	92	13	2.8	100	10	53	1.1	.92	.69	3.8
27	76	21	24	14	1.5	89	10	159	1.1	.92	1.2	.87
28	77	21	19	3.0	3.6	51	46	64	1.1	1.0	.74	15
29	326	21	21	3.4	------	53	18	57	1.1	1.1	.78	41
30	85	20	20	19	------	174	13	48	2.1	.97	.74	38
31	77	------	20	1.0	------	71	------	61	------	.97	.74	------
TOTAL	1,930.0	1,964	800.9	282.5	554.8	2,947.2	1,533.7	2,020.5	1,159.61	411.84	59.21	404.78
MEAN	62.3	65.5	25.8	9.11	19.8	95.1	51.1	65.2	38.7	13.3	1.91	13.5
MAX	440	229	92	56	227	337	131	193	245	55	9.6	150
MIN	2.1	20	8.9	1.0	1.5	1.3	2.3	7.7	.92	.82	.69	.62
AC-FT	3,830	3,900	1,590	560	1,100	5,850	3,040	4,010	2,300	817	117	803

CAL YR 1972 TOTAL 24,514.84 MEAN 67.0 MAX 823 MIN .92 AC-FT 48,630
WTR YR 1973 TOTAL 14,069.04 MEAN 38.5 MAX 440 MIN .62 AC-FT 27,910

PEAK DISCHARGE (BASE, 2,800 CFS).--No peak above base.

16068000 East Branch of North Fork Wailua River near Lihue

LOCATION.--Lat 22°04'19", long 159°25'05", on right bank 1,200 ft (366 m) upstream from mouth and 7.2 mi (11.6 km) northwest of Lihue.

DRAINAGE AREA.--6.27 mi^2 (16.24 km^2).

PERIOD OF RECORD.--July 1912 to September 1914, December 1914 to March 1915, May 1915 to March 1919, June 1919 to current year. Monthly discharge only for some periods, published in WSP 1319.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 500 ft (152 m), from topographic map. Prior to Dec. 31, 1914, nonrecording gage at site 725 ft (221 m) downstream at different datum. Dec. 31, 1914, to May 10, 1934, water-stage recorder at site 75 ft (23 m) upstream at present datum.

AVERAGE DISCHARGE.--58 years (1912-14, 1915-17, 1919-73), 48.4 ft^3/s (1.371 m^3/s), 35,070 acre-ft/yr (43.2 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,520 ft^3/s (43.0 m^3/s) Oct. 29, gage height, 5.21 ft (1,588 m); minimum, 14 ft^3/s (0.40 m^3/s) Sept. 13, 14, 16, 17.
Period of record: Maximum discharge, 18,400 ft^3/s (521 m^3/s) Nov. 12, 1955, gage height, 14.7 ft (4.48 m), from floodmarks, from rating curve extended above 2,700 ft^3/s (76.5 m^3/s); minimum, 6.8 ft^3/s (0.19 m^3/s) July 3, 13, 1926.

REMARKS.--Records good. No diversion above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 770: 1932-33. WSP 1719: 1916. WSP 1937: 1918. WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	36	24	20	26	27	43	35	38	32	17	18
2	22	35	24	19	66	24	36	30	35	33	16	20
3	24	39	24	22	31	22	38	38	33	39	16	19
4	219	69	23	20	25	21	38	27	32	42	20	17
5	53	51	22	19	22	49	31	34	31	35	24	17
6	43	125	22	29	20	27	30	30	29	31	22	16
7	30	82	22	23	20	24	30	66	32	28	20	16
8	27	59	29	20	33	24	31	35	28	27	18	16
9	39	55	23	19	23	25	29	66	28	26	17	16
10	35	89	22	18	20	59	39	97	25	34	19	15
11	68	52	22	18	19	170	55	82	26	31	18	15
12	86	48	21	18	18	144	58	64	27	27	16	15
13	35	56	21	18	18	87	44	44	26	29	16	14
14	31	69	21	18	18	100	32	37	32	24	16	21
15	29	45	21	18	18	82	29	33	27	24	16	16
16	27	39	22	18	18	154	28	31	54	30	21	15
17	25	36	25	17	20	100	46	30	39	28	26	15
18	24	48	25	18	18	62	30	39	30	23	22	18
19	24	35	21	18	18	52	27	35	27	21	20	16
20	24	32	20	17	213	52	26	45	25	21	18	24
21	22	31	20	23	47	46	29	61	24	20	17	16
22	22	30	20	19	27	57	38	82	24	20	17	15
23	21	31	20	23	35	68	28	41	23	20	18	16
24	21	29	20	26	120	59	27	40	22	20	21	50
25	21	28	20	20	45	53	24	46	22	18	18	27
26	21	28	34	36	32	59	25	39	22	18	18	19
27	40	26	21	42	27	55	26	140	21	18	18	16
28	61	26	20	33	26	39	37	51	21	18	17	24
29	206	25	21	38	------	41	27	39	21	18	17	30
30	50	25	21	36	------	70	27	35	22	18	17	32
31	37	------	20	25	------	55	------	35	------	18	16	------
TOTAL	1,402	1,379	691	708	1,023	1,907	1,008	1,507	846	791	572	584
MEAN	45.2	46.0	22.3	22.8	36.5	61.5	33.6	48.6	28.2	25.5	18.5	19.5
MAX	219	125	34	42	213	170	58	140	54	42	26	50
MIN	21	25	20	17	18	21	24	27	21	18	16	14
AC-FT	2,780	2,740	1,370	1,400	2,030	3,780	2,000	2,990	1,680	1,570	1,130	1,160

CAL YR 1972 TOTAL 18,040 MEAN 49.3 MAX 631 MIN 18 AC-FT 35,780
WTR YR 1973 TOTAL 12,418 MEAN 34.0 MAX 219 MIN 14 AC-FT 24,630

PEAK DISCHARGE (BASE, 1,900 CFS).--No peak above base.

16069000 Wailua ditch near Kapaa

LOCATION.--Lat 22°04'34", long 159°24'04", on right bank 2,000 ft (610 m) downstream from Wailua Reservoir, 5.2 mi (8.4 km) west of Kapaa, and 7.0 mi (11.3 km) north of Lihue.

PERIOD OF RECORD.--November 1936 to current year.

GAGE.--Water-stage recorder. Sharp-crested weir since Feb. 4, 1965. Datum of gage is 462.3 ft (140.91 m) above mean sea level (by stadia survey).

AVERAGE DISCHARGE.--36 years (1937-73), 14.7 ft^3/s (0.416 m^3/s), 10,650 acre-ft/yr (13.1 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 63 ft^3/s (1.78 m^3/s) June 4, 1937; no flow at times.

REMARKS.--Records good. Ditch diverts water from North Fork Wailua River to reservoir 2,000 ft (610 m) above station and thence to fields for irrigation of sugarcane in vicinity of Kapaa.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	4.8	3.8	4.3	25	18	27	29	30	21	10	12
2	11	4.8	7.6	4.3	26	18	27	29	30	23	10	12
3	18	4.6	7.6	4.3	28	18	29	30	29	24	10	12
4	11	4.6	7.4	7.7	28	17	30	30	30	25	12	12
5	7.3	4.4	7.4	10	28	17	30	30	30	26	16	12
6	7.3	2.1	7.8	10	27	20	29	29	30	25	21	12
7	7.1	.70	8.0	11	26	22	29	29	30	25	19	11
8	7.1	.70	8.5	15	26	22	28	29	27	24	17	11
9	6.9	.70	8.7	17	26	22	28	29	25	24	14	10
10	4.1	.60	8.9	18	25	21	28	30	25	25	13	9.8
11	1.1	.50	12	18	24	22	29	21	25	40	13	9.4
12	.80	.40	15	18	23	21	29	8.9	25	40	13	9.2
13	.80	.40	15	17	22	18	29	8.5	25	39	13	9.1
14	.70	.40	15	17	21	19	28	18	25	40	12	12
15	.60	.30	19	20	21	19	27	23	25	41	12	15
16	.40	.30	21	21	20	19	27	23	25	41	12	14
17	4.5	.20	21	22	19	18	27	29	25	40	14	14
18	9.8	.20	22	25	19	17	28	31	25	38	15	14
19	10	.20	22	23	24	17	17	31	25	36	15	14
20	10	.20	23	22	30	18	11	31	25	34	15	17
21	10	2.3	23	22	34	19	11	31	25	31	15	18
22	10	3.4	13	22	34	19	11	30	25	29	15	18
23	10	3.4	5.5	21	28	19	11	29	24	27	14	18
24	10	3.2	5.3	21	20	18	14	29	24	26	14	20
25	13	2.9	5.2	21	3.6	17	18	20	23	24	16	23
26	18	2.7	5.2	20	3.4	17	21	10	22	23	15	23
27	18	2.6	5.2	21	12	15	25	10	22	21	15	23
28	11	2.1	5.0	22	18	17	27	11	21	17	14	23
29	5.2	2.1	5.0	23	------	27	28	11	21	14	14	24
30	5.0	1.9	4.6	25	------	30	29	19	20	12	13	26
31	4.8	------	4.4	25	------	28	------	32	------	11	13	------
TOTAL	237.40	57.70	342.1	547.6	641.0	609	732	750.4	763	866	434	457.5
MEAN	7.66	1.92	11.0	17.7	22.9	19.6	24.4	24.2	25.4	27.9	14.0	15.3
MAX	18	4.8	23	25	34	30	30	32	30	41	21	26
MIN	.40	.20	3.8	4.3	3.4	15	11	8.5	20	11	10	9.1
AC-FT	471	114	679	1,090	1,270	1,210	1,450	1,490	1,510	1,720	861	907

CAL YR 1972 TOTAL 3,712.00 MEAN 10.1 MAX 25 MIN .20 AC-FT 7,360
WTR YR 1973 TOTAL 6,437.70 MEAN 17.6 MAX 41 MIN .20 AC-FT 12,770

16071000 North Fork Wailua River near Kapaa

LOCATION.--Lat 22°03'08", long 159°22'22", on right bank 1.1 mi (1.8 km) upstream from confluence with South Fork, 3.7 mi (6.0 km) southwest of Kapaa, and 5.0 mi (8.0 km) north of Lihue.

DRAINAGE AREA.--17.9 mi^2 (46.4 km^2).

PERIOD OF RECORD.--July 1952 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 18 ft (5.5 m), from topographic map.

AVERAGE DISCHARGE.--21 years, 129 ft^3/s (3.653 m^3/s), 93,460 acre-ft/yr (115 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 3,490 ft^3/s (98.8 m^3/s) Oct. 29, gage height, 6.65 ft (2.027 m); minimum, 5.6 ft^3/s (0.16 m^3/s) Oct. 29.
Period of record: Maximum discharge, 53,200 ft^3/s (1,510 m^3/s) Nov. 12, 1955, gage height, 19.88 ft (6.059 m) in gage well, 20.8 ft (6.34 m), from floodmarks, from rating curve extended above 3,700 ft^3/s (105 m^3/s) on basis of slope-area measurement of peak flow; minimum, 2.12 ft^3/s (0.060 m^3/s) Oct. 28, 1953.

REMARKS.--Records good. Wailua and Aahoaka ditches (see stas 16069000 and 16070000) divert above station for irrigation of sugarcane in vicinities of Kapaa and Wailua, respectively. Selected determinations of minor elements for water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	135	49	43	9.2	15	138	27	83	23	6.9	9.6
2	33	108	43	42	130	12	58	27	77	19	6.9	9.4
3	14	124	43	45	19	14	29	50	53	23	6.9	9.3
4	582	230	41	35	7.4	14	58	37	38	72	7.8	8.7
5	210	144	40	12	6.5	93	52	47	11	67	8.2	8.7
6	114	380	34	45	6.5	36	27	36	11	72	12	8.2
7	89	230	30	27	6.0	12	19	141	16	52	7.8	8.2
8	74	166	60	14	6.5	17	19	86	21	43	7.4	8.2
9	80	153	34	11	6.0	23	13	146	52	31	7.8	8.2
10	104	271	30	11	6.0	54	55	270	40	32	7.4	7.4
11	113	150	26	11	6.0	385	121	257	41	17	6.9	7.8
12	292	123	22	10	6.0	489	114	233	46	15	6.4	7.7
13	103	148	19	9.6	6.0	359	158	131	55	14	6.9	7.7
14	85	164	19	9.6	6.5	303	103	64	101	21	6.9	21
15	75	112	18	9.6	6.0	181	71	14	59	18	7.4	8.3
16	70	92	28	9.2	7.4	348	67	13	215	16	7.8	6.5
17	61	87	81	9.2	6.9	270	122	13	132	11	10	6.5
18	38	175	47	9.2	6.5	155	66	32	61	9.4	8.2	9.7
19	41	101	19	9.2	6.5	100	57	33	50	9.1	7.4	7.1
20	35	81	12	8.7	139	82	65	51	40	8.7	7.8	7.8
21	28	72	11	11	54	83	102	107	14	8.2	7.4	12
22	26	74	20	11	8.7	129	130	195	12	7.8	7.4	7.0
23	26	80	42	10	8.3	178	84	88	11	7.8	7.8	7.4
24	25	78	41	10	123	170	75	84	11	7.4	10	88
25	24	75	41	9.6	58	127	36	102	11	6.4	8.2	10
26	23	74	123	9.6	18	143	27	75	11	6.4	7.8	6.7
27	94	62	52	39	12	122	16	229	12	6.4	8.2	6.3
28	135	55	44	10	10	65	40	140	12	8.2	8.2	6.5
29	562	53	45	11	------	77	22	96	11	8.2	10	18
30	173	52	48	23	------	217	16	75	11	7.8	9.5	17
31	132	------	47	9.6	------	159	------	65	------	7.8	9.5	------
TOTAL	3,495	3,849	1,209	534.1	691.9	4,428	1,960	2,913	1,518	655.6	248.6	354.9
MEAN	113	128	39.0	17.2	24.7	143	65.3	94.0	43.9	21.1	8.02	11.8
MAX	582	380	123	45	139	489	158	270	215	72	12	88
MIN	14	52	11	8.7	6.0	12	13	13	11	6.4	6.4	6.3
AC-FT	6,930	7,630	2,400	1,060	1,370	8,780	3,890	5,780	2,610	1,300	493	704

CAL YR 1972 TOTAL 46,383 MEAN 127 MAX 1,560 MIN 11 AC-FT 92,000
WTR YR 1973 TOTAL 21,657.1 MEAN 59.3 MAX 582 MIN 6.0 AC-FT 42,960

PEAK DISCHARGE (BASE, 4,100 CFS).--No peak above base.

16071500 Left Branch Opaekaa Stream near Kapaa

LOCATION.--Lat 22°04'43", long 159°23'55", on left bank 0.4 mi (0.6 km) upstream from mouth, 0.6 mi (1.0 km) northeast of Wailua Reservoir, and 4.9 mi (7.9 km) west of Kapaa.

DRAINAGE AREA.--0.65 mi^2 (1.68 km^2).

PERIOD OF RECORD.--May 1960 to current year. Prior to July 1960, published as Left Branch Opaikaa Stream near Kapaa.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 458.4 ft (139.72 m) above mean sea level (by stadia survey).

AVERAGE DISCHARGE.--13 years, 2.75 ft^3/s (0.0779 m^3/s), 1,990 acre-ft/yr (2.45 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 47 ft^3/s (1.33 m^3/s) Oct. 12, gage height, 2.26 ft (0.689 m); minimum, 0.70 ft^3/s (0.020 m^3/s) for several days in July, August, September, but may have been less during period of no gage-height record Aug. 14 to Sept. 7.
Period of record: Maximum discharge, 365 ft^3/s (10.3 m^3/s) Apr. 15, 1963, gage height, 5.21 ft (1.588 m), from rating curve extended above 13 ft^3/s (0.37 m^3/s); minimum, 0.09 ft^3/s (0.003 m^3/s) Sept. 27-30, 1968.

REMARKS.--Records fair. No diversion above station. Recording rain gage located at station.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	2.0	1.6	1.2	1.0	1.0	1.3	1.2	1.2	1.0	.70	.78
2	.96	1.9	1.5	1.2	1.1	.96	1.3	1.1	1.2	1.0	.70	.76
3	.96	1.9	1.5	1.2	1.1	.90	1.3	1.2	1.2	1.1	.70	.74
4	3.9	2.1	1.5	1.2	1.1	.90	1.3	1.1	1.2	1.0	.74	.74
5	1.9	2.1	1.5	1.2	1.0	1.1	1.2	1.2	1.2	.96	.74	.74
6	1.4	4.6	1.4	1.2	1.0	1.1	1.2	1.1	1.2	.90	.78	.74
7	1.3	3.2	1.4	1.1	.96	.90	1.2	1.3	1.2	.90	.74	.74
8	1.2	2.8	1.4	1.1	1.0	.86	1.2	1.3	1.2	.90	.74	.74
9	1.7	2.4	1.4	1.1	.96	.86	1.2	1.4	1.1	.90	.74	.74
10	2.0	3.0	1.4	1.1	.96	.96	1.2	2.0	1.1	.96	.74	.74
11	1.7	2.4	1.4	1.1	.96	1.9	1.4	1.8	1.1	.96	.70	.74
12	9.9	2.3	1.4	1.1	.96	2.5	1.4	1.9	1.1	.96	.70	.74
13	3.0	2.6	1.4	1.1	.90	1.4	1.5	1.5	1.1	1.0	.70	.78
14	2.3	2.4	1.3	1.1	.90	1.4	1.3	1.4	1.1	1.0	.70	.82
15	2.2	2.3	1.3	1.1	.90	1.4	1.2	1.4	1.1	.96	.70	.78
16	2.0	2.2	1.3	1.1	.90	1.7	1.2	1.3	1.1	1.0	.70	.74
17	1.9	2.2	1.4	1.0	.90	1.7	1.4	1.3	1.1	.90	.80	.78
18	1.9	2.3	1.4	1.0	.86	1.4	1.3	1.3	1.1	.86	.74	.90
19	1.8	2.1	1.3	1.0	.86	1.4	1.2	1.3	1.1	.82	.72	.78
20	1.7	2.0	1.3	1.0	3.1	1.4	1.3	1.3	1.1	.82	.70	.82
21	1.6	1.9	1.3	1.0	1.7	1.3	1.3	1.3	1.1	.82	.70	.78
22	1.6	1.9	1.3	1.0	1.0	1.4	1.3	1.4	1.1	.78	.70	.74
23	1.6	1.9	1.3	1.0	.96	1.5	1.2	1.3	1.1	.74	.70	.78
24	1.5	1.9	1.3	1.0	1.4	1.4	1.1	1.3	1.1	.74	.70	.90
25	1.5	1.8	1.3	1.0	1.3	1.3	1.1	1.3	1.0	.70	.70	.82
26	1.4	1.7	1.4	1.0	1.1	1.3	1.1	1.2	1.0	.70	.70	.78
27	1.5	1.7	1.3	1.1	1.0	1.3	1.1	2.9	1.0	.70	.70	.74
28	2.2	1.7	1.3	1.0	1.0	1.3	1.1	1.6	1.0	.70	.70	.78
29	6.1	1.6	1.3	1.0	------	1.3	1.1	1.3	.96	.70	.72	.82
30	3.6	1.6	1.3	1.1	------	1.4	1.1	1.3	.96	.70	.74	.90
31	2.2	------	1.2	1.1	------	1.4	------	1.2	------	.70	.76	------
TOTAL	69.52	66.5	42.4	33.5	30.88	40.64	37.1	43.5	33.12	26.88	22.30	23.38
MEAN	2.24	2.22	1.37	1.08	1.10	1.31	1.24	1.40	1.10	.87	.72	.78
MAX	9.9	4.6	1.6	1.2	3.1	2.5	1.5	2.9	1.2	1.1	.80	.90
MIN	.96	1.6	1.2	1.0	.86	.86	1.1	1.1	.96	.70	.70	.74
AC-FT	138	132	84	66	61	81	74	86	66	53	44	46

CAL YR 1972 TOTAL 710.17 MEAN 1.94 MAX 16 MIN .66 AC-FT 1,410
WTR YR 1973 TOTAL 469.72 MEAN 1.29 MAX 9.9 MIN .70 AC-FT 932

PEAK DISCHARGE (BASE, 140 CFS).--No peak above base.

16077000 Makaleha ditch near Kealia

LOCATION.--Lat 22°07'06", long 159°22'04", on left bank at end of last tunnel from which flow enters Mimino Reservoir, 3.9 mi (6.3 km) northwest of Kealia, and 4.0 mi (6.4 km) northwest of Kapaa.

PERIOD OF RECORD.--December 1936 to current year.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 518 ft (158 m) above mean sea level (by stadia survey).

AVERAGE DISCHARGE.--36 years (1937-73), 6.74 ft^3/s (0.191 m^3/s), 4,880 acre-ft/yr (6.02 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 31 ft^3/s (0.88 m^3/s) Aug. 1, 1961; no flow at times.

REMARKS.--Records good. Ditch diverts from Makaleha Strean for irrigation of sugarcane in vicinity of Kealia.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	.52	.33	.21	9.7	6.8	11	14	11	13	5.5	8.7
2	8.9	.42	.33	.21	12	5.3	11	13	11	11	5.5	10
3	11	.38	.33	3.2	9.0	3.0	11	16	10	17	5.4	9.7
4	25	.38	.33	8.3	7.9	2.5	11	10	9.7	16	9.3	6.8
5	13	.38	.33	7.3	6.8	6.8	9.4	10	11	13	8.9	7.3
6	9.5	.58	2.2	15	6.2	6.8	8.6	2.3	9.0	12	10	5.5
7	.47	.58	7.0	11	6.1	4.3	9.2	11	12	12	8.9	7.1
8	.69	.58	11	4.4	9.7	5.3	10	13	9.1	12	6.8	6.4
9	.93	.47	7.6	.33	7.6	5.3	10	17	10	11	6.5	6.1
10	.81	.52	7.1	.33	6.5	7.0	13	19	9.2	14	5.6	5.6
11	1.7	.58	6.9	.33	6.2	12	17	19	11	12	6.1	6.3
12	5.3	.47	6.8	.28	6.2	9.6	15	17	13	10	5.8	6.8
13	1.9	.52	6.6	.28	6.2	9.6	16	12	12	13	5.7	5.8
14	1.2	.58	6.6	.24	6.2	1.5	11	9.3	15	7.8	6.1	9.6
15	.74	.63	6.6	2.9	6.1	.30	9.4	8.2	12	9.3	6.1	4.0
16	.58	.58	6.8	6.1	8.4	.30	11	8.3	18	14	8.8	4.2
17	.52	.52	7.3	6.0	9.4	.30	15	7.4	16	13	10	4.4
18	3.8	.47	9.3	6.0	6.8	.30	10	14	10	8.2	8.7	7.0
19	9.5	.42	7.0	6.0	6.2	1.5	8.6	12	9.0	7.3	6.3	5.2
20	8.7	.38	6.6	6.0	12	6.8	8.0	16	7.5	6.6	6.4	10
21	8.0	.38	6.6	10	12	6.8	11	18	6.8	5.7	6.0	5.4
22	7.6	.38	6.5	7.0	9.7	6.8	12	19	6.5	6.2	5.7	5.0
23	7.1	.33	7.6	11	12	11	10	12	6.4	6.0	6.8	7.5
24	6.2	.38	7.3	11	10	11	9.4	9.8	6.3	6.1	10	16
25	6.1	.38	6.9	8.2	1.5	11	8.4	14	6.1	6.1	8.3	11
26	4.8	.33	11	11	.60	11	9.7	11	6.1	5.7	7.1	8.0
27	.33	.33	7.6	12	.30	11	11	13	6.1	5.6	7.4	7.0
28	.38	.33	5.9	11	1.5	9.3	13	13	6.0	5.6	6.6	11
29	1.3	.33	.28	12	------	10	12	9.6	5.8	6.1	7.2	13
30	1.5	.33	.21	12	------	11	11	8.7	6.2	6.1	6.5	7.0
31	.74	------	.21	8.7	------	12	------	9.9	------	5.5	5.8	------
TOTAL	157.39	13.46	167.15	198.31	202.80	206.20	332.7	386.5	287.8	296.9	219.8	227.4
MEAN	5.08	.45	5.39	6.40	7.24	6.65	11.1	12.5	9.59	9.58	7.09	7.58
MAX	25	.63	11	15	12	12	17	19	18	17	10	16
MIN	.33	.33	.21	.21	.30	.30	8.0	2.3	5.8	5.5	5.4	4.0
AC-FT	312	27	332	393	402	409	660	767	571	589	436	451

CAL YR 1972 TOTAL 1,921.83 MEAN 5.25 MAX 25 MIN .04 AC-FT 3,810
WTR YR 1973 TOTAL 2,696.41 MEAN 7.39 MAX 25 MIN .21 AC-FT 5,350

16079000 Kapahi ditch near Kealia

LOCATION.--Lat 22°06'09", long 159°22'28", on right bank 500 ft (152 m) downstream from intake and 4.0 mi (6.4 km) west of Kealia.

PERIOD OF RECORD.--April 1909 to February 1911, May 1911, July 1911 to May 1914, July 1915 to April 1917, June 1917 to current year. Published as "at Kapahi, near Kapaa" prior to January 1913 and as "at Kapahi, near Kealia" January to December 1913.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 377.1 ft (114.94 m) above mean sea level (by stadia survey). Prior to Nov. 26, 1936, at site 61 ft (19 m) upstream at datum 2.52 ft (0.768 m) higher.

AVERAGE DISCHARGE.--55 years (1917-20, 1921-73), 6.46 ft^3/s (0.183 m^3/s), 4,680 acre-ft/yr (5.77 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 138 ft^3/s (3.91 m^3/s) Feb. 6, 1913; no flow at times.

REMARKS.--Records good. Ditch diverts from Kapaa Stream for irrigation of sugarcane in vicinity of Kapaa.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.01	10	.25	7.6	5.4	14	6.9	6.5	9.1	3.2	3.5
2	1.8	.01	10	.25	29	4.2	6.8	6.4	6.6	5.0	3.0	4.6
3	4.3	.01	10	6.3	8.6	3.6	8.1	13	4.9	11	3.0	3.9
4	7.5	.03	9.6	3.6	5.7	3.5	14	5.0	4.7	13	3.3	3.5
5	.01	.03	9.6	3.3	3.9	13	5.9	11	4.9	6.4	3.6	3.5
6	0	.10	8.1	7.3	3.3	6.4	4.9	16	4.4	5.6	4.8	3.9
7	0	.03	3.5	4.7	3.2	3.8	4.9	27	4.9	6.2	3.8	3.2
8	0	.06	7.3	5.7	8.2	3.5	5.2	8.4	3.6	5.6	3.5	3.0
9	4.0	.10	3.6	9.0	3.9	3.5	5.2	17	.66	5.0	3.5	2.9
10	5.8	.19	3.3	9.4	2.8	16	8.0	7.2	.58	11	4.6	2.9
11	.16	.19	3.3	9.4	2.5	41	6.0	.58	3.2	10	3.3	2.9
12	.56	.19	3.2	8.6	2.5	17	.38	.51	4.9	6.2	3.2	3.0
13	.03	8.7	3.2	8.6	2.4	.45	3.6	.45	3.1	9.1	3.2	3.0
14	.01	15	3.2	8.6	2.4	.38	7.0	4.0	8.4	6.2	3.2	8.5
15	.01	14	3.2	6.1	2.4	.38	5.7	5.7	4.1	4.7	3.2	6.6
16	.01	14	3.3	2.9	3.3	.38	5.9	5.6	.74	11	5.2	4.6
17	2.5	14	3.9	2.9	3.4	.19	7.9	4.9	.66	6.2	12	4.4
18	.06	16	4.4	2.9	2.6	.25	4.9	6.4	3.5	4.1	8.0	6.6
19	3.5	15	3.5	2.9	2.4	7.7	2.0	5.9	4.4	3.6	6.1	5.2
20	4.2	13	3.3	2.9	20	11	.31	8.6	4.1	3.5	3.6	7.9
21	4.7	12	3.2	7.7	17	10	.25	13	3.8	3.6	3.5	4.6
22	4.2	11	3.2	3.2	6.2	9.1	.25	19	3.8	3.5	3.3	4.4
23	4.4	8.2	3.3	8.2	15	6.6	4.4	7.4	3.6	3.5	3.5	4.7
24	4.7	8.2	2.0	8.1	14	.14	5.0	5.9	3.5	3.5	5.5	24
25	4.9	8.2	.38	3.3	.38	.10	4.4	2.5	3.5	3.3	3.6	5.9
26	5.5	8.4	4.3	9.9	11	4.7	4.2	.58	3.3	3.3	3.2	4.1
27	7.4	8.2	4.1	19	13	7.5	4.9	.68	3.3	3.5	3.2	3.3
28	3.6	8.2	2.3	6.3	9.9	6.1	8.7	1.1	3.3	3.5	3.0	7.7
29	.54	8.9	.31	11	------	8.6	4.9	4.5	3.2	3.3	3.0	13
30	.01	10	.25	10	------	18	4.6	5.9	3.2	3.2	3.3	8.8
31	.01	------	.19	4.4	------	18	------	5.9	------	3.2	3.2	------
TOTAL	74.55	201.95	133.03	196.70	206.58	230.47	162.29	227.00	113.34	179.9	125.6	168.1
MEAN	2.40	6.73	4.29	6.35	7.38	7.43	5.41	7.32	3.78	5.80	4.05	5.60
MAX	7.5	16	10	19	29	41	14	27	8.4	13	12	24
MIN	0	.01	.19	.25	.38	.10	.25	.45	.58	3.2	3.0	2.9
AC-FT	148	401	264	390	410	457	322	450	225	357	249	333

CAL YR 1972 TOTAL 1,486.55 MEAN 4.06 MAX 18 MIN 0 AC-FT 2,950
WTR YR 1973 TOTAL 2,019.51 MEAN 5.53 MAX 41 MIN 0 AC-FT 4,010

16080000 Kapaa Stream at Kapahi ditch intake, near Kapaa

LOCATION.--Lat 22°06'15", long 159°22'29", on right bank at Kapahi ditch intake, 3.8 mi (6.1 km) northwest of Kapaa, and 4.3 mi (6.9 km) northwest of Wailua.

DRAINAGE AREA.--3.86 mi^2 (10.00 km^2).

PERIOD OF RECORD.--July 1936 to current year. Prior to July 1959, published as Kapaa River at Kapahi ditch intake, near Kapaa.

GAGE.--Water-stage recorder and concrete-masonry control. Datum of gage is 381.8 ft (116.37 m) above mean sea level (by stadia survey). Prior to July 1, 1962, at datum 0.07 ft (0.021 m) higher.

AVERAGE DISCHARGE.--37 years, 21.2 ft^3/s (0.600 m^3/s), 15,360 acre-ft/yr (18.9 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,700 ft^3/s (48.1 m^3/s) Oct. 4, gage height, 2.83 ft (0.863 m); no flow for many days.
Period of record: Maximum discharge, 7,670 ft^3/s (217 m^3/s) Jan. 25, 1956, gage height, 5.41 ft (1.649 m), present datum, from rating curve extended above 2,800 ft^3/s (79.3 m^3/s); no flow at times.

REMARKS.--Records good. Entire low flow is diverted above station at times for irrigation of sugarcane. Records do not include flow of Kapahi ditch (see sta 16079000).

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	27	0	9.1	0	0	.60	0	.06	0		
2	1.3	25	0	9.1	2.3	0	0	0	0	0		
3	.60	34	0	5.4	0	0	9.8	0	0	0		
4	162	53	0	0	0	0	5.7	0	0	0		
5	17	36	0	0	0	8.6	0	0	0	0		
6	12	73	0	.04	0	0	0	0	0	0		
7	17	38	0	0	0	0	.25	.24	0	0		
8	16	27	10	0	0	0	.75	0	1.3	0		
9	59	27	0	0	0	0	.47	0	6.2	0		
10	28	60	0	0	0	5.5	13	38	5.1	0		
11	65	27	0	0	0	26	23	38	1.5	0		
12	118	27	0	0	0	24	30	27	.87	0		
13	30	23	0	0	0	40	13	9.9	2.2	0		
14	21	32	0	0	0	53	0	2.8	.17	0		
15	19	7.6	0	0	0	38	0	0	1.2	0		
16	17	1.6	0	0	0	83	0	0	24	.25		
17	12	.12	0	0	0	37	11	0	9.9	0		
18	9.9	3.1	2.0	0	0	23	.93	0	1.8	0		
19	1.8	.25	0	0	0	6.2	3.2	0	0	0		
20	.21	0	0	0	12	2.2	4.5	0	0	0		
21	0	0	0	.09	2.7	.17	7.1	0	0	0		
22	0	.90	0	0	0	6.9	14	7.7	0	0		
23	.01	3.0	0	0	5.0	15	1.1	0	0	0		
24	.24	2.2	.92	0	111	13	0	0	0	0		
25	0	3.3	2.6	0	37	14	0	8.5	0	0		
26	1.0	5.1	8.0	16	5.8	11	0	5.6	0	0		
27	33	2.0	0	1.2	0	5.8	0	41	0	0		
28	44	0	1.7	0	0	0	.60	11	0	0		
29	136	0	13	0	------	0	0	2.6	0	0		
30	34	0	12	0	------	23	0	0	0	0		
31	23	------	9.9	0	------	3.6	------	0	------	0		------
TOTAL	881.56	538.17	60.12	40.93	175.8	438.97	139.00	192.34	54.30	.25	0	0
MEAN	28.4	17.9	1.94	1.32	6.28	14.2	4.63	6.20	1.81	.008	0	0
MAX	162	73	13	16	111	83	30	41	24	.25	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	1,750	1,070	119	81	349	871	276	382	108	.5	0	0

CAL YR 1972 TOTAL 8,005.32 MEAN 21.9 MAX 458 MIN 0 AC-FT 15,880
WTR YR 1973 TOTAL 2,521.44 MEAN 6.91 MAX 162 MIN 0 AC-FT 5,000

PEAK DISCHARGE (BASE, 1,900 CFS).--No peak above base.

16087000 Anahola ditch wasteway near Kealia

LOCATION.--Lat 22°08'16", long 159°22'28", on right bank 300 ft (91 m) downstream from wasteway gates on Anahola ditch, 500 ft (152 m) north of Kaneha Reservoir, 3.8 mi (6.1 km) west of Anahola, and 4.9 mi (7.9 km) northwest of Kealia.

PERIOD OF RECORD.--July 1936 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 825 ft (251 m) above mean sea level (by stadia survey).

AVERAGE DISCHARGE.--37 years, 4.91 ft^3/s (0.139 m^3/s), 3,560 acre-ft/yr (4.39 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 84 ft^3/s (2.38 m^3/s) Nov. 12, 1955; no flow at times.

REMARKS.--Records good. Water that passes station flows into Kaupaku Stream and thence into Anahola Stream 2 mi (3 km) below gaging station 16089000 on Anahola Stream.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	7.3	4.0	.70	.37	.01	.37	.37	.18	.07	.02	.56
2	.70	7.0	4.3	.70	.56	.02	.37	.37	.18	.07	.07	.18
3	.99	7.6	4.0	.84	.18	.02	.56	.56	.18	.07	.07	.18
4	.56	16	3.8	.84	.37	.07	.07	.37	.18	.18	.18	.18
5	.37	10	3.3	.84	.37	.18	.07	.37	.18	0	.37	.18
6	0	18	2.7	.99	.18	.07	.07	.37	.18	.02	.37	.18
7	0	13	1.4	.70	.18	.07	.18	.56	.37	.02	.37	.37
8	0	14	1.2	.70	.37	.02	.07	.18	.37	.07	.37	.37
9	0	14	.99	.70	.37	.02	.18	.37	.37	.02	.37	.37
10	0	18	.99	.70	.37	.07	.37	.37	.37	.18	.37	.37
11	.05	9.2	.99	.70	.37	4.1	.37	.56	.37	.07	.37	.37
12	8.9	7.9	.84	.70	.37	15	.18	.56	.56	.07	.37	.37
13	8.2	12	.84	.70	.37	11	.18	.37	.37	.07	.37	.37
14	6.1	13	.84	.70	.37	12	.07	.37	.37	.02	.18	.56
15	5.2	7.6	.84	.70	.18	12	.18	.37	.56	.02	.37	.37
16	4.8	6.4	.84	.70	.37	17	.37	.37	.56	.07	.37	.37
17	4.5	5.8	.99	.70	.56	13	.37	.37	.37	.07	.18	.18
18	4.0	8.2	.99	.70	.37	7.9	.18	.37	0	.18	.18	.56
19	4.3	5.8	.99	.70	.18	4.4	.18	.18	0	.18	.18	.56
20	3.8	5.0	.99	.70	.56	.70	.18	.37	0	.18	.18	.19
21	3.8	4.8	.84	.84	.02	.56	.37	.56	0	.18	.18	0
22	3.3	4.5	.84	.84	0	.56	.56	.56	0	.18	.18	0
23	3.3	4.5	.70	.84	0	.56	.56	.18	.11	.18	.18	0
24	3.1	4.5	.84	.84	.18	.56	.56	.18	.18	.18	.37	.01
25	3.1	8.0	.84	.70	.07	.56	.56	.18	.07	.18	.37	0
26	2.8	11	.99	.84	.02	.70	.56	.18	.07	.18	.37	.01
27	13	5.0	.70	.56	.01	.70	.56	.37	.07	.18	.37	0
28	11	7.4	.70	.18	.02	.56	.70	.07	.07	.18	.37	0
29	21	4.8	.84	.37	------	.56	.37	.01	.07	.18	.37	.01
30	9.2	4.3	.84	.56	------	.70	.37	0	.07	.18	.37	0
31	7.9	------	.70	.37	------	.56	------	.01	------	.07	.37	------
TOTAL	134.67	264.6	44.66	21.65	7.34	104.23	9.74	10.08	6.43	3.50	8.81	6.87
MEAN	4.34	8.82	1.44	.70	.26	3.36	.32	.33	.21	.11	.28	.23
MAX	21	18	4.3	.99	.56	17	.70	.56	.56	.18	.37	.56
MIN	0	4.3	.70	.18	0	.01	.07	0	0	0	.02	0
AC-FT	267	525	89	43	15	207	19	20	13	6.9	17	14

CAL YR 1972 TOTAL 1,444.62 MEAN 3.95 MAX 35 MIN 0 AC-FT 2,870
WTR YR 1973 TOTAL 622.58 MEAN 1.71 MAX 21 MIN 0 AC-FT 1,230

16088000 Anahola ditch above Kaneha Reservoir, near Kealia

LOCATION.--Lat 22°08'10", long 159°22'28", on left bank at point of discharge into Kaneha Reservoir, 500 ft (152 m) below wasteway gates, and 4.8 mi (7.7 km) northwest of Kealia.

PERIOD OF RECORD.--December 1921 to current year. Records for May 1915 to December 1921 at site 520 ft (158 m) upstream not equivalent owing to intervening diversion.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 821.8 ft (250.48 m) above mean sea level (Lihue Plantation bench mark). Dec. 9, 1921, to June 2, 1934, at site 480 ft (146 m) upstream at different datum.

AVERAGE DISCHARGE.--49 years (1922-25, 1927-73), 4.12 ft^3/s (0.117 m^3/s), 2,980 acre-ft/yr (3.67 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 62 ft^3/s (1.76 m^3/s) Nov. 12, 1947; no flow at times.

REMARKS.--Records good. Ditch diverts water from Anahola Stream to Kaneha Reservoir, where it is stored for irrigation. Flow sometimes diverted above station by Anahola ditch wasteway (see sta 16087000).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	.01	.04	1.2	6.7	6.8	7.8	4.1	5.8	8.7	1.6	5.4
2	1.7	0	.06	1.0	17	5.0	6.1	3.8	5.4	8.2	1.6	10
3	2.7	.02	.09	6.0	5.9	3.5	13	7.5	5.0	6.8	1.6	4.6
4	24	.09	.09	1.9	4.1	2.9	9.0	3.3	4.8	12	3.5	4.2
5	10	.04	.09	1.2	3.2	13	5.1	4.3	5.0	4.4	2.6	2.9
6	4.1	.09	.48	15	2.6	5.4	4.8	5.3	3.6	4.3	3.2	1.8
7	3.3	.09	1.2	6.3	2.2	3.3	11	17	3.9	3.8	2.6	1.8
8	3.2	.09	5.7	2.3	3.6	3.0	6.2	10	3.8	5.4	2.0	1.6
9	9.6	.06	1.8	2.4	2.4	3.3	6.8	13	5.3	3.8	1.8	1.4
10	4.6	.09	1.4	5.3	1.9	7.7	14	18	3.3	12	1.6	1.2
11	18	.04	1.4	2.3	1.7	15	18	19	3.6	5.0	1.6	1.4
12	13	.02	1.2	1.6	1.6	3.9	13	13	3.9	3.6	1.4	1.2
13	.13	.06	1.2	1.7	1.6	3.0	12	6.8	3.3	5.9	1.4	1.2
14	.09	.06	1.2	1.4	1.6	2.8	7.8	5.0	6.3	3.0	1.8	8.0
15	.06	.04	1.2	1.2	1.4	2.9	6.1	4.4	4.8	3.5	1.7	1.8
16	.04	.04	1.2	1.0	1.7	3.8	6.7	4.3	14	13	2.0	1.2
17	.04	.04	1.4	1.0	2.4	2.6	11	4.1	10	10	8.1	1.2
18	.04	.09	2.2	1.2	1.7	1.8	5.0	8.3	4.3	3.8	3.3	1.8
19	.04	.04	1.4	1.4	1.4	3.8	4.1	6.9	3.6	3.0	1.9	2.6
20	.04	.02	1.0	1.2	26	7.2	3.9	11	3.2	2.8	1.6	6.3
21	.04	.02	.97	4.5	11	5.9	11	19	2.9	2.6	1.4	2.6
22	.04	.02	.97	1.6	4.8	10	7.5	20	2.6	2.6	1.2	2.4
23	.04	0	1.0	4.7	10	11	4.4	7.6	2.4	2.3	1.4	4.2
24	.02	0	1.0	5.9	32	9.6	3.6	8.0	2.3	2.2	3.4	13
25	.02	.04	.97	2.2	17	9.1	3.3	7.0	2.2	2.2	1.9	3.3
26	.02	.06	3.9	9.1	7.6	12	3.9	5.3	2.0	1.9	1.4	2.3
27	.04	0	1.9	9.2	5.3	8.3	3.6	10	1.9	1.9	2.4	1.8
28	.04	.04	1.2	7.2	4.8	5.0	8.3	6.5	1.9	1.8	1.4	2.4
29	.13	0	2.8	8.8	------	9.7	4.3	5.0	1.9	1.8	1.4	8.6
30	.01	.04	2.6	9.4	------	19	3.3	4.1	2.0	1.7	1.7	5.3
31	.01	------	1.6	3.5	------	14	------	4.5	------	1.6	1.4	------
TOTAL	97.39	1.25	43.26	122.7	183.2	214.3	224.6	266.1	125.0	145.6	65.9	107.5
MEAN	3.14	.042	1.40	3.96	6.54	6.91	7.49	8.58	4.17	4.70	2.13	3.58
MAX	24	.09	5.7	15	32	19	18	20	14	13	8.1	13
MIN	.01	0	.04	1.0	1.4	1.8	3.3	3.3	1.9	1.6	1.2	1.2
AC-FT	193	2.5	86	243	363	425	445	528	248	289	131	213

CAL YR 1972 TOTAL 771.65 MEAN 2.11 MAX 24 MIN 0 AC-FT 1,530
WTR YR 1973 TOTAL 1,596.80 MEAN 4.37 MAX 32 MIN 0 AC-FT 3,170

16089000 Anahola Stream near Kealia

LOCATION.--Lat 22°09'05", long 159°21'17", on right bank at intake of Lower Anahola ditch and 4.7 mi (7.6 km) northwest of Kealia.

DRAINAGE AREA.--4.27 mi^2 (11.06 km^2).

PERIOD OF RECORD.--August to December 1910, January 1913 to November 1918, January 1919, March 1919 to current year. Monthly discharge only for some periods, published in WSP 1319. Published as Anahola River above dam at Kiokala, near Kealia prior to July 1913 and as Anahola River near Kealia July 1913 to June 1958.

GAGE.--Water-stage recorder and combination concrete dam and orifice control. Datum of gage is 295.11 ft (89.950 m) above mean sea level (Highway Department bench mark). Prior to May 4, 1934, at site 0.1 mi (0.2 km) upstream at different datum.

AVERAGE DISCHARGE.--58 years (1913-17, 1919-73), 22.8 ft^3/s (0.646 m^3/s), 16,520 acre-ft/yr (20.4 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,180 ft^3/s (33.4 m^3/s) Oct. 4, gage height, 4.65 ft (1.417 m), from rating curve extended above 240 ft^3/s (6.80 m^3/s) on basis of slope-area measurement at gage height 10.6 ft (3.23 m); minimum, 2.4 ft^3/s (0.068 m^3/s) Sept. 10.
Period of record: Maximum discharge, 19,600 ft^3/s (555 m^3/s) Jan. 25, 1956, gage height, 14.6 ft (4.45 m), from floodmarks, from rating curve extended above 590 ft^3/s (16.7 m^3/s); minimum, 1.98 ft^3/s (0.056 m^3/s) Oct. 27, 1953.

REMARKS.--Records poor. Records include flow in Lower Anahola ditch (see sta 16091000). Anahola ditch (see sta 16088000) diverts 3 mi (5 km) above station for irrigation in vicinity of Kealia.

REVISIONS (FISCAL YEARS).--WSP 1719: 1915, 1916-18(M). (WATER YEAR).--WSP 2137: 1965(P), drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	8.6	7.1	6.5	5.1	9.4	9.6	7.8	7.7	6.3	3.3	3.6
2	5.6	8.6	7.2	6.4	11	9.0	8.8	7.8	7.7	6.6	3.3	10
3	5.7	8.0	7.2	7.1	5.7	8.4	12	8.4	7.7	4.9	3.4	3.6
4	75	9.9	7.0	6.6	5.2	8.0	11	7.8	7.7	13	4.2	3.1
5	9.3	8.8	6.8	6.2	4.9	17	8.6	8.0	7.6	5.2	4.4	3.1
6	6.8	21	6.8	31	4.8	10	8.4	7.7	7.6	5.1	4.1	2.7
7	6.5	11	6.8	7.7	4.7	8.4	12	20	7.4	5.0	4.0	2.6
8	8.5	10	7.6	5.3	4.8	8.0	8.8	9.4	7.2	6.3	4.0	2.7
9	7.1	11	7.0	5.4	4.7	8.0	8.8	10	7.4	4.4	4.0	2.6
10	7.2	16	6.6	7.5	4.6	8.8	10	13	7.2	10	3.8	2.4
11	38	9.4	6.5	5.5	4.5	16	15	15	7.2	4.2	3.7	2.7
12	72	8.6	6.5	5.1	4.5	24	21	13	7.1	3.7	3.8	2.6
13	10	9.4	6.5	5.0	4.5	11	13	9.0	7.1	3.8	3.8	2.6
14	8.2	10	6.5	4.9	4.5	9.6	9.4	8.4	7.2	3.3	4.0	11
15	7.6	8.6	6.5	4.8	4.5	10	8.8	8.0	7.6	3.3	4.0	3.7
16	7.2	7.8	6.5	4.7	4.6	18	8.8	8.0	8.4	7.5	4.3	2.8
17	7.1	7.6	6.5	4.7	4.6	12	9.6	7.8	5.8	11	8.2	2.8
18	7.0	7.6	6.8	4.7	4.5	9.2	8.8	8.0	4.3	5.0	4.0	3.0
19	6.8	7.6	6.5	4.7	4.5	8.8	8.4	8.0	3.6	4.1	3.4	2.8
20	6.6	7.2	6.4	4.6	207	8.6	8.2	9.4	3.4	3.8	3.0	4.4
21	6.6	7.2	6.2	4.6	11	8.4	9.9	11	3.3	3.5	2.9	3.0
22	6.5	7.2	6.2	4.6	8.2	9.4	8.8	16	3.2	3.6	2.6	3.0
23	6.4	7.1	6.5	4.9	8.4	9.6	8.0	8.6	3.2	3.3	2.6	3.0
24	6.4	7.0	6.5	5.1	190	8.6	7.8	9.0	3.1	3.3	2.6	14
25	6.2	7.6	6.4	4.7	25	8.2	7.7	9.8	3.0	3.3	2.6	4.5
26	6.1	11	6.8	13	12	9.6	7.8	8.4	3.0	3.1	2.6	3.0
27	14	7.4	6.6	7.4	9.8	9.4	7.8	13	3.0	3.1	2.6	3.0
28	9.0	7.4	6.5	5.5	9.4	8.0	8.6	9.4	3.1	3.1	2.7	4.0
29	70	7.2	6.4	6.1	------	8.9	8.4	8.0	3.1	3.2	2.6	15
30	12	7.2	6.5	6.4	------	23	7.8	7.8	3.4	3.3	2.6	9.2
31	9.0	------	6.5	5.1	------	13	------	7.7	------	3.3	2.6	------
TOTAL	460.1	273.0	206.4	205.8	577.0	338.3	291.6	303.2	168.3	152.6	109.7	136.5
MEAN	14.8	9.10	6.66	6.64	20.6	10.9	9.72	9.78	5.61	4.92	3.54	4.55
MAX	75	21	7.6	31	207	24	21	20	8.4	13	8.2	15
MIN	5.6	7.0	6.2	4.6	4.5	8.0	7.7	7.7	3.0	3.1	2.6	2.4
AC-FT	913	541	409	408	1,140	671	578	601	334	303	218	271

CAL YR 1972 TOTAL 6,960.7 MEAN 19.0 MAX 508 MIN 5.6 AC-FT 13,810
WTR YR 1973 TOTAL 3,222.5 MEAN 8.83 MAX 207 MIN 2.4 AC-FT 6,390

PEAK DISCHARGE (BASE, 2,200 CFS).--No peak above base.

16091000 Lower Anahola ditch near Kealia

LOCATION.--Lat 22°08'14", long 159°19'31", on left bank 100 ft (30 m) downstream from last wasteway, 1.5 mi (2.4 km) southwest of mouth of Anahola Stream, and 2.8 mi (4.5 km) northwest of Kealia.

PERIOD OF RECORD.--December 1936 to current year.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 276.11 ft (84.158 m) above mean sea level (Highway Department bench mark).

AVERAGE DISCHARGE.--36 years (1937-73), 3.08 ft^3/s (0.0872 m^3/s), 2,230 acre-ft/yr (2.75 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 18.6 ft^3/s (0.53 m^3/s) June 1, 1938; no flow at times each year.

REMARKS.--Records good. Ditch diverts from Anahola Stream for irrigation of sugarcane in vicinity of Anahola.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	0	.04	4.0	5.9	6.1	0	4.4	6.7	3.6	2.7	2.9
2	4.8	0	.04	3.5	6.8	5.8	0	4.2	5.0	4.2	2.6	4.7
3	4.8	0	.04	4.4	6.7	4.5	.01	4.1	4.3	4.0	2.7	4.2
4	9.4	0	.04	5.4	5.7	4.1	2.0	3.9	6.0	4.8	2.9	3.3
5	6.4	0	.04	5.3	5.2	5.7	3.4	3.8	5.9	4.5	3.2	3.3
6	5.2	0	.92	6.1	5.6	6.3	2.7	3.8	6.4	4.5	3.1	3.0
7	4.9	0	2.8	7.6	6.2	3.9	3.8	4.6	6.2	4.2	3.2	2.7
8	5.2	0	3.1	6.7	5.7	5.1	1.4	5.4	5.4	4.5	2.9	2.9
9	5.3	0	3.1	5.9	5.4	4.2	0	6.1	4.5	4.2	3.0	2.5
10	5.0	0	3.2	6.7	5.0	3.0	0	6.2	4.2	4.6	3.0	2.5
11	3.2	.04	3.2	6.1	4.5	3.8	.04	6.4	4.4	4.6	2.8	2.3
12	.04	.04	3.1	5.7	4.7	4.9	3.3	5.5	4.0	4.2	2.5	1.6
13	.02	.06	3.0	5.1	4.6	4.7	9.3	4.2	3.8	4.2	2.4	1.7
14	.02	.06	2.9	4.9	4.3	2.7	7.8	3.9	3.9	3.9	2.3	4.3
15	.02	.06	3.0	4.8	4.2	.02	6.7	5.1	4.2	3.7	2.6	5.0
16	0	.06	3.2	5.1	4.2	0	8.5	5.1	4.2	4.2	2.4	3.0
17	0	.04	3.1	5.2	4.0	.02	10	5.2	4.5	5.1	3.3	2.5
18	0	.04	3.8	4.6	3.9	.02	9.9	5.2	4.2	4.5	3.5	2.6
19	0	.04	4.5	4.4	3.8	0	9.3	3.9	3.9	4.0	3.0	2.5
20	0	.04	4.4	4.5	6.3	0	5.9	3.3	3.1	3.7	2.9	2.9
21	0	.04	4.1	4.5	7.0	0	5.9	4.8	2.7	3.4	2.9	2.6
22	0	.04	4.0	4.3	5.9	0	5.6	5.6	3.2	3.2	2.8	2.6
23	0	.04	4.0	4.7	6.3	0	6.9	6.0	2.2	3.2	2.6	2.4
24	0	.04	4.2	4.8	7.6	0	8.4	6.5	1.8	3.2	2.6	2.9
25	0	.06	4.0	4.6	7.6	0	8.0	6.6	1.8	3.2	2.4	3.0
26	.01	.04	3.9	4.6	6.7	0	8.1	5.1	1.8	3.1	1.3	2.6
27	.04	.04	4.0	7.7	6.7	0	7.3	4.4	2.3	3.0	.89	2.2
28	.04	.04	3.8	6.4	6.1	0	5.2	7.4	2.6	3.0	.85	2.6
29	.06	.04	3.5	6.6	------	0	4.7	7.0	2.7	2.9	.85	3.0
30	0	.04	3.9	6.8	------	0	4.4	7.2	3.0	2.9	.75	2.9
31	0	------	3.8	6.2	------	0	------	6.9	------	2.8	1.3	------
TOTAL	59.15	.90	90.72	167.2	156.6	64.86	148.55	161.8	118.9	119.1	76.24	87.2
MEAN	1.91	.030	2.93	5.39	5.59	2.09	4.95	5.22	3.96	3.84	2.46	2.91
MAX	9.4	.06	4.5	7.7	7.6	6.3	10	7.4	6.7	5.1	3.5	5.0
MIN	0	0	.04	3.5	3.8	0	0	3.3	1.8	2.8	.75	1.6
AC-FT	117	1.8	180	332	311	129	295	321	236	236	151	173

CAL YR 1972 TOTAL 757.96 MEAN 2.07 MAX 12 MIN 0 AC-FT 1,500
WTR YR 1973 TOTAL 1,251.22 MEAN 3.43 MAX 10 MIN 0 AC-FT 2,480

16093200 Anahola Stream at Anahola

LOCATION.--Lat 22°08'42", long 159°18'59", on downstream side of old highway bridge at Anahola, 0.1 mi (0.2 km) upstream from Highway 56, and 0.9 mi (1.4 km) upstream from mouth.

DRAINAGE AREA.--9.24 mi^2 (23.93 km^2).

PERIOD OF RECORD.--Annual maximum, water years 1962-65, November 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (by stadia survey). Apr. 12, 1962, to Nov. 19, 1964, crest-stage gage at same site and datum.

AVERAGE DISCHARGE.--8 years (1965-73), 38.7 ft^3/s (1.096 m^3/s), 28,040 acre-ft/yr (34.6 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,170 ft^3/s (33.1 m^3/s) Oct. 4, gage height, 7.84 ft (2.390 m); minimum, 4.4 ft^3/s (0.12 m^3/s) Sept. 27, 28.
Period of record: Maximum discharge, 13,000 ft^3/s (368 m^3/s) May 15, 1965, gage height, 16.0 ft (4.88 m), from rating curve extended above 5,800 ft^3/s (164 m^3/s) on basis of contracted-opening measurement of peak flow; minimum, 3.8 ft^3/s (0.11 m^3/s) Aug. 21, Sept. 7, 1968.

REMARKS.--Records good. Anahola and Lower Anahola ditches (see sta 16088000 and 16091000) divert above station for irrigation of sugarcane in vicinities of Kealia and Anahola, respectively. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	20	17	8.0	6.6	12	18	9.8	14	9.8	8.4	8.0
2	11	20	17	7.7	24	11	17	10	12	11	7.7	21
3	11	18	18	9.8	11	9.8	25	11	11	8.4	7.7	11
4	107	44	17	10	7.3	8.0	28	11	13	14	9.3	7.7
5	14	42	16	8.0	6.2	28	16	9.8	12	9.3	9.8	8.4
6	7.3	86	16	60	5.8	20	15	9.3	13	8.0	8.4	8.0
7	5.8	54	12	22	6.2	9.3	29	38	13	8.0	8.0	6.9
8	9.9	37	14	7.3	6.2	9.3	18	15	12	8.9	8.0	7.3
9	6.6	46	12	6.2	6.2	8.9	18	17	11	8.4	7.3	7.3
10	8.4	66	11	15	5.4	8.4	21	23	11	16	6.9	6.2
11	74	38	11	8.0	5.1	53	41	31	11	9.3	6.2	8.4
12	190	29	11	6.6	5.4	95	37	30	11	8.0	6.2	9.8
13	34	38	11	6.2	5.4	39	37	14	11	8.0	5.8	8.4
14	21	40	11	6.2	5.4	28	17	12	11	7.7	6.2	27
15	18	35	11	6.2	5.8	29	15	11	12	7.3	6.2	9.8
16	16	25	10	5.8	5.8	60	16	11	12	9.8	6.2	6.2
17	15	22	11	5.1	6.6	43	19	10	17	17	9.6	6.2
18	14	23	13	5.1	6.6	21	17	10	11	8.4	7.7	7.3
19	15	22	10	5.1	6.6	20	16	11	11	7.3	6.2	5.8
20	16	20	9.3	5.1	256	15	13	13	11	7.7	5.1	10
21	16	19	9.3	5.1	28	12	16	40	9.8	7.7	5.1	7.3
22	16	19	8.9	5.4	9.8	13	14	33	8.4	8.0	5.1	7.3
23	14	18	9.3	6.6	9.3	16	14	16	8.9	8.0	5.1	6.6
24	12	17	9.3	7.3	266	14	14	13	8.4	8.4	6.2	30
25	12	18	9.3	6.6	121	12	13	15	8.4	9.8	6.2	13
26	12	45	11	18	34	24	14	12	8.9	9.8	8.4	5.8
27	42	21	9.8	25	15	17	13	19	8.0	9.3	9.3	4.7
28	34	22	9.3	7.3	12	13	11	17	7.7	9.3	10	6.2
29	167	19	9.3	10	------	13	13	13	7.7	9.3	9.8	37
30	61	19	9.8	10	------	42	9.8	14	8.0	9.3	9.8	29
31	25	------	8.9	7.3	------	34	------	14	------	8.4	9.3	------
TOTAL	1,016.0	942	362.5	322.0	888.7	737.7	564.8	512.9	324.2	289.6	231.2	337.6
MEAN	32.8	31.4	11.7	10.4	31.7	23.8	18.8	16.5	10.8	9.34	7.46	11.3
MAX	190	86	18	60	266	95	41	40	17	17	10	37
MIN	5.8	17	8.9	5.1	5.1	8.0	9.8	9.3	7.7	7.3	5.1	4.7
AC-FT	2,020	1,870	719	639	1,760	1,460	1,120	1,020	643	574	459	670

CAL YR 1972 TOTAL 11,942.4 MEAN 32.6 MAX 1,080 MIN 4.8 AC-FT 23,690
WTR YR 1973 TOTAL 6,529.2 MEAN 17.9 MAX 266 MIN 4.7 AC-FT 12,950

PEAK DISCHARGE (BASE, 2,200 CFS).--No peak above base.

16097500 Halaulani Stream at altitude 400 ft (122 m), near Kilauea

LOCATION.--Lat 22°10'54", long 159°25'17", on left bank 0.5 mi (0.8 km) upstream from confluence with Pohakuhonu Stream and 2.3 mi (3.7 km) south of Kilauea.

DRAINAGE AREA.--1.19 mi^2 (3.08 km^2).

PERIOD OF RECORD.--November 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 391.8 ft (119.42 m) above mean sea level (by stadia survey).

AVERAGE DISCHARGE.--15 years (1958-73), 11.4 ft^3/s (0.323 m^3/s), 8,260 acre-ft/yr (10.2 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 330 ft^3/s (9.35 m^3/s) Oct. 11, gage height, 3.62 ft (1.103 m), from rating curve extended as explained below; minimum, 3.2 ft^3/s (0.091 m^3/s) Sept. 10.
Period of record: Maximum discharge, 2,070 ft^3/s (58.6 m^3/s) Aug. 6, 1959, gage height, 8.30 ft (2.530 m), from rating curve extended above 190 ft^3/s (5.38 m^3/s) on basis of slope-area measurement of peak flow; minimum, 1.8 ft^3/s (0.051 m^3/s) Sept. 6-8, 1968.

REMARKS.--Records good. No diversion above station.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	6.8	4.8	4.6	6.6	5.7	11	8.7	6.2	6.4	4.1	4.1
2	3.8	6.0	6.0	4.5	18	6.1	9.0	6.3	6.0	5.4	3.9	4.8
3	5.3	6.9	5.1	6.3	8.7	5.9	12	8.2	5.5	6.9	3.9	3.9
4	36	11	4.7	4.0	6.6	5.4	8.1	6.2	5.5	9.1	4.6	4.1
5	11	9.3	4.6	3.6	5.7	15	6.9	7.2	5.5	7.9	4.4	4.1
6	6.3	27	4.5	23	5.1	8.2	6.4	6.3	5.3	7.1	4.3	3.6
7	5.1	19	4.4	9.6	4.8	6.0	9.2	29	5.9	6.4	4.1	3.6
8	4.7	14	5.5	5.2	5.0	5.8	6.5	18	5.3	6.6	4.1	3.4
9	5.3	14	4.5	9.8	4.5	5.5	7.7	18	5.4	6.2	4.1	3.4
10	5.1	19	4.4	13	4.2	8.5	12	27	5.0	8.7	3.9	3.3
11	25	12	4.3	6.7	4.0	26	14	24	5.1	7.1	3.9	3.7
12	25	9.9	4.2	5.4	3.9	36	15	15	5.0	5.9	3.7	3.4
13	8.4	12	4.1	5.0	3.9	20	11	10	5.0	5.7	3.7	3.3
14	6.6	15	4.1	4.6	3.9	19	8.0	8.5	6.9	5.3	4.1	9.3
15	5.7	10	4.0	4.3	3.7	22	7.1	7.6	5.6	5.3	3.9	4.3
16	5.3	8.2	3.9	4.0	3.8	55	7.1	7.0	9.5	5.9	4.9	3.6
17	4.9	7.3	4.0	3.9	3.8	22	10	6.6	8.5	6.4	5.5	3.6
18	4.7	7.7	4.2	4.3	3.6	14	6.8	8.7	5.8	5.3	3.9	4.8
19	4.6	6.5	4.3	4.0	3.5	11	6.2	7.9	5.3	4.9	3.9	4.4
20	4.4	5.9	4.0	3.7	30	12	6.0	11	5.0	4.9	3.7	6.2
21	4.3	5.6	3.9	4.4	7.5	10	11	21	4.9	4.8	3.6	4.3
22	4.2	5.3	3.9	4.0	4.7	12	7.9	21	4.7	4.8	3.6	4.4
23	4.1	5.1	4.1	4.8	5.7	12	6.2	9.9	4.5	4.6	3.6	4.1
24	4.0	5.0	4.1	5.7	55	13	5.7	12	4.5	4.6	3.7	11
25	4.0	7.3	4.2	4.3	21	11	5.4	12	4.4	4.4	3.6	5.1
26	3.9	10	5.7	9.2	8.8	15	5.4	8.4	4.3	4.4	3.4	4.3
27	10	5.6	4.6	8.4	6.8	12	5.2	8.1	4.3	4.3	3.7	3.9
28	8.5	5.5	4.4	5.7	6.1	8.0	6.5	7.3	4.2	4.3	3.6	4.3
29	37	5.4	5.1	8.6	------	8.5	5.6	6.6	4.2	4.3	3.7	9.5
30	11	5.0	5.1	9.0	------	28	6.8	6.4	4.6	4.1	3.7	7.0
31	8.1	------	5.0	6.2	------	18	------	6.7	------	4.3	3.6	------
TOTAL	280.5	287.3	139.7	199.8	248.9	436.6	245.7	360.6	161.9	176.3	122.4	142.8
MEAN	9.05	9.58	4.51	6.45	8.89	14.1	8.19	11.6	5.40	5.69	3.95	4.76
MAX	37	27	6.0	23	55	36	15	29	9.5	9.1	5.5	11
MIN	3.8	5.0	3.9	3.6	3.5	5.4	5.2	6.2	4.2	4.1	3.4	3.3
AC-FT	556	570	277	396	494	866	487	715	321	350	243	283

CAL YR 1972 TOTAL 3,807.2 MEAN 10.4 MAX 140 MIN 3.8 AC-FT 7,550
WTR YR 1973 TOTAL 2,802.5 MEAN 7.63 MAX 55 MIN 3.3 AC-FT 5,560

PEAK DISCHARGE (BASE, 580 CFS).--No peak above base.

16100000 Hanalei tunnel outlet near Lihue

LOCATION.--Lat 22°05'02", long 159°27'50", on right bank at outlet of Hanalei tunnel, 2.2 mi (3.5 km) downstream from intake on Kaapoko Stream, and 9.4 mi (15.1 km) northwest of Lihue.

PERIOD OF RECORD.--July 1932 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 1,210 ft (369 m), from tunnel-profile.

AVERAGE DISCHARGE.--41 years, 27.6 ft^3/s (0.782 m^3/s), 20,000 acre-ft/yr (24.7 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 99 ft^3/s (2.80 m^3/s) Apr. 11, 25, 26, 1942; no flow at times.

REMARKS.--Records good. Tunnel diverts water from Kaapoko Stream and Hanalei River into North Branch of North Fork Wailua River, from which it is later diverted for irrigation in vicinity of Lihue and Kapaa.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	16	11	9.9	14	22	27	26	29	27	24	17
2	12	15	12	9.9	19	23	24	25	24	26	24	18
3	12	20	11	11	17	22	25	28	24	28	23	17
4	41	24	10	9.9	16	22	24	23	25	28	32	17
5	20	18	10	9.9	15	32	23	25	23	27	25	17
6	15	27	10	18	14	23	22	26	24	24	33	18
7	15	21	10	12	14	22	22	32	28	24	32	19
8	13	20	21	11	15	29	23	26	26	23	25	17
9	13	20	11	10	16	24	23	31	24	24	24	17
10	13	27	10	10	15	30	30	35	23	25	25	18
11	16	17	9.9	9.9	18	46	29	33	23	27	22	18
12	21	16	9.9	9.9	19	44	31	30	26	23	20	18
13	14	19	9.9	9.9	19	46	29	25	26	25	18	18
14	13	19	9.9	9.9	19	39	29	23	32	22	17	33
15	12	15	9.9	9.9	19	33	26	23	26	15	16	28
16	12	14	17	9.4	19	39	26	23	41	11	20	25
17	12	14	18	9.4	6.0	36	31	23	30	8.4	21	27
18	13	21	14	9.4	14	30	25	28	25	7.9	18	28
19	12	15	11	9.4	19	28	23	27	23	7.4	14	31
20	12	13	10	9.4	24	30	23	29	23	7.4	17	36
21	12	12	9.9	10	27	26	30	34	23	7.9	17	32
22	12	12	9.9	9.9	24	30	27	32	22	7.9	16	29
23	12	12	11	11	26	31	27	26	22	7.9	18	34
24	12	12	9.9	12	33	30	25	26	22	7.4	20	46
25	12	13	10	9.9	30	30	23	26	21	7.4	17	34
26	12	13	20	12	25	33	23	24	21	7.4	17	31
27	23	12	11	15	23	30	23	30	21	15	18	29
28	15	12	10	14	22	25	30	27	21	24	17	33
29	25	12	11	16	------	27	25	25	21	26	17	38
30	17	12	9.9	17	------	36	24	24	23	24	17	39
31	17	------	11	13	------	28	------	26	------	24	17	------
TOTAL	472	493	359.1	347.9	541.0	946	772	841	742	569.0	641	782
MEAN	15.2	16.4	11.6	11.2	19.3	30.5	25.7	27.1	24.7	18.4	20.7	26.1
MAX	41	27	21	18	33	46	31	35	41	28	33	46
MIN	12	12	9.9	9.4	6.0	22	22	23	21	7.4	14	17
AC-FT	936	978	712	690	1,070	1,880	1,530	1,670	1,470	1,130	1,270	1,550

CAL YR 1972 TOTAL 7,042.0 MEAN 19.2 MAX 60 MIN 9.9 AC-FT 13,970
WTR YR 1973 TOTAL 7,506.0 MEAN 20.6 MAX 46 MIN 6.0 AC-FT 14,890

16103000 Hanalei River near Hanalei

LOCATION.--Lat 22°11'31", long 159°27'57", on right bank 2.6 mi (4.2 km) southeast of Hanalei School and 4.9 mi (7.9 km) upstream from mouth.

DRAINAGE AREA.--19.1 mi^2 (49.5 km^2).

PERIOD OF RECORD.--January 1912 to November 1919, annual maximum, water years 1962-63, December 1962 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 35.8 ft (10.91 m) above mean sea level (by stadia survey). Jan. 1, 1912, to Nov. 20, 1919, nonrecording gage at site 0.2 mi (0.3 km) upstream at different datum. Jan. 26 to Dec. 26, 1962, crest-stage gage at present site and datum.

AVERAGE DISCHARGE (since diversion to Hanalei tunnel).--10 years (1963-73), 224 ft^3/s (6.344 m^3/s), 162,300 acre-ft/yr (200 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 7,130 ft^3/s (202 m^3/s), gage height, 8.96 ft (2.731 m); minimum, 33 ft^3/s (0.93 m^3/s) Oct. 17, 18.
Period of record: Maximum discharge, 24,600 ft^3/s (697 m^3/s) Nov. 13, 1965, Jan. 31, 1969, gage height, 14.23 ft (4.337 m), from rating curve extended above 9,600 ft^3/s (272 m^3/s); minimum, 33 ft^3/s (0.93 m^3/s) Sept. 16, 17.

REMARKS.--Records fair. Since 1925, Hanalei tunnel (see sta 16100000) had diverted from Hanalei River and its tributary Kaapoko Stream above station to North Branch of North Fork Wailua River for irrigation. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1937: Drainage area. WSP 2137: 1962(M), 1963-65(P).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	114	72	62	136	140	150	131	137	123	35	40
2	68	106	84	59	374	94	120	111	126	82	35	49
3	100	134	74	81	149	87	130	178	106	135	35	47
4	1,100	261	69	65	106	76	150	110	110	191	63	48
5	226	168	68	60	90	207	120	126	107	146	52	43
6	196	565	67	238	81	125	105	162	91	110	61	37
7	115	477	67	116	76	86	108	582	126	86	56	38
8	92	403	202	71	156	153	110	315	100	66	40	37
9	86	336	82	70	90	137	106	312	97	63	37	35
10	81	512	72	81	73	130	222	428	83	141	40	35
11	231	218	69	68	64	350	276	456	86	88	37	35
12	277	175	67	63	61	705	245	305	96	66	35	35
13	102	197	66	61	61	504	264	177	102	73	36	35
14	84	274	65	59	60	375	183	138	252	61	35	115
15	78	164	64	59	58	351	128	117	132	51	36	38
16	74	132	77	57	57	750	124	109	347	121	38	33
17	72	121	107	57	69	631	219	100	198	116	42	33
18	73	186	96	56	65	278	124	222	90	65	47	38
19	72	117	68	56	57	220	100	173	70	63	49	35
20	67	99	63	56	1,850	223	91	255	63	63	42	82
21	65	93	62	76	286	186	155	481	60	54	39	45
22	62	88	61	61	128	261	168	465	52	52	38	35
23	62	86	61	76	228	323	137	200	50	52	44	36
24	62	84	61	102	1,140	295	106	209	48	53	47	171
25	61	103	60	67	360	256	90	167	47	44	43	57
26	59	117	156	227	162	334	86	147	46	41	40	40
27	284	83	70	254	121	308	93	458	45	39	46	35
28	143	79	62	160	109	164	156	188	44	38	40	47
29	577	77	61	243	------	226	112	136	43	37	40	92
30	185	74	65	202	------	450	121	115	44	36	39	77
31	143	------	70	115	------	200	------	117	------	35	38	------
TOTAL	4,975	5,643	2,388	3,078	6,267	8,625	4,299	7,190	2,998	2,391	1,305	1,523
MEAN	160	188	77.0	99.3	224	278	143	232	99.9	77.1	42.1	50.8
MAX	1,100	565	202	254	1,850	750	276	582	347	191	63	171
MIN	59	74	60	56	57	76	86	100	43	35	35	33
AC-FT	9,870	11,190	4,740	6,110	12,430	17,110	8,530	14,260	5,950	4,740	2,590	3,020

CAL YR 1972 TOTAL 65,384 MEAN 179 MAX 2,280 MIN 55 AC-FT 129,700
WTR YR 1973 TOTAL 50,682 MEAN 139 MAX 1,850 MIN 33 AC-FT 100,500

PEAK DISCHARGE (BASE, 9,200 CFS).--No peak above base.

16108000 Wainiha River near Hanalei

LOCATION.--Lat 22°08'20", long 159°33'38", on left bank at Puwainui Falls, 1.5 mi (2.4 km) upstream from Wainiha powerplant intake, and 6.0 mi (9.6 km) southwest of Hanalei.

DRAINAGE AREA.--10.2 mi^2 (26.4 km^2).

PERIOD OF RECORD.--August 1952 to February 1956, October 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 960 ft (293 m), from topographic map.

AVERAGE DISCHARGE.--18 years (1952-55, 1958-73), 142 ft^3/s (4.021 m^3/s), 102,900 acre-ft/yr (127 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 3,300 ft^3/s (93.5 m^3/s) Oct. 4, gage height, 5.10 ft (1.554 m), from rating curve extended as explained below; minimum, 38 ft^3/s (0.11 m^3/s) Jan. 19, 20.
Period of record: Maximum discharge recorded, 20,100 ft^3/s (569 m^3/s) Aug. 6, 1959, gage height, 8.19 ft (2,496 m), from rating curve extended above 1,100 ft^3/s (31.2 m^3/s) on basis of slope-area measurement at gage height 7.72 ft (2.353 m); minimum, 34.8 ft^3/s (0.99 m^3/s) Feb. 12, 1954.
Flood of Feb. 17, 1956, which destroyed the station, reached a stage of 14.1 ft (4.30 m), from floodmarks, discharge, about 40,000 ft^3/s (1,130 m^3/s), from unit-discharge study.

REMARKS.--Records good. No diversion above station. Records of chemical analyses for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	63	43	49	98	78	100	129	129	178	49	64
2	65	71	51	43	332	75	69	111	83	130	47	66
3	111	136	49	53	79	65	78	200	77	248	49	72
4	656	212	43	45	65	65	86	104	77	200	120	74
5	110	118	41	43	55	335	65	116	79	193	78	54
6	68	411	45	157	49	92	62	152	77	117	172	58
7	59	296	42	71	48	69	67	304	100	75	149	67
8	49	202	133	52	195	242	93	140	88	81	67	53
9	47	199	58	47	89	106	90	210	76	80	61	55
10	45	349	49	44	60	305	249	239	71	94	56	45
11	45	128	45	43	54	1,200	184	217	75	99	52	46
12	93	114	43	41	53	624	181	154	108	68	49	50
13	48	144	41	41	53	318	145	83	133	75	49	45
14	43	188	41	39	54	157	157	69	411	58	51	228
15	41	90	40	39	50	140	114	63	147	64	49	58
16	41	69	108	39	50	390	116	72	500	103	95	51
17	40	70	190	39	86	536	328	84	250	75	104	60
18	48	150	127	39	69	189	107	286	100	61	73	83
19	49	70	65	39	48	126	72	201	80	57	68	101
20	45	54	53	39	454	196	66	259	60	54	61	147
21	44	49	47	47	121	96	231	427	58	52	56	90
22	45	51	44	41	83	178	116	274	57	56	60	66
23	47	52	58	68	197	195	99	108	56	58	84	108
24	51	52	49	74	442	173	87	99	54	56	57	182
25	52	60	47	49	170	226	77	93	53	54	55	70
26	60	72	228	130	79	307	101	69	52	49	65	56
27	176	49	64	279	63	197	91	165	51	49	84	49
28	82	54	49	186	67	82	150	96	51	48	64	70
29	259	49	45	187	------	148	91	87	49	56	69	150
30	72	46	45	163	------	445	104	69	94	49	60	121
31	61	------	56	79	------	147	------	102	------	49	57	------
TOTAL	2,736	3,668	2,037	2,305	3,263	7,502	3,576	4,782	3,296	2,686	2,210	2,439
MEAN	88.3	122	65.7	74.4	117	242	119	154	110	86.6	71.3	81.3
MAX	656	411	228	279	454	1,200	328	427	500	248	172	228
MIN	40	46	40	39	48	65	62	63	49	48	47	45
AC-FT	5,430	7,280	4,040	4,570	6,470	14,880	7,090	9,490	6,540	5,330	4,380	4,840

CAL YR 1972 TOTAL 37,586 MEAN 103 MAX 840 MIN 40 AC-FT 74,550
WTR YR 1973 TOTAL 40,500 MEAN 111 MAX 1,200 MIN 39 AC-FT 80,330

PEAK DISCHARGE (BASE, 3,600 CFS).--No peak above base.

16200000 North Fork Kaukonahua Stream above Right Branch, near Wahiawa

LOCATION.--Lat 21°31'09", long 157°56'53", on left bank 140 ft (43 m) upstream from Mauka ditch intake and Right Branch, and 4.5 mi (7.2 km) northeast of Wahiawa.

DRAINAGE AREA.--1.38 mi^2 (3.57 km^2).

PERIOD OF RECORD.--May 1913 to July 1953, April 1960 to current year. Monthly discharge only for some periods, published in WSP 1319. Prior to August 1953, published as Left Branch of North Fork Kaukonahua Stream near Wahiawa.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,150 ft (351 m), from topographic map.

AVERAGE DISCHARGE.--50 years (1913-24, 1926-52, 1960-73), 16.7 ft^3/s (0.473 m^3/s), 12,100 acre-ft/yr (14.9 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,100 ft^3/s (31.2 m^3/s) Oct. 3, gage height, 5.85 ft (1.783 m), from rating curve extended above 82 ft^3/s (2.32 m^3/s) on basis of slope-area measurement at gage height 12.46 ft (3.798 m); minimum, 0.25 ft^3/s (0.007 m^3/s) Jan. 26.
Period of record: Maximum discharge, 5,490 ft^3/s (155 m^3/s) Jan. 1, 1933, gage height, 11.7 ft (3.57 m), from floodmarks, from rating curve extended above 68 ft^3/s (1.93 m^3/s) by test of model of station site; maximum gage height, 12.46 ft (3.798 m) Apr. 15, 1963; minimum discharge, 0.12 ft^3/s (0.003 m^3/s) Mar. 2, 13, 1941.

REMARKS.--Records good. No diversion above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1219: 1931-33(M), 1935(M), 1937-38(M). WSP 1319: 1914, 1917-18(M), 1920-23(M), 1925(M), 1927-30(M). WSP 1719: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	3.9	1.7	2.2	4.4	1.2	12	7.2	4.7	36	2.3	1.4
2	4.3	9.9	1.6	1.5	17	1.5	8.4	6.6	4.0	19	2.9	1.9
3	163	42	1.6	1.2	40	13	7.2	6.2	3.9	30	3.6	1.2
4	77	14	1.4	1.1	3.6	2.4	6.8	4.7	5.2	12	24	2.6
5	15	4.7	1.3	.98	1.6	19	5.6	4.7	8.4	15	11	2.1
6	7.4	95	1.3	1.8	1.1	3.7	5.0	5.8	15	9.2	23	1.9
7	6.2	19	1.2	3.4	.92	8.7	4.5	5.2	26	6.5	9.6	1.3
8	14	9.3	1.6	1.6	1.5	26	4.3	9.4	6.6	18	4.5	.98
9	18	29	2.0	1.0	1.4	5.4	34	25	4.8	77	5.8	.87
10	6.7	21	1.2	.87	.63	12	113	12	4.0	31	9.7	.75
11	4.7	17	1.0	.72	.55	105	16	28	5.4	35	2.9	.72
12	3.6	7.7	.98	.67	2.9	34	27	9.5	6.4	12	5.4	.72
13	3.2	6.2	.87	.63	2.0	20	19	5.8	60	13	2.7	.63
14	2.8	5.4	.82	.59	1.2	15	9.6	4.7	53	7.4	2.8	16
15	2.7	4.3	.77	.51	.82	9.9	19	4.3	8.4	15	2.6	1.5
16	2.6	3.9	.77	.47	.67	18	11	4.0	89	7.2	3.4	1.0
17	2.8	9.7	7.6	.44	.72	12	26	4.0	27	6.8	5.7	1.9
18	2.3	16	32	.41	.55	8.0	7.4	27	9.6	5.2	2.5	1.4
19	2.0	6.7	16	.38	.44	6.2	6.2	5.6	12	4.7	2.2	.82
20	1.9	3.6	2.1	.41	34	91	10	19	7.4	4.3	2.6	24
21	1.7	3.2	1.3	.67	5.9	14	28	20	6.4	4.0	2.1	4.4
22	1.7	2.9	1.0	.55	1.3	21	13	16	5.6	3.7	2.2	3.3
23	1.6	2.9	1.0	.38	.98	47	14	8.4	5.2	4.0	8.4	29
24	2.1	2.8	.98	.32	26	15	13	48	4.7	4.0	5.4	11
25	1.6	2.5	27	.29	19	18	6.8	18	4.3	4.3	2.2	2.7
26	17	3.9	14	.27	2.6	21	11	7.7	4.0	3.8	1.8	1.7
27	12	2.4	2.1	.35	1.6	11	7.4	7.7	3.7	3.0	3.9	6.4
28	20	2.2	13	.32	1.4	9.0	13	8.9	4.0	2.8	1.8	9.1
29	12	2.1	13	.32	------	14	8.8	13	3.4	3.6	1.8	24
30	2.8	2.0	2.4	4.0	------	37	12	5.8	16	2.6	1.5	5.4
31	2.2	------	3.4	3.9	------	37	------	5.6	------	2.5	2.0	------
TOTAL	446.9	355.2	156.99	32.25	174.78	656.0	479.0	357.8	418.1	402.6	162.3	160.69
MEAN	14.4	11.8	5.06	1.04	6.24	21.2	16.0	11.5	13.9	13.0	5.24	5.36
MAX	163	95	32	4.0	40	105	113	48	89	77	24	29
MIN	1.6	2.0	.77	.27	.44	1.2	4.3	4.0	3.4	2.5	1.5	.63
AC-FT	886	705	311	64	347	1,300	950	710	829	799	322	319

CAL YR 1972 TOTAL 5,032.99 MEAN 13.8 MAX 715 MIN .77 AC-FT 9,980
WTR YR 1973 TOTAL 3,802.61 MEAN 10.4 MAX 163 MIN .27 AC-FT 7,540

PEAK DISCHARGE (BASE, 1,300 CFS).--No peak above base.

16208000 South Fork Kaukonahua Stream at East Pump Reservoir, near Wahiawa

LOCATION.--Lat 21°29'32", long 157°59'54" (revised), on right bank on upstream side of dam at East Pump Reservoir, 2.3 mi (3.7 km) east of Wahiawa Post Office, and 7.1 mi (11.4 km) north of Waipahu.

DRAINAGE AREA.--4.04 mi^2 (10.46 km^2).

PERIOD OF RECORD.--July 1957 to June 1963, water years 1963-64 (annual maximum), July 1964 to current year.

GAGE.--Water-stage recorder and Ogee-type dam control. Datum of gage is 860.35 ft (262.235 m) above mean sea level. July 1, 1963, to June 30, 1964, crest-stage gage at same site and datum.

AVERAGE DISCHARGE (since termination of diversions to Schofield Barracks).--11 years (1960-62, 1964-73), 22.7 ft^3/s (0.643 m^3/s), 16,450 acre-ft/yr (20.3 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 464 ft^3/s (13.1 m^3/s) Oct. 3, gage height, 4.76 ft (1.451 m); minimum, 0.52 ft^3/s (0.015 m^3/s) Feb. 20.
Period of record: Maximum discharge, 5,460 ft^3/s (155 m^3/s) Apr. 15, 1963, gage height, 11.33 ft (3.453 m), from rating curve extended above 1,100 ft^3/s (31.2 m^3/s) on basis of computation of peak flow over dam; no flow Dec. 24, 25, 27, 28, 1960, Feb. 23, 24, 1963.

REMARKS.--Records good. Prior to 1960, diversions from reservoirs above station for use at Schofield Barracks. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	1.6	1.5	3.3	2.0	.95	25	13	12	68	4.5	2.6
2	6.1	7.2	1.4	2.0	2.5	1.3	16	9.9	10	63	5.8	2.2
3	151	11	1.4	1.4	36	11	14	10	9.7	97	11	2.7
4	140	17	1.4	1.2	9.4	5.8	13	7.3	10	39	45	2.9
5	37	6.6	1.9	1.1	2.4	11	11	7.5	16	31	10	5.5
6	11	196	1.5	1.3	1.4	8.8	9.3	11	20	27	13	3.3
7	7.2	99	1.5	1.7	1.1	13	8.3	7.8	20	15	31	4.4
8	11	24	1.6	2.8	.91	14	7.7	14	11	37	8.6	2.4
9	11	52	1.7	1.7	.96	9.0	15	72	8.8	101	7.4	1.8
10	14	34	1.6	1.2	1.1	34	109	17	7.8	101	9.4	1.5
11	5.0	27	1.5	1.1	.93	84	39	41	7.4	28	5.5	1.3
12	3.4	14	1.4	.95	.78	36	27	19	8.1	16	6.1	1.3
13	2.7	10	1.4	.90	2.3	12	22	12	75	15	5.5	1.2
14	2.3	8.7	1.3	.85	1.8	8.5	11	8.5	66	12	7.4	5.1
15	2.2	7.7	1.3	.84	1.1	9.2	13	7.4	16	32	5.4	3.9
16	2.1	6.4	1.3	.84	.96	24	13	6.8	59	16	5.3	1.9
17	2.2	7.5	9.1	.83	.89	34	31	7.1	28	16	15	1.7
18	1.9	7.7	53	.81	.77	12	11	53	14	11	5.6	2.1
19	1.8	9.6	35	.78	.61	15	8.0	20	13	8.9	4.2	1.8
20	1.7	5.2	5.4	.78	20	32	9.2	88	12	8.5	5.6	4.9
21	1.7	2.8	2.9	.79	23	23	25	59	9.9	7.9	3.7	5.8
22	1.7	2.4	2.1	.78	2.9	30	14	74	8.6	7.2	3.1	5.6
23	1.8	2.2	1.9	.82	1.4	108	9.8	34	8.5	7.0	5.0	14
24	1.8	2.0	1.7	.81	4.9	40	10	102	7.8	7.7	8.7	19
25	1.9	1.9	1.6	.79	35	26	8.0	48	7.0	19	3.3	5.4
26	19	2.2	5.4	.78	4.6	31	23	25	6.6	12	2.6	2.3
27	3.2	1.7	3.2	.82	1.9	26	15	25	6.2	6.8	4.1	3.1
28	8.8	1.6	2.6	.90	1.2	31	19	17	5.9	5.7	3.7	6.8
29	29	1.6	11	.98	------	39	11	35	5.7	8.0	4.0	21
30	4.1	1.5	3.4	.79	------	43	14	15	21	5.6	3.5	6.0
31	2.1	------	2.6	1.0	------	51	------	13	------	4.9	2.9	------
TOTAL	503.7	572.1	164.2	35.64	162.81	823.55	561.3	879.3	511.0	834.2	255.9	143.5
MEAN	16.3	19.1	5.30	1.15	5.81	26.6	18.7	28.4	17.0	26.9	8.25	4.78
MAX	151	196	53	3.3	36	108	109	102	75	101	45	21
MIN	1.7	1.5	1.3	.78	.61	.95	7.7	6.8	5.7	4.9	2.6	1.2
AC-FT	1,000	1,130	326	71	323	1,630	1,110	1,740	1,010	1,650	508	285

CAL YR 1972 TOTAL 6,103.90 MEAN 16.7 MAX 663 MIN 1.3 AC-FT 12,110
WTR YR 1973 TOTAL 5,449.20 MEAN 14.9 MAX 196 MIN .61 AC-FT 10,810

PEAK DISCHARGE (BASE, 1,100 CFS).--No peak above base.

16210900 Poamoho tunnel near Wahiawa

LOCATION.--Lat 21°31'12", long 157°58'51", on left bank 5 ft (2 m) downstream from tunnel outlet and 3.6 mi (5.8 km) northeast of Wahiawa Post Office.

PERIOD OF RECORD.--July 1958 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,120 ft (341 m), from topographic map.

AVERAGE DISCHARGE.--15 years, 5.00 ft^3/s (0.142 m^3/s), 3,620 acre-ft/yr (4.46 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 265 ft^3/s (7.50 m^3/s) Mar. 16, 1968; no flow at times.

REMARKS.--Records fair. Tunnel diverts from Poamoho Stream to North Fork Kaukonahua Stream to augment storage in Wahiawa Reservoir.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	.03	.07	1.9	.34	.22	.19	.15	.12	.13	.09	.12
2	.03	.02	.07	.70	.62	.25	.17	.15	.12	.11	.09	.11
3	22	.03	.11	.50	.75	.40	.17	.15	.13	.20	.09	.11
4	5.8	.03	.21	.38	.38	.23	.17	.15	.13	.11	.10	.11
5	.02	.03	.19	.34	.34	.70	.17	.15	.13	.11	.10	.11
6	.02	.88	.17	.44	.32	.30	.17	.15	.13	.11	.10	.12
7	.02	.09	.15	1.1	.25	.40	.17	.15	.16	.11	.09	.12
8	.03	.03	.16	.98	.23	1.0	.17	.16	.13	.12	.09	.12
9	.02	.04	1.1	.50	.30	.35	.19	.16	.13	3.3	.09	.12
10	.02	.04	.38	.34	.25	.35	3.9	.16	.13	1.8	.09	.12
11	.02	.03	.21	.25	.15	8.0	.21	.15	.12	.11	.10	.11
12	.02	.03	.16	.17	.10	.40	4.8	.15	.12	.11	.10	.10
13	.02	.02	.12	.15	.25	.25	1.6	.15	.15	.10	.09	.08
14	.02	.03	.10	.13	.34	.22	.19	.15	.28	.10	.09	.19
15	.02	.03	.09	.11	.32	.21	.19	.15	.15	.10	.09	.19
16	.02	.03	.08	.10	.32	.21	.19	.15	11	.10	.09	.17
17	.02	.03	.74	.09	.34	.21	.19	.15	.22	.10	.09	.16
18	.02	.04	10	.07	.30	.21	.17	.15	.17	.09	.09	.15
19	.02	.03	7.1	.05	.25	.21	.17	.15	.17	.09	.09	.13
20	.02	.03	1.5	.04	5.0	1.2	.19	.15	.16	.08	.09	1.0
21	.03	.03	.74	.04	.70	.17	11	.20	.16	.08	.10	.13
22	.03	.03	.44	.16	.30	.16	.26	.19	.16	.08	.10	.12
23	.03	.03	.36	.17	.25	4.9	.92	.16	.16	.08	.10	.18
24	.03	.04	.34	.09	3.0	.16	.13	.16	.15	.08	.12	.16
25	.04	.05	3.1	.05	.80	.16	.13	.15	.13	.08	.12	.13
26	.10	.06	7.6	.03	.40	2.1	.15	.15	.12	.08	.11	.11
27	.33	.05	1.7	.03	.30	.17	.15	.33	.11	.08	.10	.11
28	5.5	.04	.98	.02	.25	.16	.15	.15	.11	.08	.10	.13
29	.21	.04	2.4	.03	------	.16	.15	.11	.11	.08	.10	.16
30	.02	.07	1.3	.09	------	.17	.15	.12	.10	.08	.10	.13
31	.03	------	1.4	.11	------	.19	------	.12	------	.08	.11	------
TOTAL	41.21	1.96	43.07	9.16	17.15	23.82	26.56	4.87	15.16	7.96	3.01	4.80
MEAN	1.33	.065	1.39	.30	.61	.77	.89	.16	.51	.26	.097	.16
MAX	22	.88	10	1.9	5.0	8.0	11	.33	11	3.3	.12	1.0
MIN	.02	.02	.07	.02	.10	.16	.13	.11	.10	.08	.09	.08
AC-FT	82	3.9	85	18	34	47	53	9.7	30	16	6.0	9.5

CAL YR 1972 TOTAL 935.18 MEAN 2.56 MAX 113 MIN .02 AC-FT 1,850
WTR YR 1973 TOTAL 198.73 MEAN .54 MAX 22 MIN .02 AC-FT 394

16211000 Poamoho Stream near Wahiawa

LOCATION.--Lat 21°31'24", long 157°58'55", on left bank 180 ft (55 m) downstream from Poamoho tunnel intake and 3.7 mi (5.9 km) northeast of Wahiawa Post Office.

DRAINAGE AREA.--1.79 mi^2 (4.64 km^2).

PERIOD OF RECORD.--January 1947 to current year (discontinued).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,150 ft (351 m), from topographic map.

AVERAGE DISCHARGE.--26 years, 4.29 ft^3/s (0.121 m^3/s), 3,110 acre-ft/yr (3.83 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 192 ft^3/s (5.44 m^3/s) Oct. 3, gage height, 2.36 ft (0.719 m), from rating curve extended as explained below; no flow for many days.
Period of record: Maximum discharge, 3,630 ft^3/s (103 m^3/s) Mar. 16, 1968, gage height, 10.32 ft (3.146 m), from rating curve extended above 75 ft^3/s (2.12 m^3/s) on basis of slope-area measurement at gage height 7.26 ft (2.213 m); no flow at times.

REMARKS.--Records fair. Poamoho tunnel (see sta 16210900) diverts 180 ft (55 m) above station to North Fork Kaukonahua Stream to augment storage in Wahiawa Reservoir.

REVISIONS (FISCAL YEARS).--WSP 1569: Drainage area. WSP 1937: 1959(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	.80	.37	.20	0	.42	5.9	3.4	1.7	13	.74	.10
2	2.5	1.1	.30	0	10	1.1	3.8	3.0	1.5	8.2	.74	.15
3	34	1.3	.17	0	15	4.7	3.2	2.9	1.4	16	1.1	.16
4	36	3.7	0	0	2.5	1.7	2.8	2.3	1.5	6.0	9.1	.22
5	5.2	1.5	0	0	.41	3.9	2.4	2.0	2.8	2.7	2.6	.60
6	2.4	23	0	0	.08	2.1	2.0	1.9	2.0	3.0	7.5	.81
7	2.2	13	0	0	0	2.2	1.7	2.0	10	1.7	4.5	.41
8	8.0	3.9	0	0	.01	15	1.6	1.9	2.6	6.4	1.6	.17
9	4.6	7.6	0	0	.06	3.6	11	8.3	1.5	33	1.1	.08
10	3.0	7.8	0	0	0	5.6	44	5.9	1.4	21	1.2	.03
11	1.4	3.2	0	0	0	35	9.0	5.0	1.5	8.4	1.1	0
12	1.1	2.0	0	0	0	20	30	3.0	1.6	4.3	.59	0
13	.87	1.5	0	0	.49	31	26	2.3	8.4	3.6	.48	0
14	.73	1.2	0	0	.13	9.2	7.8	1.6	17	2.6	.44	6.9
15	.63	1.1	0	0	.21	3.9	5.5	1.4	3.3	6.0	.47	1.1
16	.55	.91	0	0	2.2	3.8	4.1	1.2	52	2.8	.41	.35
17	.49	.95	.01	0	4.6	6.0	13	1.3	14	2.3	.47	.18
18	.52	5.0	12	0	1.5	3.0	4.1	10	4.0	1.8	.41	.12
19	.40	2.0	7.6	0	.26	3.6	2.9	4.0	3.2	1.6	.36	.15
20	.34	.94	0	0	21	25	9.5	9.0	2.6	1.5	.39	18
21	.29	.72	0	0	9.9	7.7	53	11	2.2	1.5	.35	2.4
22	.32	.61	0	0	1.3	3.6	16	15	1.8	1.3	.25	.78
23	.48	.61	0	0	.68	35	18	7.0	1.6	1.3	.44	9.1
24	.74	.68	0	0	9.5	6.1	6.9	9.6	1.5	1.3	2.6	5.1
25	.74	.59	4.9	0	18	9.4	4.7	4.2	1.3	1.3	.64	1.8
26	3.9	2.9	14	0	2.1	23	6.7	2.8	1.2	1.2	.35	.72
27	12	.93	0	0	.93	9.9	4.6	9.6	1.2	1.2	.39	.85
28	16	.52	0	0	.58	6.0	8.2	4.2	1.2	.92	.38	2.3
29	14	.44	.16	0	------	6.2	3.9	3.2	1.1	1.1	.29	10
30	2.0	.42	0	0	------	9.3	5.0	2.5	1.3	.86	.21	1.6
31	1.1	------	.64	0	------	8.9	------	1.9	------	.74	.16	------
TOTAL	174.50	90.92	40.15	.20	101.44	305.92	317.3	143.4	148.4	158.62	41.36	64.18
MEAN	5.63	3.03	1.30	.007	3.62	9.87	10.6	4.63	4.95	5.12	1.33	2.14
MAX	36	23	14	.20	21	35	53	15	52	33	9.1	18
MIN	.29	.42	0	0	0	.42	1.6	1.2	1.1	.74	.16	0
AC-FT	346	180	80	.4	201	607	629	284	294	315	82	127

CAL YR 1972 TOTAL 1,555.48 MEAN 4.25 MAX 258 MIN 0 AC-FT 3,090
WTR YR 1973 TOTAL 1,586.39 MEAN 4.35 MAX 53 MIN 0 AC-FT 3,150

16211600 Makaha Stream near Makaha

LOCATION.--Lat 21°30'16", long 158°10'59", on right bank 1.5 mi (2.4 km) northeast of Kaneaki Heiau and 3.4 mi (5.5 km) northeast of Makaha.

DRAINAGE AREA.--2.31 mi^2 (5.98 km^2).

PERIOD OF RECORD.--July 1959 to current year.

GAGE.--Water-stage recorder and concrete-masonry control. Datum of gage is 938.64 ft (286.097 m) above mean sea level (Waianae Plantation bench mark).

AVERAGE DISCHARGE.--14 years, 2.03 ft^3/s (0.0575 m^3/s), 1,470 acre-ft/yr (1.81 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 62 ft^3/s (1.76 m^3/s) Dec. 17, gage height, 2.55 ft (0.777 m), from rating curve extended as explained below; no flow part of each day Oct. 22-25.
Period of record: Maximum discharge, 1,170 ft^3/s (33.1 m^3/s) Mar. 13, 1962, gage height, 6.50 ft (1.981 m), from floodmarks, from rating curve extended above 51 ft^3/s (1.44 m^3/s) on basis of slope-area measurement of peak flow; no flow at times.
Maximum stage known since at least 1953, about 7.8 ft (2.38 m) Nov. 24, 1954, from information by local resident. Discharge, about 1,700 ft^3/s (48.1 m^3/s).

REMARKS.--Records good. Wells and water-development tunnels in the vicinity and above the station may affect low-flow records. Recording rain gage located at station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS.--WSP 1937: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.38	.25	.99	.51	2.0	.58	.43	.26	.78	.19	.08
2	.07	.31	.24	.74	.51	1.7	.52	.39	.23	1.1	.20	.08
3	.11	.27	.23	.60	.78	1.7	.50	.37	.22	2.8	.21	.08
4	.30	.30	.22	.53	.77	1.5	1.9	.33	.24	1.9	.40	.09
5	.39	.43	.20	.50	.57	1.8	.77	.31	.40	.91	.39	.10
6	.26	1.5	.18	8.0	.48	1.5	.58	.30	.37	.63	.83	.09
7	.23	2.3	.17	6.8	.41	1.2	.76	.31	.72	.52	.54	.09
8	.23	1.0	2.6	3.0	.80	1.1	.80	.30	.49	.64	.48	.10
9	.23	1.1	1.2	2.1	.87	.99	1.0	.34	.41	2.5	.45	.10
10	.20	1.0	.67	1.6	.56	.99	1.0	.34	.32	1.4	.40	.09
11	.19	.69	.47	1.3	.46	1.1	.78	.35	.28	.87	.33	.08
12	.17	.53	.37	1.1	.43	.94	.60	.34	.26	.64	.29	.08
13	.14	.41	.30	.94	.38	.82	.72	.29	.63	.46	.26	.07
14	.13	.33	.28	.81	.36	.76	.50	.26	1.8	.45	.23	.06
15	.12	.29	.26	.73	.35	.69	.45	.26	.75	1.7	.20	.05
16	.11	.25	1.2	.64	.34	.75	.45	.25	1.3	1.1	.20	.05
17	.09	.18	15	.59	.33	1.8	.66	.25	.96	.66	.17	.04
18	.09	.19	16	.58	.31	1.0	.55	.40	.63	.50	.16	.05
19	.06	.16	9.7	.55	.28	1.2	.45	.61	.50	.43	.16	.04
20	.05	.14	4.0	.50	9.9	.83	.45	.78	.44	.38	.16	.09
21	.04	.12	2.2	.48	4.8	.77	.60	1.4	.39	.35	.15	.08
22	.01	.12	1.5	.45	2.4	.74	.78	.85	.34	.33	.16	.04
23	.01	.08	1.1	.43	2.0	1.0	.55	.56	.29	.31	.17	.04
24	.01	.10	.93	.39	17	.80	.45	.43	.26	.28	.15	.04
25	.01	.11	.85	.38	15	.65	.45	.39	.24	.30	.14	.03
26	.02	2.3	.89	.38	5.4	.60	.72	.33	.22	.28	.11	.03
27	.05	.65	.78	.79	3.3	.56	.72	.30	.21	.26	.11	.05
28	2.0	.43	.69	.76	2.4	.56	.55	.55	.21	.23	.10	.05
29	2.4	.34	.63	.75	------	.53	.50	.35	.18	.21	.10	.04
30	.84	.29	.57	.58	------	.56	.45	.32	.18	.21	.09	.03
31	.53	------	1.2	.58	------	.78	------	.29	------	.18	.08	------
TOTAL	9.16	16.30	64.88	38.57	71.70	31.92	19.79	12.98	13.73	23.31	7.61	1.94
MEAN	.30	.54	2.09	1.24	2.56	1.03	.66	.42	.46	.75	.25	.065
MAX	2.4	2.3	16	8.0	17	2.0	1.9	1.4	1.8	2.8	.83	.10
MIN	.01	.08	.17	.38	.28	.53	.45	.25	.18	.18	.08	.03
AC-FT	18	32	129	77	142	63	39	26	27	46	15	3.8

CAL YR 1972 TOTAL 557.56 MEAN 1.52 MAX 38 MIN .01 AC-FT 1,110
WTR YR 1973 TOTAL 311.89 MEAN .85 MAX 17 MIN .01 AC-FT 619

PEAK DISCHARGE (BASE, 200 CFS).--No peak above base.

16212800 Kipapa Stream near Wahiawa

LOCATION (revised).--Lat 21°28'13", long 157°57'40", on left bank 1,700 ft (518 m) downstream from forest-reserve boundary, 4.9 mi (7.9 km) southeast of Wahiawa Post Office, and 6.3 mi (10.1 km) northeast of Waipahu.

DRAINAGE AREA.--4.29 mi^2 (11.11 km^2).

PERIOD OF RECORD.--January 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 690 ft (210 m), from topographic map.

AVERAGE DISCHARGE.--16 years, 10.8 ft^3/s (0.306 m^3/s), 7,820 acre-ft/yr (9.64 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 660 ft^3/s (18.7 m^3/s) Oct. 3, gage height, 6.20 ft (1.890 m), from rating curve extended as explained below; no flow for parts of Jan. 26, 27.
Period of record: Maximum discharge, 5,680 ft^3/s (161 m^3/s) May 14, 1963, gage height, 12.29 ft (3.746 m), from rating curve extended above 300 ft^3/s (8.50 m^3/s) on basis of slope-area measurements at gage heights 7.96 (2.426) and 12.29 ft (3.746 m); no flow at times.

REMARKS.--Records good. No diversion above station. Recording rain gage located at station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses and susponded sediment loads for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	.54	.37	.69	.25	.55	8.5	2.0	1.4	31	.60	.30
2	3.1	2.2	.33	.49	.41	.60	3.4	1.7	1.2	19	.90	.52
3	79	2.9	.30	.37	21	1.1	2.5	1.8	1.1	17	2.2	.98
4	74	6.1	.27	.30	3.0	1.9	2.5	1.9	1.1	10	15	.50
5	15	2.4	.25	.27	.86	1.2	2.2	1.1	2.2	4.1	3.1	1.6
6	4.7	69	.25	.49	.45	2.0	1.4	1.1	3.0	3.6	4.2	.98
7	3.6	29	.22	1.6	.30	.90	1.1	.98	7.5	2.5	14	.73
8	2.1	10	.25	1.4	.25	8.0	.98	1.1	3.5	9.4	2.7	.38
9	7.1	18	.30	.64	.25	4.1	3.4	17	1.6	78	1.5	.24
10	7.0	14	.27	.37	.25	2.2	125	5.3	1.2	49	11	.16
11	1.5	7.1	.19	.25	.17	21	16	17	1.1	18	2.2	.12
12	1.0	4.7	.17	.22	.11	9.4	26	11	1.4	8.1	2.7	.10
13	.74	3.4	.15	.17	.03	7.8	15	4.3	15	6.8	1.5	.10
14	.59	2.2	.15	.15	.37	4.3	6.0	1.9	27	3.9	.90	9.7
15	.59	1.7	.15	.15	.54	2.5	6.0	1.4	5.3	15	.98	2.0
16	.45	1.4	.17	.13	.33	3.9	4.5	1.1	58	5.6	.98	.66
17	.37	1.5	14	.15	.49	4.3	10	1.1	20	4.3	5.2	.38
18	.33	1.6	31	.15	.37	3.5	4.5	8.1	6.3	2.8	2.0	.38
19	.27	1.4	26	.17	.27	6.4	2.8	6.4	7.0	2.0	.84	.27
20	.25	.98	4.0	.19	24	25	3.4	27	4.5	1.7	.78	12
21	.22	.80	1.8	.22	18	10	26	13	2.5	1.5	.60	3.4
22	.19	.69	1.1	.17	1.7	5.3	11	14	1.8	1.3	.68	1.2
23	.17	.69	.92	.17	.72	30	6.8	7.3	7.7	1.2	4.0	17
24	.17	.69	.74	.09	9.1	9.1	4.3	23	2.0	1.4	4.4	19
25	.17	.64	.74	.04	26	4.9	3.2	13	1.4	1.9	.98	3.9
26	.19	1.1	7.4	.01	3.0	5.1	3.2	4.5	1.1	1.8	.50	1.3
27	1.3	.86	1.5	.03	1.1	5.8	3.4	3.2	.98	1.8	.46	3.7
28	6.1	.54	.86	.07	.66	4.3	3.6	2.4	.90	1.1	.42	9.3
29	18	.45	2.3	.12	------	6.3	3.2	2.7	.84	1.1	.38	20
30	2.1	.41	1.1	.06	------	13	2.2	1.9	2.0	.98	.34	3.4
31	.86	------	.80	.17	------	11	------	1.6	------	.72	.30	------
TOTAL	243.16	186.99	98.05	9.50	113.98	215.45	312.08	199.88	190.62	306.60	86.34	114.30
MEAN	7.84	6.23	3.16	.31	4.07	6.95	10.4	6.45	6.35	9.89	2.79	3.81
MAX	79	69	31	1.6	26	30	125	27	58	78	15	20
MIN	.17	.41	.15	.01	.03	.55	.98	.98	.84	.72	.30	.10
AC-FT	482	371	194	19	226	427	619	396	378	608	171	227

CAL YR 1972 TOTAL 2,875.69 MEAN 7.86 MAX 233 MIN .07 AC-FT 5,700
WTR YR 1973 TOTAL 2,076.95 MEAN 5.69 MAX 125 MIN .01 AC-FT 4,120

PEAK DISCHARGE (BASE, 930 CFS).--No peak above base.

16213000 Waikele Stream at Waipahu

LOCATION.--Lat 21°23'11", long 158°00'49", on left bank 300 ft (91 m) upstream from bridge on Highway 90 and 0.3 mi (0.5 km) southwest of sugar refinery at Waipahu.

DRAINAGE AREA.--45.7 mi^2 (118.4 km^2).

PERIOD OF RECORD.--June to October 1951, December 1951 to October 1959, July 1960 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1.37 ft (0.418 m) above mean sea level. Prior to July 1, 1960, at site 300 ft (91 m) downstream at datum 1.30 ft (0.396 m) higher.

AVERAGE DISCHARGE.--20 years (1952-59, 1960-73), 38.7 ft^3/s (1.100 m^3/s), 28,040 acre-ft/yr (34.6 hm^3/yr).

EXTREMES.--Curent year: Maximum discharge, 956 ft^3/s (27.1 m^3/s) Oct. 3, gage height, 4.32 ft (1.317 m); minimum, 3.2 ft^3/s (0.091 m^3/s) Sept. 12-14.
Period of record: Maximum discharge, 13,600 ft^3/s (385 m^3/s) Nov. 28, 1954, gage height, 14.82 ft (4.517 m), site and datum then in use, from rating curve extended above 730 ft^3/s (20.7 m^3/s) on basis of slope-area measurement of peak flow; minimum, 3.2 ft^3/s (0.091 m^3/s) Sept. 12-14, 1973.

REMARKS.--Records good. Diversions above station for irrigation of sugarcane in vicinity of Waiphau. Selected determinations of minor elements for the water year 1972 and records of chemical analyses, water temperatures, and suspended sediment loads for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEAR).--WSP 1639: 1955(M). (WATER YEARS).--WSP 1937: Drainage area. WSP 2137: 1965.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	13	12	24	11	19	34	13	14	23	9,5	11
2	12	13	12	24	11	17	20	13	19	30	9,0	9,9
3	26	12	12	20	22	24	18	13	19	48	8,3	7,8
4	241	11	12	16	30	30	13	12	9,6	31	21	4,4
5	40	12	11	14	20	28	11	16	11	19	30	3,7
6	18	45	11	17	16	18	10	23	11	20	12	3,6
7	14	113	11	16	16	19	15	16	11	19	18	4,1
8	15	27	11	15	18	19	17	11	13	19	15	7,0
9	12	28	12	14	21	18	15	21	17	64	11	4,2
10	15	37	12	14	19	18	110	24	18	144	12	3,7
11	15	31	12	13	18	32	52	18	12	41	18	3,4
12	10	28	12	14	20	33	26	46	12	28	16	3,2
13	11	18	13	15	20	23	50	29	11	19	9,5	3,2
14	15	14	12	15	17	16	30	18	30	24	9,5	3,2
15	22	14	12	13	17	11	22	15	22	25	9,6	3,4
16	12	12	12	13	17	12	16	18	60	25	9,3	3,4
17	13	14	23	13	15	25	19	16	62	16	10	4,5
18	11	12	61	13	14	22	23	13	23	16	18	6,3
19	11	13	77	13	17	19	18	34	14	11	17	6,2
20	9,8	12	25	14	19	19	16	41	17	11	11	7,3
21	9,6	11	22	18	43	32	42	59	14	13	10	11
22	10	11	19	18	20	18	48	40	14	12	8,4	9,0
23	9,2	12	20	12	20	51	30	30	17	9,2	8,5	7,7
24	8,9	12	15	13	21	46	22	34	18	7,1	9,2	16
25	9,3	13	15	13	39	27	17	43	13	9,5	17	17
26	11	19	15	16	28	18	17	27	12	12	17	9,7
27	10	12	15	22	21	22	17	31	14	13	7,6	13
28	25	12	15	33	21	20	20	31	20	15	9,1	5,9
29	47	13	15	21	------	21	26	21	15	13	9,8	16
30	20	12	19	14	------	24	19	21	15	10	9,5	19
31	13	------	24	14	------	34	------	16	------	9,4	8,7	------
TOTAL	707,8	606	569	504	571	735	793	763	557,6	756,2	388,5	227,8
MEAN	22,8	20,2	18,4	16,3	20,4	23,7	26,4	24,6	18,6	24,4	12,5	7,59
MAX	241	113	77	33	43	51	110	59	62	144	30	19
MIN	8,9	11	11	12	11	11	10	11	9,6	7,1	7,6	3,2
AC-FT	1,400	1,200	1,130	1,000	1,130	1,460	1,570	1,510	1,110	1,500	771	452

CAL YR 1972 TOTAL 13,283,0 MEAN 36,3 MAX 1,320 MIN 8,9 AC-FT 26,350
WTR YR 1973 TOTAL 7,178,9 MEAN 19,7 MAX 241 MIN 3,2 AC-FT 14,240

PEAK DISCHARGE (BASE, 1,300 CFS).--No peak above base.

16216000 Waiawa Stream near Pearl City

LOCATION (revised).--Lat 21°23'57", long 157°58'51", on left bank 100 ft (30 m) upstream from lower bridge on Highway 90, 0.6 mi (1.0 km) northwest of Pearl City, and 2.0 mi (3.2 km) northeast of Waipahu.

DRAINAGE AREA.--26.4 mi^2 (68.4 km^2).

PERIOD OF RECORD.--June 1952 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1.81 ft (0.552 m) above mean sea level.

AVERAGE DISCHARGE.--21 years, 32.0 ft^3/s (0.906 m^3/s), 23,180 acre-ft/yr (28.6 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 2,900 ft^3/s (82.1 m^3/s) July 9, gage height, 9.10 ft (2.774 m), from rating curve extended as explained below; minimum, 1.8 ft^3/s (0.051 m^3/s) Sept. 4.
Period of record: Maximum discharge, 23,400 ft^3/s (663 m^3/s) Jan. 5, 1968, gage height, 20.56 ft (6.267 m), from rating curve extended above 1,100 ft^3/s (31.2 m^3/s) on basis of slope-area measurements at gage heights 17.1 (5.21) and 20.56 ft (6.267 m); minimum, 1.8 ft^3/s (0.051 m^3/s) Sept. 1, 1971, Sept. 4, 1973.

REMARKS.--Records good except those above 300 ft^3/s (8.50 m^3/s), which are poor. Low flow affected by effluent from sewage treatment plant and occasional small irrigation diversions and return flows above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses and suspended sediment loads for the water year 1973 are published in Part 2 of this report.

REVISIONS.--WSP 1569: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	5.1	4.7	3.6	3.3	3.1	19	6.7	4.6	41	3.4	4.2
2	3.5	4.7	4.1	3.5	3.6	3.0	11	5.7	4.1	54	4.0	3.5
3	93	4.5	3.6	3.5	3.6	3.1	8.4	4.3	3.8	46	3.1	3.2
4	205	4.3	3.5	4.0	3.3	3.0	7.9	4.6	3.5	26	3.4	2.9
5	25	4.7	3.8	4.0	3.2	3.2	6.4	5.5	3.2	12	2.9	3.3
6	9.1	102	4.1	5.3	3.0	3.8	5.5	4.0	3.6	8.1	2.8	4.0
7	6.2	139	4.5	4.9	3.3	3.9	4.9	3.4	4.8	6.3	2.7	4.3
8	4.5	25	4.3	5.1	3.8	4.6	4.5	3.7	4.8	9.8	3.5	3.6
9	4.5	17	4.0	6.2	3.3	9.8	4.7	18	5.1	276	3.4	3.0
10	6.9	21	3.8	5.1	2.9	6.5	344	14	5.8	398	4.1	3.2
11	5.1	14	3.8	4.1	2.9	23	58	21	5.8	46	4.6	2.7
12	4.7	8.8	3.8	4.3	2.9	20	29	16	5.1	22	3.3	2.7
13	4.7	8.5	3.6	4.1	2.9	21	42	9.4	4.7	14	2.9	4.3
14	4.7	7.2	3.5	4.0	2.8	11	21	6.4	21	10	2.9	6.0
15	7.2	6.2	3.6	4.0	2.8	7.1	14	5.0	12	21	3.2	5.2
16	4.7	5.8	3.8	4.5	2.8	5.5	16	5.1	123	16	4.3	5.6
17	4.3	6.0	6.0	5.3	2.9	5.8	14	4.8	44	8.5	5.0	6.5
18	4.3	5.1	22	4.9	3.1	4.7	14	4.7	17	5.9	5.9	6.5
19	4.0	4.7	63	4.9	2.9	5.6	9.1	13	9.3	4.4	4.8	7.6
20	3.8	4.5	13	4.3	2.9	7.2	8.8	19	6.8	3.6	3.9	7.0
21	4.7	4.5	6.7	3.8	11	24	90	85	5.7	3.8	4.8	7.0
22	3.6	4.3	5.1	3.8	4.6	12	46	62	4.8	3.9	6.8	9.0
23	3.5	5.8	4.0	4.9	3.1	164	24	30	4.4	3.4	5.5	9.1
24	4.1	6.0	4.3	4.7	2.9	41	15	32	4.3	3.0	6.1	6.7
25	4.9	6.0	4.9	3.8	106	20	10	33	3.9	3.9	5.4	6.0
26	4.7	6.0	5.1	4.3	14	15	9.1	16	4.0	3.4	4.2	6.1
27	4.0	4.9	4.5	4.1	5.4	15	12	13	4.1	3.5	3.0	5.5
28	9.4	4.3	4.3	4.0	3.7	12	9.5	7.8	4.0	3.9	2.8	4.1
29	8.8	4.7	3.8	3.8	------	10	7.5	6.1	3.8	3.8	3.7	7.7
30	6.2	5.1	3.8	3.8	------	19	6.9	5.3	4.5	3.5	4.0	9.8
31	6.9	------	4.1	3.6	------	27	------	5.3	------	3.3	3.8	------
TOTAL	469.6	449.7	217.1	134.2	212.9	513.9	872.2	469.8	335.5	1,068.0	124.2	160.3
MEAN	15.1	15.0	7.00	4.33	7.60	16.6	29.1	15.2	11.2	34.5	4.01	5.34
MAX	205	139	63	6.2	106	164	344	85	123	398	6.8	9.8
MIN	3.5	4.3	3.5	3.5	2.8	3.0	4.5	3.4	3.2	3.0	2.7	2.7
AC-FT	931	892	431	266	422	1,020	1,730	932	665	2,120	246	318

CAL YR 1972 TOTAL 7,887.5 MEAN 21.6 MAX 2,030 MIN 2.9 AC-FT 15,640
WTR YR 1973 TOTAL 5,027.4 MEAN 13.8 MAX 398 MIN 2.7 AC-FT 9,970

PEAK DISCHARGE (BASE, 2,300 CFS).--July 9 (2400) 2,900 cfs (9.10 ft).

16224500 Kalauao Stream at Moanalua Road, at Aiea

LOCATION.--Lat 21°23'07", long 157°56'22", on left bank at downstream side of Moanalua Road bridge, 0.4 mi (0.6 km) northwest of Aiea Post Office, and 2.3 mi (3.7 km) southeast of Pearl City Post Office.

DRAINAGE AREA.--2.59 mi^2 (6.71 km^2).

PERIOD OF RECORD.--July 1957 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 11.71 ft (3.569 m) above mean sea level. Nov. 15, 1965, to June 16, 1966, at datum 0.04 ft (0.012 m) higher. Prior to Nov. 15, 1965 and June 17, 1966 to Sept. 30, 1970, at datum 1.04 ft (0.317 m) higher.

AVERAGE DISCHARGE.--16 years, 2.90 ft^3/s (0.0821 m^3/s), 2,100 acre-ft/yr (2.59 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 108 ft^3/s (3.06 m^3/s) Apr. 10, gage height, 2.92 ft (0.890 m); no flow for many days.
Period of record: Maximum discharge, 2,580 ft^3/s (73.1 m^3/s) May 14, 1963, gage height, 6.63 ft (2.021 m), datum then in use, from rating curve extended above 77 ft^3/s (2.18 m^3/s) on basis of slope-area measurements at gage heights 6.29 (1.917) and 6.63 ft (2.021 m); no flow for many days in 1970-73.

REMARKS.--Records fair. Some return of irrigation water above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	.04	.05	.15	.73	.06	.20	1.3	.02	0
2	0	.01	.01	.04	.04	.10	.30	.06	.16	3.7	.02	0
3	7.0	0	.01	.05	.04	.08	.20	.06	.15	4.2	.02	0
4	9.5	0	.01	.05	.04	.06	.15	.04	.10	3.1	.03	.01
5	.22	.01	.01	.04	.04	.04	.10	.04	.08	1.2	.01	.01
6	0	.73	.01	.05	.04	.04	.08	.02	.08	.39	0	.03
7	0	8.2	0	.04	.03	.04	.06	.02	.10	.25	0	0
8	0	.49	0	.04	.04	.04	.04	.02	.06	.20	0	0
9	.06	1.0	0	.05	.03	.04	.04	.02	.06	21	0	.01
10	0	1.7	0	.05	.03	.10	19	.02	.06	20	0	.01
11	0	.51	0	.04	.03	.55	4.5	.02	.06	3.5	0	0
12	0	.21	0	.04	.04	3.6	1.7	.10	.06	1.3	0	0
13	0	.07	0	.04	.04	.96	1.9	.04	.10	.41	0	.29
14	0	.03	0	.04	.04	.30	.61	.04	.15	.20	0	.01
15	0	.02	0	.04	.04	.18	.30	.02	.10	.25	0	0
16	0	.01	.03	.04	.04	.12	.20	.02	5.2	.30	0	0
17	0	0	.07	.04	.04	.08	.25	.02	3.1	.22	0	0
18	0	0	2.1	.04	.04	.06	.45	.06	.64	.16	0	.01
19	0	0	5.2	.04	.04	.04	.20	.04	.20	.12	.01	0
20	0	0	.23	.04	.04	.04	.25	.10	.15	.08	.01	0
21	0	0	.08	.05	.04	.04	6.0	8.1	.10	.06	0	0
22	0	0	.06	.05	.04	.10	2.0	3.4	.08	.05	.01	0
23	0	0	.03	.05	.04	12	.84	1.3	.06	.04	.04	0
24	0	0	.03	.06	.58	4.3	.35	2.6	.06	.03	0	0
25	0	.01	.04	.05	20	1.2	.20	3.6	.06	.02	0	0
26	0	0	.05	.05	1.2	.50	.15	1.0	.04	.02	.01	0
27	0	0	.04	.04	.08	.30	.20	1.3	.04	.02	.02	0
28	.62	0	.05	.05	.02	.15	.15	.22	.04	.02	.01	0
29	.16	0	.03	.05	------	.10	.10	1.6	.04	.02	.01	0
30	0	.01	.02	.04	------	.20	.06	.60	.10	.02	0	0
31	0	------	.05	.04	------	2.2	------	.25	------	.02	0	------
TOTAL	17.56	13.01	8.16	1.38	22.77	27.71	41.11	24.79	11.43	62.20	.22	.38
MEAN	.57	.43	.26	.045	.81	.89	1.37	.80	.38	2.01	.007	.013
MAX	9.5	8.2	5.2	.06	20	12	19	8.1	5.2	21	.04	.29
MIN	0	0	0	.04	.02	.04	.04	.02	.04	.02	0	0
AC-FT	35	26	16	2.7	45	55	82	49	23	123	.4	.8

CAL YR 1972 TOTAL 894.06 MEAN 2.44 MAX 288 MIN 0 AC-FT 1,770
WTR YR 1973 TOTAL 230.72 MEAN .63 MAX 21 MIN 0 AC-FT 458

PEAK DISCHARGE (BASE, 300 CFS).--No peak above base.

16226000 North Halawa Stream near Aiea

LOCATION.--Lat 21°23'46" (revised), long 157°53'37", on left bank 2.7 mi (4.3 km) upstream from confluence with South Halawa Stream and 2.7 mi (4.3 km) northeast of Aiea Post Office.

DRAINAGE AREA.--3.45 mi² (8.94 km²).

PERIOD OF RECORD.--August 1929 to June 1933, July 1953 to current year. Monthly discharge only May, June 1931, published in WSP 1319.

GAGE.--Water-stage recorder. Altitude of gage is 320 ft (98 m), from topographic map.

AVERAGE DISCHARGE.--23 years (1929-32, 1953-73), 5.18 ft³/s (0.147 m³/s), 3,750 acre-ft/yr (4.62 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 153 ft³/s (4.33 m³/s) Feb. 25, gage height, 6.89 ft (2.100 m), from rating curve extended above 44 ft³/s (1.25 m³/s) on basis of slope-area measurements at gage heights 10.3 (3.14), 13.04 (3.975) and 13.46 ft (4.103 m); no flow for many days.
Period of record: Maximum discharge, 6,650 ft³/s (188 m³/s) Feb. 28, 1932, gage height, 13.36 ft (4.103 m), from rating curve extended above 420 ft³/s (11.9 m³/s); maximum gage height, 13.46 ft (4.103 m) May 14, 1963; no flow at times each year.

REMARKS.--Records fair. Recording rain gage located at station. Records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1319: Drainage area. WSP 1719: 1954-55(P), 1956, 1957(P), 1958-59.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	.01	0	.25	1.7	.53	.39	6.7	.02	
2	0	0	0	.01	0	.15	.94	.35	.23	7.2	.02	
3	2.8	0	0	0	0	.11	.63	.23	.14	6.6	.01	
4	15	0	0	0	0	.08	.68	.15	.11	4.0	.01	
5	1.0	0	0	0	0	.07	.58	.12	.08	1.9	.01	
6	.20	4.5	0	0	0	.06	.35	.10	.05	1.2	.01	
7	.11	18	0	0	0	.05	.18	.07	.04	.68	.01	
8	.06	2.1	0	0	0	.07	.12	.07	.03	1.6	0	
9	.03	4.7	0	0	0	.07	.10	2.0	.02	48	0	
10	.02	4.6	0	0	0	.07	42	2.0	.02	32	.19	
11	.03	1.8	0	0	0	1.7	11	2.2	.02	10	.15	
12	.02	.80	0	0	0	5.1	5.1	1.7	.02	4.1	.13	
13	.01	.48	0	0	0	2.8	4.4	.87	.02	2.2	.07	
14	.01	.27	0	0	0	1.5	2.3	.58	2.9	1.4	.05	
15	0	.14	0	0	0	.74	1.3	.35	1.2	2.4	.03	
16	0	.08	0	0	0	.48	1.2	.18	18	2.1	.02	
17	0	.04	0	0	0	.35	1.8	.13	7.5	1.2	.02	
18	0	.03	.04	0	0	.25	1.7	.13	2.3	.94	.02	
19	0	.02	6.7	0	0	.16	.94	.10	1.2	.63	.02	
20	0	.02	.84	0	2.2	.20	.68	.12	.80	.48	.02	
21	0	.02	.35	0	3.0	.39	19	17	.48	.27	.01	
22	0	.01	.18	0	.23	.63	6.6	6.6	.35	.16	.01	
23	0	.01	.11	0	.14	24	3.4	2.6	.20	.13	0	
24	0	.01	.07	0	12	11	2.1	5.9	.11	.09	0	
25	0	.01	.04	0	40	3.8	1.2	4.0	.07	.07	0	
26	0	.01	.04	0	3.9	1.9	1.2	2.1	.05	.05	0	
27	0	0	.03	0	.94	1.0	1.8	1.2	.06	.04	0	
28	0	0	.02	0	.39	.74	1.1	1.9	.04	.03	0	
29	.01	0	.02	0	------	.68	.74	1.4	.03	.03	0	
30	0	0	.02	0	------	2.7	.63	.80	.05	.02	0	
31	0	------	.02	0	------	3.3	------	.58	------	.02	0	------
TOTAL	19.30	37.65	8.48	.02	62.80	64.40	115.47	56.06	36.51	136.24	.83	0
MEAN	.62	1.26	.27	.0006	2.24	2.08	3.85	1.81	1.22	4.39	.027	0
MAX	15	18	6.7	.01	40	24	42	17	18	48	.19	0
MIN	0	0	0	0	0	.05	.10	.07	.02	.02	0	0
AC-FT	38	75	17	.04	125	128	229	111	72	270	1.6	0

CAL YR 1972 TOTAL 630.46 MEAN 1.72 MAX 83 MIN 0 AC-FT 1,250
WTR YR 1973 TOTAL 537.76 MEAN 1.47 MAX 48 MIN 0 AC-FT 1,070

PEAK DISCHARGE (BASE, 570 CFS).--No peak above base.

16227500 Moanalua Stream near Kaneohe

LOCATION.--Lat 21°23'29", long 157°51'05", on left bank 3.3 mi (5.3 km) northeast of Tripler Hospital and 3.6 mi (5.8 km) southwest of Kaneohe Post Office.

DRAINAGE AREA.--0.94 mi^2 (2.43 km^2).

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 660 ft (201 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 1.50 ft^3/s (0.0425 m^3/s), 1,090 acre-ft/yr (1.34 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 106 ft^3/s (3.00 m^3/s) Feb. 25, gage height, 3.98 ft (1.213 m), from rating curve extended as explained below; no flow most of time.
Period of record: Maximum discharge, 1,530 ft^3/s (43.3 m^3/s) Nov. 26, 1970, gage height, 8.07 ft (2.460 m), from rating curve extended above 18 ft^3/s (0.51 m^3/s) on basis of slope-area measurement at gage height 5.94 ft (1.811 m); no flow for many days each year.

REMARKS.--Records fair. No diversion above station. Recording rain gage and evaporation pan located at station. Records of suspended sediment loads for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0		0	.08	.01	.22	0	.55		
2	0	0	0		0	0	0	.17	0	2.6		
3	4.5	0	0		0	0	0	.10	0	1.4		
4	6.2	0	0		0	0	0	.01	0	.47		
5	.43	0	0		0	0	0	0	0	.25		
6	.03	1.6	0		0	0	0	0	0	.13		
7	0	2.6	0		0	0	0	0	0	.02		
8	0	.22	0		0	0	0	0	0	.07		
9	0	.69	0		0	0	1.4	.85	0	29		
10	0	.67	0		0	0	24	.64	0	11		
11	0	.22	0		0	0	4.5	1.0	0	3.2		
12	0	.01	0		0	0	2.1	.68	0	1.4		
13	0	0	0		0	0	1.5	.34	0	.79		
14	0	0	0		0	0	.83	.20	0	.56		
15	0	0	0		0	0	.57	.09	0	.83		
16	0	0	0		0	0	.44	.01	2.4	.55		
17	0	0	0		0	0	.40	0	.95	.48		
18	0	0	2.0		0	0	.33	0	.31	.41		
19	0	0	3.3		0	0	.26	0	.16	.32		
20	0	0	.11		3.1	0	.21	0	.03	.27		
21	0	0	0		.76	0	11	2.3	0	.21		
22	0	0	0		0	0	1.8	1.5	0	.16		
23	0	0	0		0	1.9	.86	.54	0	.12		
24	0	0	0		8.5	.99	.57	.76	0	.12		
25	0	0	0		23	.41	.50	.75	0	.09		
26	0	0	0		1.5	.21	.48	.58	0	.04		
27	0	0	0		.55	.04	.51	.39	0	0		
28	0	0	0		.28	0	.39	.30	0	0		
29	0	0	0		------	0	.31	.21	0	0		
30	0	0	0		------	0	.28	.11	0	0		
31	0	------	0		------	.03	------	.03	------	0		------
TOTAL	11.16	6.01	5.41	0	37.69	3.66	53.25	11.78	3.85	55.04	0	0
MEAN	.36	.20	.17	0	1.35	.12	1.78	.38	.13	1.78	0	0
MAX	6.2	2.6	3.3	0	23	1.9	24	2.3	2.4	29	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	22	12	11	0	75	7.3	106	23	7.6	109	0	0

CAL YR 1972 TOTAL 358.17 MEAN .98 MAX 77 MIN 0 AC-FT 710
WTR YR 1973 TOTAL 187.85 MEAN .51 MAX 29 MIN 0 AC-FT 373

PEAK DISCHARGE (BASE, 250 CFS).--No peak above base.

16227700 Moanalua Stream tributary near Kaneohe

LOCATION.--Lat 21°23'27", long 157°50'53" (revised), on left bank 3.4 mi (5.5 km) northeast of Tripler Hospital and 3.6 mi (5.8 km) southwest of Kaneohe Post Office.

DRAINAGE AREA.--0.62 mi^2 (1.61 km^2).

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 700 ft (213 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 0.814 ft^3/s (0.0231 m^3/s), 590 acre-ft/yr (727,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 41 ft^3/s (1.16 m^3/s) Feb. 25, July 9, gage height, 2.84 ft (0.866 m), from rating curve extended as explained below; no flow for many days.
Period of record: Maximum discharge, 892 ft^3/s (25.3 m^3/s) Feb. 1, 1969, gage height, 5.57 ft (1.698 m), from rating curve extended above 28 ft^3/s (0.79 m^3/s) on basis of slope-area measurement at gage height 5.19 ft (1.582 m); no flow for many days each year.

REMARKS.--Records fair. No diversion above station. Recording rain gage located at station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	.03	0	.06	.20	.22	.18	.40	.21	.06
2	0	0	0	.03	0	.01	.18	.22	.22	1.9	.17	.06
3	2.4	0	0	.01	.06	.01	.15	.27	.18	.61	.16	.03
4	1.8	0	0	0	0	.01	.10	.29	.10	.38	.20	.03
5	.14	0	0	0	0	.01	.06	.33	.14	.30	.22	.03
6	.06	2.9	0	.01	0	.01	.06	.39	.14	.32	.22	.06
7	.04	1.5	0	.02	0	.03	.06	.26	.14	.30	.14	.06
8	.02	.22	0	.01	0	.07	.06	.19	.14	.34	.18	.06
9	.03	.52	0	.01	0	.05	.77	1.6	.18	10	.14	.03
10	.01	.52	0	0	0	.07	9.5	.43	.18	4.1	.10	.06
11	0	.18	0	0	0	.06	1.3	1.5	.22	1.3	.10	.06
12	0	.10	0	0	0	.10	.88	.59	.22	.79	.10	.03
13	0	.06	0	0	0	.17	.63	.40	.27	.62	.10	.03
14	0	.06	0	0	0	.18	.44	.32	.60	.54	.10	.06
15	0	.06	0	0	0	.18	.52	.31	.27	.63	.10	.03
16	0	.06	0	0	0	.20	.63	.32	5.2	.38	.10	.03
17	0	.06	.02	0	0	.14	.57	.29	.60	.38	.10	.03
18	0	.10	.46	0	0	.16	.35	.28	.38	.35	.10	.03
19	0	.10	.85	0	0	.19	.27	.21	.27	.32	.10	.03
20	0	.03	.09	0	2.2	.27	.26	.17	.27	.32	.10	.03
21	0	.03	.04	0	.33	.23	5.1	1.6	.27	.31	.14	0
22	0	.01	.03	0	.08	.18	.73	.51	.27	.29	.14	.01
23	0	.01	.03	0	.02	1.2	.56	.31	.27	.32	.10	.01
24	0	.01	.03	0	4.8	.46	.39	.39	.29	.31	.10	.01
25	0	.01	.04	0	7.0	.27	.41	.32	.24	.22	.10	.01
26	0	.01	.08	0	.39	.22	.57	.25	.24	.18	.10	.01
27	0	0	.09	0	.18	.22	.48	.22	.27	.17	.10	.01
28	.01	0	.04	0	.11	.22	.38	.27	.27	.16	.14	.01
29	0	0	.03	0	------	.22	.31	.22	.29	.18	.10	.03
30	0	0	.03	0	------	.50	.27	.22	.29	.23	.06	.01
31	0	------	.04	0	------	.27	------	.18	------	.27	.06	------
TOTAL	4.51	6.55	1.90	.12	15.17	5.97	26.19	13.08	12.60	26.92	3.88	.95
MEAN	.15	.22	.061	.004	.54	.19	.87	.42	.42	.87	.13	.032
MAX	2.4	2.9	.85	.03	7.0	1.2	9.5	1.6	5.2	10	.22	.06
MIN	0	0	0	0	0	.01	.06	.17	.10	.16	.06	0
AC-FT	8.9	13	3.8	.2	30	12	52	26	25	53	7.7	1.9

CAL YR 1972 TOTAL 173.04 MEAN .47 MAX 44 MIN 0 AC-FT 343
WTR YR 1973 TOTAL 117.84 MEAN .32 MAX 10 MIN 0 AC-FT 234

PEAK DISCHARGE (BASE, 150 CFS).--No peak above base.

16228000 Moanalua Stream near Honolulu

LOCATION.--Lat 21°22'53", long 157°52'22", on left bank 1.8 mi (2.9 km) northeast of Tripler Hospital and 5.0 mi (8.0 km) north of Honolulu Post Office.

DRAINAGE AREA.--2.73 mi^2 (7.07 km^2).

PERIOD OF RECORD.--June 1926 to current year.

GAGE.--Water-stage recorder and concrete weir. Datum of gage is 338.12 ft (103.059 m) above mean sea level (city and county of Honolulu bench mark). Prior to July 1, 1960, at datum 1.00 ft (0.305 m) higher.

AVERAGE DISCHARGE.--47 years, 3.21 ft^3/s (0.0909 m^3/s), 2,330 acre-ft/yr (2.87 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 180 ft^3/s (5.10 m^3/s) July 9, gage height, 3.12 ft (0.951 m), from rating curve extended above 160 ft^3/s (4.53 m^3/s) on basis of slope-area measure at gage height 11.82 ft (3.603 m); no flow most of time.
Period of record: Maximum discharge, 4,580 ft^3/s (130 m^3/s) Nov. 18, 1930, gage height, 12.58 ft (3.834 m), present datum, from rating curve extended above 110 ft^3/s (3.12 m^3/s) by test of model of station site; no flow at times each year.

REMARKS.--Records fair. No diversion above station. Recording rain gage located at station.

REVISIONS (FISCAL YEARS).--WSP 935: 1931(M). WSP 1319: 1927-30(M), 1932-41(M). WSP 1569: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0		0	.01	.28	.08	0	0		
2	0	0	0		0	0	.15	.06	0	.22		
3	1.5	0	0		0	0	.11	.05	0	2.3		
4	9.2	0	0		0	0	.06	.05	0	.63		
5	.08	0	0		0	0	.06	.04	0	.15		
6	0	0	0		0	0	.05	.03	0	.04		
7	0	6.8	0		0	0	.05	0	0	0		
8	0	.11	0		0	0	.03	0	0	0		
9	0	.09	0		0	0	.02	0	0	47		
10	0	.63	0		0	0	42	0	0	38		
11	0	.38	0		0	0	10	1.8	0	6.8		
12	0	.13	0		0	.06	4.1	1.6	0	2.6		
13	0	.06	0		0	.06	3.2	.50	0	1.5		
14	0	.03	0		0	.05	1.3	.11	0	.58		
15	0	0	0		0	.06	.58	.02	0	.68		
16	0	0	0		0	.06	.28	0	7.4	.42		
17	0	0	0		0	.06	.73	0	3.2	.13		
18	0	0	0		0	.06	.63	0	.63	.03		
19	0	0	3.4		0	.06	.25	0	.19	0		
20	0	0	.13		.28	.08	.83	0	.08	0		
21	0	0	.05		.22	.09	22	1.3	.04	0		
22	0	0	.03		0	.08	5.1	4.2	.03	0		
23	0	0	.01		0	.93	2.4	1.3	.03	0		
24	0	0	0		7.6	1.8	1.1	.88	0	0		
25	0	0	0		39	.54	.63	.88	0	0		
26	0	0	0		1.9	.22	.78	.63	0	0		
27	0	0	0		.13	.11	1.2	.25	0	0		
28	0	0	0		.03	.09	.54	.13	0	0		
29	0	0	0		------	.08	.22	.06	0	0		
30	0	0	0		------	.25	.13	.02	0	0		
31	0	------	0		------	.19	------	0	------	0		------
TOTAL	10.78	8.23	3.62	0	49.16	4.94	98.81	13.99	11.60	101.08	0	0
MEAN	.35	.27	.12	0	1.76	.16	3.29	.45	.39	3.26	0	0
MAX	9.2	6.8	3.4	0	39	1.8	42	4.2	7.4	47	0	0
MIN	0	0	0	0	0	0	.02	0	0	0	0	0
AC-FT	21	16	7.2	0	98	9.8	196	28	23	200	0	0

CAL YR 1972 TOTAL 570.61 MEAN 1.56 MAX 137 MIN 0 AC-FT 1,130
WTR YR 1973 TOTAL 302.21 MEAN .83 MAX 47 MIN 0 AC-FT 599

PEAK DISCHARGE (BASE, 400 CFS).--No peak above base.

16229000 Kalihi Stream near Honolulu

LOCATION.--Lat 21°22'00" (revised), long 157°50'49", on right bank 1.9 mi (3.1 km) upstream from Kamanaiki Stream and 4.1 mi (6.6 km) north of Honolulu Post Office.

DRAINAGE AREA.--2.61 mi² (6.76 km²).

PERIOD OF RECORD.--September 1913 to April 1914, July 1914 to current year. Monthly discharge only for some periods, published in WSP 1319.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 464.40 ft (141.549 m) above mean sea level. Prior to Oct. 12, 1923, at datum 2.00 ft (0.610 m) lower.

AVERAGE DISCHARGE.--59 years (1914-73), 6.93 ft³/s (0.196 m³/s), 5,020 acre-ft/yr (6.19 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 137 ft³/s (3.88 m³/s) Feb. 25, gage height, 4.51 ft (1.375 m), from rating curve extended as explained below; minimum, 0.30 ft³/s (0.008 m³/s) Jan. 22-26.
Period of record: Maximum discharge, about 12,400 ft³/s (351 m³/s) Nov. 18, 1930, gage height, 13.81 ft (4.209 m), from rating curve extended above 280 ft³/s (7.93 m³/s) on basis of indirect measurements at gage heights 8.9 (2.71), 10.96 (3.341) and 11.27 ft (3.435 m); minimum, 0.09 ft³/s (0.003 m³/s) Oct. 22, 1933, July 29, 1966.

REMARKS.--Records fair. No diversion above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses and suspended sediment loads for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1569: Drainage area. WSP 1719: 1921-22(M), 1923-24, 1925-26(M), 1927-28, 1929-32(M), 1935, 1937, 1938-39(M), 1943(M), 1948-52(P), 1955-56, 1957-58(M), 1959.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	.65	.65	.82	.65	1.5	3.8	3.0	2.0	5.7	1.8	.82
2	.65	1.1	.73	.73	.36	1.6	3.2	2.8	1.8	12	1.8	1.4
3	7.9	1.2	.73	.65	2.6	1.8	3.0	2.6	1.8	6.8	1.8	.91
4	7.7	.91	.57	.57	.36	1.6	2.8	2.4	2.2	4.6	3.1	1.2
5	2.4	.57	.57	.57	.43	2.2	2.4	2.3	2.6	3.6	2.0	1.1
6	1.4	7.6	.57	1.5	.50	2.0	2.3	2.4	2.2	3.2	2.4	.91
7	1.4	8.2	.57	2.6	.65	2.3	1.9	2.8	2.0	2.6	2.6	1.0
8	.82	3.0	.65	1.4	1.0	2.8	1.9	2.4	1.8	4.2	1.8	.82
9	.65	4.4	.73	1.0	.65	2.0	4.6	9.1	1.6	48	1.3	.73
10	.50	4.6	.50	.82	.57	2.0	43	4.6	1.5	30	1.2	.73
11	.50	3.4	.43	.73	.65	6.0	14	16	1.6	12	1.1	.57
12	.50	2.2	.43	.73	1.1	4.6	8.7	5.9	1.5	8.4	1.0	.65
13	.50	1.6	.50	.65	.90	4.6	6.8	4.4	2.8	6.5	.91	.57
14	.50	1.4	.50	.57	.70	3.6	5.4	3.4	4.6	5.4	.91	1.4
15	.50	1.4	.50	.50	.52	2.6	4.9	2.8	2.8	5.9	1.0	.73
16	.43	1.1	.57	.50	.57	3.4	4.4	2.6	15	4.6	1.2	.65
17	.43	1.1	1.6	.43	.50	4.0	5.4	3.2	7.0	3.8	1.2	.73
18	.43	1.1	3.6	.36	.43	3.8	4.0	4.6	3.8	3.4	1.2	.91
19	.43	1.0	5.3	.36	.36	3.8	3.6	3.6	4.4	3.2	1.2	.82
20	.43	.82	1.8	.36	9.6	3.8	5.4	4.2	2.3	3.0	1.3	.91
21	.43	.73	1.2	.36	3.8	3.6	18	12	2.0	2.8	1.2	.91
22	.57	.57	.91	.30	1.4	3.8	7.7	6.5	1.8	2.4	1.2	1.1
23	.43	.73	.82	.30	1.1	9.5	5.6	5.0	1.6	2.4	1.1	1.1
24	.36	.82	1.0	.30	14	5.9	4.6	3.8	1.5	2.4	1.1	.91
25	.36	.65	1.4	.30	28	4.0	3.8	3.2	1.5	2.4	1.0	.65
26	.50	1.1	1.6	.30	5.0	3.0	4.6	2.8	1.3	2.8	1.1	.57
27	.73	.65	.91	.57	3.2	2.6	4.0	17	1.2	2.3	1.1	.73
28	1.3	.65	.82	.73	2.2	2.4	3.6	5.4	1.2	2.2	.82	.73
29	1.8	.65	1.0	.36	------	3.0	3.0	3.5	1.2	2.0	.91	2.2
30	.65	.65	.65	.43	------	5.1	3.2	2.7	2.7	1.9	.82	.82
31	.57	------	.82	.43	------	4.4	------	2.3	------	1.9	.82	------
TOTAL	37.57	54.55	32.63	20.23	81.80	107.3	189.6	149.3	81.3	202.4	41.99	27.28
MEAN	1.21	1.82	1.05	.65	2.92	3.46	6.32	4.82	2.71	6.53	1.35	.91
MAX	7.9	8.2	5.3	2.6	28	9.5	43	17	15	48	3.1	2.2
MIN	.36	.57	.43	.30	.36	1.5	1.9	2.3	1.2	1.9	.82	.57
AC-FT	75	108	65	40	162	213	376	296	161	401	83	54

CAL YR 1972 TOTAL 1,352.00 MEAN 3.69 MAX 170 MIN .30 AC-FT 2,680
WTR YR 1973 TOTAL 1,025.95 MEAN 2.81 MAX 48 MIN .30 AC-FT 2,030

PEAK DISCHARGE (BASE, 700 CFS).--No peak above base.

NOTE.--No gage-height record Jan. 14 to Feb. 15, May 23 to June 22.

16229300 Kalihi Stream at Kalihi

LOCATION.--Lat 21°20'29", long 157°52'36", on right bank at Kalihi, 0.4 mi (0.6 km) northwest of Bishop Museum, and 2.4 mi (3.9 km) northwest of Honolulu Post Office.

DRAINAGE AREA.--5.18 mi^2 (13.42 km^2).

PERIOD OF RECORD.--Water year 1962 (annual maximum), July 1962 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 70 ft (21 m), from topographic map. Aug. 28, 1961, to June 30, 1962, crest-stage gage at site 600 ft (183 m) downstream at different datum.

AVERAGE DISCHARGE.--11 years, 12.2 ft^3/s (0.346 m^3/s), 8,840 acre-ft/yr (10.9 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 2,130 ft^3/s (60.3 m^3/s) May 27, gage height, 5.38 ft (1.640 m), from rating curve extended above 780 ft^3/s (22.1 m^3/s) on basis of slope-area measurements at gage heights 8.0 (2.44) and 8.24 ft (2.512 m); minimum, 0.70 ft^3/s (0.019 m^3/s) Oct. 26.
Period of record: Maximum discharge, about 7,000 ft^3/s (198 m^3/s) Nov. 14, 1965; minimum, 0.16 ft^3/s (0.005 m^3/s) June 24, 1966.
Flood of May 14, 1960, reached a stage of 8.0 ft (2.44 m) from floodmarks, present site and datum, discharge, 6,350 ft^3/s (180 m^3/s), from slope-area measurement of peak flow.

REMARKS.--Records fair except those below 1.0 ft^3/s (0.028 m^3/s), which are poor. No diversion above station. Recording rain gage located at station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses and suspended sediment loads for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	.90	1.0	1.5	2.4	3.4	7.3	4.8	3.6	11	2.4	1.3
2	1.3	2.1	1.0	1.3	2.4	3.9	5.6	4.5	3.6	24	3.1	2.6
3	13	1.7	1.0	1.2	5.2	3.9	4.8	4.2	3.6	13	2.6	1.7
4	15	1.5	.90	1.0	2.1	2.8	4.5	3.9	4.5	8.6	4.5	3.1
5	3.9	1.0	.90	1.2	1.2	4.2	3.6	3.9	4.5	6.9	3.1	2.1
6	2.4	14	.90	4.9	1.3	2.8	3.4	4.5	3.6	5.2	3.4	1.7
7	2.4	20	1.0	3.9	1.9	3.6	3.1	6.3	3.9	4.2	3.9	2.4
8	1.5	6.9	.90	1.9	2.8	5.2	3.1	7.0	3.1	6.9	2.8	1.5
9	1.9	12	1.0	1.5	1.9	3.1	5.6	16	2.8	62	2.8	1.5
10	2.1	9.6	.90	1.3	1.7	3.9	44	7.7	2.8	45	3.9	1.5
11	1.3	7.3	.80	1.2	1.9	14	17	24	3.1	17	2.6	1.5
12	1.2	4.2	.80	1.2	3.1	9.6	12	11	2.8	12	2.1	1.5
13	1.0	3.4	.90	1.2	2.4	8.2	10	7.3	5.2	9.6	2.1	1.7
14	1.0	3.1	.90	1.2	2.1	5.6	7.7	5.6	7.3	8.2	2.4	2.3
15	1.0	3.5	.80	1.3	1.5	3.9	8.2	4.8	3.6	10	2.1	1.3
16	1.0	2.4	1.8	1.5	1.9	6.8	6.9	4.5	28	7.3	2.4	1.2
17	.90	2.1	3.9	1.3	1.5	7.7	8.2	6.9	12	6.9	2.4	1.0
18	1.0	2.4	22	1.2	1.3	9.6	6.1	10	6.1	5.6	2.1	1.3
19	1.2	1.7	12	1.2	1.3	8.6	5.2	6.9	6.9	5.6	1.5	1.2
20	1.2	1.3	3.6	1.2	13	8.2	9.8	7.7	3.9	5.2	1.9	1.3
21	1.3	1.3	2.4	1.1	8.2	7.3	27	24	3.4	5.2	1.5	1.5
22	1.3	1.3	1.7	1.0	2.8	8.4	12	16	3.1	5.2	1.7	2.1
23	1.2	1.3	1.5	1.0	2.6	26	9.6	9.4	2.8	4.2	1.7	1.6
24	1.0	1.3	1.7	1.5	17	14	7.7	9.6	2.6	3.6	1.5	1.3
25	1.0	2.0	1.9	1.5	40	9.6	7.3	7.3	2.6	3.4	1.5	1.1
26	1.2	2.6	3.7	1.7	8.7	8.9	8.3	5.6	2.4	3.6	1.9	1.0
27	2.6	1.2	1.7	2.6	5.2	6.1	6.9	39	2.4	3.1	1.9	1.5
28	6.4	1.2	1.7	2.4	3.9	6.5	6.1	10	2.6	2.8	1.5	1.3
29	3.4	1.2	1.7	1.0	------	6.9	5.2	6.1	2.6	2.8	2.1	3.9
30	.90	1.2	1.5	1.2	------	13	5.2	4.5	5.2	2.8	1.7	1.9
31	.90	------	1.9	1.5	------	10	------	4.2	------	2.8	1.5	------
TOTAL	79.10	115.70	78.40	48.7	141.3	235.7	271.4	287.2	144.6	313.7	72.6	50.9
MEAN	2.55	3.86	2.53	1.57	5.05	7.60	9.05	9.26	4.82	10.1	2.34	1.70
MAX	15	20	22	4.9	40	26	44	39	28	62	4.5	3.9
MIN	.90	.90	.80	1.0	1.2	2.8	3.1	3.9	2.4	2.8	1.5	1.0
AC-FT	157	229	156	97	280	468	538	570	287	622	144	101

CAL YR 1972 TOTAL 2,261.33 MEAN 6.18 MAX 235 MIN .70 AC-FT 4,490
WTR YR 1973 TOTAL 1,839.30 MEAN 5.04 MAX 62 MIN .80 AC-FT 3,650

PEAK DISCHARGE (BASE, 1,600 CFS).--May 27 (1830) 2,130 cfs (5.38 ft).

16232000 Nuuanu Stream below reservoir 2 wasteway, near Honolulu

LOCATION.--Lat 21°20'57" (revised), long 157°49'40", on right bank beside Old Pali Road in upper Nuuanu Valley, 0.2 mi (0.3 km) downstream from reservoir 2 wasteway, and 3.5 mi (5.6 km) northeast of Honolulu Post Office.

DRAINAGE AREA.--3.35 mi^2 (8.68 km^2).

PERIOD OF RECORD.--October 1913 to January 1921, September 1921 to current year.

GAGE.--Water-stage recorder and sharp-crested weirs. Datum of gage is 631.71 ft (192.545 m) above mean sea level. Prior to Sept. 7, 1915, nonrecording gage at same site at datum 0.03 ft (0.009 m) lower and Sept. 7, 1915, to Mar. 31, 1918, at same datum.

AVERAGE DISCHARGE.--57 years (1914-16, 1917-20, 1921-73), 7.32 ft^3/s (0.207 m^3/s), 5,300 acre-ft/yr (6.53 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 117 ft^3/s (3.31 m^3/s) Feb. 25, gage height, 2.57 ft (0.783 m), from rating curve extended above 420 ft^3/s (11.9 m^3/s) on basis of slope-area measurement at gage height 6.69 ft (2.039 m); minimum, 0.50 ft^3/s (0.014 m^3/s) Dec. 13, 14.
Period of record: Maximum discharge, 6,990 ft^3/s (198 m^3/s) Jan. 16, 1921, gage height, 8.74 ft (2.664 m), from floodmarks, from rating curve extended above 420 ft^3/s (11.9 m^3/s) by test of model of station site; minimum, 0.09 ft^3/s (0.003 m^3/s) Sept. 10, 11, 1925.

REMARKS.--Records fair. Low-flow regulation by reservoirs 2, 3, and 4, capacities, 21 (25,900 m^3), 34 (41,900 m^3), and 1,630 acre-ft (2.01 hm^3), respectively. Honolulu Board of Water Supply diverts ground water from tunnels in drainage area. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 985: 1921-35(M). WSP 1319: 1931. WSP 1569: Drainage area. WSP 1639: 1931, 1935.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	.81	.66	.76	1.1	1.3	2.0	2.5	2.4	3.4	2.2	1.6
2	.81	.96	.76	.76	1.0	1.4	1.9	2.4	2.2	6.4	2.3	1.7
3	6.9	1.0	.66	.71	1.3	1.5	1.7	2.4	2.2	4.8	2.2	1.6
4	4.9	.86	.62	.66	.86	1.3	1.8	2.3	2.4	3.1	2.8	1.7
5	1.3	.81	.58	.66	.74	1.4	1.6	2.3	2.2	3.3	2.4	1.7
6	1.3	2.7	.58	1.1	.62	1.2	1.6	2.3	2.2	3.3	2.5	1.6
7	1.4	3.7	.58	1.1	.62	1.4	1.6	2.5	2.2	3.3	2.4	1.5
8	1.4	1.3	.62	.91	.76	1.5	1.6	2.7	2.1	3.9	2.3	1.4
9	.86	1.4	.62	.91	.66	1.4	2.7	6.4	2.0	16	2.5	1.4
10	.81	1.3	.54	.86	.54	1.4	17	3.0	2.0	10	3.3	1.4
11	.81	1.2	.54	.96	.54	2.1	5.2	12	2.0	4.7	2.2	1.3
12	.86	1.1	.54	.81	.56	2.0	4.5	4.2	2.0	3.9	2.1	1.3
13	.96	1.0	.54	.62	.54	1.8	4.4	2.9	2.4	3.1	2.0	1.3
14	.91	1.1	.54	.62	.58	1.6	3.0	2.5	3.2	3.1	2.2	1.8
15	.81	1.1	.58	.62	.54	1.6	3.2	2.4	2.1	4.6	2.2	1.2
16	.76	.96	.62	.62	.58	2.0	2.8	2.3	12	3.4	2.1	1.2
17	.76	.86	.76	.62	.62	2.0	3.3	2.5	4.0	3.3	2.0	1.3
18	.76	.96	1.9	.62	.76	1.8	2.6	3.3	2.5	3.2	2.0	1.2
19	.76	.86	2.3	.62	1.1	1.9	2.4	2.6	2.6	2.9	2.0	1.2
20	.76	.76	1.1	.58	6.9	2.3	2.8	2.9	2.4	2.9	2.0	1.2
21	.76	.81	.91	.62	3.0	2.0	7.5	4.7	2.3	2.8	1.9	1.2
22	.76	.86	.91	.62	2.0	2.1	4.3	3.6	2.2	2.6	1.9	1.2
23	.76	.91	1.0	.62	1.8	5.4	3.8	2.9	2.2	2.5	1.9	1.4
24	.76	.91	1.2	.71	12	4.0	3.4	3.2	2.1	2.7	1.8	1.2
25	.76	.91	2.0	.62	21	2.4	2.5	2.9	2.0	2.7	1.7	1.2
26	.91	.86	1.7	.62	1.9	2.2	2.4	2.6	2.0	2.5	1.8	1.1
27	.99	.66	.91	.86	1.5	2.0	2.4	2.9	2.0	2.4	1.9	1.2
28	1.2	.66	.91	.91	1.4	1.9	2.5	2.7	1.9	2.4	1.7	1.1
29	1.4	.66	.86	.86	------	1.8	2.5	2.5	2.0	2.4	1.7	1.8
30	.96	.66	.81	1.2	------	3.1	2.6	2.4	2.4	2.4	1.7	1.2
31	.81	------	.76	1.0	------	2.4	------	2.4	------	2.2	1.6	------
TOTAL	39.20	32.64	27.61	23.76	65.52	62.2	101.6	99.2	78.2	120.2	65.3	41.2
MEAN	1.26	1.09	.89	.77	2.34	2.01	3.39	3.20	2.61	3.88	2.11	1.37
MAX	6.9	3.7	2.3	1.2	21	5.4	17	12	12	16	3.3	1.8
MIN	.76	.66	.54	.58	.54	1.2	1.6	2.3	1.9	2.2	1.6	1.1
AC-FT	78	65	55	47	130	123	202	197	155	238	130	82

CAL YR 1972 TOTAL 1,428.66 MEAN 3.90 MAX 68 MIN .54 AC-FT 2,830
WTR YR 1973 TOTAL 756.63 MEAN 2.07 MAX 21 MIN .54 AC-FT 1,500

PEAK DISCHARGE (BASE, 240 CFS).--No peak above base.

16238500 Waihi Stream at Honolulu

LOCATION.--Lat 21°19'55", long 157°48'12" (revised), on left bank 100 ft (30 m) upstream from bridge on Waaloa Way, 700 ft (213 m) upstream from confluence with Waiakeakua Stream, and 4.2 mi (6.8 km) northeast of Honolulu Post Office.

DRAINAGE AREA.--1.14 mi^2 (2.95 km^2).

PERIOD OF RECORD.--May 1913 to January 1921, August 1925 to current year. Prior to July 1960, published as West Branch Manoa Stream near Honolulu.

GAGE.--Water-stage recorder and combination Parshall flume and V-notch weir. Datum of gage is 290.84 ft (88.648 m) above mean sea level (Honolulu Board of Water Supply bench mark). Prior to June 17, 1914, non-recording gage at same site at different datum. June 17, 1914, to Jan. 16, 1921, water-stage recorder at site 150 ft (46 m) upstream at different datum and Aug. 4, 1925, to Mar. 15, 1928, at present site at datum 3.35 ft (1.021 m) lower.

AVERAGE DISCHARGE.--55 years (1913-20, 1925-73), 3.66 ft^3/s (0.104 m^3/s), 2,650 acre-ft/yr (3.27 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 130 ft^3/s (3.68 m^3/s) May 11, gage height, 2.13 ft (0.649 m), from rating curve extended above 120 ft^3/s (3.40 m^3/s) by test of model of station site; minimum, 0.15 ft^3/s (0.004 m^3/s) several days in January.
Period of record: Maximum discharge, 3,250 ft^3/s (92.0 m^3/s) Jan. 16, 1921, gage height, 10.4 ft (3.17 m), from floodmarks (site and datum then in use), from rating curve extended above 60 ft^3/s (1.70 m^3/s); minimum, 0.08 ft^3/s (0.002 m^3/s) Dec. 16, 18, 1913, Jan. 16-18, Feb. 4, 6, 1915, Mar. 16, 22, 1926.

REMARKS.--Records good. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1319: 1930-32(M), 1939(M). WSP 1569: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	.36	.42	.30	.28	.59	2.9	2.1	1.5	9.0	.81	.43
2	.34	.89	.48	.22	.41	.63	2.3	1.7	1.4	20	.82	.39
3	13	1.8	.42	.18	.60	1.7	2.2	1.5	1.3	8.7	.86	.29
4	8.4	.96	.36	.22	.35	.75	2.1	1.3	2.3	4.7	1.7	.98
5	3.0	.62	.36	.18	.22	1.3	1.6	1.4	2.1	3.2	.93	.84
6	1.5	11	.30	.89	.30	.82	1.4	1.4	1.8	2.6	2.1	.53
7	.98	11	.30	.99	.55	1.3	1.3	4.1	1.7	2.3	1.7	.64
8	.73	3.6	.36	.32	.42	1.8	1.4	4.0	1.4	4.4	1.0	.37
9	1.8	3.9	.30	.24	.36	1.0	5.7	14	1.2	21	2.2	.29
10	.80	3.6	.30	.21	.22	.90	19	3.6	1.2	11	2.8	.25
11	.62	2.7	.30	.21	.22	8.7	4.9	17	1.1	6.2	.90	.23
12	.55	1.9	.26	.19	.22	5.9	5.1	4.1	1.2	5.0	.71	.22
13	.48	1.5	.22	.17	.22	4.0	4.0	2.9	5.5	3.4	.61	.23
14	.42	1.3	.26	.18	.18	2.8	2.7	2.3	6.4	3.1	.66	1.2
15	.36	1.6	.36	.17	.18	1.9	5.4	2.0	2.3	5.2	.78	.30
16	.36	1.1	.36	.16	.26	4.0	2.9	1.8	18	2.6	.74	.32
17	.36	1.0	.48	.16	.22	3.8	4.8	3.4	4.5	2.5	1.2	.39
18	.26	1.1	2.1	.18	.22	3.2	2.5	4.1	2.6	2.2	.98	.27
19	.26	.92	2.0	.21	.22	2.9	2.1	2.6	2.7	1.9	.60	.25
20	.26	.76	.44	.19	3.5	3.6	3.3	5.8	1.9	1.8	.73	.23
21	.26	.69	.28	.24	1.3	3.0	8.5	7.1	1.7	1.9	.46	.28
22	.26	.69	.22	.20	.46	3.3	3.6	4.8	1.6	1.6	.52	.30
23	.26	.69	.25	.17	.33	11	2.9	3.3	1.5	1.6	.42	1.4
24	.22	.62	.20	.23	8.2	6.9	2.4	4.1	1.3	1.6	.41	.59
25	.26	.55	1.4	.18	14	3.9	2.3	3.3	1.1	1.8	.36	.29
26	.55	.92	.98	.17	2.3	3.0	4.5	2.4	1.0	1.3	.85	.24
27	.36	.48	.28	.32	1.2	2.4	3.0	2.4	1.0	1.2	.72	.85
28	.84	.48	.59	.23	.80	2.2	2.4	2.4	.92	1.1	.45	.43
29	1.4	.42	.42	.21	------	2.4	2.1	2.2	.84	1.0	.80	3.5
30	.42	.42	.27	.60	------	6.9	2.1	1.8	4.1	.89	.68	.84
31	.30	------	.32	.39	------	4.3	------	1.6	------	.87	.53	------
TOTAL	41.11	57.57	15.59	8.51	37.74	100.89	111.4	116.5	77.16	135.66	28.63	17.37
MEAN	1.33	1.92	.50	.27	1.35	3.25	3.71	3.76	2.57	4.38	.92	.58
MAX	13	11	2.1	.99	14	11	19	17	18	21	2.8	3.5
MIN	.22	.36	.20	.16	.18	.59	1.3	1.3	.84	.87	.36	.22
AC-FT	82	114	31	17	75	200	221	231	153	269	57	34

CAL YR 1972 TOTAL 604.43 MEAN 1.65 MAX 44 MIN .19 AC-FT 1,200
WTR YR 1973 TOTAL 748.13 MEAN 2.05 MAX 21 MIN .16 AC-FT 1,480

PEAK DISCHARGE (BASE, 310 CFS).--No peak above base.

16240500 Waiakeakua Stream at Honolulu

LOCATION (revised).--Lat 21°19'53", long 157°48'12", on right bank 5 ft (2 m) downstream from bridge on Waaloa Way, 500 ft (152 m) upstream from confluence with Waihi Stream, and 4.2 mi (6.8 km) northeast of Honolulu Post Office.

DRAINAGE AREA.--1.06 mi^2 (2.75 km^2).

PERIOD OF RECORD.--May 1913 to January 1921, August 1925 to current year. Prior to July 1960, published as East Branch Manoa Stream near Honolulu.

GAGE.--Water-stage recorder and combination Parshall flume and concrete weir. Datum of gage is 294.50 ft (89.764 m) above mean sea level (Honolulu Board of Water Supply bench mark). Prior to May 20, 1914, non-recording gage at site 200 ft (61 m) upstream at different datum. May 20, 1914, to Jan. 16, 1921, water-stage recorder at site 30 ft (9 m) upstream at different datum. Aug. 18, 1925, to Mar. 15, 1928, water-stage recorder at present site at datum 2.99 ft (0.911 m) lower, and Mar. 16, 1928, to Oct. 18, 1933, at datum 0.41 ft (0.125 m) higher than present datum.

AVERAGE DISCHARGE.--55 years (1913-20, 1925-73), 5.16 ft^3/s (0.146 m^3/s), 3,740 acre-ft/yr (4.61 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 133 ft^3/s (3.77 m^3/s) Feb. 25, gage height, 2.41 ft (0.735 m), from rating curve extended above 110 ft^3/s (3.12 m^3/s) on basis of slope-area measurement at gage height 5.28 ft (1.609 m); minimum, 1.1 ft^3/s (0.031 m^3/s) Jan. 26.
Period of record: Maximum discharge, 3,090 ft^3/s (87.5 m^3/s) Jan. 16, 1921, gage height, 10.4 ft (3.17 m), from floodmarks, site and datum then in use, from rating curve extended above 58 ft^3/s (1.64 m^3/s); minimum, 0.6 ft^3/s (0.017 m^3/s) June 7, 8, 1926.

REMARKS.--Records fair. Honolulu Board of Water Supply at times diverts a small amount of ground water from tunnel above station. Occasional small diversions for irrigation above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1319: 1919(M), 1930-33(M). WSP 1569: Drainage area. WSP 1937: 1949(M), 1960(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	1.6	1.3	1.4	1.2	1.7	3.2	2.6	2.5	11	2.7	1.9
2	1.6	2.3	1.4	1.2	1.3	2.4	2.7	2.1	2.4	19	2.7	1.9
3	15	3.1	1.3	1.2	1.6	2.8	2.8	2.0	2.4	8.2	2.7	1.9
4	9.2	2.1	1.3	1.2	1.2	1.9	2.7	1.9	3.2	4.7	3.3	3.1
5	3.7	1.8	1.3	1.2	1.2	2.7	2.2	2.0	3.1	3.8	2.8	2.6
6	2.4	9.4	1.3	3.0	1.2	2.1	2.1	2.0	2.7	3.4	3.9	2.7
7	2.0	7.5	1.3	2.7	1.7	2.5	2.0	3.6	2.6	3.6	3.6	2.5
8	1.7	3.2	1.4	1.7	1.8	2.7	2.1	4.2	2.4	7.8	3.1	2.1
9	2.6	4.1	1.3	1.3	1.6	1.9	7.5	13	2.2	35	4.7	2.0
10	2.1	3.8	1.3	1.2	1.2	1.9	22	3.4	2.1	17	5.4	1.9
11	1.7	2.7	1.3	1.2	1.2	7.5	5.6	19	2.0	9.8	2.7	1.9
12	1.6	2.2	1.2	1.2	1.2	5.5	5.5	4.6	2.1	7.1	2.5	1.9
13	1.6	2.1	1.2	1.2	1.2	4.4	4.0	3.3	4.6	5.2	2.4	2.0
14	1.6	2.0	1.3	1.2	1.2	3.4	3.2	3.0	5.1	5.0	2.4	3.2
15	1.5	2.1	1.3	1.2	1.2	2.6	5.1	2.7	2.7	7.4	2.7	1.9
16	1.4	1.8	1.4	1.2	1.2	4.0	3.3	2.6	14	4.4	2.6	1.8
17	1.4	1.8	1.7	1.2	1.2	4.0	4.5	4.2	4.4	4.0	3.0	2.0
18	1.4	1.8	4.2	1.2	1.2	3.6	2.8	4.5	3.1	4.0	2.4	1.8
19	1.4	1.7	3.6	1.2	1.2	3.4	2.6	3.3	3.7	3.4	2.4	1.8
20	1.4	1.5	1.6	1.2	4.9	3.6	4.0	5.0	3.0	3.4	2.6	1.8
21	1.4	1.5	1.4	1.3	2.6	3.0	7.4	6.3	2.6	3.6	2.1	1.8
22	1.4	1.5	1.3	1.2	1.4	3.8	3.7	4.5	2.5	3.2	2.2	1.9
23	1.3	1.6	1.3	1.2	1.4	12	3.0	3.4	2.4	3.2	2.1	3.4
24	1.3	1.5	1.3	1.4	14	5.6	2.8	4.8	2.4	3.2	2.1	2.6
25	1.3	1.5	2.2	1.2	20	3.4	2.8	4.0	2.2	3.9	2.0	2.0
26	1.7	1.7	1.7	1.2	3.0	3.2	4.4	3.2	2.1	3.3	2.6	2.0
27	1.8	1.4	1.3	1.6	2.1	2.8	3.1	3.1	2.1	2.8	2.4	3.6
28	2.4	1.4	2.3	1.3	1.9	2.7	2.6	3.7	2.0	2.8	2.0	2.2
29	3.0	1.4	1.4	1.3	------	3.2	2.5	3.6	2.1	2.8	2.5	5.6
30	1.7	1.4	1.3	1.6	------	6.6	2.5	3.0	4.5	2.7	2.2	2.7
31	1.6	------	1.5	1.3	------	4.1	------	2.6	------	2.7	2.1	------
TOTAL	76.9	73.5	49.0	42.7	76.1	115.0	124.7	131.2	95.2	201.4	84.9	70.5
MEAN	2.48	2.45	1.58	1.38	2.72	3.71	4.16	4.23	3.17	6.50	2.74	2.35
MAX	15	9.4	4.2	3.0	20	12	22	19	14	35	5.4	5.6
MIN	1.3	1.4	1.2	1.2	1.2	1.7	2.0	1.9	2.0	2.7	2.0	1.8
AC-FT	153	146	97	85	151	228	247	260	189	399	168	140

CAL YR 1972 TOTAL 1,139.9 MEAN 3.11 MAX 50 MIN 1.2 AC-FT 2,260
WTR YR 1973 TOTAL 1,141.1 MEAN 3.13 MAX 35 MIN 1.2 AC-FT 2,260

PEAK DISCHARGE (BASE, 310 CFS).--No peak above base.

16244000 Pukele Stream near Honolulu

LOCATION (revised).--Lat 21°18'36", long 157°47'27", on right bank 200 ft (61 m) upstream from bridge on Palolo Avenue, 0.6 mi (1.0 km) upstream from confluence with Waiomao Stream, and 4.8 mi (7.7 km) east of Honolulu Post Office.

DRAINAGE AREA.--1.18 mi^2 (3.06 km^2).

PERIOD OF RECORD.--June 1926 to current year.

GAGE.--Water-stage recorder and V-notch weir. Datum of gage is 344.78 ft (105.089 m) above mean sea level (Honolulu Board of Water Supply bench mark).

AVERAGE DISCHARGE.--47 years, 1.99 ft^3/s (0.0564 m^3/s), 1,440 acre-ft/yr (1.78 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 79 ft^3/s (2.24 m^3/s) Feb. 25, gage height, 2.77 ft (0.844 m); minimum, 0.20 ft^3/s (0.006 m^3/s) for many days.
Period of record: Maximum discharge, 2,600 ft^3/s (73.6 m^3/s) Apr. 11, 1930, gage height, 7.75 ft (2.362 m), from rating curve extended above 71 ft^3/s (2.01 m^3/s) by test of model of station site; minimum, 0.08 ft^3/s (0.002 m^3/s) Oct. 31, 1929.

REMARKS.--Records fair. No diversion above station. Records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 835: 1930(M). WSP 1569: Drainage area. WSP 1639: 1927-29(M), 1931(M), 1932, 1933-34(M). WSP 1719: 1935(M), 1937-40(M), 1942(M), 1948-59(P).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.26	.23	.29	.23	.20	.50	1.6	.97	.90	1.6	.65	.40
2	.26	.23	.29	.23	.20	.50	1.4	.90	.90	7.0	.65	.40
3	2.1	.23	.29	.23	.23	.55	1.4	.83	.90	4.2	.60	.40
4	2.6	.20	.29	.23	.20	.50	1.3	.83	.90	1.3	.60	.45
5	.65	.20	.29	.23	.20	.55	1.2	.77	.83	.97	.55	.45
6	.40	.77	.29	.23	.20	.45	1.1	.77	.77	.97	.60	.40
7	.40	2.1	.29	.23	.20	.50	1.0	.77	.71	.97	.55	.36
8	.40	.40	.29	.23	.20	.45	.97	.90	.71	1.5	.55	.36
9	.40	.45	.29	.23	.20	.45	1.1	3.1	.65	16	.55	.36
10	.40	.45	.29	.23	.20	.45	8.4	.97	.65	12	.90	.36
11	.40	.45	.29	.23	.20	1.9	2.7	7.7	.60	3.9	.55	.36
12	.40	.45	.29	.23	.20	2.0	2.4	2.9	.60	2.5	.55	.36
13	.40	.50	.29	.26	.20	1.0	1.7	1.4	.65	1.8	.50	.36
14	.36	.50	.29	.26	.20	.71	1.2	.97	.60	1.6	.55	.36
15	.36	.50	.29	.26	.17	.65	1.4	.97	.55	1.9	.55	.36
16	.36	.45	.26	.23	.17	.90	1.2	1.0	2.9	1.6	.50	.36
17	.36	.45	.26	.23	.17	1.1	1.2	1.1	1.2	1.7	.50	.36
18	.32	.45	.32	.23	.17	1.1	1.1	1.1	.71	1.6	.50	.36
19	.32	.40	.40	.23	.17	1.2	1.0	.97	.77	1.4	.50	.36
20	.32	.36	.29	.23	.83	1.1	1.3	1.0	.77	1.3	.50	.36
21	.32	.36	.29	.23	.36	1.1	2.7	1.1	.77	1.2	.45	.36
22	.32	.36	.26	.23	.29	1.3	1.8	.97	.83	1.0	.45	.36
23	.32	.36	.26	.23	.26	3.7	1.2	1.0	.83	1.0	.45	.36
24	.29	.32	.26	.20	3.9	2.9	1.1	1.1	.83	.97	.45	.36
25	.29	.32	.26	.20	13	1.7	1.1	1.0	.77	.97	.45	.32
26	.29	.32	.26	.20	1.0	1.6	1.2	.97	.77	.90	.45	.32
27	.29	.32	.26	.20	.45	1.5	1.0	1.1	.71	.83	.45	.32
28	.26	.32	.26	.20	.45	1.4	1.0	1.1	.71	.77	.40	.32
29	.26	.32	.26	.20	------	1.4	.97	.97	.65	.77	.40	.32
30	.23	.32	.23	.20	------	3.0	.97	.97	.71	.77	.40	.32
31	.23	------	.26	.20	------	2.3	------	.90	------	.71	.40	------
TOTAL	14.57	13.09	8.74	6.98	24.22	38.46	47.71	41.10	24.85	75.70	16.15	10.90
MEAN	.47	.44	.28	.23	.87	1.24	1.59	1.33	.83	2.44	.52	.36
MAX	2.6	2.1	.40	.26	13	3.7	8.4	7.7	2.9	16	.90	.45
MIN	.23	.20	.23	.20	.17	.45	.97	.77	.55	.71	.40	.32
AC-FT	29	26	17	14	48	76	95	82	49	150	32	22

CAL YR 1972 TOTAL 366.07 MEAN 1.00 MAX 23 MIN .20 AC-FT 726
WTR YR 1973 TOTAL 322.47 MEAN .88 MAX 16 MIN .17 AC-FT 640

PEAK DISCHARGE (BASE, 140 CFS).--No peak above base.

16247000 Palolo Stream near Honolulu

LOCATION.--Lat 21°17'35", long 157°48'25", on left bank 250 ft (76 m) downstream from bridge on Palolo Avenue and 3.9 mi (6.3 km) east of Honolulu Post Office.

DRAINAGE AREA.--3.63 mi^2 (9.40 km^2).

PERIOD OF RECORD.--April 1952 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 95 ft (29 m), from topographic map.

AVERAGE DISCHARGE.--21 years, 5.78 ft^3/s (0.164 m^3/s), 4,190 acre-ft/yr (5.17 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 314 ft^3/s (8.89 m^3/s) Feb. 25, gage height, 2.54 ft (0.774 m), from rating curve extended as explained below; minimum, 0.21 ft^3/s (0.006 m^3/s) Dec. 13, 14.
Period of record: Maximum discharge, 4,270 ft^3/s (121 m^3/s) Dec. 18, 1967, gage height, 5.98 ft (1.823 m), from rating curve extended above 140 ft^3/s (3.96 m^3/s) on basis of slope-conveyance study and slope-area measurements at gage heights 3.92 (1.195) and 4.13 ft (1.259 m); minimum, 0.02 ft^3/s (0.001 m^3/s) June 25, 1958.

REMARKS.--Records fair. Honolulu Board of Water Supply diverts ground water from tunnels in drainage area. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1569: Drainage area. WSP 1937: 1953, 1955-60.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.77	.53	.48	.40	.43	1.2	3.2	2.0	1.1	7.6	1.1	.93
2	.59	.53	.53	.37	.41	1.4	2.6	1.6	1.1	24	1.2	.93
3	9.6	.58	.48	.34	4.1	2.5	2.8	1.4	1.2	11	1.4	.93
4	12	.58	.93	.34	.59	1.8	3.1	1.3	1.4	3.3	1.2	1.3
5	3.5	.43	.77	.34	.46	3.0	2.5	1.4	1.2	2.2	1.0	.77
6	2.0	6.5	.43	2.3	.45	1.8	2.3	1.4	1.1	2.4	1.6	.85
7	1.7	14	.43	2.7	.51	2.0	2.2	2.0	1.1	2.3	1.9	.77
8	1.3	2.9	.53	.77	1.5	1.5	2.2	2.5	1.1	8.2	1.4	.70
9	1.3	4.3	.37	.53	.58	1.2	4.5	13	1.1	61	1.3	.68
10	1.2	2.7	.37	.43	.41	1.1	23	3.3	1.1	36	3.3	.68
11	1.1	1.4	.34	.40	.41	7.7	5.0	18	1.1	10	1.3	.65
12	1.0	1.0	.34	.40	.44	7.2	5.0	2.5	1.1	4.9	1.2	.65
13	1.0	.93	.31	.37	.44	2.5	3.3	2.0	1.7	3.2	1.1	.69
14	.93	.85	.31	.37	.42	2.4	2.0	1.6	2.7	2.6	1.6	.91
15	.93	.85	.34	.37	.42	2.3	2.9	1.4	1.2	4.1	1.1	.81
16	.93	.77	.43	.40	.43	4.2	2.3	1.4	10	2.6	.93	.79
17	.77	1.0	.48	.70	.43	5.5	2.3	2.0	3.5	2.8	.93	.68
18	.77	1.0	16	.34	.43	6.1	1.9	2.0	1.4	2.2	.93	.65
19	.77	.70	2.9	.34	.37	4.7	1.9	1.7	1.5	1.9	.93	.71
20	.77	.70	.53	.34	7.3	3.3	2.7	2.0	1.3	2.1	.93	.69
21	.77	.85	.43	.37	1.8	2.4	6.2	2.9	1.2	1.8	.93	.74
22	.70	1.1	.37	.37	.90	4.7	2.7	2.3	1.2	1.7	1.0	.79
23	.77	1.1	.37	.37	.88	16	2.0	1.9	1.2	1.6	.93	.66
24	.70	1.1	.34	.40	20	9.7	2.0	1.9	1.1	1.7	.93	.68
25	.70	1.7	.77	.40	55	3.5	2.0	1.3	1.1	2.1	.93	.56
26	1.0	1.4	.53	.40	2.7	3.3	2.9	1.3	1.1	1.5	1.0	.56
27	.77	.53	.40	.85	1.9	2.7	2.5	2.3	1.0	1.4	1.0	.62
28	2.7	.53	.77	.77	1.2	2.7	2.0	1.9	.98	1.3	.93	.60
29	1.7	.53	.53	.43	------	3.5	1.9	1.2	.92	1.3	1.0	1.2
30	.93	.53	.43	.58	------	9.9	1.9	1.1	1.7	1.2	1.2	1.1
31	.53	------	.85	.43	------	5.5	------	1.1	------	1.1	1.0	------
TOTAL	54.20	51.62	33.09	17.92	104.91	127.3	103.8	83.7	48.50	211.1	37.20	23.28
MEAN	1.75	1.72	1.07	.58	3.75	4.11	3.46	2.70	1.62	6.81	1.20	.78
MAX	12	14	16	2.7	55	16	23	18	10	61	3.3	1.3
MIN	.53	.43	.31	.34	.37	1.1	1.9	1.1	.92	1.1	.93	.56
AC-FT	108	102	66	36	208	252	206	166	96	419	74	46

CAL YR 1972 TOTAL 1,337.13 MEAN 3.65 MAX 199 MIN .31 AC-FT 2,650
WTR YR 1973 TOTAL 896.62 MEAN 2.46 MAX 61 MIN .31 AC-FT 1,780

PEAK DISCHARGE (BASE, 500 CFS).--No peak above base.

16254000 Makawao Stream near Kailua

LOCATION.--Lat 21°21'49", long 157°46'02", on left bank 650 ft (198 m) upstream from mouth, 2.7 mi (4.3 km) southwest of Kailua, and 4.3 mi (6.9 km) southeast of Kaneohe Courthouse.

DRAINAGE AREA.--2.04 mi^2 (5.28 km^2).

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

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 80 ft (24 m), from topographic map. Prior to Jan. 1, 1958, nonrecording gage at sites about 200 ft (61 m) upstream at different datums.

AVERAGE DISCHARGE.--17 years (1913-15, 1958-73), 5.41 ft^3/s (0.153 m^3/s), 3,920 acre-ft/yr (4.83 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 35 ft^3/s (0.99 m^3/s) Feb. 25, gage height, 2.49 ft (0.759 m); minimum, 0.88 ft^3/s (0.025 m^3/s) Oct. 28, June 26, 28-30.
Period of record: Maximum discharge, 6,000 ft^3/s (170 m^3/s) Feb. 4, 1965, gage height, 12.41 ft (3.783 m), from rating curve extended above 470 ft^3/s (13.3 m^3/s) on basis of slope-area measurement of peak flow; minimum, 0.43 ft^3/s (0.012 m^3/s) Sept. 8-12, 14, 16-20, 22, 23, 1964.

REMARKS.--Records good. Maunawili ditch diverts 1.5 mi (2.4 km) above station for irrigation in vicinity of Waimanalo.

REVISIONS.--WSP 1937: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.1	1.0	1.2	1.1	1.9	1.3	1.5	1.6	1.2	1.2	1.1
2	1.1	1.1	1.1	1.1	1.1	1.5	1.3	1.4	1.2	1.5	1.2	1.0
3	1.3	1.1	1.1	1.1	1.3	1.6	1.3	1.4	1.2	1.3	1.2	1.0
4	1.2	1.1	1.0	1.1	1.2	1.4	1.3	1.3	1.3	1.1	1.4	1.2
5	1.1	1.0	1.0	1.1	1.2	1.4	1.4	1.3	1.2	1.0	1.2	1.1
6	1.1	1.3	1.1	2.0	1.2	1.4	1.5	1.3	1.2	1.0	1.3	1.2
7	1.1	1.3	1.1	2.1	1.3	1.3	1.4	1.7	1.2	1.1	1.2	1.0
8	1.2	1.2	1.2	1.7	1.2	1.4	1.4	1.4	1.2	1.2	1.2	1.0
9	1.1	1.2	1.1	1.4	1.1	1.3	1.6	1.9	1.2	3.8	1.2	1.0
10	1.1	1.2	1.1	1.3	1.1	1.4	2.6	1.4	1.2	4.9	1.4	1.0
11	1.1	1.1	1.0	1.2	1.1	1.3	2.0	1.7	1.2	1.8	1.1	.98
12	1.1	1.1	1.0	1.2	1.1	1.4	1.7	1.5	1.2	1.5	1.0	1.0
13	1.1	1.1	1.0	1.2	1.1	1.3	1.5	1.3	1.3	1.3	1.0	1.1
14	1.1	1.1	1.0	1.1	1.2	1.4	1.5	1.3	1.2	1.5	1.1	1.1
15	1.2	1.2	1.0	1.1	1.2	1.3	1.6	1.2	1.2	2.3	1.0	.99
16	1.2	1.1	1.1	1.1	1.1	1.5	1.4	1.2	1.4	1.4	1.1	.98
17	1.2	1.4	1.4	1.1	1.1	1.4	1.6	1.2	1.2	1.3	1.1	1.0
18	1.1	1.1	2.5	1.2	1.1	1.4	1.5	1.2	1.1	1.3	1.0	.99
19	1.1	1.2	2.5	1.2	1.1	1.4	1.6	1.1	1.2	1.2	1.1	.98
20	1.1	1.1	1.5	1.2	1.3	1.4	1.6	1.2	1.1	1.2	1.1	1.1
21	1.1	1.1	1.3	1.2	1.2	1.5	2.0	1.3	1.0	1.3	1.0	1.0
22	1.2	1.1	1.2	1.2	1.1	1.4	1.8	1.2	1.0	1.3	1.0	1.0
23	1.1	1.1	1.2	1.2	1.1	2.0	1.7	1.2	1.0	1.3	2.5	1.1
24	1.0	1.1	1.2	1.2	3.8	1.5	1.4	1.2	1.0	1.3	1.4	1.0
25	1.0	1.1	1.3	1.2	12	1.4	1.3	1.2	.98	1.4	1.2	.96
26	1.0	1.5	1.2	1.1	2.6	1.4	1.4	1.2	.96	1.3	1.2	.97
27	1.0	1.1	1.1	1.2	2.0	1.4	1.5	1.3	.96	1.3	1.1	1.1
28	1.3	1.1	1.2	1.1	2.0	1.4	1.4	1.6	.94	1.3	1.1	1.0
29	1.7	1.1	1.2	1.1	------	1.4	1.4	2.1	.91	1.3	1.1	1.3
30	1.2	1.1	1.1	1.1	------	1.4	1.4	1.9	1.1	1.3	1.1	1.0
31	1.2	------	1.2	1.1	------	1.4	------	1.6	------	1.3	1.1	------
TOTAL	35.5	34.5	38.0	38.4	49.0	44.6	46.4	43.3	34.45	47.3	36.9	31.25
MEAN	1.15	1.15	1.23	1.24	1.75	1.44	1.55	1.40	1.15	1.53	1.19	1.04
MAX	1.7	1.5	2.5	2.1	12	2.0	2.6	2.1	1.6	4.9	2.5	1.3
MIN	1.0	1.0	1.0	1.1	1.1	1.3	1.3	1.1	.91	1.0	1.0	.96
AC-FT	70	68	75	76	97	88	92	86	68	94	73	62

CAL YR 1972	TOTAL 1,385.20	MEAN 3.78	MAX 94	MIN 1.0	AC-FT 2,750
WTR YR 1973	TOTAL 479.60	MEAN 1.31	MAX 12	MIN .91	AC-FT 951

PEAK DISCHARGE (BASE, 390 CFS).--No peak above base.

16270500 Kamooalii Stream below Kuou Stream, near Kaneohe

LOCATION.--Lat 21°23'42", long 157°48'26", on right bank 100 ft (30 m) downstream from Kuou Stream, 1.1 mi (1.8 km) southwest of Castle High School, and 1.9 mi (3.1 km) south of Kaneohe Post Office.

DRAINAGE AREA.--3.21 mi^2 (8.31 km^2).

PERIOD OF RECORD.--April 1967 to September 1970. Occasional low-flow measurements and annual maximum, water year 1971. January 1972 to current year.

GAGE.--Water-stage recorder and combination pipe culverts and paved road control. Altitude of gage is 118 ft (36 m), from topographic map. Control rebuilt and datum lowered 2.80 ft (0.853 m) Apr. 22, 1969.

EXTREMES.--Current year: Maximum discharge, 81 ft^3/s (2.29 m^3/s) Apr. 10, gage height, 4.90 ft (1.494 m), from rating curve extended above 130 ft^3/s (3.68 m^3/s); minimum, 3.4 ft^3/s (0.096 m^3/s) for several days in August and September.
Period of record: Maximum discharge, 10,800 ft^3/s (306 m^3/s) Feb. 1, 1969, gage height, 12.42 ft (3.786 m), control and datum then in use, from rating curve extended above 1,800 ft^3/s (51 m^3/s); minimum, 3.4 ft^3/s (0.096 m^3/s) for several days in August and September 1973.

REMARKS.--Records poor. No diversion above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses and suspended sediment loads for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	5.2	4.7	4.9	4.9	5.7	4.7	4.7	4.4	5.4	3.7	3.4
2	4.4	5.2	5.2	4.9	4.7	5.7	4.4	4.7	4.2	7.1	4.3	3.9
3	6.8	5.4	4.7	4.9	9.8	5.7	4.7	4.4	3.9	4.7	4.4	4.2
4	6.2	5.4	4.7	4.7	5.4	5.4	4.2	4.4	4.4	4.4	5.2	4.4
5	5.4	5.4	4.4	4.9	5.2	5.7	4.2	4.4	4.7	4.4	4.4	3.7
6	4.9	8.5	4.2	12	5.4	5.2	4.2	4.2	4.4	4.4	4.4	3.9
7	5.2	7.1	4.2	7.6	5.2	4.7	4.2	4.4	4.4	4.4	4.4	4.2
8	4.9	6.2	4.7	6.2	5.4	4.9	4.2	4.7	4.2	5.4	3.9	3.7
9	5.7	7.1	3.9	5.7	5.2	4.7	7.1	5.9	4.2	10	3.9	3.7
10	5.4	6.5	4.2	5.2	4.7	4.9	13	4.7	3.9	8.5	3.9	3.7
11	4.9	5.7	4.2	5.2	4.7	4.9	7.1	4.9	4.2	6.5	3.4	3.4
12	4.9	5.4	4.2	4.9	4.7	5.4	5.9	4.9	3.9	5.4	3.4	3.7
13	5.2	5.4	4.2	4.9	4.7	4.9	5.7	4.7	4.7	4.9	3.4	3.9
14	4.9	5.4	4.2	4.7	4.7	4.9	5.2	4.2	5.2	4.7	3.4	3.9
15	4.7	5.7	4.2	4.7	4.7	4.9	5.4	3.9	4.4	6.0	3.4	3.4
16	4.9	5.4	5.4	4.7	4.7	5.2	5.2	3.9	5.2	5.2	3.7	3.7
17	4.7	5.4	7.1	4.4	4.7	4.7	5.4	3.9	4.4	4.4	3.7	3.4
18	4.4	5.4	12	4.7	4.7	5.2	4.7	4.4	3.9	4.4	3.7	3.9
19	4.2	5.4	8.2	4.7	4.4	4.9	4.7	4.2	4.2	4.4	3.7	3.4
20	4.2	5.2	5.4	4.7	5.9	5.4	5.1	4.2	3.9	4.4	3.7	3.7
21	4.2	5.2	5.2	4.7	4.9	4.7	5.7	6.8	3.7	4.4	3.4	3.4
22	4.2	5.2	4.9	4.4	4.7	5.4	4.9	5.5	3.7	4.4	3.7	3.4
23	4.2	5.4	4.9	4.7	4.9	7.6	4.7	4.7	3.7	4.4	4.5	3.7
24	4.2	5.2	4.7	4.4	13	5.2	4.7	6.2	3.7	4.4	3.9	3.4
25	4.2	5.7	5.2	4.4	16	4.9	4.9	5.4	3.9	4.7	3.7	3.4
26	4.4	6.2	4.9	4.4	7.1	4.7	5.2	5.7	3.9	4.9	3.9	3.4
27	4.2	4.9	4.7	5.2	6.2	4.7	4.9	5.2	3.9	4.4	4.2	4.9
28	7.6	4.9	4.9	4.7	5.9	4.4	4.7	4.7	3.9	4.4	3.7	3.7
29	6.2	4.9	4.7	4.4	------	4.9	4.7	4.7	3.7	3.9	3.7	4.7
30	5.2	4.7	4.9	4.7	------	5.4	4.9	4.4	4.7	3.9	3.7	3.9
31	4.9	------	5.4	4.4	------	4.9	------	4.4	------	3.9	3.4	------
TOTAL	154.8	168.7	158.4	159.0	166.5	159.8	158.6	147.4	125.5	156.7	119.8	113.1
MEAN	4.99	5.62	5.11	5.13	5.95	5.15	5.29	4.75	4.18	5.05	3.86	3.77
MAX	7.6	8.5	12	12	16	7.6	13	6.8	5.2	10	5.2	4.9
MIN	4.2	4.7	3.9	4.4	4.4	4.4	4.2	3.9	3.7	3.9	3.4	3.4
AC-FT	307	335	314	315	330	317	315	292	249	311	238	224

CAL YR 1972 TOTAL 3,520.3 MEAN 9.62 MAX 145 MIN 3.9 AC-FT 6,980
WTR YR 1973 TOTAL 1,788.3 MEAN 4.90 MAX 16 MIN 3.4 AC-FT 3,550

PEAK DISCHARGE (BASE, 900 CFS).--No peak above base.

16273900 Kamooalii Stream at Kaneohe

LOCATION.--Lat 21°24'51", long 157°48'13" (revised), on right bank 500 ft (152 m) upstream from Highway 83 and 0.2 mi (0.3 km) south of Parker School in Kaneohe.

DRAINAGE AREA.--4.38 mi^2 (11.34 km^2).

PERIOD OF RECORD.--January 1959 to October 1963, November 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 38.75 ft (11.811 m) above mean sea level (levels by city and county of Honolulu). Prior to Oct. 5, 1963, at site 50 ft (15 m) downstream at datum 0.93 ft (0.283 m) lower.

AVERAGE DISCHARGE.--11 years (1959-63, 1966-73), 15.7 ft^3/s (0.445 m^3/s), 11,370 acre-ft/yr (14.0 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 309 ft^3/s (8.75 m^3/s) Aug. 23, gage height, 2.56 ft (0.780 m); minimum, 5.2 ft^3/s (0.147 m^3/s) on several days in August.
Period of record: Maximum discharge, 12,000 ft^3/s (340 m^3/s) Feb. 1, 1969, gage height, 10.16 ft (3.097 m), from rating curve extended above 380 ft^3/s (10.8 m^3/s) on basis of slope-area measurements at gage heights 5.26 (1.603), 7.14 (2.176), 7.47 (2.277) and 10.16 ft (3.097 m); minimum, 3.4 ft^3/s (0.096 m^3/s) Aug. 28, 1962.
Flood of Oct. 23, 1958, reached a stage of 8.3 ft (2.53 m), from floodmarks, former site and datum, discharge, 6,610 ft^3/s (187 m^3/s), from rating curve extended above 120 ft^3/s (3.40 m^3/s) on basis of slope-area measurement at gage height 5.69 ft (1.734 m). Discharge for peaks of Feb. 4 and May 2, 1965, 6,190 (175) and 5,400 ft^3/s (153 m^3/s), respectively; results of slope-area measurements of peak flow.

REMARKS.--Records good. Many diversions for irrigation above station. Recording rain gage located at station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses and suspended sediment loads for the water year 1973 are published in Part 2 of this report.

REVISIONS.--WSP 1937: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	7.6	7.0	7.3	7.3	8.2	7.0	7.0	6.7	7.9	6.0	5.7
2	6.7	7.6	7.6	7.3	7.0	8.2	6.7	7.0	6.4	10	6.6	6.2
3	9.6	7.9	7.0	7.3	14	8.2	7.0	6.7	6.2	7.0	6.7	6.4
4	8.7	7.9	7.0	7.0	7.9	7.9	6.4	6.7	6.7	6.7	7.6	6.7
5	7.9	7.9	6.7	7.3	7.6	8.2	6.4	6.7	7.0	6.7	6.4	6.0
6	7.3	12	6.4	14	7.9	7.6	6.4	6.4	6.7	6.7	6.7	6.2
7	7.6	10	6.4	11	7.6	7.0	6.4	6.7	6.7	6.7	6.7	6.4
8	7.3	8.9	7.0	8.9	7.9	7.3	6.4	7.0	6.4	7.9	6.2	6.0
9	8.2	10	6.2	8.2	7.6	7.0	10	8.5	6.4	17	6.0	6.0
10	7.9	9.3	6.4	7.6	7.0	7.3	17	7.0	6.2	12	6.0	6.0
11	7.3	8.2	6.4	7.6	7.0	7.3	10	7.3	6.4	9.3	5.4	5.7
12	7.3	7.9	6.4	7.3	7.0	7.9	8.5	7.3	6.2	7.9	5.4	6.0
13	7.6	7.9	6.4	7.3	7.0	7.3	8.2	7.0	7.0	7.3	5.4	6.2
14	7.3	7.9	6.4	7.0	7.0	7.3	7.6	6.4	7.6	7.0	5.4	6.2
15	7.0	8.2	6.4	7.0	7.0	7.3	7.9	6.2	6.7	10	5.4	5.7
16	7.3	7.9	7.7	7.0	7.0	7.6	7.6	6.2	7.6	7.6	5.7	6.0
17	7.0	7.9	10	6.7	7.0	7.0	7.9	6.2	6.7	6.7	5.7	5.7
18	6.7	7.9	17	7.0	7.0	7.6	7.0	6.7	6.2	6.7	5.7	6.2
19	6.4	7.9	12	7.0	6.7	7.3	7.0	6.4	6.4	6.7	5.7	5.7
20	6.4	7.6	7.9	7.0	8.5	7.9	7.2	6.4	6.2	6.7	5.7	6.0
21	6.4	7.6	7.6	7.0	7.3	7.0	8.2	9.7	6.0	6.7	5.4	5.7
22	6.4	7.6	7.3	6.7	7.0	7.9	7.3	7.9	6.0	6.7	5.7	5.7
23	6.4	7.9	7.3	7.0	7.3	11	7.0	7.0	6.0	6.7	9.8	6.0
24	6.4	7.6	7.0	6.7	18	7.6	7.0	8.9	6.0	6.7	6.2	5.7
25	6.4	8.1	7.6	6.7	23	7.3	7.3	7.9	6.2	7.0	6.0	5.7
26	6.7	9.0	7.3	6.7	10	7.0	7.6	8.2	6.2	7.3	6.2	5.7
27	6.4	7.3	7.0	7.6	8.9	7.0	7.3	7.6	6.2	6.6	6.4	7.3
28	11	7.3	7.3	7.0	8.5	6.7	7.0	7.0	6.2	6.6	6.0	6.0
29	9.0	7.3	7.0	6.7	------	7.3	7.0	7.0	6.0	6.2	6.0	7.0
30	7.6	7.0	7.3	7.0	------	7.9	7.3	6.7	7.0	6.2	6.0	6.2
31	7.3	------	7.9	6.7	------	7.3	------	6.7	------	6.2	5.7	------
TOTAL	229.4	245.1	234.9	232.6	243.0	235.4	231.6	220.4	194.2	237.4	189.8	182.0
MEAN	7.40	8.17	7.58	7.50	8.68	7.59	7.72	7.11	6.47	7.66	6.12	6.07
MAX	11	12	17	14	23	11	17	9.7	7.6	17	9.8	7.3
MIN	6.4	7.0	6.2	6.7	6.7	6.7	6.4	6.2	6.0	6.2	5.4	5.7
AC-FT	455	486	466	461	482	467	459	437	385	471	376	361

CAL YR 1972 TOTAL 4,853.6 MEAN 13.3 MAX 204 MIN 6.2 AC-FT 9,630
WTR YR 1973 TOTAL 2,675.8 MEAN 7.33 MAX 23 MIN 5.4 AC-FT 5,310

PEAK DISCHARGE (BASE, 950 CFS).--No peak above base.

16275000 Haiku Stream near Heeia

LOCATION (revised).--Lat 21°24'46", long 157°49'33", on left bank 1.7 mi (2.7 km) west of Kaneohe Post Office and 1.8 mi (2.9 km) southwest of Heeia.

DRAINAGE AREA.--0.97 mi² (2.51 km²).

PERIOD OF RECORD.--January 1914 to October 1919, July 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 271.9 ft (82.875 m) above mean sea level (levels by city and county of Honolulu). Prior to Apr. 28, 1914, nonrecording gage and Apr. 28, 1914, to Oct. 25, 1919, water-stage recorder, at same site at different datums.

AVERAGE DISCHARGE (since diversion from tunnel began).--30 years (1943-73), 2.21 ft³/s (0.0626 m³/s), 1,600 acre-ft/yr (1.97 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 30 ft³/s (0.850 m³/s) Feb. 25, gage height, 1.94 ft (0.591 m), from floodmark in well, from rating curve extended as explained below; minimum, 0.84 ft³/s (0.024 m³/s) Aug. 29, Sept. 3.
Period of record: Maximum discharge, 5,740 ft³/s (163 m³/s) May 2, 1965, gage height, 7.94 ft (2.420 m), from rating curve extended above 57 ft³/s (1.61 m³/s) on basis of slope-area measurements at gage heights 3.87 (1.180), 3.88 (1.183) and 7.94 ft (2.420 m); minimum, 0.20 ft³/s (0.006 m³/s) July 20, 1957, Sept. 17, 1961.

REMARKS.--Records fair except those for period of no gage-height record, which are poor. Honolulu Board of Water Supply has diverted ground water from tunnel in drainage area since 1943. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 935: 1940. WSP 1319: 1916-19(M). WSP 1569: Drainage area. WSP 1719: 1942-43, 1946(M), 1947, 1949, 1951, 1954(M), 1955, 1957-59. WSP 1937: 1940-45(M), 1947(M), 1948-50(P), 1951, 1952(P), 1953(M), 1955-57(P), 1958-59, 1960(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.1	.98	1.1	1.1	1.1	1.1	1.1	1.1	1.3	.99	.96
2	1.0	1.1	.95	1.1	1.1	1.0	1.1	1.0	1.1	1.5	1.0	.96
3	1.2	1.1	.95	1.0	2.0	1.0	1.1	1.0	1.1	1.2	1.0	.98
4	1.6	1.1	.95	1.0	1.3	1.0	1.1	1.0	1.1	1.1	1.0	.98
5	1.2	1.1	.95	1.0	1.2	1.0	1.1	1.1	1.1	1.1	1.0	.98
6	1.1	2.2	.99	1.8	1.1	1.0	1.1	1.1	1.1	1.1	1.0	.96
7	1.1	1.8	1.0	1.8	1.1	1.0	1.1	1.1	1.1	1.1	1.0	.98
8	1.1	1.4	1.0	1.4	1.1	1.0	1.1	1.1	1.1	1.7	1.0	.98
9	1.0	1.5	.96	1.2	1.1	1.0	1.6	1.2	1.1	7.0	1.1	.98
10	1.0	1.3	.96	1.1	1.1	1.0	7.4	1.1	1.1	3.9	1.1	.98
11	1.0	1.2	.97	1.1	1.1	1.0	2.9	1.1	1.1	2.0	1.0	.96
12	1.0	1.2	.96	1.1	1.2	1.0	1.6	1.1	1.0	1.6	1.0	.96
13	1.0	1.1	.95	1.0	1.1	1.0	1.4	1.0	1.1	1.3	.99	.96
14	1.0	1.1	.95	1.0	1.1	1.1	1.2	1.0	1.1	1.3	.98	.96
15	1.0	1.1	.96	1.1	1.1	1.1	1.0	1.0	1.0	1.3	.98	.96
16	1.0	1.1	1.0	1.1	1.1	1.1	1.1	1.0	1.1	1.3	.98	1.0
17	1.0	1.1	2.4	1.0	1.1	1.1	1.1	1.0	1.1	1.2	.97	1.0
18	1.0	1.1	4.1	1.0	1.1	1.1	1.1	1.0	1.1	1.2	.99	.96
19	1.0	1.1	3.1	1.0	1.1	1.1	1.1	1.0	1.1	1.2	.98	.96
20	1.0	1.1	1.5	1.0	3.0	1.1	1.1	1.0	1.0	1.2	.99	.96
21	1.0	1.1	1.2	1.0	2.0	1.1	1.1	1.4	1.0	1.2	.98	.96
22	1.0	1.1	1.1	1.0	1.4	1.1	1.1	1.1	1.0	1.1	.99	.96
23	1.0	1.1	1.1	1.0	1.2	1.8	1.1	1.1	1.0	1.1	1.1	1.0
24	1.0	1.1	1.1	1.0	6.0	1.4	1.1	1.6	1.0	1.2	.98	.96
25	1.0	1.0	1.1	1.1	10	1.2	1.1	1.3	1.0	1.1	.95	.96
26	1.0	1.1	1.1	1.1	2.5	1.1	1.1	1.2	1.0	1.1	.96	.96
27	1.1	1.0	1.1	1.1	1.5	1.1	1.1	1.1	1.0	1.1	.96	1.0
28	1.5	1.0	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.1	.96	.96
29	1.3	1.0	1.0	1.1	------	1.1	1.1	1.1	1.1	1.0	.96	.95
30	1.1	1.0	1.0	1.1	------	1.2	1.1	1.1	1.1	.99	.97	.95
31	1.1	------	1.1	1.1	------	1.1	------	1.1	------	1.0	.97	------
TOTAL	33.4	35.9	38.58	34.6	51.0	34.1	42.4	34.2	32.0	46.59	30.83	29.08
MEAN	1.08	1.18	1.24	1.12	1.82	1.10	1.41	1.10	1.07	1.50	.99	.97
MAX	1.6	2.2	4.1	1.8	10	1.8	7.4	1.6	1.1	7.0	1.1	1.0
MIN	1.0	1.0	.95	1.0	1.1	1.0	1.0	1.0	1.0	.99	.95	.95
AC-FT	66	70	77	69	101	68	84	68	63	92	61	58

CAL YR 1972 TOTAL 624.40 MEAN 1.71 MAX 39 MIN .95 AC-FT 1,240
WTR YR 1973 TOTAL 442.18 MEAN 1.21 MAX 10 MIN .95 AC-FT 877

PEAK DISCHARGE (BASE, 340 CFS).--No peak above base.

NOTE.--No gage-height record Feb. 2 to Mar. 7.

16283600 South Fork Waihee Stream near Heeia

LOCATION (revised).--Lat 21°26'47", long 157°52'12", on left bank 0.6 mi (1.0 km) upstream from confluence with North Fork, 3.0 mi (4.8 km) southwest of Waiahole School, and 4.0 mi (6.4 km) northwest of Heeia.

DRAINAGE AREA.--0.03 mi^2 (0.08 km^2).

PERIOD OF RECORD.--September 1962 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 615.74 (187.678 m) above mean sea level (levels by Honolulu Board of Water Supply).

AVERAGE DISCHARGE.--11 years, 2.02 ft^3/s (0.0572 m^3/s), 1,460 acre-ft/yr (1.80 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 11 ft^3/s (0.31 m^3/s) Apr. 10, gage height, 1.30 ft (0.396 m), from rating curve extended above 3.9 ft^3/s (0.11 m^3/s); minimum, 1.1 ft^3/s (0.031 m^3/s) many days. Period of record: Maximum discharge, 279 ft^3/s (7.90 m^3/s) May 2, 1965, gage height, 3.96 ft (1.207 m), from rating curve extended above 3.9 ft^3/s (0.11 m^3/s); minimum, 1.1 ft^3/s (0.031 m^3/s) many days in 1973.

REMARKS.--Records fair. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.2	1.2	1.3
2	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.2	1.2	1.3
3	1.8	1.3	1.3	1.3	1.3	1.2	1.2	1.1	1.1	1.2	1.2	1.3
4	1.6	1.3	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.2	1.2	1.3
5	1.4	1.3	1.3	1.3	1.2	1.3	1.2	1.1	1.1	1.2	1.2	1.3
6	1.4	1.5	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.2	1.2	1.3
7	1.4	1.4	1.4	1.3	1.2	1.2	1.2	1.1	1.1	1.2	1.2	1.3
8	1.4	1.3	1.4	1.2	1.2	1.2	1.2	1.1	1.1	1.2	1.2	1.3
9	1.4	1.3	1.4	1.2	1.2	1.2	1.5	1.1	1.1	2.1	1.2	1.3
10	1.4	1.3	1.4	1.2	1.2	1.3	2.7	1.1	1.1	1.4	1.2	1.3
11	1.4	1.3	1.4	1.2	1.2	1.3	1.3	1.1	1.1	1.2	1.2	1.3
12	1.4	1.3	1.4	1.2	1.2	1.3	1.2	1.1	1.1	1.2	1.2	1.3
13	1.4	1.3	1.3	1.2	1.2	1.3	1.1	1.1	1.1	1.2	1.3	1.3
14	1.4	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.2	1.3	1.3
15	1.4	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.3	1.3	1.3
16	1.4	1.3	1.4	1.2	1.2	1.2	1.1	1.1	1.3	1.2	1.3	1.3
17	1.4	1.3	1.4	1.2	1.2	1.2	1.1	1.1	1.2	1.2	1.3	1.3
18	1.4	1.3	1.7	1.2	1.2	1.2	1.1	1.1	1.1	1.2	1.3	1.3
19	1.4	1.3	1.5	1.2	1.2	1.2	1.1	1.1	1.1	1.2	1.3	1.3
20	1.4	1.3	1.3	1.2	1.3	1.2	1.1	1.1	1.1	1.2	1.3	1.3
21	1.4	1.3	1.3	1.2	1.3	1.2	1.1	1.1	1.1	1.2	1.3	1.3
22	1.3	1.3	1.3	1.2	1.2	1.3	1.1	1.1	1.1	1.2	1.3	1.3
23	1.3	1.3	1.3	1.2	1.2	1.5	1.1	1.1	1.1	1.2	1.3	1.4
24	1.3	1.3	1.3	1.2	1.9	1.2	1.1	1.2	1.1	1.2	1.3	1.3
25	1.3	1.3	1.3	1.2	1.8	1.2	1.1	1.2	1.1	1.2	1.3	1.3
26	1.3	1.3	1.3	1.2	1.3	1.2	1.1	1.1	1.1	1.2	1.3	1.3
27	1.3	1.3	1.3	1.2	1.3	1.2	1.1	1.1	1.1	1.2	1.3	1.3
28	1.3	1.3	1.3	1.2	1.3	1.2	1.1	1.1	1.1	1.2	1.3	1.3
29	1.3	1.3	1.3	1.2	------	1.2	1.1	1.1	1.1	1.2	1.3	1.3
30	1.4	1.3	1.3	1.2	------	1.2	1.1	1.1	1.1	1.2	1.3	------
31	1.3	------	1.3	1.2	------	1.2	------	1.1	------	1.2	1.3	------
TOTAL	43.1	39.3	41.7	37.9	35.5	38.1	36.1	34.3	33.3	38.4	39.1	39.1
MEAN	1.39	1.31	1.35	1.22	1.27	1.23	1.20	1.11	1.11	1.24	1.26	1.30
MAX	1.8	1.5	1.7	1.3	1.9	1.5	2.7	1.2	1.3	2.1	1.3	1.4
MIN	1.3	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.2	1.2	1.3
AC-FT	85	78	83	75	70	76	72	68	66	76	78	78

CAL YR 1972 TOTAL 535.2 MEAN 1.46 MAX 4.3 MIN 1.3 AC-FT 1,060
WTR YR 1973 TOTAL 455.9 MEAN 1.25 MAX 2.7 MIN 1.1 AC-FT 904

PEAK DISCHARGE (BASE, 47 CFS).--No peak above base.

16283700 North Fork Waihee Stream near Heeia

LOCATION.--Lat 21°26'48" (revised), long 157°52'18", on left bank 0.6 mi (1.0 km) upstream from confluence with South Fork, 2.8 mi (4.5 km) southwest of Waiahole School, and 4.3 mi (6.9 km) northwest of Heeia.

DRAINAGE AREA.--0.03 mi^2 (0.08 km^2).

PERIOD OF RECORD.--September 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 639.00 ft (194.767 m) above mean sea level (levels by Honolulu Board of Water Supply).

AVERAGE DISCHARGE.--11 years, 1.97 ft^3/s (0.0558 m^3/s), 1,430 acre-ft/yr (1.76 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 8.0 ft^3/s (0.23 m^3/s) Apr. 10, gage height, 1.00 ft (0.305 m), from rating curve extended above 19 ft^3/s (0.54 m^3/s); minimum, 1.3 ft^3/s (0.037 m^3/s) many days.
Period of record: Maximum discharge, 376 ft^3/s (10.6 m^3/s) Feb. 4, 1965, gage height, 3.38 ft (1.030 m), from rating curve extended above 19 ft^3/s (0.54 m^3/s); minimum, 1.3 ft^3/s (0.037 m^3/s) many days in 1963 and 1973.

REMARKS.--Records fair. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	1.6	1.5	1.5	1.5	1.5	1.4	1.3	1.4	1.5	1.4	1.5
2	1.5	1.6	1.5	1.5	1.5	1.5	1.4	1.3	1.4	1.4	1.4	1.5
3	1.8	1.6	1.5	1.5	1.5	1.5	1.4	1.3	1.4	1.4	1.4	1.5
4	1.9	1.6	1.5	1.5	1.5	1.5	1.4	1.3	1.4	1.4	1.4	1.5
5	1.8	1.6	1.5	1.5	1.5	1.5	1.4	1.3	1.4	1.4	1.4	1.5
6	1.7	1.8	1.5	1.5	1.5	1.5	1.4	1.3	1.4	1.4	1.4	1.5
7	1.6	1.6	1.5	1.5	1.5	1.5	1.4	1.3	1.4	1.4	1.4	1.5
8	1.6	1.5	1.5	1.5	1.5	1.5	1.4	1.3	1.4	1.4	1.4	1.5
9	1.6	1.5	1.4	1.5	1.5	1.5	1.6	1.4	1.4	2.5	1.4	1.5
10	1.6	1.5	1.4	1.5	1.5	1.5	2.8	1.3	1.4	1.6	1.4	1.5
11	1.6	1.5	1.4	1.5	1.5	1.5	1.5	1.4	1.4	1.5	1.4	1.5
12	1.6	1.5	1.4	1.5	1.4	1.5	1.4	1.4	1.4	1.4	1.4	1.5
13	1.6	1.5	1.4	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5
14	1.6	1.5	1.4	1.5	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.5
15	1.6	1.5	1.4	1.5	1.4	1.4	1.4	1.3	1.4	1.6	1.4	1.5
16	1.6	1.5	1.4	1.5	1.4	1.4	1.4	1.3	1.6	1.4	1.5	1.5
17	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.3	1.4	1.4	1.5	1.5
18	1.6	1.5	1.7	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5
19	1.6	1.5	1.6	1.5	1.4	1.4	1.4	1.3	1.4	1.4	1.5	1.5
20	1.6	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.5	1.5
21	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5
22	1.6	1.5	1.5	1.5	1.4	1.5	1.4	1.4	1.4	1.4	1.5	1.5
23	1.6	1.5	1.5	1.5	1.4	1.8	1.4	1.3	1.4	1.4	1.5	1.7
24	1.6	1.5	1.5	1.5	1.9	1.5	1.4	1.5	1.4	1.4	1.5	1.6
25	1.6	1.5	1.5	1.5	2.0	1.4	1.4	1.4	1.4	1.4	1.5	1.5
26	1.6	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.5	1.5
27	1.6	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.5	1.5
28	1.6	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.5	1.5
29	1.6	1.5	1.5	1.5	------	1.4	1.4	1.4	1.4	1.4	1.5	1.5
30	1.6	1.5	1.5	1.5	------	1.4	1.4	1.4	1.4	1.4	1.5	1.6
31	1.6	------	1.5	1.5	------	1.4	------	1.4	------	1.4	1.5	------
TOTAL	50.3	45.9	46.0	46.5	41.8	45.2	43.7	42.0	42.2	45.1	45.0	45.4
MEAN	1.62	1.53	1.48	1.50	1.49	1.46	1.46	1.35	1.41	1.45	1.45	1.51
MAX	1.9	1.8	1.7	1.5	2.0	1.8	2.8	1.5	1.6	2.5	1.5	1.7
MIN	1.5	1.5	1.4	1.5	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.5
AC-FT	100	91	91	92	83	90	87	83	84	89	89	90

CAL YR 1972 TOTAL 580.9 MEAN 1.59 MAX 3.1 MIN 1.4 AC-FT 1,150
WTR YR 1973 TOTAL 539.1 MEAN 1.48 MAX 2.8 MIN 1.3 AC-FT 1,070

PEAK DISCHARGE (BASE, 45 CFS).--No peak above base.

16284000 Waihee Stream near Heeia

LOCATION (revised).--Lat 21°27'01", long 157°51'38", on left bank 70 ft (21 m) upstream from intake of Kihe ditch, 120 ft (37 m) downstream from forest-reserve boundary, 3.5 mi (5.6 km) northwest of Heeia, and 4.0 mi (6.4 km) northwest of Kaneohe Post Office.

DRAINAGE AREA.--0.93 mi^2 (2.41 km^2).

PERIOD OF RECORD.--December 1935 to current year.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 193.44 ft (58.961 m) above mean sea level (levels by Honolulu Board of Water Supply).

AVERAGE DISCHARGE.--37 years (1936-73), 8.75 ft^3/s (0.248 m^3/s), 6,340 acre-ft/yr (7.82 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 54 ft^3/s (1.53 m^3/s) Apr. 10, gage height, 1.97 ft (0.600 m); minimum, 1.9 ft^3/s (0.054 m^3/s) several days in September.
Period of record: Maximum discharge, 5,110 ft^3/s (145 m^3/s) Feb. 4, 1965, gage height, 8.72 ft (2.658 m), from floodmarks, from rating curve extended above 77 ft^3/s (2.18 m^3/s) on basis of slope-area measurements at gage heights 6.06 (1.847) and 8.72 ft (2.658 m); minimum, 1.9 ft^3/s (0.054 m^3/s) several days in September 1973.

REMARKS.--Records fair. Honolulu Board of Water Supply diverts water from tunnel in drainage area and pumps water from wells nearby.

REVISIONS (FISCAL YEARS).--WSP 1569: Drainage area. WSP 1719: 1956-57. WSP 1937: 1940-43(M), 1947(M), 1948(P), 1949-50(M), 1953(M), 1955(M), 1958(M), 1959(P). (WATER YEAR).--WRD 1972: 1971(P).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	3.1	3.0	3.1	3.0	2.9	3.1	3.0	3.1	3.3	2.6	2.1
2	3.4	3.1	3.0	3.1	2.9	2.9	3.1	3.0	3.3	3.3	2.7	2.1
3	4.8	3.3	3.0	3.1	3.1	2.8	3.1	3.0	3.3	3.0	2.6	2.2
4	4.3	3.3	2.9	3.1	2.9	2.8	3.1	3.0	3.1	3.0	2.6	2.4
5	3.3	3.1	2.9	3.1	2.7	2.8	3.1	3.0	3.3	3.0	2.6	2.2
6	3.4	4.0	2.9	3.3	2.7	2.7	3.1	3.0	3.3	3.0	2.6	2.2
7	3.4	3.8	2.9	3.3	2.7	2.7	3.1	3.0	3.1	3.0	2.6	2.0
8	3.3	3.4	3.1	3.3	2.7	2.7	3.1	3.0	3.1	3.1	2.6	2.0
9	3.3	3.3	3.0	3.3	2.7	2.7	3.8	3.3	3.3	6.8	2.6	2.0
10	3.3	3.3	3.0	3.3	2.7	2.6	17	3.1	3.3	6.3	2.9	2.0
11	3.3	3.3	3.0	3.3	2.6	2.6	7.2	3.3	3.0	4.5	2.7	2.0
12	3.3	3.3	3.0	3.3	2.7	2.6	4.8	3.1	3.1	3.7	2.6	2.0
13	3.3	3.1	3.0	3.1	2.6	3.3	3.8	3.1	3.1	3.3	2.6	2.0
14	3.3	3.1	3.0	3.1	2.7	3.1	3.5	3.1	3.1	3.1	2.6	2.0
15	3.3	3.1	3.0	3.1	2.7	3.0	3.4	3.0	3.1	3.8	2.6	2.0
16	3.3	3.1	3.1	3.1	2.7	3.0	3.3	3.0	3.5	3.3	2.6	2.0
17	3.3	3.1	3.3	3.1	2.7	3.0	3.1	3.0	3.3	3.1	2.7	2.0
18	3.1	3.1	4.5	3.1	2.7	3.1	3.1	3.1	3.1	3.1	2.6	2.0
19	3.1	3.0	4.7	3.1	2.7	3.0	3.1	3.1	3.1	3.0	2.6	2.0
20	3.1	3.0	3.4	3.0	2.9	3.1	3.1	3.1	3.1	2.9	2.5	2.0
21	3.1	3.0	3.3	3.0	2.7	3.1	3.3	3.5	3.0	3.3	2.2	2.0
22	3.1	3.0	3.3	3.0	2.6	3.4	3.1	3.4	3.0	3.1	2.1	2.0
23	3.1	3.0	3.1	3.0	2.6	5.4	3.0	3.3	2.9	3.1	2.2	2.4
24	3.1	3.0	3.1	3.0	10	3.4	3.0	3.6	2.9	2.7	2.1	2.2
25	3.1	3.1	3.3	3.0	5.0	3.1	3.0	3.5	2.9	2.9	2.1	2.0
26	3.1	3.0	3.1	2.9	3.5	3.0	3.0	3.3	2.9	3.1	2.1	2.0
27	3.1	3.0	3.3	2.9	3.2	3.3	3.0	3.1	2.9	2.9	2.2	2.1
28	3.2	3.0	3.1	2.9	3.0	3.1	3.0	3.1	2.9	2.7	2.2	2.1
29	3.4	3.0	3.1	2.9	------	3.1	3.0	3.3	2.9	2.7	2.2	2.2
30	3.2	3.0	3.1	3.0	------	3.3	3.0	3.1	2.9	2.7	2.1	2.1
31	3.3	------	3.1	3.0	------	3.3	------	3.1	------	2.7	2.1	------
TOTAL	103.2	95.0	98.6	95.9	87.7	94.9	114.4	97.6	92.9	103.5	76.1	62.3
MEAN	3.33	3.17	3.18	3.09	3.13	3.06	3.81	3.15	3.10	3.34	2.45	2.08
MAX	4.8	4.0	4.7	3.3	10	5.4	17	3.6	3.5	6.8	2.9	2.4
MIN	3.1	3.0	2.9	2.9	2.6	2.6	3.0	3.0	2.9	2.7	2.1	2.0
AC-FT	205	188	196	190	174	188	227	194	184	205	151	124

CAL YR 1972 TOTAL 1,633.0 MEAN 4.46 MAX 44 MIN 2.9 AC-FT 3,240
WTR YR 1973 TOTAL 1,122.1 MEAN 3.07 MAX 17 MIN 2.0 AC-FT 2,230

PEAK DISCHARGE (BASE, 140 CFS).--No peak above base.

HAWAII, ISLAND OF OAHU

16294900 Waikane Stream at altitude 75 ft (23 m), at Waikane

LOCATION.--Lat 21°30'00", long 157°51'54", on right bank 0.3 mi (0.5 km) downstream from Waikeekee Stream, 0.7 mi (1.1 km) west of Waikane, and 1.2 mi (1.9 km) northwest of Waiahole School.

DRAINAGE AREA.--2.22 mi^2 (5.75 km^2).

PERIOD OF RECORD.--December 1959 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 75 ft (23 m), from topographic map.

AVERAGE DISCHARGE.--13 years (1960-73), 9.19 ft^3/s (0.260 m^3/s), 6,660 acre-ft/yr (8.21 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 292 ft^3/s (8.27 m^3/s) Aug. 23, gage height, 3.59 ft (1.094 m), from rating curve extended as explained below; minimum, 1.3 ft^3/s (0.037 m^3/s) Jan. 10, 11, 23.
Period of record: Maximum discharge, 8,800 ft^3/s (249 m^3/s) Feb. 4, 1965, gage height, 10.76 ft (3.280 m), from rating curve extended above 120 ft^3/s (3.40 m^3/s) on basis of slope-area measurements at gage heights 4.88 (1.487), 9.46 (2.883), and 10.76 ft (3.280 m); minimum, 1.2 ft^3/s (0.034 m^3/s) Oct. 10, 11, 1962.

REMARKS.--Records good. Waiahole tunnel diverts from two tributaries above station for irrigation in vicinity of Waipahu. Recording rain gage located at station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS.--WSP 1937: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.0	2.0	1.7	1.7	4.7	3.4	2.8	2.4	5.4	2.3	2.3
2	2.0	2.1	1.8	1.7	1.7	4.4	2.9	2.8	2.4	4.1	2.8	2.4
3	14	2.3	2.0	1.7	3.0	4.4	3.2	2.7	2.3	4.5	2.4	2.2
4	12	2.5	1.8	1.7	2.0	4.0	3.8	2.7	2.4	3.4	4.4	2.4
5	4.0	2.2	1.8	1.7	1.8	4.0	3.1	2.7	2.4	2.8	2.8	2.4
6	2.8	6.2	2.0	2.6	1.8	3.8	2.9	2.6	2.6	2.8	2.8	2.4
7	2.9	4.7	2.0	3.4	1.7	3.4	2.9	2.6	2.4	2.8	3.0	2.2
8	2.9	3.0	2.3	2.3	1.7	3.6	2.8	2.6	2.3	6.0	2.6	2.2
9	5.7	3.2	1.8	2.0	1.7	3.2	4.0	4.1	2.3	45	2.4	2.1
10	3.5	3.0	1.7	1.7	1.7	3.2	49	2.7	2.3	29	2.6	2.1
11	2.9	2.3	1.7	1.7	1.7	3.4	13	5.7	2.1	8.3	2.3	2.2
12	2.8	2.1	1.8	1.7	1.8	4.0	7.0	4.2	2.1	5.8	2.3	2.3
13	2.9	2.1	1.8	1.7	1.7	3.3	5.5	3.2	2.3	4.9	2.3	2.3
14	2.6	2.0	1.8	1.7	1.7	3.1	4.4	2.7	2.6	4.2	2.4	3.0
15	2.5	2.0	1.8	1.7	1.7	3.1	4.2	2.5	2.2	5.2	2.3	2.1
16	2.7	2.0	2.0	1.6	1.7	3.5	3.8	2.5	3.2	4.0	2.3	2.1
17	2.5	2.1	4.7	1.6	1.7	3.1	3.8	2.5	3.1	3.6	3.0	2.2
18	2.2	2.0	9.1	1.6	1.7	3.2	3.6	2.8	2.4	3.2	2.1	2.2
19	2.0	2.0	8.3	1.6	1.7	3.1	3.4	2.5	2.7	3.0	2.1	2.2
20	2.0	2.0	2.8	1.6	10	3.9	3.4	5.3	2.3	2.8	2.1	2.4
21	2.0	1.8	2.1	1.6	8.3	3.1	3.4	3.8	2.2	2.8	2.3	2.2
22	2.0	2.0	2.0	1.6	3.4	3.0	3.2	4.0	3.5	2.6	2.1	2.1
23	2.0	2.0	1.8	1.6	2.7	4.6	3.2	3.7	4.0	2.8	20	4.9
24	2.0	2.0	1.8	1.6	21	3.4	3.0	6.6	2.4	3.0	5.8	5.6
25	2.0	2.0	2.1	1.6	50	3.1	3.1	4.4	2.2	3.0	3.2	2.5
26	2.4	2.3	2.1	1.6	9.9	3.1	3.2	3.4	2.1	3.0	2.7	2.2
27	2.2	2.0	1.8	1.6	7.3	2.9	3.0	3.0	2.0	2.6	2.6	3.7
28	5.6	2.0	2.3	1.5	5.5	2.9	3.1	3.0	2.1	2.6	2.5	3.5
29	3.4	2.0	1.8	1.6	------	3.0	2.9	2.8	2.0	2.4	2.4	7.0
30	2.2	2.0	1.7	1.7	------	3.0	2.9	2.6	2.3	2.3	2.3	3.6
31	2.1	------	1.8	1.7	------	3.5	------	2.6	------	2.3	2.3	------
TOTAL	104.8	71.9	76.3	54.7	152.3	108.0	161.1	102.1	73.6	180.2	99.5	83.0
MEAN	3.38	2.40	2.46	1.76	5.44	3.48	5.37	3.29	2.45	5.81	3.21	2.77
MAX	14	6.2	9.1	3.4	50	4.7	49	6.6	4.0	45	20	7.0
MIN	2.0	1.8	1.7	1.5	1.7	2.9	2.8	2.5	2.0	2.3	2.1	2.1
AC-FT	208	143	151	108	302	214	320	203	146	357	197	165

CAL YR 1972 TOTAL 2,175.2 MEAN 5.94 MAX 115 MIN 1.7 AC-FT 4,310
WTR YR 1973 TOTAL 1,267.5 MEAN 3.47 MAX 50 MIN 1.5 AC-FT 2,510

PEAK DISCHARGE (BASE, 700 CFS).--No peak above base.

16296500 Kahana Stream at altitude 30 ft (9.1 m), near Kahana

LOCATION.--Lat 21°32'37" (revised), long 157°53'07", on right bank 600 ft (183 m) upstream from Kawa Stream, 1.1 mi (1.8 km) southwest of Kahana, and 2.2 mi (3.5 km) southwest of Swanzy Beach Park in Kaaawa.

DRAINAGE AREA.--3.74 mi^2 (9.69 km^2).

PERIOD OF RECORD.--December 1958 to current year.

GAGE.--Water-stage recorder and concrete-masonry control. Altitude of gage is 30 ft (9.1 m), from topographic map.

AVERAGE DISCHARGE.--14 years (1959-73), 36.9 ft^3/s (1.045 m^3/s), 26,730 acre-ft/yr (33.0 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,270 ft^3/s (36.0 m^3/s) Sept. 20, gage height, 4.38 ft (1.335 m), from rating curve extended as explained below; minimum, 12 ft^3/s (0.34 m^3/s) Feb. 11, 20.
Period of record: Maximum discharge, 5,430 ft^3/s (154 m^3/s) Apr. 15, 1963, gage height, 8.10 ft (2.469 m), from rating curve extended above 530 ft^3/s (15.0 m^3/s) on basis of computation of peak flow over submerged weir; minimum, 10 ft^3/s (0.28 m^3/s) Sept. 17, 18, 20, 1961.

REMARKS.--Records good except those above 50 ft^3/s (1.42 m^3/s), which are fair. Approximately 9 ft^3/s (0.25 m^3/s) is diverted by Waiahole Water Co. at 800-ft (244 m) elevation, 2.3 mi (3.7 km) above station. Recording rain gage located at station. Selected determinations of minor elements for water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1937: 1959-60.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	16	14	16	13	16	19	16	15	44	13	15
2	17	17	14	15	14	15	17	16	15	22	14	16
3	180	22	13	15	26	17	17	16	15	29	15	14
4	124	20	13	14	15	15	18	15	15	19	19	16
5	32	17	13	14	13	18	16	15	17	18	16	15
6	26	65	13	17	13	15	15	15	17	18	18	15
7	34	31	13	19	13	15	15	15	19	17	18	14
8	80	22	14	16	13	16	15	15	16	26	15	13
9	124	27	13	15	12	15	26	23	15	142	16	14
10	44	27	13	14	12	16	280	17	15	89	20	13
11	31	20	13	14	12	31	50	40	15	52	15	13
12	26	19	13	14	13	35	71	20	14	32	17	13
13	23	19	13	14	13	28	39	17	20	31	14	13
14	21	18	13	14	12	27	28	16	32	24	14	32
15	20	17	13	14	12	21	26	15	16	26	13	15
16	19	17	13	13	13	21	23	15	54	22	14	13
17	19	17	21	13	12	19	28	14	50	22	16	14
18	17	19	44	14	12	18	21	17	20	20	14	13
19	17	18	34	14	12	17	20	15	19	19	13	12
20	17	16	16	13	50	31	21	21	17	18	13	142
21	16	16	15	14	18	19	33	18	16	17	13	23
22	16	15	14	13	14	19	22	22	17	17	13	18
23	16	15	14	13	13	38	20	17	18	17	145	50
24	15	15	14	13	58	22	20	28	15	17	34	35
25	15	15	25	13	87	20	18	20	15	17	20	19
26	16	16	29	13	21	21	18	17	14	17	18	17
27	18	14	16	13	19	19	17	23	14	15	18	25
28	33	14	27	12	17	18	19	17	16	14	17	22
29	26	14	20	12	------	18	17	19	14	14	17	39
30	17	14	16	13	------	20	16	16	17	14	16	22
31	16	------	17	13	------	21	------	16	------	14	16	------
TOTAL	1,106	592	531	434	552	641	965	562	572	863	634	695
MEAN	35.7	19.7	17.1	14.0	19.7	20.7	32.2	18.1	19.1	27.8	20.5	23.2
MAX	180	65	44	19	87	38	280	40	54	142	145	142
MIN	15	14	13	12	12	15	15	14	14	14	13	12
AC-FT	2,190	1,170	1,050	861	1,090	1,270	1,910	1,110	1,130	1,710	1,260	1,380

CAL YR 1972 TOTAL 12,426 MEAN 34.0 MAX 828 MIN 13 AC-FT 24,650
WTR YR 1973 TOTAL 8,147 MEAN 22.3 MAX 280 MIN 12 AC-FT 16,160

PEAK DISCHARGE (BASE, 1,600 CFS).--No peak above base.

16302000 Punaluu ditch near Punaluu

LOCATION (revised).--Lat 21°33'41", long 157°54'10", on right bank 800 ft (244 m) downstream from intake, 1.5 mi (2.4 km) west of Kahana, and 1.7 mi (2.7 km) southwest of Punaluu.

PERIOD OF RECORD.--May 1953 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 200 ft (61 m), from topographic map.

AVERAGE DISCHARGE.--20 years, 9.91 ft^3/s (0.281 m^3/s), 7,180 acre-ft/yr (8.85 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 54 ft^3/s (1.53 m^3/s) Oct. 31, 1964; no flow for several days in 1963, 1966, 1969, 1972.

REMARKS.--Records good. Ditch diverts from Punaluu Stream for irrigation and domestic use in Punaluu Valley. Records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1719: 1954-55.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	3.0	2.4	3.0	2.8	3.7	5.1	4.7	3.2	3.5	3.3	2.2
2	4.2	2.9	2.4	2.9	2.8	3.6	5.0	4.7	3.2	3.1	3.4	2.3
3	4.6	3.0	2.4	2.8	3.3	3.7	5.0	4.7	3.2	3.3	3.4	2.4
4	.34	3.0	2.4	2.8	2.7	3.6	5.2	4.6	3.3	3.0	3.7	2.6
5	2.5	2.8	2.4	2.8	2.6	3.8	4.8	4.6	3.4	2.9	3.6	2.5
6	3.8	3.9	2.4	3.3	2.6	3.7	4.8	4.6	3.4	2.8	3.6	2.6
7	3.8	3.6	2.4	3.6	2.5	3.7	4.7	4.7	3.4	2.8	3.6	2.5
8	5.5	3.3	2.4	3.2	2.6	3.9	4.7	4.7	3.4	3.1	3.4	2.5
9	5.2	3.3	2.4	3.0	2.6	3.9	5.4	5.0	3.4	3.4	3.4	2.3
10	4.4	3.4	2.4	3.0	2.6	4.3	10	4.8	3.4	1.2	3.7	2.0
11	3.8	3.3	2.4	2.9	2.7	5.0	7.1	5.2	3.4	4.0	3.4	2.0
12	3.6	3.3	2.4	2.8	2.8	5.1	7.2	4.8	3.4	3.2	3.4	2.1
13	3.3	3.3	2.4	2.8	2.7	5.0	2.2	4.6	3.6	3.1	3.4	2.2
14	3.2	3.3	2.4	2.8	2.8	4.8	1.7	4.4	3.8	3.0	3.6	2.9
15	3.0	3.2	2.4	2.8	2.7	4.7	5.0	4.4	3.6	3.3	3.6	2.3
16	2.9	3.2	2.6	2.7	2.8	4.6	4.7	4.4	4.0	2.8	3.6	2.3
17	2.9	3.2	3.2	2.7	2.7	4.7	5.3	4.4	3.5	2.8	3.7	2.4
18	2.8	3.1	4.5	2.8	2.7	4.7	5.6	4.5	2.9	2.5	3.8	2.3
19	2.7	2.7	4.2	2.7	2.7	4.8	5.4	4.1	2.9	2.4	3.8	2.3
20	2.7	2.5	3.0	2.7	2.5	5.3	5.2	4.1	2.8	2.5	3.9	2.7
21	2.7	2.3	2.8	2.7	.78	5.0	6.0	4.6	2.8	2.4	3.8	1.3
22	2.7	2.0	2.8	2.6	1.8	5.1	5.2	4.7	2.8	2.5	4.0	2.4
23	2.7	2.1	2.8	2.5	1.9	7.2	4.8	4.5	2.8	2.8	3.2	3.4
24	2.7	2.1	2.9	2.5	2.7	5.5	4.8	4.5	2.7	3.1	1.0	2.9
25	2.7	2.2	3.3	2.5	.82	5.2	4.7	4.4	2.7	3.2	1.9	2.6
26	2.9	2.4	3.3	2.5	.38	5.2	4.7	4.4	2.7	3.3	1.9	2.9
27	2.8	2.4	2.9	2.6	2.8	5.1	4.1	3.2	2.7	3.2	1.9	3.3
28	3.5	2.4	3.1	2.6	3.9	5.1	5.0	2.3	2.7	3.3	2.1	3.3
29	3.6	2.4	3.0	2.7	------	5.1	4.7	3.6	2.7	3.3	2.1	3.9
30	3.1	2.4	2.8	2.8	------	5.1	4.7	3.3	2.8	3.3	2.1	3.1
31	3.0	------	3.2	2.7	------	5.1	------	3.2	------	3.3	2.2	------
TOTAL	102.94	86.0	86.4	86.8	69.28	145.3	152.8	134.7	94.6	92.4	97.5	76.5
MEAN	3.32	2.87	2.79	2.80	2.47	4.69	5.09	4.35	3.15	2.98	3.15	2.55
MAX	5.5	3.9	4.5	3.6	3.9	7.2	10	5.2	4.0	4.0	4.0	3.9
MIN	.34	2.0	2.4	2.5	.38	3.6	1.7	2.3	2.7	1.2	1.0	1.3
AC-FT	204	171	171	172	137	288	303	267	188	183	193	152

CAL YR 1972 TOTAL 770.72 MEAN 2.11 MAX 9.0 MIN 0 AC-FT 1,530
WTR YR 1973 TOTAL 1,225.22 MEAN 3.36 MAX 10 MIN .34 AC-FT 2,430

16303000 Punaluu Stream near Punaluu

LOCATION.--Lat 21°33'33", long 157°54'06", on left bank at Punaluu ditch diversion dam, 1.4 mi (2.2 km) west of Kahana, and 1.8 mi (2.9 km) southwest of Punaluu.

DRAINAGE AREA.--2.78 mi^2 (7.20 km^2).

PERIOD OF RECORD.--May 1953 to current year.

GAGE.--Water-stage recorder and masonry control. Altitude of gage is 212 ft (65 m), from topographic map.

AVERAGE DISCHARGE.--20 years, 16.2 ft^3/s (0.459 m^3/s), 11,740 acre-ft/yr (14.5 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 556 ft^3/s (15.7 m^3/s) May 27, gage height, 2.52 ft (0.768 m), from rating curve extended as explained below; minimum, 8.0 ft^3/s (0.23 m^3/s) Jan. 29, 30.
Period of record: Maximum discharge, 3,180 ft^3/s (90.1 m^3/s) Feb. 1, 1969, gage height, 6.33 ft (1.929 m), from rating curve extended above 170 ft^3/s (4.81 m^3/s) on basis of slope-area measurement at gage height 5.77 ft (1.759 m); no flow at times.

REMARKS.--Records poor. Records do not include flow of Punaluu ditch (see sta 16302000). Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1569: Drainage area. WSP 1937: 1956(P), 1957(M), 1959(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	10	10	10	9.0	11	9.1	10	10	19	9.6	9.6
2	18	11	10	9.6	9.5	10	9.1	10	10	13	10	9.6
3	54	10	10	9.6	18	9.5	9.1	10	10	15	9.6	9.6
4	34	11	10	9.6	11	9.2	9.6	9.6	11	12	11	10
5	18	10	10	9.6	10	10	8.6	9.6	11	12	10	10
6	24	22	10	12	9.2	9.5	8.6	9.6	12	11	10	16
7	16	12	10	13	9.0	9.0	8.6	10	12	11	10	10
8	38	10	11	10	9.0	8.6	8.2	10	12	13	9.6	10
9	36	10	10	10	8.5	8.6	16	11	12	60	9.6	9.6
10	23	11	10	10	8.5	10	75	10	11	28	10	9.6
11	18	10	10	9.6	8.5	12	22	12	12	17	9.6	10
12	16	10	10	9.6	9.0	12	47	11	12	15	9.6	10
13	13	10	9.6	9.1	9.0	12	32	10	12	13	9.1	10
14	12	10	10	9.1	8.5	10	15	9.6	13	13	9.6	16
15	12	10	10	9.1	8.5	8.6	11	9.6	12	15	9.6	11
16	12	10	11	9.1	9.0	8.6	11	9.1	19	13	9.1	10
17	11	10	14	9.1	9.0	9.1	13	9.1	17	13	9.1	11
18	10	12	26	9.1	9.0	9.1	11	10	13	12	9.6	11
19	10	10	21	9.1	8.5	9.1	10	8.6	12	12	9.6	11
20	10	12	11	9.1	35	10	12	8.6	12	12	9.6	55
21	10	10	10	9.1	16	9.1	16	10	12	12	9.6	15
22	9.6	10	10	8.6	13	10	11	10	12	12	10	13
23	9.6	10	10	8.6	11	27	10	9.6	12	12	30	19
24	9.6	10	10	8.6	30	10	10	10	12	12	20	13
25	9.6	10	16	8.4	50	10	10	9.1	12	12	14	12
26	10	11	15	8.4	20	10	10	9.1	11	12	13	12
27	10	10	11	8.2	13	9.6	10	24	11	11	12	12
28	20	10	12	8.2	12	9.6	11	14	10	10	11	13
29	13	10	10	8.0	------	9.6	10	12	10	11	10	16
30	11	10	9.6	8.0	------	9.6	10	11	11	10	10	12
31	10	------	12	8.2	------	9.6	------	10	------	10	9.6	------
TOTAL	547.4	322	359.2	287.7	380.7	320.0	453.9	326.2	358	453	343.1	396.0
MEAN	17.7	10.7	11.6	9.28	13.6	10.3	15.1	10.5	11.9	14.6	11.1	13.2
MAX	54	22	26	13	50	27	75	24	19	60	30	55
MIN	9.6	10	9.6	8.0	8.5	8.6	8.2	8.6	10	10	9.1	9.6
AC-FT	1,090	639	712	571	755	635	900	647	710	899	681	785

CAL YR 1972 TOTAL 7,786.6 MEAN 21.3 MAX 454 MIN 9.6 AC-FT 15,440
WTR YR 1973 TOTAL 4,547.2 MEAN 12.5 MAX 75 MIN 8.0 AC-FT 9,020

PEAK DISCHARGE (BASE, 930 CFS).--No peak above base.

NOTE.--No gage-height record Jan. 23 to Mar. 9.

16304200 Kaluanui Stream near Punaluu

LOCATION.--Lat 21°35'22", long 157°54'38", on right bank 0.8 mi (1.3 km) downstream from Sacred Falls, 1.6 mi (2.6 km) west of Punaluu Beach Park, and 1.7 mi (2.7 km) south of cemetery in Hauula.

DRAINAGE AREA.--1.11 mi^2 (2.87 km^2).

PERIOD OF RECORD.--May 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 110 ft (34 m), from topographic map.

AVERAGE DISCHARGE.--6 years, 4.00 ft^3/s (0.113 m^3/s), 2,900 acre-ft/yr (3.58 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 489 ft^3/s (13.8 m^3/s) Oct. 3, gage height, 9.04 ft (2.755 m), from rating curve extended as explained below; minimum, 0.02 ft^3/s (0.001 m^3/s) Dec. 16.
Period of record: Maximum discharge, 2,010 ft^3/s (56.9 m^3/s) Feb. 1, 1969, gage height, 10.0 ft (3.05 m), from rating curve extended above 14 ft^3/s (0.40 m^3/s) on basis of slope-area measurements at gage heights 8.85 (2.697) and 10.0 ft (3.05 m); minimum, no flow for several days in July and August 1971.

REMARKS.--Records fair except those above 100 ft^3/s (2.8 m^3/s), which are poor. No diversion above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	.79	.25	.79	.25	.91	1.9	1.1	1.1	12	.41	.34
2	.69	2.0	.20	.37	1.4	.85	1.4	.85	.85	5.9	.49	.91
3	27	4.1	.18	.28	6.1	2.9	1.7	1.3	.79	5.0	.64	.45
4	10	3.6	.16	.22	1.3	1.1	5.9	.79	1.5	4.0	1.8	1.7
5	2.3	1.3	.12	.20	.45	4.9	1.3	.64	2.7	4.7	.74	1.8
6	2.7	9.9	.10	8.0	.28	1.4	1.1	.79	2.9	2.8	2.7	.91
7	4.2	4.9	.14	7.5	.20	.91	1.1	.91	3.2	2.9	4.0	.69
8	3.9	3.1	2.4	2.0	.16	4.5	1.9	1.4	1.3	11	1.4	.41
9	5.8	3.5	.79	.98	.25	1.5	13	6.1	1.1	29	1.4	.34
10	1.9	4.8	.28	.64	.18	2.4	30	3.1	.91	9.3	.98	.28
11	1.1	1.6	.14	.49	.08	6.9	4.5	3.4	.91	7.1	.54	.25
12	.85	1.3	.10	.41	.22	4.2	11	2.5	1.7	4.2	.45	.22
13	.69	1.1	.07	.41	.54	3.7	4.5	1.3	3.9	5.0	.37	.28
14	.59	1.1	.05	.31	.64	4.5	2.3	.85	5.9	2.3	.37	4.2
15	.54	.85	.04	.28	.41	3.1	2.8	.74	1.4	7.3	.37	.59
16	.45	.74	.03	.22	.91	3.4	1.6	.64	8.4	3.2	.34	.31
17	.59	.64	3.3	.18	.79	2.0	5.0	.54	4.5	2.4	.59	.64
18	.37	2.0	10	.25	.41	1.5	1.5	3.5	1.5	1.8	.37	.85
19	.28	.79	5.8	.45	.41	1.5	1.2	1.4	1.6	1.5	.91	.37
20	.25	.54	.91	.20	16	3.7	1.1	1.6	1.3	1.4	.59	4.2
21	.22	.45	.54	1.3	1.9	1.6	4.0	3.9	1.1	1.3	.41	.85
22	.20	.37	.31	.41	.69	4.3	1.8	3.7	1.1	.98	1.9	1.3
23	.18	.34	.28	.22	.49	7.9	1.7	1.3	1.4	1.1	21	9.3
24	.16	.37	.31	.14	27	1.9	1.1	2.7	.79	.91	3.4	3.4
25	.14	.37	6.0	.12	18	5.0	.98	3.2	.64	.91	1.1	.98
26	1.0	3.5	2.6	.10	2.3	3.4	3.9	1.3	.54	2.0	.74	.64
27	2.3	.59	.64	.28	1.9	1.8	1.5	12	.49	.85	.85	4.5
28	7.2	.31	.49	.31	1.4	1.5	2.2	1.7	.45	.64	.59	2.5
29	3.1	.31	.74	.20	------	2.5	1.1	2.9	.37	1.5	.49	5.9
30	.91	.34	.41	.20	------	4.5	1.1	1.4	2.8	.59	.45	1.2
31	.59	------	2.0	.71	------	3.2	------	1.5	------	.49	.37	------
TOTAL	81.70	55.60	39.38	28.17	84.66	93.47	114.18	69.05	57.14	134.07	50.76	50.31
MEAN	2.64	1.85	1.27	.91	3.02	3.02	3.81	2.23	1.90	4.32	1.64	1.68
MAX	27	9.9	10	8.0	27	7.9	30	12	8.4	29	21	9.3
MIN	.14	.31	.03	.10	.08	.85	.98	.54	.37	.49	.34	.22
AC-FT	162	110	78	56	168	185	226	137	113	266	101	100

CAL YR 1972 TOTAL 1,142.08 MEAN 3.12 MAX 80 MIN .03 AC-FT 2,270
WTR YR 1973 TOTAL 858.49 MEAN 2.35 MAX 30 MIN .03 AC-FT 1,700

PEAK DISCHARGE (BASE, 500 CFS).--No peak above base.

16325000 Kamananui Stream at Pupukea Military Road, near Maunawai

LOCATION.--Lat 21°37'25", long 158°01'04", on right bank 75 ft (23 m) upstream from Pupukea Military Road and 3.5 mi (5.6 km) southeast of Maunawai.

DRAINAGE AREA.--3.13 mi² (8.11 km²).

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1961, 1963, June 1963 to current year.

GAGE.--Water-stage recorder and combination pipe culverts and paved road control. Altitude of gage is 590 ft (180 m), from topographic map.

AVERAGE DISCHARGE.--10 years, 11.8 ft³/s (0.334 m³/s), 8,550 acre-ft/yr (10.5 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 615 ft³/s (17.4 m³/s) Oct. 3, gage height, 6.02 ft (1.835 m), from rating curve extended as explained below; minimum, 0.05 ft³/s (0.001 m³/s) Oct. 23.
Period of record: Maximum discharge, 1,720 ft³/s (48.7 m³/s) Apr. 20, 1968, gage height, 9.13 ft (2.783 m), from rating curve extended above 42 ft³/s (1.19 m³/s) on basis of slope-area measurement at gage height 8.12 ft (2.475 m); minimum, no flow Aug. 26 to Sept. 1, Sept. 23, Oct. 15-25, 1971.

REMARKS.--Records fair. No diversion above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses and suspended sediment loads for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.96	1.0	1.9	.54	2.1	3.7	3.0	1.4	13	1.8	.82
2	.26	1.2	.96	1.5	1.2	2.0	3.0	2.9	1.4	18	1.8	.89
3	38	1.8	.90	1.1	4.2	2.3	2.5	3.2	1.4	14	2.0	1.4
4	84	3.3	.84	.96	3.1	2.5	3.8	3.1	1.4	8.4	3.0	1.2
5	3.8	3.0	.84	.90	1.2	3.0	3.0	2.4	2.0	6.6	3.1	5.2
6	1.8	15	.78	5.1	.66	5.0	2.1	2.3	2.7	6.6	5.9	2.8
7	1.2	14	.72	19	.48	2.1	2.0	2.2	5.3	3.3	11	2.4
8	1.1	3.8	.78	2.8	.54	9.4	2.0	2.3	3.3	12	3.6	1.4
9	1.8	4.6	3.3	1.4	1.5	6.3	6.6	5.8	1.8	104	2.5	.97
10	.96	12	1.2	.90	1.1	3.5	120	4.8	1.4	47	2.4	.82
11	.96	3.8	.66	.66	.66	23	17	5.6	1.3	12	1.7	.67
12	.66	2.4	.43	.54	.48	8.7	19	4.1	1.3	6.7	1.4	.60
13	.43	1.8	.31	.43	.48	5.4	14	2.9	7.7	5.7	1.4	.60
14	.26	1.5	.22	.43	.90	4.3	6.4	2.2	17	4.6	1.4	.67
15	.18	1.4	.18	.37	1.2	3.9	6.0	2.0	4.0	8.5	1.3	2.0
16	.15	1.3	.18	.31	.96	4.4	5.2	1.8	22	6.9	1.3	1.0
17	.13	1.2	2.8	.31	1.2	4.9	19	1.8	8.9	5.6	1.3	.82
18	.11	1.2	21	.31	1.2	2.9	6.0	3.9	3.7	3.7	1.1	.74
19	.09	1.6	23	.37	.84	2.2	4.2	5.0	2.9	3.4	1.1	.82
20	.08	1.2	3.4	.84	23	4.3	4.1	2.6	3.2	2.9	1.1	.95
21	.07	.96	1.9	.72	16	6.8	5.5	6.1	2.0	2.6	1.1	4.1
22	.06	.90	1.4	1.1	2.0	3.2	6.8	7.1	1.6	2.4	1.1	1.5
23	.05	.90	1.2	.66	1.1	15	5.1	3.7	2.0	2.5	1.3	3.2
24	.06	.96	1.2	.43	53	5.3	4.2	2.6	1.9	2.5	7.0	5.3
25	.07	1.0	1.4	.31	82	8.4	3.3	2.4	1.4	2.4	1.7	2.0
26	.15	8.1	11	.22	15	14	7.2	2.5	1.3	2.2	1.0	1.2
27	2.5	2.3	2.6	.18	3.7	8.4	7.1	2.0	1.2	2.2	.89	1.1
28	30	1.3	1.5	.18	2.6	4.6	4.3	1.8	1.2	2.0	.82	2.9
29	20	1.0	1.2	.22	------	6.4	4.0	1.7	1.3	2.0	.89	8.5
30	2.6	1.0	1.0	.22	------	4.9	3.4	1.7	1.4	1.9	1.0	3.3
31	1.4	------	1.2	.24	------	4.9	------	1.6	------	2.0	.89	------
TOTAL	193.08	95.48	89.10	44.61	220.84	184.1	300.5	97.1	109.4	317.6	67.89	59.87
MEAN	6.23	3.18	2.87	1.44	7.89	5.94	10.0	3.13	3.65	10.2	2.19	2.00
MAX	84	15	23	19	82	23	120	7.1	22	104	11	8.5
MIN	.05	.90	.18	.18	.48	2.0	2.0	1.6	1.2	1.9	.82	.60
AC-FT	383	189	177	88	438	365	596	193	217	630	135	119

CAL YR 1972 TOTAL 2,129.64 MEAN 5.82 MAX 164 MIN .05 AC-FT 4,220
WTR YR 1973 TOTAL 1,779.57 MEAN 4.88 MAX 120 MIN .05 AC-FT 3,530

PEAK DISCHARGE (BASE, 950 CFS).--No peak above base.

16330000 Kamananui Stream at Maunawai

LOCATION.--Lat 21°38'20", long 158°03'27", on right bank at Maunawai, 25 ft (7.6 m) upstream from Elehaha Stream, 4.9 mi (7.9 km) northeast of Waialua School, and 7.3 mi (11.7 km) southwest of Kahuku School.

DRAINAGE AREA.--9.79 mi^2 (25.4 km^2).

PERIOD OF RECORD.--February 1958 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 20 ft (6.1 m), from topographic map. Prior to May 13, 1965, at datum 2.00 ft (0.610 m) higher and May 13, 1965, to May 17, 1966, at datum 1.00 ft (0.305 m) higher.

AVERAGE DISCHARGE.--15 years, 15.8 ft^3/s (0.447 m^3/s), 11,450 acre-ft/yr (14.1 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 610 ft^3/s (17.3 m^3/s) Feb. 24, gage height, 4.55 ft (1.387 m), from rating curve extended as explained below; minimum, no flow for several days in October.
Period of record: Maximum discharge, 5,270 ft^3/s (149 m^3/s) Mar. 16, 1968, gage height, 10.14 ft (3.091 m), from rating curve extended above 150 ft^3/s (4.25 m^3/s) on basis of slope-area measurements at gage heights 6.25 (1.905), 8.13 (2.478) and 10.14 ft (3.091 m); no flow at times.

REMARKS.--Records good. No diversion above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1937: 1958-60.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	1.2	.48	1.3	.03	2.5	4.8	3.7	.87	12	1.4	.37
2	0	.81	.43	1.9	.02	2.0	3.7	3.3	.72	29	1.3	.35
3	5.1	1.5	.38	.96	1.6	2.0	2.9	3.6	.63	19	1.3	.50
4	122	2.5	.30	.51	5.4	2.7	3.2	3.4	.58	14	2.4	1.0
5	8.6	3.9	.24	.31	1.6	2.6	4.0	2.7	.58	8.3	4.0	4.6
6	3.7	14	.21	.46	.67	6.2	2.6	2.6	2.1	10	5.6	3.7
7	1.8	29	.17	34	.35	3.4	2.2	2.3	4.1	5.3	15	2.9
8	1.1	7.9	.17	7.6	.36	7.8	1.9	2.2	4.6	12	6.4	1.6
9	1.9	5.6	1.6	3.1	.27	11	2.0	5.1	2.4	146	3.3	.82
10	1.7	17	1.7	1.6	1.2	4.3	175	6.8	1.3	112	2.7	.42
11	.81	8.6	.73	.96	.56	33	34	11	.91	20	1.9	.24
12	.60	3.9	.38	.62	.29	15	23	8.2	.71	11	1.3	.16
13	.30	2.5	.24	.40	.19	7.7	27	4.1	2.9	7.8	.99	.11
14	.17	1.8	.15	.29	.12	5.2	11	2.9	23	6.3	.87	.05
15	.10	1.5	.09	.23	.12	4.3	7.1	2.1	7.6	9.0	.80	.03
16	.05	1.2	.05	.18	.60	4.1	7.5	1.7	29	9.5	.72	.68
17	.03	.89	.09	.14	.38	6.8	26	1.5	19	8.1	.67	.34
18	.01	.73	27	.09	.65	4.3	12	3.4	6.5	6.1	.56	.20
19	.01	.66	45	.06	.55	2.9	6.2	7.0	3.7	4.3	.48	.15
20	0	.97	7.3	.04	15	2.5	5.2	3.7	4.0	3.6	.41	.12
21	0	.60	3.1	.09	30	8.6	6.9	5.8	2.5	3.1	.38	2.5
22	0	.38	1.7	.22	4.6	4.3	9.8	8.0	1.7	2.8	.42	1.6
23	0	.30	1.1	.48	2.1	16	6.8	5.2	1.4	2.6	.45	.79
24	0	.21	.76	.29	80	11	5.7	3.4	2.0	2.7	11	7.8
25	0	.21	.64	.17	176	4.9	4.2	2.6	1.5	2.6	3.6	3.0
26	0	7.6	8.8	.10	15	25	5.0	2.3	.97	2.4	1.5	1.5
27	0	5.1	4.6	.06	5.9	17	12	2.0	.73	2.3	.86	.71
28	15	2.1	2.0	.03	3.5	7.6	5.6	1.4	.61	2.1	.57	1.7
29	55	1.1	1.0	.02	------	7.5	5.4	1.1	.51	1.8	.43	10
30	5.6	.73	.62	.01	------	8.5	4.3	1.1	.53	1.7	.36	6.8
31	2.2	------	.65	.01	------	6.5	------	1.0	------	1.4	.50	------
TOTAL	225.78	124.49	111.68	56.23	347.06	247.2	427.0	115.2	127.65	478.8	72.17	54.74
MEAN	7.28	4.15	3.60	1.81	12.4	7.97	14.2	3.72	4.26	15.4	2.33	1.82
MAX	122	29	45	34	176	33	175	11	29	146	15	10
MIN	0	.21	.05	.01	.02	2.0	1.9	1.0	.51	1.4	.36	.03
AC-FT	448	247	222	112	688	490	847	228	253	950	143	109

CAL YR 1972 TOTAL 3,182.86 MEAN 8.70 MAX 218 MIN 0 AC-FT 6,310
WTR YR 1973 TOTAL 2,388.00 MEAN 6.54 MAX 176 MIN 0 AC-FT 4,740

PEAK DISCHARGE (BASE, 1,100 CFS).--No peak above base.

16343000 Helemano Stream at Haleiwa

LOCATION.--Lat 21°34'40", long 158°06'12", on left bank at upstream side of private road bridge, 0.3 mi (0.5 km) east of Weed Circle, and 1.1 mi (1.8 km) southeast of Waialua School at Haleiwa.

DRAINAGE AREA.--14.2 mi^2 (36.8 km^2).

PERIOD OF RECORD.--November 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1.57 ft (0.479 m) above mean sea level.

AVERAGE DISCHARGE.--5 years (1968-73), 14.2 ft^3/s (0.402 m^3/s), 10,290 acre-ft/yr (12.7 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 392 ft^3/s (11.1 m^3/s) Oct. 4, gage height, 5.53 ft (1.686 m), from rating curve extended as explained below; minimum, no flow for many days.
Period of record: Maximum discharge, 11,300 ft^3/s (320 m^3/s) Feb. 1, 1969, gage height, 17.63 ft (5.374 m), from floodmark in well, from rating curve extended above 300 ft^3/s (8.50 m^3/s) on basis of slope-area measurements at gage heights 10.54 (3.213), 14.2 (4.328), 15.34 (4.676) and 17.63 ft (5.374 m); minimum, no flow at times.

REMARKS.--Records fair. Minor regulation by reservoir on upstream tributary. Diversions into basin for irrigation of sugarcane; low flow affected by irrigation return flow and releases. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	.01	.01	.02	.04	.07	.04	.06	.05	.02
2	.01	0	0	.01	.01	.02	.04	.08	.04	.06	.04	.02
3	.03	0	0	.01	.02	.02	.04	.10	.04	.06	.04	.02
4	105	0	.08	.01	.02	.02	.03	.12	.04	.05	.03	.02
5	7.5	0	.01	.01	.02	.03	.03	.13	.04	.05	.03	.02
6	.70	0	0	.02	.03	.03	.03	.15	.03	.05	.03	.02
7	.01	18	0	.02	.03	.03	.04	.20	.03	.05	.04	.02
8	0	3.6	0	.02	.03	.03	.04	.20	.03	.05	.03	.02
9	0	.59	0	.02	.03	.03	.04	.16	.03	.05	.02	.01
10	.03	.48	0	.02	.03	.04	13	.12	.03	128	.03	.01
11	.18	2.1	0	.01	.03	.04	17	.08	.03	11	.02	.01
12	.01	.20	0	.01	.03	.05	.81	.08	.03	.83	.02	.01
13	.03	.01	0	.01	.03	.05	30	.07	.04	.12	.02	.01
14	.02	0	0	.01	.03	.05	3.6	.05	.05	.09	.02	.01
15	.03	0	0	.01	.03	.05	.80	.04	.07	.08	.02	.01
16	.04	0	0	.01	.03	.04	.12	.05	.07	.06	.01	.01
17	.04	0	0	.01	.03	.04	.08	.05	.07	.04	.01	.01
18	.06	0	.02	.01	.03	.03	.08	.05	.07	.04	.01	.01
19	.06	0	16	.01	.03	.03	.12	.05	.06	.04	.01	.01
20	.06	0	4.8	.01	.03	.02	.16	.04	.05	.04	.01	.01
21	.07	0	.49	.01	48	.02	46	.04	.05	.05	.01	.01
22	.08	0	.04	.01	1.5	.02	31	.04	.05	.05	.01	0
23	.08	0	.01	.01	.05	5.6	4.0	.03	.05	.05	.02	0
24	.11	0	.01	.01	.02	13	.73	.02	.04	.05	.03	0
25	.02	.01	0	.01	36	.83	.22	.02	.04	.07	.02	0
26	.10	0	0	.01	6.0	.06	.12	.01	.05	.07	.02	0
27	.05	0	0	.01	.36	.03	.09	.01	.06	.06	.02	.01
28	.05	0	0	.01	.03	.03	.07	.01	.06	.07	.02	.01
29	11	0	0	.01	------	.03	.07	.01	.06	.07	.02	.01
30	2.6	0	0	.01	------	.04	.06	.02	.06	.07	.01	.01
31	.15	------	.01	.01	------	.05	------	.03	------	.06	.02	------
TOTAL	128.12	24.99	21.47	.36	92.49	20.38	148.46	2.13	1.41	141.49	.69	.33
MEAN	4.13	.83	.69	.012	3.30	.66	4.95	.069	.047	4.56	.022	.011
MAX	105	18	16	.02	48	13	46	.20	.07	128	.05	.02
MIN	0	0	0	.01	.01	.02	.03	.01	.03	.04	.01	0
AC-FT	254	50	43	.7	183	40	294	4.2	2.8	281	1.4	.7

CAL YR 1972 TOTAL 3,258.75 MEAN 8.90 MAX 895 MIN 0 AC-FT 6,460
WTR YR 1973 TOTAL 582.32 MEAN 1.60 MAX 128 MIN 0 AC-FT 1,160

PEAK DISCHARGE (BASE, 1,200 CFS).--No peak above base.

16345000 Opaeula Stream near Wahiawa

LOCATION.--Lat 21°33'55", long 158°00'10", on left bank 4.3 mi (6.9 km) northeast of Leilehua High School in Wahiawa and 8.1 mi (13.0 km) east of Waialua School.

DRAINAGE AREA.--2.98 mi² (7.72 km²).

PERIOD OF RECORD.--August 1959 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,120 ft (341 m), from topographic map.

AVERAGE DISCHARGE.--14 years, 14.1 ft³/s (0.399 m³/s), 10,220 acre-ft/yr (12.6 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 974 ft³/s (27.6 m³/s) Oct. 3, gage height, 5.97 ft (1.820 m), from rating curve extended as explained below; minimum, 0.17 ft³/s (0.005 m³/s) Jan. 22, 23.
Period of record: Maximum discharge, 3,900 ft³/s (110 m³/s) Feb. 1, 1969, gage height, 10.12 ft (3.085 m), from rating curve extended above 110 ft³/s (3.12 m³/s) on basis of slope-area measurements at gage heights 6.74 (2.054) and 10.12 ft (3.085 m); minimum, 0.03 ft³/s (0.001 m³/s) July 31, Aug. 31, 1971.

REMARKS.--Records good. No diversion above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses and suspended sediment loads for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEAR).--WSP 1937: 1960.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	1.5	.70	4.9	2.0	2.8	8.7	3.9	3.6	41	1.6	.85
2	6.5	3.0	.66	2.2	1.2	2.0	4.7	3.5	2.8	21	1.5	.89
3	84	4.0	.62	1.1	22	3.9	3.7	5.0	2.3	24	1.7	.97
4	79	14	.49	.78	9.5	6.7	9.1	5.0	2.3	21	2.9	1.3
5	10	7.4	.40	.39	2.9	8.4	4.8	2.8	5.2	9.3	2.6	5.9
6	4.3	36	.38	.67	1.4	8.3	3.0	2.8	5.2	13	5.6	3.8
7	4.2	31	.35	12	.85	3.4	2.6	3.0	11	5.9	17	3.2
8	6.7	9.3	.40	5.8	.76	7.8	2.5	5.1	7.0	25	6.2	1.8
9	7.7	15	8.3	2.7	.74	9.4	20	19	3.2	124	4.0	1.1
10	8.3	20	2.3	1.5	1.2	5.1	116	12	2.9	76	2.6	.79
11	3.0	7.3	1.0	.95	.84	32	21	14	2.5	18	1.9	.60
12	1.6	4.2	.66	.71	.60	15	36	8.6	3.5	10	1.4	.55
13	1.1	3.3	.46	.56	.49	11	21	6.7	13	11	1.1	.49
14	.92	2.7	.35	.46	1.3	13	8.4	3.4	29	6.7	1.0	2.7
15	.81	3.2	.28	.40	2.6	7.5	6.2	2.6	7.0	19	1.0	4.3
16	.70	2.4	.23	.35	1.6	10	7.4	2.2	30	11	1.4	1.7
17	.59	1.7	.90	.32	.93	9.3	16	2.2	16	7.1	1.1	1.0
18	.51	1.9	38	.29	1.6	5.3	7.1	13	6.7	5.2	1.2	.78
19	.45	3.9	31	.25	1.5	4.6	4.0	14	4.2	4.4	1.4	1.7
20	.43	2.0	5.2	.23	127	16	3.4	5.9	5.0	3.7	1.6	14
21	.38	1.3	2.2	.21	31	15	24	11	3.5	3.6	1.3	8.7
22	.31	1.0	1.3	.18	4.6	5.3	14	19	2.9	3.1	1.3	2.4
23	.27	.92	.96	.50	2.4	43	6.3	6.5	2.4	2.6	2.2	16
24	.25	.89	.80	.67	69	11	5.3	7.9	2.8	2.8	20	13
25	.24	.97	1.2	.48	99	6.2	4.4	11	2.1	2.7	3.6	5.8
26	.22	6.8	19	.36	9.3	17	8.8	6.3	1.8	2.6	1.8	2.5
27	.56	3.8	4.2	.36	4.3	12	11	7.9	1.6	4.1	1.5	1.5
28	15	1.5	1.8	.35	3.2	6.0	6.8	12	1.6	2.3	1.7	4.8
29	33	.99	1.2	.75	------	8.8	6.1	6.9	1.5	2.1	1.7	15
30	4.6	.82	.91	.84	------	15	4.1	6.1	1.7	3.1	1.2	6.1
31	2.5	------	1.2	.90	------	11	------	3.4	------	1.8	.93	------
TOTAL	281.74	192.79	127.45	42.36	403.81	331.8	396.4	232.7	184.3	487.1	96.03	124.22
MEAN	9.09	6.43	4.11	1.37	14.4	10.7	13.2	7.51	6.14	15.7	3.10	4.14
MAX	84	36	38	12	127	43	116	19	30	124	20	16
MIN	.22	.82	.23	.18	.49	2.0	2.5	2.2	1.5	1.8	.93	.49
AC-FT	559	382	253	84	801	658	786	462	366	966	190	246

CAL YR 1972 TOTAL 3,675.85 MEAN 10.0 MAX 346 MIN .22 AC-FT 7,290
WTR YR 1973 TOTAL 2,900.70 MEAN 7.95 MAX 127 MIN .18 AC-FT 5,750

PEAK DISCHARGE (BASE, 1,200 CFS).--No peak above base.

16400000 Halawa Stream near Halawa

LOCATION.--Lat 21°09'31", long 156°45'53", on right bank 600 ft (183 m) downstream from Hipuapua Stream and 1.5 mi (2.4 km) west of Halawa.

DRAINAGE AREA.--4.62 mi^2 (11.97 km^2).

PERIOD OF RECORD.--July 1917 to July 1932, November 1937 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 210 ft (64 m), from topographic map. Prior to June 25, 1923, at site 350 ft (107 m) upstream at different datum. June 25, 1923, to July 18, 1932, and Nov. 17, 1937, to Feb. 3, 1965, at present site at datum 2.00 ft (0.610 m) higher.

AVERAGE DISCHARGE.--49 years (1917-31, 1938-73), 29.7 ft^3/s (0.841 m^3/s), 21,520 acre-ft/yr (26.5 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 985 ft^3/s (27.9 m^3/s) Apr. 10, gage height, 8.32 ft (2.536 m), from rating curve extended as explained below; minimum, 2.1 ft^3/s (0.059 m^3/s) Oct. 25, 26.
Period of record: Maximum discharge, 26,900 ft^3/s (762 m^3/s) Feb. 4, 1965, gage height, 19.91 ft (6.069 m), from floodmarks, from rating curve extended above 86 ft^3/s (2.44 m^3/s) on basis of slope-area measurement of peak flow; minimum, 0.76 ft^3/s (0.022 m^3/s) about Nov. 23, 1962.

REMARKS.--Records fair. No diversion above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1319: 1928, 1929(M), 1930-31, 1938-50(M), drainage area. WSP 1719: 1954.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	5.5	4.4	11	11	15	17	6.1	8.3	31	3.0	6.1
2	7.3	14	4.0	6.6	12	25	12	5.3	7.3	71	3.7	16
3	160	56	12	5.6	18	12	11	5.0	6.7	32	3.6	5.0
4	50	16	5.6	5.3	9.1	10	77	4.1	6.7	12	4.3	4.6
5	16	19	4.3	16	5.9	38	13	3.6	7.9	26	9.8	4.6
6	8.9	51	4.1	39	4.9	11	9.3	3.6	16	26	11	4.9
7	22	69	4.1	106	4.8	24	9.6	4.0	14	19	43	6.3
8	12	33	49	67	4.6	29	11	3.7	9.1	18	49	4.1
9	12	48	22	20	27	11	166	111	6.9	73	10	3.3
10	6.9	39	6.4	13	7.7	7.9	278	13	5.9	78	5.8	2.5
11	5.0	31	4.8	10	4.8	46	42	100	6.4	43	4.6	2.3
12	4.3	13	4.1	8.3	11	32	54	82	11	49	4.1	8.4
13	8.8	11	3.8	8.5	9.6	25	25	97	52	23	3.6	31
14	5.5	9.6	3.6	7.3	9.1	17	15	22	53	15	11	56
15	3.9	11	3.6	6.3	5.9	14	33	17	10	46	6.4	7.3
16	3.5	8.7	3.3	5.8	4.6	36	17	11	82	16	4.8	4.5
17	3.5	7.3	3.2	5.2	5.1	90	19	59	26	18	7.1	5.2
18	2.9	19	32	5.9	8.7	64	11	102	10	13	6.1	4.5
19	2.8	12	89	17	8.3	38	8.3	29	21	10	3.6	3.6
20	2.8	6.7	11	11	50	32	7.9	45	9.8	7.7	3.4	21
21	2.7	5.5	6.4	15	38	22	33	58	7.1	6.6	3.1	6.6
22	2.9	4.9	5.2	6.7	6.9	40	13	48	24	5.9	3.8	7.6
23	2.6	6.6	4.5	4.9	25	74	10	24	12	6.1	3.6	68
24	2.4	7.3	4.9	4.5	67	24	8.5	54	6.6	5.9	3.1	38
25	2.2	5.5	71	4.3	152	17	6.6	18	5.8	19	2.5	9.1
26	31	47	14	7.6	42	19	9.7	13	5.0	6.7	2.5	5.8
27	26	10	9.8	8.4	13	21	7.3	11	4.6	5.0	3.1	7.7
28	5.9	6.3	38	17	8.1	33	10	32	4.4	4.6	3.2	10
29	101	5.2	24	46	------	16	7.3	20	4.0	4.3	7.2	34
30	12	5.3	11	31	------	74	6.3	10	5.6	3.6	7.5	8.5
31	6.4	------	9.8	14	------	40	------	9.3	------	3.2	9.6	------
TOTAL	564.2	583.4	472.9	534.2	574.1	956.9	947.8	1,020.7	449.1	697.6	247.1	396.5
MEAN	18.2	19.4	15.3	17.2	20.5	30.9	31.6	32.9	15.0	22.5	7.97	13.2
MAX	160	69	89	106	152	90	278	111	82	78	49	68
MIN	2.2	4.9	3.2	4.3	4.6	7.9	6.3	3.6	4.0	3.2	2.5	2.3
AC-FT	1,120	1,160	938	1,060	1,140	1,900	1,880	2,020	891	1,380	490	786

CAL YR 1972 TOTAL 7,480.4 MEAN 20.4 MAX 363 MIN 2.2 AC-FT 14,840
WTR YR 1973 TOTAL 7,444.5 MEAN 20.4 MAX 278 MIN 2.2 AC-FT 14,770

PEAK DISCHARGE (BASE, 1,900 CFS).--No peak above base.

16403900 Kawainui Stream near Pelekunu

LOCATION.--Lat 21°07'59", long 156°52'38", on right bank 900 ft (274 m) upstream from confluence with Kapuhi Stream, 2.1 mi (3.4 km) south of former village of Pelekunu, and 5.7 mi (9.2 km) north of Kamalo.

DRAINAGE AREA.--1.17 mi^2 (3.03 km^2).

PERIOD OF RECORD.--August 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 770 ft (235 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 8.75 ft^3/s (0.248 m^3/s), 6,340 acre-ft/yr (7.82 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 415 ft^3/s (11.8 m^3/s) Feb. 20, gage height, 4.55 ft (1.387 m), from rating curve extended above 43 ft^3/s (1.22 m^3/s); minimum, 1.2 ft^3/s (0.034 m^3/s) Sept. 21, 28.
Period of record: Maximum discharge, 1,630 ft^3/s (46.2 m^3/s) Jan. 8, 1969, gage height, 7.36 ft (2.243 m), from rating curve extended above 43 ft^3/s (1.22 m^3/s); minimum, 0.70 ft^3/s (0.020 m^3/s) Sept. 22, 1968.

REMARKS.--Records good except those above 90 ft^3/s (2.55 m^3/s), which are poor. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	3.6	2.5	4.5	9.4	10	13	4.4	3.6	8.2	2.0	1.6
2	1.9	5.1	2.8	3.9	8.8	14	10	4.2	3.3	13	2.1	1.8
3	21	10	3.1	3.5	7.0	15	9.6	4.0	3.1	9.9	2.0	1.4
4	9.0	5.8	2.4	3.3	5.6	13	16	3.3	4.2	9.5	2.1	1.7
5	4.4	10	2.3	3.0	4.7	14	9.2	3.3	3.6	8.2	2.1	1.8
6	3.1	23	2.2	6.3	4.1	13	7.6	3.4	5.5	6.4	2.2	2.3
7	2.8	28	2.1	8.0	3.8	18	7.2	3.0	4.9	5.6	5.8	2.2
8	2.4	19	12	5.4	5.8	14	6.1	3.0	3.6	5.8	4.2	1.7
9	2.2	21	7.9	4.2	20	10	9.7	10	2.9	7.6	2.4	1.4
10	2.0	16	4.6	3.8	9.7	13	18	5.0	2.7	10	2.1	1.4
11	2.0	14	3.7	3.3	6.7	19	11	8.5	2.7	10	1.9	1.4
12	1.9	9.7	3.1	3.1	6.2	12	11	17	3.2	8.3	1.9	1.3
13	1.9	7.7	2.8	3.0	5.4	11	9.9	15	9.9	6.7	1.8	1.6
14	1.8	6.4	2.7	2.8	4.8	9.5	7.9	10	9.2	5.8	1.9	2.5
15	1.8	6.0	2.5	2.5	3.9	12	10	7.7	5.6	7.2	1.8	1.4
16	1.7	4.9	2.4	2.4	3.5	19	8.5	6.1	21	5.2	2.0	1.4
17	1.7	4.5	2.4	2.2	3.7	46	7.7	12	12	5.0	2.0	1.6
18	1.6	5.4	19	2.2	3.3	29	6.1	22	8.2	4.2	1.7	1.4
19	1.6	3.9	22	2.1	2.9	21	5.4	16	6.5	3.7	1.8	1.3
20	1.6	3.3	10	2.4	73	17	4.9	16	5.0	3.4	1.7	1.3
21	1.7	3.2	7.0	2.2	50	14	8.5	17	4.2	3.1	1.6	1.3
22	1.6	3.0	5.5	2.1	17	12	6.5	14	3.9	3.0	1.6	1.5
23	1.6	3.3	4.7	2.0	16	17	6.6	11	3.5	2.8	1.5	3.0
24	1.6	2.9	4.4	2.0	40	17	6.2	10	3.2	2.7	1.5	2.0
25	1.5	2.5	10	1.9	68	13	5.2	8.5	3.0	2.8	1.4	1.4
26	4.4	8.8	6.6	2.9	21	12	6.2	6.9	2.8	2.4	1.5	1.4
27	4.1	3.5	5.4	15	14	11	5.7	6.0	2.6	2.4	2.2	1.3
28	1.9	3.0	6.4	15	10	15	6.0	5.4	2.5	2.4	1.6	1.3
29	28	2.8	7.3	15	------	15	4.9	4.8	2.5	2.2	1.9	2.9
30	5.8	2.8	5.4	13	------	26	5.0	4.2	3.5	2.1	1.8	1.7
31	3.9	------	5.2	9.2	------	20	------	3.9	------	2.0	1.7	------
TOTAL	125.3	243.1	180.4	152.2	428.3	501.5	249.6	265.6	152.4	171.6	63.8	50.3
MEAN	4.04	8.10	5.82	4.91	15.3	16.2	8.32	8.57	5.08	5.54	2.06	1.68
MAX	28	28	22	15	73	46	18	22	21	13	5.8	3.0
MIN	1.5	2.5	2.1	1.9	2.9	9.5	4.9	3.0	2.5	2.0	1.4	1.3
AC-FT	249	482	358	302	850	995	495	527	302	340	127	100

CAL YR 1972 TOTAL 2,890.8 MEAN 7.90 MAX 184 MIN 1.3 AC-FT 5,730
WTR YR 1973 TOTAL 2,584.1 MEAN 7.08 MAX 73 MIN 1.3 AC-FT 5,130

PEAK DISCHARGE (BASE, 300 CFS).--Feb. 20 (1530) 415 cfs (4.55 ft).

16404000 Pelekunu Stream near Pelekunu

LOCATION.--Lat 21°08'11", long 156°52'43", on right bank, 0.4 mi (0.6 km) upstream from Pilipililau Stream, 1.9 mi (3.1 km) south of former village of Pelekunu, and 5.8 mi (9.3 km) north of Kamalo.

DRAINAGE AREA.--2.59 mi^2 (6.71 km^2).

PERIOD OF RECORD.--December 1919 to January 1929, September 1937 to November 1947, June 1948 to August 1957, August 1971 to current year. Occasional low-flow measurements and annual maximum, water years 1968-71.

GAGE.--Water-stage recorder. Altitude of gage is 552 ft (168.250 m) above mean sea level (levels by Bureau of Reclamation). Prior to Aug. 25, 1957, at site 300 ft (91 m) downstream at different datum.

AVERAGE DISCHARGE.--28 years (1920-28, 1937-47, 1948-56, 1971-73), 16.8 ft^3/s (0.476 m^3/s), 12,170 acre-ft/yr (15.0 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 320 ft^3/s (9.06 m^3/s) Feb. 20, gage height, 4.25 ft (1.300 m), from rating curve extended above 60 ft^3/s (1.70 m^3/s); minimum, 2.8 ft^3/s (0.079 m^3/s) Sept. 28.
Period of record: Maximum discharge, 4,120 ft^3/s (117 m^3/s) Nov. 20, 1940, gage height, 6.81 ft (2.076 m), from rating curve extended above 39 ft^3/s (1.10 m^3/s) by test on model of station site; minimum, 2.26 ft^3/s (0.064 m^3/s) Nov. 26, 27, 1943.
Flood of undetermined magnitude destroyed station on Jan. 26, 1948.

REMARKS.--Records good. No diversion above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEAR).--WSP 1569: 1940(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	7.1	6.1	9.1	17	21	26	10	9.6	16	5.2	4.8
2	4.0	10	6.3	7.9	17	26	21	10	9.1	24	5.2	5.2
3	42	17	7.5	7.5	14	29	23	9.6	8.7	18	5.2	4.6
4	17	10	5.8	7.1	12	25	46	8.3	10	17	5.4	5.2
5	8.3	17	5.4	7.1	10	29	21	8.3	9.1	14	5.4	5.4
6	7.1	46	5.4	15	9.1	27	17	8.3	12	11	5.8	6.4
7	6.1	54	5.2	17	8.3	41	17	7.9	11	10	11	6.1
8	5.4	32	33	11	14	31	15	7.9	8.7	10	11	4.8
9	5.2	41	16	9.1	56	21	22	24	7.5	14	6.4	4.3
10	4.8	34	9.6	7.9	21	32	46	11	7.1	18	5.4	4.0
11	4.6	25	7.9	7.9	15	42	23	18	7.1	17	5.2	3.8
12	4.6	17	7.1	7.5	14	26	24	40	7.9	14	4.8	3.8
13	4.6	14	6.8	7.1	12	24	21	32	22	11	4.8	4.6
14	4.3	12	6.4	6.8	11	19	17	19	19	10	5.2	5.8
15	4.3	12	6.4	6.4	9.1	24	22	15	11	13	4.8	3.8
16	4.0	10	6.1	6.1	8.7	40	18	12	47	9.6	5.2	4.0
17	4.0	8.7	6.1	5.4	8.3	93	17	30	22	9.1	5.4	4.3
18	3.8	10	42	5.4	7.9	63	14	57	14	8.3	4.8	3.8
19	3.8	7.9	55	5.2	7.5	48	12	38	12	7.5	5.2	3.5
20	3.8	7.1	19	5.4	91	40	12	35	10	7.5	4.8	3.5
21	4.0	6.8	14	5.4	86	30	17	37	9.1	7.1	4.6	3.3
22	4.0	6.8	12	4.8	28	26	13	29	8.3	6.8	4.6	3.8
23	3.8	7.1	10	4.6	28	39	16	24	7.9	6.4	4.3	6.1
24	4.0	6.8	9.1	4.6	56	36	14	21	7.5	6.4	4.3	4.6
25	3.5	6.1	18	4.6	115	28	12	17	7.1	6.4	4.0	3.5
26	8.6	19	14	6.4	43	25	14	15	7.1	6.1	4.0	3.3
27	9.1	7.5	10	42	26	23	12	14	6.8	5.8	5.2	3.3
28	4.8	6.8	12	35	20	32	13	13	6.8	5.8	4.6	3.3
29	53	6.1	14	32	------	34	11	12	6.8	5.4	5.2	6.2
30	10	6.4	10	24	------	60	11	10	7.9	5.4	5.2	4.0
31	7.9	------	10	17	------	38	------	10	------	5.2	5.2	------
TOTAL	259.8	471.2	396.2	342.3	764.9	1,074	567	603.3	340.1	325.8	167.4	133.1
MEAN	8.38	15.7	12.8	11.0	27.3	34.6	18.9	19.5	11.3	10.5	5.40	4.44
MAX	53	54	55	42	115	93	46	57	47	24	11	6.4
MIN	3.5	6.1	5.2	4.6	7.5	19	11	7.9	6.8	5.2	4.0	3.3
AC-FT	515	935	786	679	1,520	2,130	1,120	1,200	675	646	332	264

CAL YR 1972 TOTAL 4,948.8 MEAN 13.5 MAX 179 MIN 3.3 AC-FT 9,820
WTR YR 1973 TOTAL 5,445.1 MEAN 14.9 MAX 115 MIN 3.3 AC-FT 10,800

PEAK DISCHARGE (BASE, 460 CFS).--No peak above base.

16404200 Pilipililau Stream near Pelekunu

LOCATION.--Lat 21°08'08", long 156°53'09", on right bank 500 ft (152 m) downstream from left-bank tributary, 1.9 mi (3.1 km) south of former village of Pelekunu, and 5.8 mi (9.3 km) north of Kamalo.

DRAINAGE AREA.--0.49 mi^2 (1.27 km^2).

PERIOD OF RECORD.--August 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,000 ft (305 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 1.56 ft^3/s (0.0442 m^3/s), 1,130 acre-ft/yr (1.39 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 94 ft^3/s (2.66 m^3/s) Dec. 8, gage height, 2.97 ft (0.905 m), from rating curve extended above 3.8 ft^3/s (0.11 m^3/s); minimum, 0.65 ft^3/s (0.018 m^3/s) Oct. 2, 10-28.
Period of record: Maximum discharge, 214 ft^3/s (6.06 m^3/s) Nov. 25, 1970, gage height, 3.58 ft (1.091 m), from rating curve extended above 3.8 ft^3/s (0.11 m^3/s); minimum, 0.53 ft^3/s (0.015 m^3/s) Nov. 22, 1968.

REMARKS.--Records good except those above 8 ft^3/s (0.23 m^3/s), which are poor. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.68	.71	.68	.82	1.0	1.7	1.7	1.2	1.1	1.1	.78	.78
2	.65	.71	.82	.82	1.1	1.9	1.6	1.2	1.1	1.1	.78	.78
3	2.1	.74	.82	.78	.94	1.8	2.3	1.2	1.1	1.1	.78	.74
4	.92	.71	.71	.78	.90	1.7	4.6	1.2	1.1	1.0	.78	.82
5	.71	.78	.71	.74	.86	1.9	2.0	1.2	1.1	.98	.82	.82
6	.71	1.3	.71	1.1	.82	1.9	1.8	1.2	1.2	.94	.78	.82
7	.71	1.3	.68	1.2	.82	2.6	1.9	1.1	1.2	.94	.94	.82
8	.68	.94	7.5	.94	1.0	2.1	1.6	1.1	1.1	.94	.90	.78
9	.68	1.3	1.8	.86	3.1	1.6	2.3	1.3	1.1	.98	.86	.74
10	.65	1.3	.94	.82	1.2	2.5	3.4	1.1	1.1	.98	.82	.74
11	.65	.98	.86	.78	1.0	2.5	1.9	1.2	1.1	.94	.78	.71
12	.65	.82	.82	.78	.98	1.8	1.9	1.7	1.1	.90	.78	.71
13	.65	.78	.78	.82	.94	1.6	1.7	1.7	1.2	.90	.78	.74
14	.65	.78	.74	.78	.90	1.5	1.6	1.2	1.2	.90	.78	.78
15	.65	.78	.74	.74	.90	1.6	1.6	1.1	1.1	.94	.78	.74
16	.65	.71	.71	.74	.86	3.2	1.6	1.1	1.7	.90	.78	.78
17	.65	.71	.71	.74	.86	5.8	1.5	2.6	1.1	.90	.78	.78
18	.65	.71	3.0	.71	.82	4.1	1.4	4.5	1.0	.90	.78	.74
19	.65	.71	4.2	.71	.82	3.1	1.4	2.1	1.0	.86	.78	.74
20	.65	.68	1.3	.74	6.2	2.5	1.4	1.7	.98	.86	.78	.74
21	.65	.68	1.1	.74	4.4	2.2	1.4	1.9	.98	.86	.74	.71
22	.65	.68	.98	.71	1.6	2.1	1.4	1.6	.98	.86	.78	.74
23	.65	.68	.90	.71	1.4	2.3	1.4	1.5	.94	.86	.78	.78
24	.65	.68	.90	.71	3.8	1.9	1.4	1.4	.94	.86	.78	.74
25	.65	.68	1.0	.71	3.7	1.8	1.3	1.3	.94	.86	.74	.71
26	.86	1.2	.90	.82	2.5	1.8	1.3	1.3	.94	.86	.78	.68
27	.74	.74	.82	3.2	1.9	1.6	1.3	1.2	.94	.82	.82	.68
28	.72	.71	.82	2.0	1.6	1.8	1.3	1.2	.94	.82	.78	.68
29	2.6	.71	.86	1.8	------	1.9	1.3	1.2	.94	.82	.78	.71
30	.78	.71	.82	1.3	------	2.8	1.2	1.1	.98	.78	.78	.68
31	.71	------	.95	1.1	------	2.1	------	1.1	------	.78	.78	------
TOTAL	24.65	24.92	39.28	30.20	46.92	69.7	52.5	45.5	32.20	28.24	24.58	22.41
MEAN	.80	.83	1.27	.97	1.68	2.25	1.75	1.47	1.07	.91	.79	.75
MAX	2.6	1.3	7.5	3.2	6.2	5.8	4.6	4.5	1.7	1.1	.94	.82
MIN	.65	.68	.68	.71	.82	1.5	1.2	1.1	.94	.78	.74	.68
AC-FT	49	49	78	60	93	138	104	90	64	56	49	44

CAL YR 1972 TOTAL 419.89 MEAN 1.15 MAX 14 MIN .62 AC-FT 833
WTR YR 1973 TOTAL 441.10 MEAN 1.21 MAX 7.5 MIN .65 AC-FT 875

PEAK DISCHARGE (BASE, 80 CFS).--Dec. 8 (1830) 94 cfs (3.03 ft).

16405100 Molokai tunnel at east portal

LOCATION.--Lat 21°08'38", long 156°55'16", on left bank 100 ft (30 m) downstream from the east portal, 5.3 mi (8.5 km) southeast of Kalaupapa, and 7.5 mi (12.1 km) northeast of Kaunakakai.

PERIOD OF RECORD.--July 1966 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 989 ft (301.4 m), from tunnel plans.

AVERAGE DISCHARGE.--7 years, 3.05 ft^3/s (0.0864 m^3/s), 2,210 acre-ft/yr (2.72 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 29 ft^3/s (0.82 m^3/s) Jan. 27, May 18, 1973; no flow at times.

REMARKS.--Records good. Tunnel diverts from Waikolu Stream and two tributaries; diversion is augmented by water pumped from two wells in Waikolu Valley near the east portal.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.90	1.2	.90	3.0	4.6	4.6	4.0	2.2	1.5	4.5	.99	1.1
2	1.7	2.0	1.9	1.6	9.6	7.3	3.0	2.2	1.4	10	.99	1.5
3	16	6.1	5.3	1.2	3.5	3.4	3.1	3.0	1.4	7.4	1.2	1.2
4	9.4	4.0	1.6	.99	1.8	4.0	17	2.2	1.9	6.7	1.1	1.5
5	2.5	10	1.2	.99	1.3	17	4.6	1.8	2.6	3.2	1.1	2.4
6	1.9	23	.99	3.4	1.1	15	3.0	1.8	5.4	2.7	1.3	3.2
7	1.6	19	.90	17	.99	18	5.3	1.6	7.0	.92	5.0	3.0
8	1.1	7.6	14	5.3	1.6	12	4.4	1.5	4.3	.89	7.9	1.6
9	.99	10	11	2.4	25	4.6	12	10	2.2	4.4	3.0	1.1
10	.90	9.2	2.5	1.5	4.5	7.7	23	3.0	1.5	4.3	2.6	.99
11	1.6	5.8	2.0	1.2	1.9	15	6.6	6.3	1.4	3.3	1.5	.90
12	.90	2.8	1.4	.99	1.8	4.4	5.0	15	1.9	.67	1.2	.90
13	.82	1.6	1.1	1.9	1.9	4.0	5.5	15	9.6	.76	1.1	.90
14	.82	1.3	.99	2.9	2.2	3.4	3.6	3.8	11	.70	1.1	1.1
15	.82	1.1	1.4	.99	1.6	6.6	6.4	2.2	4.0	.67	.99	1.2
16	.82	1.5	1.8	.90	1.3	20	6.2	1.9	21	.42	.99	.99
17	2.6	1.3	1.3	.90	1.2	24	7.0	16	6.1	.27	.99	1.2
18	1.6	1.6	21	.82	1.3	19	3.2	29	2.6	.27	.99	.99
19	.82	2.2	21	.74	1.2	14	2.2	13	1.9	.14	.99	.90
20	.82	1.2	3.6	.74	11	9.9	1.9	8.8	1.6	.10	.99	.90
21	.82	.90	1.8	1.7	17	7.6	3.2	17	1.4	.08	.90	.90
22	.82	.90	1.7	.74	3.4	5.3	3.6	7.9	1.4	.08	.90	.90
23	.82	.90	2.1	.74	12	12	6.3	4.8	1.8	.06	.90	.99
24	.82	1.9	1.5	.74	12	7.3	5.4	4.6	1.6	.45	.90	1.9
25	2.5	1.5	3.9	.67	21	4.6	2.8	3.0	2.5	1.1	.82	1.2
26	1.7	9.9	4.4	1.5	6.8	4.6	5.3	2.2	2.5	1.1	.90	1.5
27	4.2	2.5	2.0	29	3.4	5.5	4.0	2.2	2.5	.99	.99	.99
28	1.2	1.4	2.0	18	2.6	9.3	5.2	2.2	2.4	.99	.99	1.4
29	20	1.1	5.0	18	------	9.6	3.0	1.8	2.4	.99	.99	1.4
30	2.8	.99	3.0	12	------	20	2.6	1.6	1.8	.99	1.2	1.1
31	2.1	------	3.0	5.2	------	9.4	------	1.5	------	.99	1.3	------
TOTAL	86.39	134.49	126.28	137.75	157.59	309.1	168.4	189.1	110.6	60.13	46.81	39.85
MEAN	2.79	4.48	4.07	4.44	5.63	9.97	5.61	6.10	3.69	1.94	1.51	1.33
MAX	20	23	21	29	25	24	23	29	21	10	7.9	3.2
MIN	.82	.90	.90	.67	.99	3.4	1.9	1.5	1.4	.06	.82	.90
AC-FT	171	267	250	273	313	613	334	375	219	119	93	79

CAL YR 1972 TOTAL 1,350.66 MEAN 3.69 MAX 28 MIN .31 AC-FT 2,680
WTR YR 1973 TOTAL 1,566.49 MEAN 4.29 MAX 29 MIN .06 AC-FT 3,110

16405300 Molokai tunnel at west portal

LOCATION.--Lat 21°07'27", long 156°59'50", on left bank 50 ft (15 m) upstream from the west portal, 2.5 mi (4.0 km) northeast of Kaunakakai, and 4.7 mi (7.6 km) south of Kalaupapa.

PERIOD OF RECORD.--July 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 970 ft (295.7 m), from tunnel plans.

AVERAGE DISCHARGE.--8 years, 5.39 ft^3/s (0.153 m^3/s), 3,910 acre-ft/yr (4.82 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 34 ft^3/s (0.96 m^3/s) Feb. 5, 1972; minimum daily, 1.8 ft^3/s (0.051 m^3/s) Oct. 15, 1967.

REMARKS.--Records excellent. Tunnel diverts from Waikolu Stream and two tributaries; diversion is augmented by water pumped from two wells in Waikolu Valley near east portal and one well in the tunnel near east portal. Water is used for irrigation in west-central Molokai.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	2.8	2.8	5.0	6.1	6.6	6.0	3.9	3.3	6.1	3.1	3.5
2	3.8	3.3	3.0	3.3	12	9.6	4.5	3.7	3.3	12	3.3	3.7
3	15	7.1	7.9	3.0	6.2	6.3	4.7	4.6	3.3	10	3.5	3.5
4	13	5.6	3.8	2.8	3.7	4.4	18	3.9	3.5	9.5	3.7	3.5
5	4.8	10	3.0	2.8	3.1	19	6.6	3.5	4.3	5.3	3.6	4.1
6	3.9	22	2.8	3.5	3.0	16	4.5	3.5	6.2	5.2	3.3	5.0
7	3.7	19	2.8	18	3.0	20	8.2	3.5	8.5	3.1	6.0	5.3
8	3.3	8.8	13	6.9	2.8	13	7.0	3.3	6.5	3.4	11	4.1
9	3.1	12	15	3.9	25	8.0	13	10	4.3	6.5	5.3	3.6
10	3.7	10	4.3	3.1	7.2	7.1	25	4.8	3.9	6.0	5.0	3.0
11	3.1	7.2	3.5	3.0	3.9	18	11	7.4	3.5	6.0	3.9	3.0
12	2.8	4.6	3.5	2.8	3.3	6.3	7.1	16	3.9	3.1	3.7	3.0
13	2.8	3.5	3.0	3.5	3.5	5.8	8.4	17	9.9	2.8	3.1	3.0
14	2.8	3.1	2.8	5.1	3.9	5.3	5.4	5.6	14	3.4	3.1	3.3
15	2.8	3.1	3.0	2.6	3.5	7.5	10	4.1	6.3	3.0	3.1	3.6
16	3.5	3.3	4.0	2.6	3.1	19	9.0	3.7	21	2.6	3.1	3.0
17	3.5	3.3	3.1	2.6	3.4	25	11	15	9.1	2.4	3.1	3.1
18	3.5	3.3	20	2.6	3.0	19	5.0	28	5.1	2.4	3.1	3.0
19	2.8	4.4	22	2.6	3.1	18	4.2	16	4.1	2.4	3.1	3.0
20	2.8	3.6	5.3	2.6	10	11	3.7	10	3.9	2.2	3.1	3.0
21	2.8	2.8	3.7	4.2	20	10	4.8	17	3.7	2.2	3.0	3.0
22	2.8	2.8	3.7	2.4	5.3	6.1	5.4	10	3.5	2.2	3.0	3.0
23	2.8	2.8	4.0	2.4	14	14	9.2	6.3	3.9	2.2	3.1	3.0
24	3.5	3.0	3.3	2.6	14	9.0	7.6	6.3	4.3	2.4	3.1	3.9
25	3.5	4.2	5.4	2.4	26	6.6	4.3	5.0	3.3	3.3	3.3	3.3
26	3.5	11	6.1	3.0	9.8	6.2	7.6	4.3	3.3	3.3	3.0	3.6
27	6.2	4.3	3.7	28	5.6	8.6	5.6	4.3	3.3	3.3	3.1	3.0
28	3.0	3.1	3.5	19	4.3	11	7.4	4.1	3.3	3.3	3.1	3.1
29	21	3.0	6.3	21	------	13	4.8	3.5	3.3	3.0	3.1	3.7
30	4.8	2.8	5.1	14	------	21	4.3	3.3	3.7	3.0	3.5	3.1
31	3.9	------	4.6	7.3	------	12	------	3.3	------	3.1	3.5	------
TOTAL	145.6	179.8	178.0	188.6	211.8	362.4	233.3	234.9	163.5	128.7	115.0	103.0
MEAN	4.70	5.99	5.74	6.08	7.56	11.7	7.78	7.58	5.45	4.15	3.71	3.43
MAX	21	22	22	28	26	25	25	28	21	12	11	5.3
MIN	2.8	2.8	2.8	2.4	2.8	4.4	3.7	3.3	3.3	2.2	3.0	3.0
AC-FT	289	357	353	374	420	719	463	466	324	255	228	204

CAL YR 1972 TOTAL 2,121.0 MEAN 5.80 MAX 34 MIN 2.4 AC-FT 4,210
WTR YR 1973 TOTAL 2,244.6 MEAN 6.15 MAX 28 MIN 2.2 AC-FT 4,450

16405500 Waikolu Stream at altitude 900 ft (274 m), near Kalaupapa

LOCATION.--Lat 21°08'43", long 156°55'18", on right bank 1.8 mi (2.9 km) southwest of Haupu Bay, 2.3 mi (3.7 km) upstream from mouth, and 5.2 mi (8.4 km) southeast of Kalaupapa.

DRAINAGE AREA.--1.99 mi^2 (5.15 km^2).

PERIOD OF RECORD.--May 1956 to October 1961, July 1962 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 900 ft (274 m), from topographic map. Prior to July 1, 1962, at site 200 ft (61 m) upstream at datum 6.14 ft (1.871 m) higher.

AVERAGE DISCHARGE (since Molokai tunnel diversion began).--12 years (1960-61, 1962-73), 8.31 ft^3/s (0.235 m^3/s), 6,020 acre-ft/yr (7.42 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 830 ft^3/s (23.5 m^3/s) Feb. 20, gage height, 4.34 ft (1.323 m), from rating curve extended above 43 ft^3/s (1.22 m^3/s); minimum, 0.28 ft^3/s (0.008 m^3/s) Oct. 26.
Period of record: Maximum discharge, 2,080 ft^3/s (58.9 m^3/s) Apr. 13, 1965, gage height, 6.12 ft (1.865 m), from rating curve extended above 43 ft^3/s (1.22 m^3/s); minimum, 0.09 ft^3/s (0.003 m^3/s) Jan. 15-18, 1972.
Flood of Oct. 31, 1961, reached a stage of 13.62 ft (4.151 m), from floodmarks, former site and datum, discharge, 6,220 ft^3/s (176 m^3/s), by slope-area measurement.

REMARKS.--Records fair except those above 90 ft^3/s (2.55 m^3/s), which are poor. Since Nov. 16, 1960, water diverted above station at times, either into or from Molokai tunnel. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEAR).--WSP 1719: 1959. (WATER YEARS).--WSP 2137: 1963(P), 1964(M), 1965(P).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	.48	.60	.48	.96	8.0	1.2	.73	1.5	2.0	.87	.87
2	.60	.48	.60	.48	2.1	11	1.4	.73	1.5	3.4	.87	.87
3	21	.73	.88	.48	.88	9.9	1.7	.73	1.5	2.6	.87	.87
4	1.8	.60	.60	.48	.88	11	26	.73	1.5	2.3	.87	.87
5	.60	2.6	.60	.48	.88	5.2	1.0	.73	1.5	1.5	.87	.87
6	.48	6.4	.60	2.6	.73	4.4	1.0	.73	2.0	2.3	1.1	.70
7	.48	8.0	.60	5.4	.73	9.4	1.2	.73	2.3	3.4	1.3	.70
8	.48	2.9	102	.73	.73	4.0	1.0	.73	1.3	3.6	2.0	.70
9	.48	11	1.9	.60	45	1.4	4.2	3.5	1.1	5.0	1.3	.70
10	.48	11	.60	.60	1.0	3.7	18	.88	1.1	5.3	1.3	.70
11	.48	1.8	.48	.60	.88	6.3	1.4	1.4	1.1	5.0	1.1	.70
12	.48	.73	.48	.60	.88	1.0	1.4	17	1.3	3.6	1.1	.70
13	.48	.60	.37	.60	.88	.88	1.2	5.5	3.1	3.1	.87	.70
14	.48	.60	.37	.60	.88	1.0	1.0	1.0	4.0	3.1	.87	.70
15	.48	.73	.37	.48	.88	2.1	1.6	1.0	1.3	4.0	.87	.70
16	.48	.60	.48	.48	.88	19	1.6	1.0	10	3.4	.87	.70
17	.48	.60	.48	.48	.88	78	1.8	30	2.0	3.1	.87	.70
18	.37	.60	19	.48	.88	33	1.0	70	1.3	2.8	.70	.70
19	.37	.60	28	.48	.88	7.6	1.0	5.3	1.3	2.6	.70	.70
20	.37	.60	.88	.48	143	2.1	1.0	3.1	1.3	2.6	.70	.70
21	.48	.60	.73	.48	36	1.6	1.0	8.6	1.3	2.3	.70	.70
22	.48	.60	.60	.48	1.0	1.2	1.0	3.1	1.3	2.0	.70	.70
23	.48	.60	.60	.48	3.1	3.1	1.9	2.0	1.3	2.0	.70	.70
24	.48	.60	.48	.48	48	1.4	1.2	2.0	1.3	1.7	.70	.70
25	.37	.60	.60	.48	75	1.0	1.0	1.8	1.3	.87	.70	.70
26	.37	2.8	.48	.60	1.2	1.2	1.2	1.8	1.3	.87	.87	.70
27	.48	.60	.48	51	1.0	1.2	1.0	1.8	1.5	.87	.87	.70
28	.48	.60	.37	11	1.0	2.4	.88	1.8	1.5	.87	.87	.70
29	30	.60	.48	7.1	------	2.4	.88	1.8	1.5	.87	.87	.70
30	.60	.60	.48	3.2	------	7.9	.88	1.8	1.5	.87	.87	.70
31	.48	------	.48	1.0	------	2.1	------	1.5	------	.87	.87	------
TOTAL	66.17	59.85	165.67	93.91	371.11	244.48	80.64	173.52	55.8	78.79	28.72	21.85
MEAN	2.13	2.00	5.34	3.03	13.3	7.89	2.69	5.60	1.86	2.54	.93	.73
MAX	30	11	102	51	143	78	26	70	10	5.3	2.0	.87
MIN	.37	.48	.37	.48	.73	.88	.88	.73	1.1	.87	.70	.70
AC-FT	131	119	329	186	736	485	160	344	111	156	57	43

CAL YR 1972 TOTAL 1,384.23 MEAN 3.78 MAX 164 MIN .14 AC-FT 2,750
WTR YR 1973 TOTAL 1,440.51 MEAN 3.95 MAX 143 MIN .37 AC-FT 2,860

PEAK DISCHARGE (BASE, 590 CFS).--Dec. 8 (1730) 735 cfs (4.15 ft); Feb. 20 (1900) 830 cfs (4.34 ft).

16408000 Waikolu Stream below pipeline crossing, near Kalaupapa

LOCATION.--Lat 21°09'45", long 156°55'54", on left bank 0.7 mi (1.1 km) upstream from mouth and 4.4 mi (7.1 km) southeast of Molokai Lighthouse near Kalaupapa.

DRAINAGE AREA.--3.68 mi^2 (9.53 km^2).

PERIOD OF RECORD.--July 1919 to November 1930, August 1931 to July 1932, September 1937 to January 1948, July 1948 to current year. Prior to August 1931, published as "at pipeline crossing, near Kalaupapa."

GAGE.--Water-stage recorder. Datum of gage is 252 ft (76.810 m) above mean sea level (hand levels by Bureau of Reclamation). Prior to Nov. 19, 1930, at site 500 ft (152 m) upstream at different datums. Aug. 14, 1931, to July 20, 1932, and Sept. 20, 1937, to Jan. 26, 1948, at present site at datum 1.49 ft (0.454 m) higher, and July 30, 1948, to June 30, 1962, at present site at datum 1.00 ft (0.305 m) higher.

AVERAGE DISCHARGE (since Molokai tunnel diversion began).--13 years (1960-73), 16.3 ft^3/s (0.462 m^3/s), 11,810 acre-ft/yr (14.6 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 698 ft^3/s (19.8 m^3/s) Feb. 25, gage height, 4.48 ft (1.366 m), from rating curve extended as explained below; minimum daily discharge, 4.4 ft^3/s (0.12 m^3/s) on Oct. 21-26.
Period of record: Maximum discharge, 6,600 ft^3/s (187 m^3/s) Oct. 31, 1961, gage height, 13.75 ft (4.191 m), present datum, from floodmarks), from rating curve extended above 39 ft^3/s (1.10 m^3/s) on basis of slope-area measurement of peak flow; minimum, 2.0 ft^3/s (0.057 m^3/s) Nov. 1, 2, 1925, June 5, 1926.

REMARKS.--Records fair except those above 80 ft^3/s (2.27 m^3/s), which are poor. Diversion above station for domestic use in Kalaupapa, and since Nov. 16, 1960, water has been diverted above station both to and from Molokai tunnel.

REVISIONS (FISCAL YEARS).--WSP 1155: 1932(M), 1938-44(M), 1946-48(M). WSP 1319: 1923(M), 1930(M), 1932, 1938-40, 1945(M), drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	5.4	5.1	4.9	5.8	23	9.2	7.0	7.8	7.3	6.6	6.6
2	4.5	5.4	5.4	4.9	7.3	21	8.2	7.0	7.7	8.8	6.8	6.8
3	37	5.5	5.4	4.9	5.4	19	8.0	7.0	7.7	8.6	6.8	6.6
4	9.1	5.4	5.1	4.9	5.2	20	38	6.8	7.8	7.7	6.6	7.0
5	4.7	7.5	5.1	4.9	5.2	15	7.8	6.8	7.5	7.0	6.6	6.8
6	4.6	13	5.1	9.5	5.2	15	7.5	7.2	7.8	7.5	6.6	7.0
7	4.6	17	5.1	20	5.1	22	7.8	7.0	8.4	8.8	7.3	6.8
8	4.5	8.8	97	6.3	5.1	13	7.7	7.0	7.7	8.6	7.8	6.6
9	4.5	20	11	5.5	74	8.8	15	19	7.5	11	7.2	6.6
10	4.5	19	5.1	5.2	7.0	11	53	7.8	7.3	11	6.8	6.4
11	4.5	7.7	5.1	5.1	5.8	16	11	9.4	7.3	10	6.6	6.4
12	4.5	5.5	5.1	4.9	7.8	7.7	9.0	28	7.5	9.4	6.6	6.4
13	4.5	5.4	5.1	4.9	6.4	7.2	8.6	22	9.0	8.8	6.6	6.4
14	4.5	5.2	5.1	4.8	5.8	7.0	7.8	9.6	10	8.2	6.6	6.4
15	4.5	5.4	4.9	4.8	5.7	8.2	8.2	8.2	7.3	9.2	6.6	6.4
16	4.5	5.2	4.9	4.6	5.5	24	7.8	7.7	17	8.8	6.8	6.8
17	4.5	5.2	4.9	4.6	5.5	108	8.4	36	8.2	8.6	6.6	7.0
18	4.5	4.9	27	4.5	5.4	50	7.3	92	7.2	8.4	6.6	6.4
19	4.5	4.9	42	4.5	5.4	28	7.3	17	7.2	8.0	6.6	6.6
20	4.5	4.9	5.7	4.5	119	11	7.3	11	7.2	8.0	6.6	6.8
21	4.5	4.9	5.2	4.5	48	9.4	7.2	18	7.2	7.8	6.6	6.6
22	4.4	4.9	5.2	4.5	5.5	8.2	7.2	11	7.2	7.8	6.6	6.8
23	4.4	4.9	5.2	4.5	8.6	10	7.8	11	7.0	7.8	6.6	7.0
24	4.4	4.9	5.1	4.5	73	8.6	7.5	10	7.0	7.7	6.6	6.6
25	4.4	4.9	5.1	4.6	151	7.5	7.2	9.0	7.0	7.0	6.6	6.6
26	4.6	9.8	5.1	5.2	12	7.5	7.5	8.6	7.0	7.0	6.6	6.6
27	4.5	5.4	5.1	81	8.2	7.7	7.3	8.9	6.8	7.0	6.6	6.6
28	4.5	5.2	5.1	30	7.3	12	7.3	8.6	6.8	7.0	6.6	6.8
29	48	5.1	5.1	20	------	12	7.2	8.2	6.8	6.8	6.6	6.6
30	6.0	5.1	4.9	9.8	------	23	7.0	8.0	6.8	6.8	6.6	6.6
31	5.4	------	5.2	6.4	------	15	------	8.0	------	6.6	6.6	------
TOTAL	222.7	216.4	315.5	293.2	611.2	555.8	318.1	432.8	234.7	253.0	207.9	199.6
MEAN	7.18	7.21	10.2	9.46	21.8	17.9	10.6	14.0	7.82	8.16	6.71	6.65
MAX	48	20	97	81	151	108	53	92	17	11	7.8	7.0
MIN	4.4	4.9	4.9	4.5	5.1	7.0	7.0	6.8	6.8	6.6	6.6	6.4
AC-FT	442	429	626	582	1,210	1,100	631	858	466	502	412	396

CAL YR 1972 TOTAL 3,278.5 MEAN 8.96 MAX 181 MIN 4.2 AC-FT 6,500
WTR YR 1973 TOTAL 3,860.9 MEAN 10.6 MAX 151 MIN 4.4 AC-FT 7,660

16414000 Kaunakakai Gulch at Kaunakakai

LOCATION.--Lat 21°06'21", long 157°00'34", on left bank 0.6 mi (1.0 km) upstream from Molokai Ranch pipeline crossing, 1.3 mi (2.1 km) northeast of Kaunakakai Post Office, and 1.7 mi (2.7 km) upstream from mouth.

DRAINAGE AREA.--6.57 mi^2 (17.02 km^2).

PERIOD OF RECORD.--December 1949 to current year. Prior to July 1958, published as Kaunakakai Stream at Kaunakakai.

GAGE.--Water-stage recorder. Altitude of gage is 240 ft (73 m), from topographic map.

AVERAGE DISCHARGE.--23 years (1950-73), 1.61 ft^3/s (0.0456 m^3/s), 1,170 acre-ft/yr (1.44 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 314 ft^3/s (8.89 m^3/s) Feb. 20, gage height, 4.98 ft (1.518 m), from rating curve extended as explained below; no flow most of time.
Period of record: Maximum discharge, 3,060 ft^3/s (86.7 m^3/s) Oct. 31, 1961, gage height, 9.30 ft (2.835 m), from rating curve extended above 620 ft^3/s (17.6 m^3/s) on basis of slope-area measurement of peak flow; no flow at times each year.

REMARKS.--Records good. Flow has been augmented by occasional spillage from Molokai tunnel since May 1965.

REVISIONS (FISCAL YEARS).--WSP 1289: 1950-51. WSP 1569: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	0	0	0		0				
2			0	0	0	0		0				
3			0	0	0	0		0				
4			0	0	0	0		0				
5			0	0	0	0		0				
6			0	0	0	0		0				
7			0	0	0	2.6		0				
8			2.2	0	0	1.0		0				
9			12	0	4.4	.02		0				
10			0	0	.23	0		0				
11			0	0	0	0		0				
12			0	0	0	0		0				
13			0	0	0	0		0				
14			0	0	0	0		0				
15			0	0	0	0		0				
16			0	0	0	0		0				
17			0	0	0	3.0		0				
18			0	0	0	.53		.93				
19			10	0	0	11		3.3				
20			.40	0	33	.18		0				
21			0	0	54	0		0				
22			0	0	.79	0		0				
23			0	0	0	0		0				
24			0	0	0	0		0				
25			0	0	25	0		0				
26			0	0	1.4	0		0				
27			0	1.8	.01	0		0				
28			0	1.5	0	0		0				
29			0	.32	------	0		0				
30			0	0	------	0		0				
31		------	0	0	------	0	------	0	------			------
TOTAL	0	0	24.60	3.62	118.83	18.33	0	4.23	0	0	0	0
MEAN	0	0	.79	.12	4.24	.59	0	.14	0	0	0	0
MAX	0	0	12	1.8	54	11	0	3.3	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	49	7.2	236	36	0	8.4	0	0	0	0

CAL YR 1972 TOTAL 330.55 MEAN .90 MAX 81 MIN 0 AC-FT 656
WTR YR 1973 TOTAL 169.61 MEAN .46 MAX 54 MIN 0 AC-FT 336

PEAK DISCHARGE (BASE, 280 CFS).--Feb. 20 (2000) 314 cfs (4.98 ft).

16419500 Papio Gulch at Halawa

LOCATION.--Lat 21°08'55", long 156°44'16", on left bank 200 ft (61 m) downstream from wooden bridge on Highway 45 and 0.8 mi (1.3 km) south of Halawa.

DRAINAGE AREA.--0.94 mi^2 (2.43 km^2).

PERIOD OF RECORD.--July 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 640 ft (195 m), from topographic map.

AVERAGE DISCHARGE.--10 years, 0.976 ft^3/s (0.0276 m^3/s), 707 acre-ft/yr (872,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 45 ft^3/s (1.27 m^3/s) Apr. 10, gage height, 2.48 ft (0.756 m); no flow most of the time.
Period of record: Maximum discharge, 2,720 ft^3/s (77.0 m^3/s) Apr. 13, 1965, gage height, 11.25 ft (3.429 m), from rating curve extended above 17 ft^3/s (0.48 m^3/s) on basis of slope-area measurements at gage heights 4.60 (1.402), 7.15 (2.179), and 11.25 ft (3.429 m); no flow at times.

REMARKS.--Records good. Diversion above station for domestic use at Puu O Hoku Ranch.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0		0	0	0	.02	0		0
2				0		0	0	0	.01	0		0
3				0		0	0	0	.01	0		0
4				0		0	.12	0	0	0		0
5				0		0	.07	0	0	0		0
6				0		0	0	0	0	0		0
7				.14		0	0	0	0	0		0
8				1.2		0	0	0	0	0		0
9				.19		0	2.4	0	0	0		0
10				.01		0	11	0	0	0		0
11				0		0	.96	.02	0	.18		0
12				0		0	.45	.45	0	.22		0
13				0		0	.27	.66	0	.08		0
14				0		0	.14	.22	0	0		0
15				0		0	.12	.06	0	0		0
16				0		0	.12	.01	0	.03		0
17				0		0	.06	0	0	0		0
18				0		0	.04	.82	0	.15		0
19				0		.20	.01	.38	0	.02		0
20				0		.01	0	.22	0	0		0
21				0		0	.01	.30	0	0		0
22				0		0	.10	.24	0	0		0
23				0		0	.02	.16	0	0		.08
24				0		0	0	.24	0	0		.03
25				0		0	0	.14	0	0		0
26				0		0	0	.06	0	0		0
27				0		0	0	.06	0	0		0
28				0		0	0	.14	0	0		0
29				0	------	0	0	.22	0	0		0
30				0	------	0	0	.08	0	0		0
31		------		0	------	0	------	.04	------	0		------
TOTAL	0	0	0	1.54	0	.21	15.89	4.52	.04	.68	0	.11
MEAN	0	0	0	.050	0	.007	.53	.15	.001	.022	0	.004
MAX	0	0	0	1.2	0	.20	11	.82	.02	.22	0	.08
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	3.1	0	.4	32	9.0	.08	1.3	0	.2

CAL YR 1972 TOTAL 93.87 MEAN .26 MAX 16 MIN 0 AC-FT 186
WTR YR 1973 TOTAL 22.99 MEAN .063 MAX 11 MIN 0 AC-FT 46

PEAK DISCHARGE (BASE, 210 CFS).--No peak above base.

16501000 Palikea Stream below diversion dam, near Kipahulu

LOCATION.--Lat 20°41'03" (revised), long 156°04'10", on left bank 50 ft (15 m) downstream from old diversion dam, 2 mi (3.2 km) northwest of Kipahulu, and 2.1 mi (3.4 km) upstream from mouth.

DRAINAGE AREA.--6.29 mi^2 (16.29 km^2).

PERIOD OF RECORD.--February 1927 to September 1929, December 1931 to September 1935, December 1935 to February 1938, May to October, December 1938, January 1939, August 1939 to current year. Published as Oheo Stream at elevation 1,550 ft (472 m) near Kipahulu 1927-29 and as Oheo Stream below diversion dam, near Kipahulu 1930-56.

GAGE.--Water-stage recorder. Datum of gage is 1,546 ft (471 m) above mean sea level (by vertical angles). Prior to Sept. 6, 1929, at site 100 ft (30 m) upstream at different datum.

AVERAGE DISCHARGE.--38 years (1927-28, 1932-34, 1936-37, 1939-73), 58.4 ft^3/s (1.654 m^3/s), 42,310 acre-ft/yr (52.2 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 6,890 ft^3/s (195 m^3/s) Mar. 11, gage height, 10.39 ft (3.167 m); minimum, 0.01 ft^3/s (<0.001 m^3/s) on many days.
Period of record: Maximum discharge, 16,100 ft^3/s (456 m^3/s) Jan. 23, 1965, gage height, 18.3 ft (5.58 m), from floodmarks, from rating curve extended above 3,300 ft^3/s (93.5 m^3/s) on basis of computations of peak flow over dam at gage heights 12.68 (3.865) and 17.5 ft (5.33 m); no flow at times.

REMARKS.--Records good. No diversion above station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1155: 1939(M). WSP 1569: Drainage area. WSP 1719: 1932-34, 1937-40, 1948, 1949-50(P), 1951, 1952-54(P), 1956-58(P). WSP 1937: 1932-38(M), 1940-47(M), 1948-49(P), 1950(M), 1951-53(P), 1956(P), 1957(M), 1958-59(P), 1960(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	4.7	.03	14	27	.03	15	13	4.7	.73	.02	.02
2	1.7	37	.03	2.5	24	40	20	3.7	1.4	71	.02	.02
3	474	82	9.1	2.0	145	38	4.2	10	.56	30	.02	.02
4	181	12	.81	2.2	7.3	40	3.8	2.5	26	34	.02	.01
5	8.2	87	.35	47	1.6	76	2.3	4.4	24	6.1	.02	.01
6	1.8	127	.15	2.2	.91	90	1.6	1.9	48	1.4	.02	.02
7	17	243	.03	.91	.48	284	1.1	4.3	34	.29	.29	.01
8	2.2	116	.02	.56	.35	255	.81	.35	21	.09	.03	.01
9	5.1	69	.02	.29	70	31	1.0	128	2.0	.15	.02	.01
10	.91	88	.02	.12	1.6	105	89	13	.41	5.3	.02	.01
11	.29	183	.02	.03	.19	845	9.3	7.4	.41	26	.07	.01
12	.41	15	.02	.02	.56	652	63	3.9	.72	8.7	.19	.02
13	23	6.4	.02	.01	8.0	190	54	.56	99	.64	.03	102
14	.41	2.2	.02	.01	17	49	19	.29	57	.15	.03	139
15	.07	33	.34	.01	.24	26	49	.15	2.9	6.0	.02	1.1
16	.03	52	.03	.01	.19	262	46	.03	310	.72	.03	.09
17	.03	88	.02	.01	.29	554	86	12	94	4.5	.03	.03
18	.03	163	108	.24	15	95	6.5	147	5.8	2.2	.02	.02
19	.03	16	70	24	13	97	1.0	47	2.3	.15	.01	.01
20	.03	2.5	2.4	2.8	69	300	.81	52	1.2	.05	.01	83
21	.03	1.8	.24	.89	60	116	81	34	.81	.03	.01	.43
22	.05	1.5	.03	.05	1.1	26	78	43	.81	.03	.12	.09
23	.07	4.7	.02	.03	.24	153	72	20	.41	.02	13	166
24	8.0	12	.02	.03	.09	268	31	176	.19	.02	.19	67
25	.15	4.6	47	.03	34	56	3.9	18	.07	.01	.03	2.6
26	315	1.2	7.8	.09	6.3	44	23	2.2	.03	.01	.02	.64
27	256	.81	9.4	47	.41	73	21	1.0	.07	.02	.03	.24
28	64	.48	100	54	.05	223	24	.72	.35	.02	.03	.35
29	6.4	.24	37	68	------	106	31	2.5	.05	.02	.02	22
30	1.8	.09	171	137	------	678	24	.64	.03	.02	.02	.72
31	1.2	------	121	25	------	136	------	1.0	------	.02	.02	------
TOTAL	1,450.94	1,454.22	684.94	431.04	503.90	5,908.03	862.32	750.54	738.22	198.39	14.41	585.49
MEAN	46.8	48.5	22.1	13.9	18.0	191	28.7	24.2	24.6	6.40	.46	19.5
MAX	474	243	171	137	145	845	89	176	310	71	13	166
MIN	.03	.09	.02	.01	.05	.03	.81	.03	.03	.01	.01	.01
AC-FT	2,880	2,880	1,360	855	999	11,720	1,710	1,490	1,460	394	29	1,160

CAL YR 1972 TOTAL 15,887.31 MEAN 43.4 MAX 712 MIN .01 AC-FT 31,510
WTR YR 1973 TOTAL 13,582.44 MEAN 37.2 MAX 845 MIN .01 AC-FT 26,940

PEAK DISCHARGE (BASE, 3,700 CFS).--Mar. 11 (0630) 6,890 cfs (10.39 ft).

16508000 Hanawi Stream near Nahiku

LOCATION.--Lat 20°48'37" (revised), long 156°07'00", on left bank 200 ft (61 m) upstream from Koolau ditch intake and trail, 1.9 mi (3.1 km) southwest of Nahiku, and 4.5 mi (7.2 km) southeast of Keanae.

DRAINAGE AREA.--3.49 mi^2 (9.04 km^2).

PERIOD OF RECORD.--January 1914 to January 1916, November 1921 to current year. Monthly discharge only April to June 1915, published in WSP 1319.

GAGE.--Water-stage recorder. Datum of gage is 1,318 ft (401.7 m) above mean sea level (by vertical angles). Prior to Nov. 1, 1921, at site 50 ft (15 m) downstream at datum 0.12 ft (0.037 m) lower.

AVERAGE DISCHARGE.--51 years (1922-73), 22.9 ft^3/s (0.649 m^3/s), 16,590 acre-ft/yr (20.5 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 3,280 ft^3/s (92.9 m^3/s) Mar. 11, gage height, 9.11 ft (2.777 m), from rating curve extended as explained below; minimum, 1.6 ft^3/s (0.045 m^3/s) Sept. 19.
Period of record: Maximum discharge, about 5,570 ft^3/s (158 m^3/s) Jan. 18, 1916, gage height, 11.6 ft (3.54 m), present site and datum, from rating curve extended above 410 ft^3/s (11.6 m^3/s) by test of model of station site; minimum, 1.6 ft^3/s (0.045 m^3/s) Nov. 14, 19, 20, 1962, Feb. 10, 11, 16, 17, 1963, Sept. 19, 1973.

REMARKS.--Records good. No diversion above station. Selected determinations of minor elements for water year 1972 and records of chemical analyses for water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1045: 1922-43(M). WSP 1569: Drainage area. WSP 1719: 1915(M), 1922, 1924-25, 1927, 1930-35, 1937, 1939-40, 1942-43.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	2.9	4.2	3.0	18	43	20	6.4	5.1	4.8	2.7	1.9
2	3.1	5.3	4.2	2.9	8.4	28	15	6.6	5.0	11	2.6	1.9
3	180	9.5	4.1	2.8	9.7	44	13	6.6	5.5	8.8	2.6	1.9
4	72	4.4	4.0	2.7	6.3	43	15	5.7	11	8.8	2.8	1.9
5	21	15	3.8	2.7	4.7	47	12	5.4	12	6.6	2.9	2.0
6	14	23	3.7	2.7	4.2	92	11	5.2	10	5.0	2.9	2.0
7	7.4	93	5.6	60	3.8	139	12	5.8	8.8	4.0	4.2	2.1
8	5.2	42	4.9	8.9	4.1	81	14	6.0	8.6	3.8	3.0	1.9
9	4.4	23	14	4.7	103	25	13	7.9	6.0	5.1	2.6	1.8
10	4.0	19	4.9	4.6	8.8	76	30	5.4	5.4	14	2.5	1.8
11	3.7	66	3.8	3.8	5.2	431	17	10	5.1	8.5	2.5	1.8
12	3.5	12	3.5	3.4	4.8	39	13	53	5.3	5.4	2.4	1.7
13	3.9	7.6	3.4	3.2	16	22	13	36	17	4.3	2.4	1.9
14	3.3	6.4	3.3	3.0	5.7	14	11	14	11	4.5	2.3	2.2
15	3.1	53	3.6	2.9	4.5	32	11	7.7	5.8	8.8	2.2	1.8
16	3.0	33	3.3	2.8	4.3	145	17	6.4	12	7.7	2.2	1.8
17	2.9	19	3.2	2.9	4.1	307	28	61	9.0	7.3	2.2	1.8
18	2.8	21	3.6	2.8	4.0	88	11	131	6.0	5.7	2.2	1.7
19	2.7	7.9	28	5.3	3.9	83	8.4	98	5.4	4.2	2.3	1.7
20	2.7	6.0	4.6	3.4	88	50	7.7	26	5.0	4.0	2.2	8.3
21	2.7	5.3	3.4	2.8	103	34	7.4	22	4.7	3.9	2.1	2.7
22	3.1	5.0	3.2	2.6	6.0	29	7.0	19	4.5	3.6	2.1	2.7
23	3.9	5.0	3.1	2.6	5.0	66	6.9	17	4.2	3.4	2.1	6.5
24	3.2	4.8	3.0	2.6	27	76	6.6	23	4.1	3.3	2.1	4.4
25	2.9	4.6	3.7	2.6	224	25	6.0	8.9	3.9	3.5	2.1	2.9
26	35	4.6	6.5	6.4	62	20	7.9	6.6	3.8	3.1	2.1	2.5
27	26	4.5	3.9	164	15	28	12	5.8	3.5	3.0	2.1	2.3
28	4.1	4.4	3.6	66	13	63	9.0	6.8	3.5	3.0	2.0	2.3
29	3.4	4.4	4.0	51	------	64	8.1	7.2	3.4	2.9	2.1	11
30	3.1	4.3	3.1	32	------	152	8.1	5.8	3.3	2.8	2.0	3.4
31	3.0	------	3.0	13	------	69	------	5.9	------	2.7	1.9	------
TOTAL	436.5	495.9	152.2	474.1	766.5	2,455	371.1	562.1	197.9	167.5	74.4	84.6
MEAN	14.1	16.5	4.91	15.3	27.4	79.2	12.4	18.1	6.60	5.40	2.40	2.82
MAX	180	93	28	164	224	431	30	131	17	14	4.2	11
MIN	2.7	2.9	3.0	2.6	3.8	14	6.0	5.2	3.3	2.7	1.9	1.7
AC-FT	866	984	302	940	1,520	4,870	736	1,110	393	332	148	168

CAL YR 1972 TOTAL 4,557.7 MEAN 12.5 MAX 316 MIN 2.4 AC-FT 9,040
WTR YR 1973 TOTAL 6,237.8 MEAN 17.1 MAX 431 MIN 1.7 AC-FT 12,370

PEAK DISCHARGE (BASE, 1,700 CFS).--Mar. 11 (0600) 3,280 cfs (9.11 ft).

16512000 Koolau ditch at Nahiku weir, near Nahiku

LOCATION.--Lat 20°48'56" (revised), long 156°07'15", on right bank between Kapaula and Waiohue Gulches, 1.8 mi (2.9 km) southwest of Nahiku, and 3.8 mi (6.1 km) southeast of Keanae.

PERIOD OF RECORD.--February 1919 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,289.14 ft (392.930 m) above mean sea level. Prior to Apr. 28, 1922, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--54 years, 34.1 ft^3/s (0.966 m^3/s), 24,710 acre-ft/yr (30.5 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 99 ft^3/s (2.80 m^3/s) Apr. 27, May 11, 1963, May 25, 1964; no flow at times.

REMARKS.--Records excellent. Ditch diverts water from nearly all streams from the Makapipi west to the Alo for power, domestic use, and irrigation in central Maui.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	14	18	12	59	80	75	26	27	19	12	7.7
2	13	22	17	11	42	76	65	26	25	32	12	7.8
3	70	38	17	11	49	75	57	26	26	34	11	7.6
4	56	21	16	11	35	82	64	23	37	31	12	7.6
5	47	48	15	11	28	82	50	22	40	26	13	7.7
6	64	50	15	10	24	88	46	21	39	22	12	7.8
7	43	86	15	74	22	86	49	22	35	19	17	7.9
8	30	84	16	43	24	84	52	24	34	18	13	7.4
9	25	67	42	24	72	74	51	33	27	21	11	7.3
10	22	66	19	22	34	77	72	23	25	46	11	7.4
11	21	85	15	19	23	76	63	30	24	36	10	7.1
12	19	56	15	16	23	69	54	59	24	27	10	6.9
13	20	42	14	15	39	60	54	71	48	22	10	7.6
14	17	36	13	14	23	55	46	49	42	22	9.8	8.8
15	16	64	14	13	20	73	44	35	28	31	9.4	7.1
16	15	70	13	13	19	88	52	32	51	30	9.6	7.0
17	14	64	13	13	18	88	66	64	44	31	9.3	6.8
18	13	66	14	12	17	87	41	86	31	26	9.1	6.7
19	13	42	50	22	16	62	34	77	28	21	9.5	6.5
20	12	36	19	15	29	70	32	70	25	20	9.4	32
21	12	31	15	13	66	55	32	62	23	19	8.9	11
22	13	28	12	12	27	78	30	60	22	18	8.7	12
23	15	26	12	12	26	87	29	59	21	17	8.5	31
24	14	24	12	11	36	88	28	80	20	17	8.4	22
25	12	22	15	12	88	76	26	46	19	17	8.4	14
26	36	22	18	24	84	76	30	38	18	15	8.3	11
27	51	20	15	79	57	84	38	33	17	14	8.7	10
28	21	20	15	83	51	86	32	34	16	14	8.2	10
29	17	19	18	78	------	87	30	37	15	13	8.1	33
30	16	18	13	74	------	89	30	30	15	13	8.1	14
31	15	------	12	54	------	86	------	30	------	12	7.8	------
TOTAL	766	1,287	527	833	1,051	2,424	1,372	1,330	846	703	312.2	340.7
MEAN	24.7	42.9	17.0	26.9	37.5	78.2	45.7	42.9	28.2	22.7	10.1	11.4
MAX	70	86	50	83	88	89	75	86	51	46	17	33
MIN	12	14	12	10	16	55	26	21	15	12	7.8	6.5
AC-FT	1,520	2,550	1,050	1,650	2,080	4,810	2,720	2,640	1,680	1,390	619	676

CAL YR 1972 TOTAL 9,987.8 MEAN 27.3 MAX 87 MIN 9.6 AC-FT 19,810
WTR YR 1973 TOTAL 11,791.9 MEAN 32.3 MAX 89 MIN 6.5 AC-FT 23,390

16518000 West Wailuaiki Stream near Keanae

LOCATION.--Lat 20°49'16" (revised), long 156°08'37", on left bank 500 ft (152 m) upstream from Koolau ditch crossing and trail bridge and 2.8 mi (4.5 km) south of Keanae Post Office.

DRAINAGE AREA.--3.66 mi^2 (9.48 km^2).

PERIOD OF RECORD.--January 1914 to December 1915, May 1916 to October 1917, November 1921 to current year. Monthly discharge only for some periods, published in WSP 1319.

GAGE.--Water-stage recorder. Datum of gage is 1,343.6 ft (409.53 m) above mean sea level (by vertical angles).

AVERAGE DISCHARGE.--53 years (1914-15, 1916-17, 1922-73), 35.8 ft^3/s (1.014 m^3/s), 25,940 acre-ft/yr (32.0 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 5,070 ft^3/s (144 m^3/s) Mar. 11, gage height, 10.42 ft (3.176 m), from rating curve extended above 650 ft^3/s (18.4 m^3/s); minimum, 0.88 ft^3/s (0.025 m^3/s) Sept. 19.
Period of record: Maximum discharge, 9,900 ft^3/s (280 m^3/s) Jan. 14, 1923, gage height, 13.5 ft (4.11 m), from floodmarks, from rating curve extended above 650 ft^3/s (18.4 m^3/s); minimum, 0.5 ft^3/s (0.014 m^3/s) July 26, 1922.

REMARKS.--Records good. No diversion above station. Water is diverted by Koolau ditch, 500 ft (152 m) below station, for domestic supply and irrigation of sugarcane in central Maui. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1569: Drainage area. WSP 2137: 1915-16(M), 1923-25(M), 1929-31(M), 1934-35(M), 1937-39(M), 1941-43(M), 1946-47(M), 1948(P), 1949(M), 1952-53(M), 1955-56(M), 1959-60(M), (WATER YEARS) 1960(P), 1961(M), 1963(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	3.6	4.2	2.7	31	79	23	6.7	6.8	7.3	2.8	1.6
2	3.2	9.2	3.7	2.5	13	40	17	8.5	6.5	21	2.7	1.7
3	316	13	3.6	2.4	13	73	13	7.1	8.0	15	2.8	1.7
4	91	5.7	3.7	2.3	10	74	18	5.8	13	11	3.3	1.7
5	34	20	3.5	2.3	7.6	67	12	5.7	15	8.4	3.8	1.7
6	231	37	3.5	2.2	6.6	119	10	5.1	11	6.4	4.2	2.1
7	30	148	3.2	116	5.9	178	15	5.8	10	5.2	11	3.0
8	12	86	25	16	36	76	17	5.6	9.8	4.7	4.0	2.3
9	8.6	46	44	8.9	191	33	13	7.9	6.9	6.9	3.1	1.6
10	6.9	31	10	8.7	20	84	38	5.0	6.2	20	2.8	1.4
11	5.9	88	5.1	5.6	10	652	19	13	5.8	10	2.7	1.3
12	5.3	18	4.1	4.4	14	35	12	44	6.9	6.6	2.5	1.2
13	7.5	12	3.6	4.4	25	20	11	45	21	5.3	2.7	1.6
14	4.9	12	3.2	4.6	8.9	16	9.8	19	11	6.1	2.3	2.2
15	4.4	85	12	3.4	7.1	44	9.7	9.9	6.6	12	2.2	1.3
16	4.1	57	4.9	3.1	6.2	163	37	8.4	11	8.3	2.3	1.2
17	5.7	26	3.7	3.7	5.6	362	38	120	8.4	10	2.4	1.2
18	3.5	23	3.7	3.2	5.1	117	12	207	6.1	7.4	2.2	1.1
19	3.3	12	18	7.3	4.7	111	9.3	81	6.2	5.7	2.8	.94
20	3.2	9.4	6.1	3.9	125	50	8.4	40	6.0	5.2	2.6	6.2
21	3.1	8.2	4.1	3.2	157	38	7.7	31	5.5	4.9	2.1	2.0
22	8.1	7.4	3.5	3.3	13	31	7.1	30	5.4	4.5	2.0	4.1
23	7.3	6.7	3.7	2.6	12	79	6.8	23	4.8	4.1	1.9	10
24	4.0	5.9	3.1	3.1	45	113	6.9	25	4.4	4.2	1.9	5.0
25	3.3	5.4	4.4	3.1	340	30	5.9	13	4.2	4.4	2.1	2.5
26	49	5.3	10	20	92	25	12	10	4.0	3.8	2.2	1.9
27	37	4.8	4.2	292	27	34	17	9.2	3.7	3.8	2.9	1.7
28	6.1	4.8	3.4	123	27	85	10	12	3.7	3.7	2.3	1.7
29	4.7	4.3	4.3	103	------	84	8.5	11	3.6	3.3	2.2	28
30	4.1	4.1	2.9	50	------	184	8.3	8.7	3.4	3.1	1.9	4.7
31	3.8	------	2.7	21	------	97	------	8.1	------	3.0	1.8	------
TOTAL	912.8	802.8	215.1	831.9	1,258.7	3,193	432.4	831.5	224.9	225.3	88.5	98.64
MEAN	29.4	26.8	6.94	26.8	45.0	103	14.4	26.8	7.50	7.27	2.85	3.29
MAX	316	148	44	292	340	652	38	207	21	21	11	28
MIN	3.1	3.6	2.7	2.2	4.7	16	5.9	5.0	3.4	3.0	1.8	.94
AC-FT	1,810	1,590	427	1,650	2,500	6,330	858	1,650	446	447	176	196

CAL YR 1972 TOTAL 6,996.20 MEAN 19.1 MAX 544 MIN 2.1 AC-FT 13,880
WTR YR 1973 TOTAL 9,115.54 MEAN 25.0 MAX 652 MIN .94 AC-FT 18,080

PEAK DISCHARGE (BASE, 1,900 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 3	2230	7.40	2,050	3-11	0515	10.42	5,070
10- 6	1615	7.35	2,020				

16523000 Koolau ditch near Keanae

LOCATION.--Lat 20°49'53", long 156°10'30", on right bank on west side of Keanae Valley, 2.6 mi (4.2 km) southwest of Keanae Post Office, and 5.1 mi (8.2 km) southeast of Kailua.

PERIOD OF RECORD.--January 1910 to December 1912, November 1917 to February 1918, April 1918 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,237.7 ft (377.25 m) above mean sea level (by plane-table traverse). Jan. 1, 1910, to Dec. 31, 1912, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--57 years (1910-12, 1918-73), 102 ft^3/s (2.889 m^3/s), 73,900 acre-ft/yr (91.1 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 266 ft^3/s (7.53 m^3/s) Apr. 19, 1935; no flow at times.

REMARKS.--Records excellent. Ditch diverts at altitude 1,260 ft (384 m) from nearly all streams from the Makapipi west to the Alo for power, domestic use, and irrigation in central Maui.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	38	46	33	195	221	205	67	72	67	33	21
2	35	79	43	31	129	222	171	75	68	116	32	21
3	203	147	42	30	145	222	145	70	82	124	32	20
4	207	60	41	29	101	224	176	60	127	106	34	20
5	145	191	40	29	75	224	130	59	136	85	39	21
6	205	166	38	28	65	222	112	56	123	63	41	23
7	176	221	37	201	60	219	139	63	108	54	83	26
8	94	222	62	138	101	223	154	69	102	50	39	22
9	72	216	178	69	223	214	149	105	73	67	33	20
10	63	210	72	70	142	217	206	60	66	168	30	19
11	57	221	46	53	80	211	180	108	63	113	30	18
12	52	178	41	44	82	175	134	184	69	73	28	18
13	65	124	38	44	145	165	138	217	175	59	29	20
14	48	114	36	42	76	163	114	152	120	66	27	26
15	44	202	72	38	62	193	112	102	70	112	26	19
16	42	219	41	36	56	221	172	87	158	88	27	19
17	38	200	36	38	52	215	192	204	114	100	27	18
18	36	196	43	36	49	221	114	222	74	75	25	18
19	35	121	155	85	47	202	89	213	69	59	28	17
20	34	97	56	44	80	185	81	214	64	55	27	89
21	33	82	41	37	209	179	77	212	61	53	25	29
22	58	75	36	36	99	215	77	202	58	49	24	45
23	62	70	36	32	92	222	74	191	54	46	23	121
24	43	63	34	34	114	221	70	213	51	44	23	66
25	36	59	48	34	217	220	63	138	49	47	24	35
26	106	58	91	131	222	217	101	106	47	41	24	28
27	149	53	44	221	191	222	133	92	45	40	27	25
28	58	51	41	224	152	189	91	114	43	39	24	25
29	47	49	58	223	------	217	84	109	42	36	24	139
30	42	47	37	222	------	220	82	90	41	35	22	45
31	40	------	34	182	------	223	------	86	------	34	21	------
TOTAL	2,366	3,829	1,663	2,494	3,261	6,504	3,765	3,940	2,424	2,164	931	1,033
MEAN	76.3	128	53.6	80.5	116	210	126	127	80.8	69.8	30.0	34.4
MAX	207	222	178	224	223	224	206	222	175	168	83	139
MIN	33	38	34	28	47	163	63	56	41	34	21	17
AC-FT	4,690	7,590	3,300	4,950	6,470	12,900	7,470	7,810	4,810	4,290	1,850	2,050

CAL YR 1972 TOTAL 29,165 MEAN 79.7 MAX 222 MIN 25 AC-FT 57,850
WTR YR 1973 TOTAL 34,374 MEAN 94.2 MAX 224 MIN 17 AC-FT 68,180

16531000 Kula diversion from Haipuaena Stream near Olinda

LOCATION.--Lat 20°28'24", long 156°13'27", on left bank of Haipuaena Stream, 3.4 mi (5.5 km) east of Olinda, and 6.2 mi (10.0 km) south of Kailua.

PERIOD OF RECORD.--July 1945 to current year.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 4,320 ft (1,317 m), from topographic map.

AVERAGE DISCHARGE.--28 years, 0.646 ft^3/s (0.0183 m^3/s), 468 acre-ft/yr (577,000 m^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 3.17 ft^3/s (0.090 m^3/s) Mar. 20, 1948; no flow Nov. 4, 1964, Dec. 3, 5, 1970.

REMARKS.--Records excellent. Water is diverted from Haipuaena Stream at station for domestic use and irrigation of truck crops in the Olinda and Kula areas.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.91	.09	.07	.14	1.2	1.8	.10	.40	.43	.20	.06	.03
2	.34	.22	.06	.11	.67	1.4	.46	.38	.32	1.1	.05	.03
3	.45	.79	.05	.09	.83	1.2	.49	.30	.32	1.0	.05	.03
4	.68	.34	.05	.07	.84	1.0	1.6	.21	.79	.64	.04	.04
5	1.2	.55	.05	.06	.38	.97	1.2	.17	.85	.70	.05	.08
6	1.4	1.2	.05	.05	.25	1.0	.64	.14	.54	.47	.07	.25
7	1.1	1.0	.05	.49	.17	.76	.52	.12	.40	.30	.77	.52
8	.64	.91	.33	.72	.40	1.4	.85	.11	.32	.21	.57	.23
9	.40	.82	1.2	.43	.03	1.4	1.1	.64	.25	.56	.86	.12
10	.30	1.0	.82	.23	.01	1.0	1.2	.40	.18	1.2	.57	.08
11	.21	1.8	.40	.17	.01	.17	.94	.77	.15	.95	.26	.06
12	.18	.90	.26	.11	.29	.70	.76	1.4	.15	.43	.18	.07
13	.21	.52	.18	.09	.54	1.0	.64	1.2	1.1	.23	.12	.46
14	.17	.43	.12	.08	.40	.85	.49	1.0	.80	.17	.09	1.3
15	.14	1.2	.80	.06	.30	.86	.40	.49	.62	.61	.07	.38
16	.11	1.4	.54	.05	.23	1.8	1.1	.38	1.1	.70	.06	.17
17	.10	.88	.26	.05	.19	.26	1.1	1.7	1.0	1.1	.05	.09
18	.08	1.0	.19	.05	.17	.18	.70	1.6	.45	.52	.05	.06
19	.07	.84	.60	.05	.14	.17	.43	1.5	.34	.30	.05	.05
20	.06	.45	.47	.10	.44	.15	.34	1.2	.30	.18	.05	.05
21	.05	.30	.36	.19	.63	1.1	.36	1.2	.23	.15	.04	.05
22	.06	.26	.25	.11	.64	1.6	.32	1.2	.21	.14	.04	.06
23	.05	.23	.18	.07	.63	1.7	.30	1.0	.17	.21	.04	.26
24	.05	.18	.15	.06	.96	1.7	.34	1.1	.14	.17	.04	.69
25	.04	.15	.14	.05	.66	1.1	.26	.91	.10	.53	.03	.28
26	.15	.15	.15	.10	1.4	.76	.57	.59	.09	.55	.04	.12
27	1.0	.21	.12	.52	1.4	1.1	.91	.43	.08	.25	.04	.09
28	.36	.17	.17	.26	1.0	1.4	.59	.34	.08	.19	.04	.21
29	.19	.11	.38	.23	------	1.2	.59	.04	.08	.17	.04	1.1
30	.14	.09	.25	.19	------	1.6	.54	.49	.07	.11	.04	.67
31	.10	------	.17	.80	------	.14	------	.57	------	.08	.03	------
TOTAL	10.94	18.19	8.87	5.78	14.61	31.47	19.84	21.98	11.66	14.12	4.49	7.63
MEAN	.35	.61	.29	.19	.53	1.02	.66	.71	.39	.46	.14	.25
MAX	1.4	1.8	1.2	.80	1.4	1.8	1.6	1.7	1.1	1.2	.86	1.3
MIN	.04	.09	.05	.05	.01	.14	.10	.04	.07	.08	.03	.03
AC-FT	22	36	18	11	29	62	39	44	23	28	8.9	15

CAL YR 1972 TOTAL 145.73 MEAN .40 MAX 1.8 MIN .01 AC-FT 289
WTR YR 1973 TOTAL 169.78 MEAN .47 MAX 1.8 MIN .01 AC-FT 337

16538000 Spreckels ditch at Haipuaena weir, near Huelo

LOCATION.--Lat 20°51'15", long 156°11'25", on right bank near Spreckels ditch trail between Haipuaena and Puohokamoa Streams, 2.7 mi (4.3 km) west of Keanae, and 4.5 mi (7.2 km) southeast of Huelo.

PERIOD OF RECORD.--April 1922 to current year. Published as "at Haipuaena, near Huelo" 1930-35.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,470.96 ft (448.349 m) above mean sea level (East Maui Irrigation Co. bench mark). Apr. 29, 1922, to Feb. 19, 1930, at same site at different datum. Feb. 20, 1930, to Oct. 25, 1935, at site 100 ft (30 m) upstream at different datum.

AVERAGE DISCHARGE (since termination of powerplant diversion).--12 years (1961-73), 29.9 ft^3/s (0.847 m^3/s), 21,660 acre-ft/yr (26.7 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 150 ft^3/s (4.25 m^3/s) Feb. 10, 1955, Feb. 18, 1956; no flow at times.

REMARKS.--Records excellent. 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 the Puohokamoa. About 6 ft^3/s (0.17 m^3/s) was diverted above station to East Maui Irrigation Co. powerplant at Kolea Gulch prior to June 30, 1961, when the plant was abandoned. Water used for domestic supply and irrigation in central Maui.

REVISIONS (FISCAL YEARS).--WSP 770: 1932-33.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	7.3	7.4	7.4	64	117	45	14	15	22	5.6	3.1
2	7.0	39	6.9	6.5	30	73	32	18	14	51	5.2	3.4
3	115	46	7.0	6.0	38	82	24	15	16	53	5.2	3.1
4	73	15	6.4	5.8	28	90	62	11	39	32	6.3	3.2
5	48	57	6.1	6.5	16	86	29	10	32	25	8.5	3.3
6	80	54	6.1	5.7	13	119	21	9.6	31	15	8.8	4.2
7	46	123	5.7	112	11	114	23	12	28	12	33	6.2
8	21	110	32	45	48	83	32	15	26	10	8.7	4.1
9	16	75	54	15	105	55	46	41	16	19	19	3.1
10	13	55	14	12	33	77	95	15	13	59	9.1	2.9
11	11	107	8.2	9.4	17	88	48	33	12	33	5.3	2.7
12	11	39	6.9	8.3	30	41	25	74	16	21	4.9	3.0
13	22	25	6.1	10	49	34	28	87	66	14	5.1	8.0
14	10	27	5.7	9.8	19	34	22	41	31	19	4.7	11
15	8.4	92	34	7.1	14	61	20	23	15	40	4.5	4.1
16	7.9	77	9.1	6.8	12	88	53	19	47	24	4.5	3.2
17	7.3	52	6.4	11	11	100	61	112	31	30	4.4	2.6
18	6.4	53	11	9.4	10	89	22	128	18	15	3.9	2.1
19	5.9	26	64	32	9.2	89	17	92	16	13	4.6	1.9
20	5.8	19	13	11	35	81	16	77	16	12	4.6	12
21	5.8	16	8.1	8.1	86	68	14	60	13	11	3.9	4.4
22	19	15	6.9	7.1	21	59	13	59	17	9.6	3.6	12
23	15	13	7.0	6.4	29	89	12	47	13	8.6	3.4	52
24	8.4	12	6.4	6.6	44	93	12	59	10	8.7	3.4	16
25	6.6	11	16	6.6	127	59	11	29	8.9	9.6	3.8	6.6
26	42	13	40	43	105	51	26	22	8.3	8.6	3.7	4.8
27	53	10	12	127	45	75	35	20	8.8	8.4	4.9	3.3
28	14	9.0	9.3	111	48	103	20	50	10	9.0	4.2	3.0
29	10	8.2	17	103	------	105	20	29	7.6	7.3	4.0	67
30	8.5	7.8	8.6	64	------	127	20	26	7.2	6.3	3.7	10
31	7.6	------	8.0	41	------	94	------	22	------	5.8	3.3	------
TOTAL	719.6	1,213.3	449.3	860.5	1,097.2	2,524	904	1,269.6	601.8	611.9	197.6	266.3
MEAN	23.2	40.4	14.5	27.8	39.2	81.4	30.1	41.0	20.1	19.7	6.37	8.88
MAX	115	123	64	127	127	127	95	128	66	59	33	67
MIN	5.8	7.3	5.7	5.7	9.2	34	11	9.6	7.2	5.8	3.3	1.9
AC-FT	1,430	2,410	891	1,710	2,180	5,010	1,790	2,520	1,190	1,210	392	528

CAL YR 1972 TOTAL 8,851.1 MEAN 24.2 MAX 132 MIN 3.0 AC-FT 17,560
WTR YR 1973 TOTAL 10,715.1 MEAN 29.4 MAX 128 MIN 1.9 AC-FT 21,250

16541000 Koolau ditch at Haipuaena, near Huelo

LOCATION.--Lat 20°51'17", long 156°11'19", on right bank at Haipuaena Stream, 1,000 ft (305 m) upstream from intake at Puohokamoa Stream, 3.3 mi (5.3 km) southeast of Kailua, and 4.5 mi (7.2 km) southeast of Huelo.

PERIOD OF RECORD.--April 1932 to current year.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 1,240 ft (378 m), from topographic map. Prior to Mar. 21, 1933, at datum 1.94 ft (0.591 m) lower, and Mar. 21, 1933, to Mar. 20, 1935, at datum 0.25 ft (0.076 m) lower, than present datum.

AVERAGE DISCHARGE.--41 years, 118 ft^3/s (3.342 m^3/s), 85,490 acre-ft/yr (105 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 300 ft^3/s (8.50 m^3/s) July 1, 17, 1963; no flow at times.

REMARKS.--Records excellent. Ditch is extension of Wailoa ditch east of Alo Stream; it receives water from Makapipi ditch at Hanawi Stream and diverts from nearly all streams from there west to the Alo. Water is used for power, domestic supply, and irrigation in central Maui.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	39	48	33	198	266	205	73	76	61	33	20
2	35	83	45	31	128	219	174	79	70	115	32	20
3	255	140	44	30	142	241	150	74	78	135	32	20
4	216	62	43	29	104	245	182	64	128	110	34	20
5	146	179	41	30	78	232	136	62	136	89	39	20
6	225	166	40	28	68	271	117	58	124	67	41	23
7	172	281	38	250	62	255	136	66	108	56	84	26
8	98	242	64	139	108	240	159	66	104	52	39	22
9	76	217	176	74	235	205	149	114	76	72	35	19
10	64	202	74	72	144	231	225	63	69	166	31	18
11	58	253	48	55	84	253	188	101	64	118	30	18
12	54	171	42	47	92	180	140	200	69	78	28	17
13	66	125	39	45	149	169	142	230	165	61	29	20
14	48	114	37	44	80	168	121	157	125	68	28	26
15	44	219	72	38	64	202	116	104	73	114	26	19
16	41	219	43	36	58	260	172	88	147	91	27	19
17	39	196	37	39	54	285	204	225	120	100	27	18
18	37	190	42	37	50	255	123	282	78	82	25	18
19	35	122	165	83	48	245	97	238	72	62	28	17
20	34	99	60	46	88	202	88	208	66	57	27	89
21	33	86	43	38	219	196	85	206	62	54	25	30
22	57	79	38	36	104	217	79	202	60	50	24	46
23	62	74	37	33	97	253	81	188	55	46	23	125
24	44	66	34	34	132	271	76	212	52	45	22	68
25	37	62	49	33	283	222	68	141	50	48	24	35
26	109	61	93	117	246	222	100	108	47	42	24	28
27	163	56	45	281	184	224	132	96	45	41	27	26
28	59	54	40	247	174	215	99	113	43	39	24	26
29	48	51	59	248	------	246	89	117	42	37	24	146
30	44	49	37	220	------	280	88	92	41	35	22	45
31	40	------	35	178	------	241	------	91	------	34	20	------
TOTAL	2,481	3,957	1,708	2,651	3,473	7,211	3,921	4,118	2,445	2,225	934	1,044
MEAN	80.0	132	55.1	85.5	124	233	131	133	81.5	71.8	30.1	34.8
MAX	255	281	176	281	283	285	225	282	165	166	84	146
MIN	33	39	34	28	48	168	68	58	41	34	20	17
AC-FT	4,920	7,850	3,390	5,260	6,890	14,300	7,780	8,170	4,850	4,410	1,850	2,070

CAL YR 1972 TOTAL 30,877 MEAN 84.4 MAX 287 MIN 24 AC-FT 61,240
WTR YR 1973 TOTAL 36,168 MEAN 99.1 MAX 285 MIN 17 AC-FT 71,740

16541500 Manuel Luis ditch at Puohokamoa Gulch, near Huelo

LOCATION.--Lat 20°51'48", long 156°10'49" (revised), on right bank at lower portal of tunnel between Haipuaena and Puohokamoa Streams, 2.2 mi (3.5 km) west of Keanae, and 4.4 mi (7.1 km) southeast of Huelo.

PERIOD OF RECORD.--December 1917 to November 1924, January 1925 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 920 ft (280 m), from topographic map.

AVERAGE DISCHARGE.--54 years (1918-24, 1925-73), 8.57 ft^3/s (0.243 m^3/s), 6,210 acre-ft/yr (7.66 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 142 ft^3/s (4.02 m^3/s) Jan. 3, 1927; no flow at times.

REMARKS.--Records excellent. Ditch is extension of Center ditch and picks up water from streams between the Kolea and the Waikamoi for irrigation in central Maui.

REVISIONS (FISCAL YEARS).--WSP 1719: 1918-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.47	.48	.61	.56	8.1	37	5.3	.77	1.1	.62	.28	.07
2	.40	3.4	.56	.48	3.0	8.5	3.8	.76	1.1	2.4	.28	.11
3	92	3.8	.56	.48	3.7	16	3.0	.69	1.0	1.9	.28	.07
4	27	1.1	.52	.41	2.3	7.3	8.7	.63	1.1	1.2	.28	.07
5	11	2.8	.49	.73	1.8	9.3	2.9	.61	1.4	.91	.44	.07
6	38	4.2	.48	.63	1.6	24	2.4	.55	1.5	.68	.41	.13
7	5.2	51	.46	69	1.4	60	2.1	.59	1.4	.53	.94	.11
8	2.7	15	1.9	8.6	3.2	9.7	2.0	.75	1.2	.49	.40	.08
9	2.1	9.5	5.1	3.1	51	3.8	3.1	3.5	.87	.81	.28	.07
10	1.8	4.8	.64	2.3	1.6	18	20	.82	.78	4.2	.28	.07
11	1.4	35	.48	1.8	1.2	73	3.5	1.4	.72	2.1	.23	.07
12	1.3	3.7	.48	1.5	1.4	6.5	2.4	8.8	.77	.99	.22	.07
13	1.9	2.6	.41	1.4	3.6	4.3	2.7	9.9	2.2	.70	.22	.09
14	1.1	2.4	.41	1.2	.96	3.4	2.0	2.7	1.6	.85	.22	.13
15	.96	7.2	1.0	1.0	.78	8.6	1.8	1.2	.82	2.6	.22	.07
16	.87	5.1	.48	.91	.69	28	2.3	1.1	4.5	.92	.25	.07
17	.91	2.8	.41	.93	.64	86	3.7	18	2.8	.98	.24	.07
18	.82	5.9	.59	.82	.57	32	1.5	71	1.2	.74	.16	.07
19	.73	2.1	8.0	1.8	.56	36	1.3	19	.99	.60	.22	.07
20	.64	1.7	.91	.88	7.0	14	1.2	5.4	.87	.61	.24	1.4
21	.64	1.5	.56	.72	29	12	1.4	3.7	.81	.57	.17	.22
22	.64	1.4	.48	.64	.91	5.0	1.1	4.3	.77	.51	.16	.21
23	.73	1.2	.48	.58	.91	26	1.2	2.5	.69	.47	.16	4.5
24	.64	1.1	.56	.58	9.7	45	.97	6.2	.63	.44	.16	.87
25	.56	.96	1.2	.57	95	6.2	.88	2.4	.56	.56	.16	.27
26	16	1.3	2.2	3.5	24	4.1	.93	1.9	.56	.42	.16	.16
27	17	.88	.73	94	4.5	4.8	.98	1.7	.50	.41	.16	.11
28	.82	.78	.73	26	7.7	22	.97	4.0	.48	.37	.13	.11
29	.64	.72	1.9	23	------	24	.80	1.9	.45	.34	.11	2.6
30	.56	.64	.82	6.7	------	85	1.1	1.3	.41	.32	.11	.25
31	.48	------	.64	3.6	------	28	------	1.3	------	.28	.09	------
TOTAL	230.01	175.06	34.79	258.42	266.82	747.5	86.03	179.37	33.78	29.52	7.66	12.46
MEAN	7.42	5.84	1.12	8.34	9.53	24.1	2.87	5.79	1.13	.95	.25	.42
MAX	92	51	8.0	94	95	86	20	71	4.5	4.2	.94	4.5
MIN	.40	.48	.41	.41	.56	3.4	.80	.55	.41	.28	.09	.07
AC-FT	456	347	69	513	529	1,480	171	356	67	59	15	25

CAL YR 1972 TOTAL 1,543.87 MEAN 4.22 MAX 124 MIN .16 AC-FT 3,060
WTR YR 1973 TOTAL 2,061.42 MEAN 5.65 MAX 95 MIN .07 AC-FT 4,090

16570000 Nailiilihaele Stream near Huelo

LOCATION.--Lat 20°52'28", long 156°13'06", on left bank 200 ft (61 m) upstream from Wailoa ditch intake, 1,000 ft (305 m) upstream from New Hamakua ditch trail, 1.5 mi (2.4 km) south of Kailua, and 2.4 mi (3.9 km) southeast of Huelo Church.

DRAINAGE AREA.--3.49 mi^2 (9.04 km^2).

PERIOD OF RECORD.--December 1910 to December 1911, October 1913 to June 1918, August to October 1919, December 1919 to June 1924, January 1925 to current year. Gage-height records for July to December 1912 at site 700 ft (213 m) downstream not equivalent owing to diversion. Monthly discharge only for some periods, published in WSP 1319.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 1,205 ft (367.3 m) above mean sea level (by vertical angles). Dec. 9, 1910, to Dec. 31, 1911, nonrecording gage at site 300 ft (91 m) downstream at different datum. Oct. 8, 1913, to Mar. 20, 1922, water-stage recorder at present site at datum 0.50 ft (0.152 m) higher.

AVERAGE DISCHARGE (since termination of upstream diversion).--49 years (1922-23, 1925-73), 35.3 ft^3/s (1.000 m^3/s), 25,570 acre-ft/yr (31.5 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 2,280 ft^3/s (64.6 m^3/s) Mar. 11, gage height, 7.67 ft (2.338 m), from rating curve extended above 600 ft^3/s (17.0 m^3/s); minimum, 2.0 ft^3/s (0.057 m^3/s) Sept. 18-20.
Period of record: Maximum discharge, 6,410 ft^3/s (182 m^3/s) Nov. 18, 1930, gage height, 10.74 ft (3,274 m), from rating curve extended above 600 ft^3/s (17.0 m^3/s); minimum, 0.70 ft^3/s (0.020 m^3/s) July 14, 1920.

REMARKS.--Records good. No diversion above station since 1922. All low flow diverted into Wailoa ditch (see sta 16588000) 200 ft (61 m) below station for domestic supply, power, and irrigation. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 1569: 1925-56. WSP 1937: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	6.3	7.5	7.1	75	181	37	10	12	9.7	4.8	2.5
2	5.3	47	7.1	6.5	33	66	28	11	11	27	4.6	2.8
3	481	42	7.1	6.1	26	95	23	11	11	29	4.6	2.5
4	92	13	6.5	6.0	19	70	80	9.1	20	24	4.9	2.5
5	46	44	6.3	6.5	15	72	24	8.6	22	20	7.0	2.5
6	163	43	6.1	5.9	13	143	19	8.4	22	11	6.3	3.0
7	32	211	5.8	248	12	209	21	8.7	20	9.3	15	3.2
8	18	96	27	43	19	88	21	13	19	8.6	6.4	2.7
9	14	67	40	14	109	42	36	41	12	13	4.7	2.4
10	12	45	9.0	11	17	121	108	11	11	48	4.4	2.3
11	10	183	7.0	9.2	12	401	32	19	10	22	4.1	2.1
12	9.3	32	6.2	8.3	22	37	22	50	11	15	4.0	2.1
13	14	22	5.8	8.4	43	27	24	49	54	11	4.0	2.9
14	9.0	21	5.6	8.0	15	26	19	24	27	13	5.8	4.8
15	8.1	67	21	7.0	12	55	17	14	13	29	3.6	2.9
16	7.5	65	7.6	6.5	10	138	32	13	45	12	3.7	2.5
17	7.0	45	5.9	7.9	9.5	320	37	97	26	14	3.6	2.3
18	6.5	48	5.9	7.3	8.6	102	18	232	14	11	3.4	2.1
19	6.2	22	84	36	8.2	113	15	100	12	9.3	3.8	2.0
20	5.9	18	11	10	65	87	14	45	11	9.2	3.7	4.6
21	5.6	16	7.8	7.5	154	58	13	35	10	8.6	3.3	2.7
22	10	14	6.8	6.6	14	42	12	39	10	8.0	3.1	5.1
23	9.4	13	6.9	6.2	19	91	11	28	9.4	7.3	3.0	57
24	7.2	11	6.7	6.2	50	149	11	44	8.5	7.0	2.9	13
25	5.8	10	15	6.2	447	48	9.6	21	8.1	7.9	3.1	5.2
26	112	17	42	35	101	44	14	17	7.6	6.3	2.9	3.8
27	75	10	11	350	30	59	20	15	7.3	6.2	3.3	3.3
28	11	9.1	9.4	105	54	99	15	15	7.4	6.1	2.9	3.1
29	8.2	8.3	17	120	------	153	15	15	6.5	5.7	3.0	36
30	7.2	7.9	8.3	73	------	298	15	14	6.2	5.3	2.9	7.7
31	6.6	------	7.5	41	------	114	------	15	------	5.1	2.7	------
TOTAL	1,211.7	1,253.6	420.8	1,219.4	1,412.3	3,528	762.6	1,032.8	464.0	417.7	133.5	191.6
MEAN	39.1	41.8	13.6	39.3	50.4	114	25.4	33.3	15.5	13.5	4.31	6.39
MAX	481	211	84	350	447	401	108	232	54	48	15	57
MIN	5.3	6.3	5.6	5.9	8.2	26	9.6	8.4	6.2	5.1	2.7	2.0
AC-FT	2,400	2,490	835	2,420	2,800	7,000	1,510	2,050	920	829	265	380

CAL YR 1972 TOTAL 9,779.4 MEAN 26.7 MAX 481 MIN 3.1 AC-FT 19,400
WTR YR 1973 TOTAL 12,048.0 MEAN 33.0 MAX 481 MIN 2.0 AC-FT 23,900

PEAK DISCHARGE (BASE, 1,700 CFS).--Oct. 3 (0830) 1,710 cfs (6.88 ft); Mar. 11 (0345) 2,280 cfs (7.67 ft).

16587000 Honopou Stream near Huelo

LOCATION.--Lat 20°53'20", long 156°15'19" (revised), on left bank 75 ft (23 m) upstream from Wailoa ditch intake, 2.2 mi (3.5 km) southwest of Huelo, and 2.5 mi (4.0 km) west of Kailua.

DRAINAGE AREA.--0.64 mi^2 (1.66 km^2).

PERIOD OF RECORD.--December 1910 to current year. Monthly discharge only for some periods, published in WSP 1319.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,208 ft (368 m) above mean sea level (by vertical angles). Prior to June 19, 1914, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--62 years (1911-73), 4.75 ft^3/s (0.135 m^3/s), 3,440 acre-ft/yr (4.24 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 285 ft^3/s (8.07 m^3/s) Mar. 11, gage height, 3.10 ft (0.945 m), from rating curve extended as explained below; minimum, 0.19 ft^3/s (0.005 m^3/s) Sept. 19, 28.
Period of record: Maximum discharge, 5,710 ft^3/s (162 m^3/s) Nov. 18, 1930, gage height, 7.28 ft (2.219 m), from rating curve extended above 110 ft^3/s (3.12 m^3/s) by test of model of station site; minimum, 0.02 ft^3/s (0.001 m^3/s) several days in 1933, 1934.

REMARKS.--Records excellent. No diversion above station.

REVISIONS (FISCAL YEARS).--WSP 1219: 1914(M), 1916-50(M). WSP 1249: 1948-50(P). WSP 1569: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.72	1.0	1.9	1.5	7.8	17	9.5	1.6	1.6	1.0	.47	.29
2	.72	2.8	1.8	1.4	6.2	11	7.8	1.5	1.5	1.2	.41	.29
3	36	2.7	1.9	1.2	5.0	8.7	7.1	1.4	1.5	1.1	.41	.29
4	8.0	1.4	1.6	1.2	4.0	8.2	12	1.2	1.5	1.0	.47	.29
5	3.2	2.9	1.5	1.1	3.6	8.5	6.2	1.2	1.9	1.2	.63	.29
6	7.0	2.5	1.5	1.2	3.2	11	5.2	1.2	1.8	.81	.55	.35
7	4.0	11	1.4	20	2.9	17	5.0	1.1	1.9	.72	.63	.29
8	2.9	5.4	3.2	6.0	2.9	10	4.6	1.4	1.6	.72	.47	.29
9	2.5	5.2	3.0	2.9	5.8	7.8	6.4	3.0	1.2	.81	.47	.29
10	2.4	4.6	1.5	2.7	2.7	11	8.8	1.2	1.2	1.4	.41	.24
11	2.0	14	1.4	2.5	2.4	36	4.6	1.2	1.1	1.2	.41	.24
12	1.9	5.7	1.2	2.4	2.5	9.5	4.0	2.1	1.2	.81	.41	.24
13	2.0	4.8	1.2	2.2	2.5	8.0	4.0	1.8	2.9	.72	.41	.29
14	1.8	4.2	1.1	2.0	2.2	7.1	3.6	1.4	1.9	.72	.41	.29
15	1.6	5.9	1.5	1.9	1.9	6.6	3.4	1.1	1.2	1.4	.35	.24
16	1.5	6.8	1.1	1.8	1.9	11	3.8	1.4	3.8	.72	.41	.24
17	1.5	5.9	1.0	1.8	1.8	26	3.6	4.7	2.2	.72	.41	.24
18	1.4	5.4	1.1	1.6	1.6	13	2.9	16	1.4	.63	.35	.24
19	1.2	4.0	10	3.0	1.5	14	2.7	8.2	1.2	.63	.41	.19
20	1.2	3.6	1.8	1.8	3.6	12	2.5	4.9	1.2	.63	.41	.54
21	1.1	3.4	1.5	1.5	11	10	2.4	3.6	1.1	.55	.35	.35
22	1.4	3.0	1.4	1.4	2.2	8.0	2.2	3.0	1.1	.55	.35	.47
23	1.2	2.9	1.4	1.4	3.0	9.9	2.0	2.7	1.0	.55	.35	.80
24	1.1	2.7	1.2	1.2	5.6	14	2.0	3.2	1.0	.55	.35	.41
25	1.0	2.5	1.8	1.4	50	7.8	1.9	2.4	.91	.55	.35	.29
26	5.4	5.9	4.5	4.8	12	7.1	1.9	2.0	.91	.55	.35	.24
27	4.0	2.5	1.8	26	6.8	7.9	1.9	1.9	.91	.55	.35	.24
28	1.4	2.4	1.8	9.6	7.8	11	1.9	1.9	.91	.47	.29	.19
29	1.2	2.0	2.0	9.4	------	17	2.0	1.9	.91	.47	.29	.76
30	1.1	1.9	1.5	8.1	------	31	2.0	1.8	.81	.47	.29	.29
31	1.0	------	1.5	6.2	------	14	------	1.8	------	.47	.29	------
TOTAL	103.44	129.0	61.1	131.2	164.4	391.1	127.9	83.8	43.36	23.87	12.51	9.70
MEAN	3.34	4.30	1.97	4.23	5.87	12.6	4.26	2.70	1.45	.77	.40	.32
MAX	36	14	10	26	50	36	12	16	3.8	1.4	.63	.80
MIN	.72	1.0	1.0	1.1	1.5	6.6	1.9	1.1	.81	.47	.29	.19
AC-FT	205	256	121	260	326	776	254	166	86	47	25	19

CAL YR 1972 TOTAL 908.00 MEAN 2.48 MAX 36 MIN .35 AC-FT 1,800
WTR YR 1973 TOTAL 1,281.38 MEAN 3.51 MAX 50 MIN .19 AC-FT 2,540

PEAK DISCHARGE (BASE, 270 CFS).--Mar. 11 (0400) 285 cfs (3.10 ft).

16588000 Wailoa ditch at Honopou, near Huelo

LOCATION.--Lat 20°53'20", long 156°15'19", on right bank 100 ft (30 m) downstream from intake at Honopou Stream, 0.5 mi (0.8 km) west of Lupi, and 2.2 mi (3.5 km) southwest of Huelo.

PERIOD OF RECORD.--November 1922 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,208 ft (368.2 m) above mean sea level (by vertical angles).

AVERAGE DISCHARGE.--50 years (1923-73), 173 ft^3/s (4.899 m^3/s), 125,300 acre-ft/yr (154 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 326 ft^3/s (9.23 m^3/s) Apr. 1, 1967; no flow Jan. 24-27, 1923.

REMARKS.--Records excellent. Wailoa ditch receives water from Koolau ditch at Alo Stream and from all streams from there west to Halehaku Gulch at altitude of about 1,200 ft (366 m). Water is used for domestic supply, power, and irrigation in central Maui. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	76	94	80	291	321	273	130	138	106	55	32
2	70	126	89	74	266	319	270	144	128	220	53	34
3	275	204	89	69	268	317	267	153	139	246	53	32
4	290	137	85	66	227	317	288	111	228	213	59	31
5	220	220	80	74	170	317	272	106	232	189	74	32
6	292	206	78	64	147	301	259	99	232	130	72	37
7	279	285	74	293	132	297	234	113	210	105	151	43
8	206	277	111	266	185	296	270	113	202	95	75	35
9	158	276	269	163	297	294	279	229	139	145	70	30
10	154	239	147	145	253	294	287	123	124	242	59	28
11	118	283	96	115	95	292	280	153	116	219	50	27
12	109	235	84	100	10	286	268	260	126	158	47	27
13	154	197	78	101	9,2	281	268	268	261	118	47	35
14	104	194	73	99	7,9	282	253	242	229	153	45	60
15	92	245	186	83	7,5	285	214	182	141	219	42	33
16	87	281	96	79	8,4	291	265	155	255	163	43	29
17	82	278	77	91	9,1	294	279	271	229	188	44	28
18	77	276	82	86	9,8	292	232	291	157	139	41	26
19	73	248	269	213	8,5	292	186	276	137	109	45	25
20	70	202	141	107	54	292	168	268	133	103	45	95
21	68	176	96	85	221	291	160	267	118	98	39	44
22	121	162	83	77	200	291	147	266	118	89	38	74
23	121	149	83	71	197	291	148	263	106	81	36	179
24	88	134	79	72	221	292	141	266	95	78	36	132
25	74	123	138	71	322	290	126	243	89	85	38	60
26	154	163	212	232	320	290	192	197	85	74	37	44
27	258	122	117	292	307	290	252	175	81	71	42	38
28	126	110	97	262	271	292	193	195	86	71	38	36
29	97	102	161	257	------	302	107	214	75	65	38	174
30	86	97	92	293	------	302	171	176	73	60	36	83
31	80	------	84	286	------	277	------	174	------	57	33	------
TOTAL	4,259	5,823	3,538	4,366	4,514,4	9,168	6,709	6,103	4,480	4,067	1,581	1,583
MEAN	137	194	114	141	161	296	224	197	149	131	51,0	52,8
MAX	292	285	269	293	322	321	288	291	261	246	151	179
MIN	68	76	73	64	7,5	277	107	99	73	57	33	25
AC-FT	8,450	11,550	7,020	8,660	8,950	18,180	13,310	12,110	8,890	8,070	3,140	3,140

CAL YR 1972 TOTAL 53,691,0 MEAN 147 MAX 313 MIN 43 AC-FT 106,500
WTR YR 1973 TOTAL 56,191,4 MEAN 154 MAX 322 MIN 7,5 AC-FT 111,500

16589000 New Hamakua ditch at Honopou, near Huelo

LOCATION.--Lat 20°53'28", long 156°15'22", on right bank 15 ft (4.6 m) upstream from tunnel portal, 600 ft (183 m) downstream from Honopou Stream crossing, and 2.1 mi (3.4 km) southwest of Huelo.

PERIOD OF RECORD.--January 1918 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,170 ft (356.6 m) above mean sea level (by vertical angles). Prior to May 14, 1921, at site 300 ft (91 m) upstream at different datum. May 14, 1921, to Mar. 18, 1962, at present site at datum 1.00 ft (0.305 m) higher.

AVERAGE DISCHARGE.--55 years, 36.7 ft^3/s (1.039 m^3/s), 26,590 acre-ft/yr (32.8 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 182 ft^3/s (5.15 m^3/s) Nov. 2, 1967; no flow at times.

REMARKS.--Records excellent. Ditch diverts from streams between Waikamoi Stream and Halehaku Gulch above Center and Lowrie ditches for irrigation in central Maui.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.43	.80	1.4	1.1	.03	171	132	1.3	1.6	1.1	.22	.08
2	.38	40	1.3	.96	.02	108	79	1.2	1.5	31	.20	.09
3	140	114	1.4	.91	.02	84	30	1.1	1.5	54	.18	.09
4	148	2.0	1.2	.89	6.4	84	119	.96	13	35	.19	.10
5	58	128	1.1	1.4	3.4	147	44	.88	19	2.1	.45	.11
6	129	112	1.1	.94	2.8	156	6.2	.80	11	1.0	.49	.16
7	100	168	.98	144	2.5	157	18	.76	6.1	.78	34	.13
8	6.3	166	12	85	22	156	49	1.1	5.8	.67	.66	.09
9	3.3	158	114	5.4	146	138	78	63	1.2	.97	.28	.09
10	2.6	163	1.8	3.7	49	138	138	1.3	1.1	62	.21	.09
11	2.3	168	1.0	2.9	71	158	114	18	1.0	45	.16	.11
12	2.0	138	.91	2.4	146	110	14	93	1.0	1.3	.14	.12
13	7.0	63	.85	2.4	172	65	24	141	92	.91	.13	.15
14	1.8	42	.77	2.1	155	57	5.0	61	55	.93	.11	.27
15	1.6	145	20	1.9	117	77	3.7	1.5	1.3	35	.09	.13
16	1.5	161	.98	1.7	106	129	48	1.3	88	1.1	.07	.11
17	1.3	131	.75	1.7	99	115	116	123	46	1.1	.07	.11
18	1.2	131	.71	1.5	91	138	6.3	153	1.7	.81	.06	.09
19	1.1	13	106	28	85	155	2.5	150	1.4	.66	.07	.07
20	1.0	3.8	2.9	1.8	85	155	2.3	143	1.3	.59	.08	25
21	.97	3.3	1.1	1.4	148	145	2.5	136	1.2	.58	.07	.23
22	1.2	2.9	.93	1.2	9.7	149	2.0	120	1.1	.54	.06	.10
23	1.2	2.4	.91	1.1	5.4	154	2.1	73	1.0	.47	.08	86
24	.92	2.2	1.2	1.1	27	156	1.8	136	.93	.43	.12	10
25	.85	2.0	2.9	1.0	177	150	1.6	27	.88	.43	.30	.51
26	33	6.7	49	51	168	144	3.2	5.1	.82	.39	.35	.12
27	91	2.1	1.5	75	105	152	7.1	3.5	.79	.37	.36	.07
28	1.5	1.8	1.2	.05	43	155	3.0	32	.74	.36	.37	.06
29	1.0	1.6	5.1	.03	------	155	46	32	.69	.32	.44	102
30	.91	1.5	1.2	.03	------	151	2.6	1.9	.66	.28	.44	1.9
31	.83	------	1.1	.03	------	140	------	1.8	------	.25	.17	------
TOTAL	742.19	2,074.10	337.27	422.64	2,042.27	4,145	1,100.9	1,525.50	359.31	280.44	40.60	228.18
MEAN	23.9	69.1	10.9	13.6	72.9	134	36.7	49.2	12.0	9.05	1.31	7.61
MAX	148	168	114	144	177	171	138	153	92	62	34	102
MIN	.38	.80	.71	.03	.02	57	1.6	.76	.66	.25	.06	.06
AC-FT	1,470	4,110	669	838	4,050	8,220	2,180	3,030	713	556	81	453

CAL YR 1972 TOTAL 8,853.76 MEAN 24.2 MAX 168 MIN .06 AC-FT 17,560
WTR YR 1973 TOTAL 13,298.40 MEAN 36.4 MAX 177 MIN .02 AC-FT 26,380

16592000 Lowrie ditch at Honopou Gulch, near Huelo

LOCATION.--Lat 20°54'57", long 156°15'08" (revised), on left bank 0.2 mi (0.3 km) downstream from siphon across Honopou Stream, 1.6 mi (2.6 km) west of Huelo, and 2.7 mi (4.3 km) northwest of Kailua.

PERIOD OF RECORD.--January 1910 to March 1927, February 1930 to current year. Published as "at Opana weir, near Huelo" 1910-27.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 598.0 ft (182.27 m) above mean sea level. Jan. 1, 1910, to Mar. 31, 1927, at site 1.5 mi (2.4 km) downstream at different datum.

AVERAGE DISCHARGE.--59 years (1910-26, 1930-73), 38.5 ft^3/s (0.109 m^3/s), 27,890 acre-ft/yr (34.4 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 116 ft^3/s (3.29 m^3/s) Oct. 31, 1921; no flow at times.

REMARKS.--Records excellent. Lowrie ditch receives water from Center ditch at Nailiilihaele Stream and diverts from additional streams westward to Maliko Gulch for irrigation in central Maui.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	0	0	8.2	91	87	76	12	22	14	4.4	2.5
2	5.7	2.8	0	7.4	53	78	59	14	19	20	4.2	2.7
3	78	17	0	7.1	58	62	40	12	19	27	4.0	2.4
4	83	.60	.60	7.7	34	78	68	11	20	10	4.6	2.4
5	53	6.4	.24	22	37	76	37	10	25	16	6.9	2.4
6	78	5.0	.40	7.7	44	78	30	9.6	18	15	6.4	3.0
7	78	22	.29	95	35	78	27	9.6	13	13	7.4	2.8
8	71	10	.76	77	26	70	27	9.3	17	12	5.5	2.4
9	5.7	7.9	3.7	40	91	66	45	30	14	17	4.2	2.1
10	.06	8.2	1.0	46	31	51	68	10	13	18	3.8	1.9
11	0	20	.84	49	25	80	51	9.3	14	27	3.7	1.8
12	0	2.8	3.8	35	30	75	27	37	11	14	3.5	1.8
13	0	.93	4.2	19	88	60	29	72	18	18	3.7	2.1
14	0	.46	1.0	16	41	36	24	41	25	16	3.5	3.3
15	0	.12	1.6	26	33	45	23	18	16	19	3.3	2.4
16	0	0	1.0	20	30	77	32	22	28	16	3.3	2.2
17	0	0	.76	18	22	78	84	66	25	15	3.3	2.1
18	0	0	.93	15	20	77	31	96	13	14	3.1	1.9
19	0	0	54	21	16	77	39	77	15	12	3.7	1.8
20	0	0	9.1	14	16	74	16	69	16	10	3.7	8.8
21	0	0	5.0	11	88	70	30	63	15	6.9	3.1	4.8
22	0	0	4.4	17	28	65	16	56	8.8	5.5	3.0	3.1
23	0	0	4.2	15	39	73	26	31	8.2	8.2	2.7	22
24	0	0	5.5	13	16	77	26	60	8.2	6.6	2.5	9.1
25	0	0	7.4	10	105	74	20	27	14	5.9	2.5	17
26	2.5	0	9.1	35	87	66	19	20	14	5.5	2.7	17
27	7.9	0	5.2	95	62	74	14	18	14	5.5	2.8	17
28	.46	0	4.8	108	38	77	14	32	14	5.2	2.5	7.9
29	.34	0	7.7	93	------	77	22	35	14	5.0	2.8	30
30	.20	0	6.9	82	------	81	15	26	14	4.8	3.0	19
31	0	------	9.3	80	------	78	------	24	------	4.6	2.7	------
TOTAL	470.46	104.21	153.72	1,110.1	1,284	2,215	1,035	1,026.8	483.2	386.7	116.5	199.7
MEAN	15.2	3.47	4.96	35.8	45.9	71.5	34.5	33.1	16.1	12.5	3.76	6.66
MAX	83	22	54	108	105	87	84	96	28	27	7.4	30
MIN	0	0	0	7.1	16	36	14	9.3	8.2	4.6	2.5	1.8
AC-FT	933	207	305	2,200	2,550	4,390	2,050	2,040	958	767	231	396

CAL YR 1972 TOTAL 6,548.09 MEAN 17.9 MAX 94 MIN 0 AC-FT 12,990
WTR YR 1973 TOTAL 8,585.39 MEAN 23.5 MAX 108 MIN 0 AC-FT 17,030

16594000 Haiku ditch at Honopou Gulch, near Kailua

LOCATION (revised).--Lat 20°55'07", long 156°14'58", on right bank on west side of Honopou Gulch, 160 ft (49 m) below new Government Road, 2.5 mi (4.0 km) northwest of Kailua, and 5.0 mi (8.0 km) east of Haiku.

PERIOD OF RECORD.--January 1910 to December 1928, February 1930 to current year. Published as "at Peahi weir, near Huelo" prior to July 1919, as "at Manawai Gulch, near Peahi" July 1919 to December 1928, and as "at Kapalalaea Gulch, near Huelo" February 1930 to January 1940. Monthly discharge only for some periods, published in WSP 1319.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 421.54 ft (128.485 m) above mean sea level. Prior to Oct. 7, 1914, at site at Peahi weir on old Haiku ditch at different datum. Oct. 7, 1914, to Dec. 31, 1928, at site 2.9 mi (4.7 km) downstream at different datum. Feb. 19, 1930, to Feb. 20, 1940, at site 0.9 mi (1.4 km) downstream at different datum.

AVERAGE DISCHARGE.--58 years (1910-11, 1913-14, 1915-28, 1930-73), 26.3 ft^3/s (0.745 m^3/s), 19,050 acre-ft/yr (23.5 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 209 ft^3/s (5.92 m^3/s) Nov. 13, 1934, Jan. 8, 9, Feb. 25-27, 1935, Jan. 27, 1938; no flow at times.

REMARKS.--Records excellent. Ditch diverts from all streams between Nailiilihaele Stream and Maliko Gulch for irrigation in central Maui.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.91	17	13	4.4	94	53	55	2.0	2.0	1.4	1.0	.81
2	.86	18	12	3.7	28	3.9	14	1.9	1.9	1.9	1.0	.84
3	84	62	15	1.6	29	.13	10	1.9	1.9	2.1	1.0	.82
4	73	39	12	.82	4.5	.11	48	1.8	2.0	1.5	1.0	.85
5	16	38	11	.78	2.6	7.0	10	1.8	2.0	1.7	1.2	.87
6	74	37	11	.77	2.7	54	8.7	1.7	2.0	1.3	1.0	.94
7	53	111	10	1.3	3.2	47	7.7	1.6	1.9	1.2	1.2	.88
8	11	109	11	.75	5.4	17	6.6	1.7	1.8	1.2	1.0	.79
9	26	96	54	.81	68	.17	11	2.6	1.6	1.4	.94	.76
10	32	70	13	.69	4.4	.18	51	1.8	1.5	2.2	.88	.74
11	26	105	22	.60	2.4	.33	34	1.8	1.5	9.3	.82	.72
12	22	55	19	.58	4.2	13	8.5	4.6	1.6	4.1	.82	.73
13	29	41	16	.55	67	12	8.0	52	1.8	3.2	.82	.83
14	21	40	14	.55	6.6	10	6.5	24	1.8	1.9	.88	.85
15	18	96	18	2.6	4.7	23	4.6	4.8	1.8	1.8	.88	.75
16	15	102	13	5.2	3.7	99	4.5	4.2	2.9	1.8	.88	.84
17	14	57	7.5	6.3	1.9	97	40	62	2.1	1.9	.88	.74
18	16	75	12	5.6	1.8	89	6.1	103	1.7	1.6	.88	.68
19	14	44	49	5.1	1.8	78	5.5	61	1.6	1.6	.94	.68
20	12	39	21	2.9	5.6	62	4.4	42	1.5	1.6	.94	1.3
21	12	43	43	2.4	77	53	2.9	24	1.5	1.5	.88	.79
22	13	35	25	2.3	3.2	26	2.5	31	1.4	1.5	.88	.84
23	13	15	5.1	2.2	4.9	60	2.5	6.2	1.3	1.4	.88	1.9
24	11	14	6.3	2.2	4.3	78	2.4	29	1.3	1.4	.85	3.0
25	11	29	9.0	2.1	79	56	2.2	5.9	1.3	1.4	.83	1.6
26	26	35	9.4	4.3	61	15	2.2	4.9	1.3	1.3	.79	.76
27	68	22	21	36	31	53	2.3	4.3	1.3	1.1	.83	.73
28	28	15	22	6.2	11	77	2.2	4.5	1.2	1.1	.80	.65
29	30	14	24	52	------	58	4.2	6.2	1.2	1.0	.88	2.1
30	30	13	15	86	------	74	2.3	2.3	1.2	.98	.86	.81
31	22	------	4.9	82	------	87	------	2.1	------	1.0	.82	------
TOTAL	821.77	1,486	538.2	323.01	613.1	1,302.82	369.8	500.6	49.9	58.38	28.26	29.60
MEAN	26.5	49.5	17.4	10.4	21.9	42.0	12.3	16.1	1.66	1.88	.91	.99
MAX	84	111	54	86	94	99	55	103	2.9	9.3	1.2	3.0
MIN	.86	13	4.9	.55	1.8	.11	2.2	1.6	1.2	.98	.79	.65
AC-FT	1,630	2,950	1,070	641	1,220	2,580	735	993	99	116	56	59

CAL YR 1972	TOTAL 5,042.82	MEAN 13.8	MAX 111	MIN .68	AC-FT 10,000
WTR YR 1973	TOTAL 6,121.44	MEAN 16.8	MAX 111	MIN .11	AC-FT 12,140

16599500 Opana tunnel at Kailiili

LOCATION.--Lat 20°51'04", long 156°16'17", on left bank at tunnel outlet, 0.3 mi (0.5 km) north of Kailiili, and 2.7 mi (4.3 km) east of Makawao.

PERIOD OF RECORD.--May 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 2,340 ft (713 m), from topographic map.

AVERAGE DISCHARGE.--8 years, 3.39 ft^3/s (0.0960 m^3/s), 2,460 acre-ft/yr (3.03 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 13 ft^3/s (0.37 m^3/s) Apr. 1, 1969, Apr. 9, 10, 1972; minimum daily, 0.12 ft^3/s (0.003 m^3/s) Oct. 13-18, Nov. 4-7, 1971, Sept. 17-21, 1973.

REMARKS.--Records good. Tunnel diverts from Opana Gulch for domestic use in the Kokomo, Makawao and Pukalani areas. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.47	.94	1.4	4.9	8.8	9.2	2.4	2.2	.86	.27	.17
2	.17	.58	.86	.94	3.8	8.8	8.4	2.4	2.0	1.1	.23	.14
3	6.9	1.0	.94	.72	3.3	9.0	8.1	2.2	2.0	1.8	.23	.14
4	9.2	.72	.94	.65	3.0	9.2	9.6	2.0	2.3	1.3	.23	.14
5	4.0	.86	.86	.58	2.5	9.0	8.6	1.8	2.2	1.0	.32	.14
6	5.6	1.4	.79	.52	2.3	10	7.9	1.8	2.0	.94	.32	.17
7	4.5	8.0	.72	4.3	2.0	11	7.3	1.8	1.8	.79	.52	.17
8	2.4	6.8	2.2	4.4	4.0	9.6	7.7	1.6	1.8	.72	.42	.17
9	1.6	6.2	7.7	2.0	11	9.0	7.3	2.0	1.6	.65	.37	.14
10	1.3	3.6	3.0	1.4	7.3	8.8	8.6	1.6	1.4	.94	.32	.14
11	1.1	6.6	1.8	1.1	4.2	12	8.1	1.8	1.4	1.2	.32	.14
12	.94	3.7	1.4	1.0	3.4	9.4	6.2	2.0	1.4	.79	.32	.14
13	.86	2.5	1.1	1.0	3.8	8.6	5.5	2.2	2.4	.65	.27	.14
14	.72	2.0	.94	.94	3.0	8.1	4.8	2.0	2.2	.65	.27	.17
15	.65	6.4	4.9	.79	2.6	7.9	4.5	1.6	1.4	.72	.23	.14
16	.58	8.1	2.0	.72	2.4	9.2	5.4	1.4	1.6	.65	.23	.14
17	.52	4.4	1.2	.79	2.3	12	8.1	7.4	1.6	.65	.20	.12
18	.47	3.3	1.0	.72	2.0	11	5.2	12	1.4	.65	.20	.12
19	.42	2.6	7.6	.86	2.0	11	4.4	9.8	1.3	.58	.20	.12
20	.42	2.2	4.2	.72	4.2	9.6	3.8	8.8	1.2	.52	.20	.12
21	.42	2.0	2.2	.65	10	9.4	3.9	8.1	1.1	.47	.20	.12
22	.58	1.6	1.6	.58	5.5	8.8	3.6	7.5	1.0	.47	.20	.14
23	.52	1.6	1.4	.58	4.2	8.8	3.3	4.9	1.0	.42	.20	.23
24	.42	1.4	1.2	.52	4.3	10	3.1	4.2	.94	.42	.17	.20
25	.37	1.2	1.2	.52	11	8.6	2.9	3.6	.94	.42	.17	.17
26	1.0	2.0	1.6	.79	8.8	8.2	3.2	3.0	.86	.42	.17	.14
27	3.8	1.6	1.2	9.5	6.6	8.1	3.2	2.8	.86	.37	.20	.14
28	1.1	1.3	1.0	10	6.0	9.6	2.8	4.7	.86	.37	.17	.14
29	.79	1.1	1.1	9.6	------	9.6	2.8	5.3	.79	.32	.17	.65
30	.65	1.0	.94	7.3	------	11	2.6	3.1	.72	.32	.17	.58
31	.52	------	.94	5.7	------	11	------	2.4	------	.27	.17	------
TOTAL	52.72	86.23	59.47	71.29	130.4	295.1	170.1	118.2	44.27	21.43	7.66	5.38
MEAN	1.70	2.87	1.92	2.30	4.66	9.52	5.67	3.81	1.48	.69	.25	.18
MAX	9.2	8.1	7.7	10	11	12	9.6	12	2.4	1.8	.52	.65
MIN	.17	.47	.72	.52	2.0	7.9	2.6	1.4	.72	.27	.17	.12
AC-FT	105	171	118	141	259	585	337	234	88	43	15	11

CAL YR 1972 TOTAL 702.83 MEAN 1.92 MAX 13 MIN .17 AC-FT 1,390
WTR YR 1973 TOTAL 1,062.25 MEAN 2.91 MAX 12 MIN .12 AC-FT 2,110

16620000 Honokohau Stream near Honokohau

LOCATION.--Lat 20°57'48", long 156°35'22", on right bank 1,000 ft (305 m) upstream from intake of Honokohau ditch and 4.1 mi (6.6 km) southeast of Honokohau.

DRAINAGE AREA.--4.11 mi^2 (10.64 km^2).

PERIOD OF RECORD.--September, November and December 1911 (combined flow of stream and ditch below point of diversion), March 1913 to September 1920, May 1922 to current year. Monthly discharge only for some periods, published in WSP 1319.

GAGE.--Water-stage recorder and masonry control. Altitude of gage is 870 ft (265 m), from topographic map. Prior to Mar. 7, 1913, nonrecording gage at site just below Honokohau ditch intake at different datum.

AVERAGE DISCHARGE.--57 years (1913-19, 1922-73), 40.0 ft^3/s (1.133 m^3/s), 28,980 acre-ft/yr (35.7 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 990 ft^3/s (28.0 m^3/s) Oct. 3 (gage height, 5.20 ft (1.585 m), from rating curve extended above 480 ft^3/s (13.6 m^3/s); minimum, 11 ft^3/s (0.31 m^3/s) on many days.
Period of record: Maximum discharge, 3,740 ft^3/s (106 m^3/s) Dec. 14, 1942, Aug. 30, 1957, gage height, 8.40 ft (2.560 m), from rating curve extended above 480 ft^3/s (13.6 m^3/s); minimum, 8.4 ft^3/s (0.24 m^3/s) May 1, 1945, Jan. 5, 1946.

REMARKS.--Records good. No diversion above station. All medium and low flow, together with the inflow from 2 development tunnels below station, is diverted into Honokohau ditch. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS.--WSP 1937: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	13	12	17	46	95	22	21	18	42	14	13
2	12	53	12	12	43	37	20	23	17	85	14	15
3	369	54	13	12	40	23	18	19	17	29	14	13
4	68	15	12	12	17	29	41	18	25	17	14	14
5	18	51	12	11	14	43	19	18	28	50	19	22
6	21	37	11	12	13	45	17	17	23	18	20	22
7	23	105	11	46	13	118	18	18	21	16	38	17
8	14	38	37	40	26	24	20	38	18	27	25	13
9	13	32	23	14	81	18	48	110	16	47	15	13
10	13	21	13	12	16	32	169	49	15	109	14	12
11	12	129	12	12	13	121	33	44	16	41	14	12
12	12	17	12	12	18	28	34	67	17	29	14	12
13	12	14	11	12	21	23	31	49	40	20	14	14
14	12	14	11	11	15	35	20	24	29	25	14	21
15	12	28	11	11	12	40	20	20	18	51	13	13
16	12	20	11	11	12	90	24	19	126	20	14	15
17	12	32	11	12	12	189	26	70	26	26	14	13
18	12	38	112	12	12	68	18	91	17	17	14	12
19	12	17	44	11	12	50	18	40	18	16	17	12
20	12	13	14	15	79	30	41	34	17	15	15	13
21	12	13	12	13	93	33	44	46	16	15	14	12
22	12	13	12	11	14	42	28	25	16	15	13	20
23	12	13	12	11	27	32	29	20	15	15	13	177
24	12	12	14	13	35	103	21	50	15	15	13	26
25	11	12	16	12	183	33	18	19	15	16	13	18
26	61	18	29	67	61	39	25	17	14	14	13	14
27	66	13	17	175	17	31	30	17	15	14	14	14
28	13	12	15	67	14	98	30	26	15	15	13	13
29	16	12	30	53	------	47	42	18	14	15	14	51
30	13	12	13	73	------	188	22	20	17	14	14	15
31	12	------	40	26	------	73	------	26	------	14	13	------
TOTAL	928	871	615	828	959	1,853	946	1,073	674	866	477	651
MEAN	29.9	29.0	19.8	26.7	34.3	59.8	31.5	34.6	22.5	27.9	15.4	21.7
MAX	369	129	112	175	183	189	169	110	126	109	38	177
MIN	11	12	11	11	12	18	17	17	14	14	13	12
AC-FT	1,840	1,730	1,220	1,640	1,900	3,680	1,880	2,130	1,340	1,720	946	1,290

CAL YR 1972 TOTAL 9,566.2 MEAN 26.1 MAX 369 MIN 9.7 AC-FT 18,970
WTR YR 1973 TOTAL 10,741 MEAN 29.4 MAX 369 MIN 11 AC-FT 21,300

PEAK DISCHARGE (BASE, 1,100 CFS).--No peak above base.

HAWAII, ISLAND OF MAUI

16638500 Kahoma Stream at Lahaina

LOCATION.--Lat 20°53'10", long 156°40'36", on right bank 0.2 mi (0.3 km) west of Kelawea, 0.6 mi (1.0 km) northeast of Lahaina, 0.6 mi (1.0 km) downstream from Kanaha Stream, and 0.9 mi (1.4 km) upstream from mouth.

DRAINAGE AREA.--5.22 mi^2 (13.52 km^2).

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 90 ft (27 m), from topographic map.

AVERAGE DISCHARGE.--10 years (1963-73), 4.40 ft^3/s (0.125 m^3/s), 3,190 acre-ft/yr (3.93 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 980 ft^3/s (27.8 m^3/s) Mar. 30, gage height, 7.85 ft (2.393 m), from rating curve extended as explained below; no flow many days.
Period of record: Maximum discharge, 2,490 ft^3/s (70.5 m^3/s) July 11, 1965, gage height, 11.03 ft (3.362 m), from rating curve extended above 21 ft^3/s (0.59 m^3/s) on basis of slope-area measurements at gage heights 5.90 (1.798), 6.01 (1.832), 7.58 (2.310), 8.07 (2.460) and 11.03 ft (3.362 m); no flow many days each year.
Maximum discharge of flood of May 13, 1960, 7,750 ft^3/s (219 m^3/s), by slope-area measurement at site 0.5 mi (0.8 km) upstream.

REMARKS.--Records fair except those below 10 ft^3/s (0.28 m^3/s), which are poor. Diversion above station by Pioneer Mill Co. for irrigation of sugarcane. Diversion from Kanaha Stream above station by Maui County Board of Water Supply for domestic use. Recording rain gage located at station.

REVISIONS (WATER YEARS).--WSP 2137: 1963-65(P).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	0	1.6	.01	.03	0	0	0		0
2	0	0	0	0	.03	.06	.01	0	0	14		0
3	.32	.17	.07	0	0	18	0	0	0	2.9		0
4	.77	0	0	0	0	4.6	0	0	0	0		0
5	0	9.0	.10	0	0	11	0	0	0	0		0
6	0	6.4	0	0	0	12	.01	0	0	0		0
7	0	13	0	.06	0	69	0	0	0	0		0
8	0	1.2	0	.02	0	9.3	0	0	0	0		0
9	0	1.0	0	0	7.2	.17	0	0	0	.14		0
10	0	.05	0	.02	.02	14	0	0	0	1.1		0
11	0	1.4	0	0	.02	38	0	0	0	.02		0
12	0	0	.05	0	.01	2.3	0	0	0	0		0
13	0	.02	.05	.04	.03	.04	0	0	1.2	0		0
14	0	0	0	0	.05	.03	0	0	.74	0		0
15	0	0	0	.06	0	0	0	0	0	0		0
16	0	0	0	0	0	21	0	0	4.7	0		0
17	0	0	0	0	0	162	0	17	1.6	0		0
18	0	0	4.1	0	0	40	0	25	0	0		0
19	0	0	.34	0	0	20	0	3.9	0	0		0
20	0	0	.07	0	.03	.04	2.4	.06	0	0		0
21	0	0	.01	0	.57	.08	.30	.58	0	0		0
22	0	0	0	0	0	0	0	0	0	0		0
23	0	0	0	0	0	.32	0	0	0	0		5.5
24	0	0	0	0	0	55	0	0	0	0		.05
25	0	0	0	0	.06	5.7	.02	0	0	0		0
26	0	0	.04	0	.03	1.7	0	0	0	0		0
27	.64	0	.02	3.5	0	8.6	.03	0	0	0		0
28	0	0	.02	6.5	.09	17	.02	0	0	0		0
29	0	0	0	12	------	15	0	0	.04	0		0
30	0	0	0	3.9	------	188	0	0	0	0		0
31	0	------	.05	.25	------	27	------	0	------	0		------
TOTAL	1.73	32.24	4.92	26.35	9.74	739.95	2.82	46.54	8.28	18.16	0	5.55
MEAN	.056	1.07	.16	.85	.35	23.9	.094	1.50	.28	.59	0	.19
MAX	.77	13	4.1	12	7.2	188	2.4	25	4.7	14	0	5.5
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	3.4	64	9.8	52	19	1,470	5.6	92	16	36	0	11

CAL YR 1972 TOTAL 856.03 MEAN 2.34 MAX 127 MIN 0 AC-FT 1,700
WTR YR 1973 TOTAL 896.28 MEAN 2.46 MAX 188 MIN 0 AC-FT 1,780

PEAK DISCHARGE (BASE, 590 CFS).--Mar. 17(0700) 602 cfs (7.22 ft); Mar. 30 (1730) 980 cfs (7.85 ft).

16646200 Olowalu Stream at Olowalu

LOCATION.--Lat 20°49'23", long 156°37'15", on downstream side of center pier of plantation road bridge, 0.6 mi (1.0 km) northeast of Olowalu, and 5.5 mi (8.8 km) southeast of Lahaina.

DRAINAGE AREA.--4.08 mi^2 (10.57 km^2).

PERIOD OF RECORD.--May 1963 to June 30, 1973 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder. Altitude of gage is 130 ft (40 m), from topographic map.

AVERAGE DISCHARGE.--9 years (1963-72), 4.02 ft^3/s (0.114 m^3/s), 2,910 acre-ft/yr (3.59 hm^3/yr).

EXTREMES.--Maximum discharge during period October 1972 to June 1973, 181 ft^3/s (5.13 m^3/s) Mar. 30, gage height, 2.65 ft (0.808 m), from rating curve extended as explained below; no flow most of time.
Period of record: Maximum discharge, 1,300 ft^3/s (36.8 m^3/s) Mar. 24, 1967, gage height, 5.40 ft (1.646 m), from rating curve extended above 66 ft^3/s (1.87 m^3/s) on basis of slope-area measurements at gage heights 3.39 (1.033), 3.58 (1.091), 3.72 (1.134), 5.31 (1.618) and 5.40 ft (1.646 m); no flow most of time each year.
Maximum discharge of flood of Nov. 2, 1961, 743 ft^3/s (21.0 m^3/s), by slope-area measurement.

REMARKS.--Records good. All low flow is diverted 1.5 mi (2.4 km) above station by Olowalu ditch for domestic use and irrigation of sugarcane in vicinity of Olowalu. Recording rain gage located at station. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1972 TO JUNE 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	0	0	0	9.4	0				
2	0	0	0	0	0	0	.84	0				
3	26	0	0	0	0	0	0	0				
4	.30	0	0	0	0	0	0	0				
5	0	0	0	0	0	0	0	0				
6	0	0	0	0	0	0	0	0				
7	0	0	0	0	0	3.9	0	0				
8	0	0	0	0	0	0	0	0				
9	0	0	0	0	0	0	0	0				
10	0	0	0	0	0	0	0	0				
11	0	6.8	0	0	0	5.1	0	0				
12	0	.81	0	0	0	.96	0	0				
13	0	0	0	0	0	0	0	0				
14	0	0	0	0	0	0	0	0				
15	0	0	0	0	0	0	0	0				
16	0	0	0	0	0	1.0	0	0				
17	0	0	0	0	0	80	0	0				
18	0	0	37	0	0	14	0	1.3				
19	0	0	.44	0	0	8.7	0	0				
20	0	0	0	0	0	0	0	0				
21	0	0	0	0	1.6	0	0	0				
22	0	0	0	0	0	0	0	0				
23	0	0	0	0	0	0	0	0				
24	0	0	0	0	0	.09	0	0				
25	0	0	0	0	1.3	.02	0	0				
26	0	0	0	0	0	0	0	0				
27	0	0	0	2.6	0	0	0	0				
28	0	0	0	4.1	0	7.4	0	0				
29	0	0	0	.32	------	0	0	0				
30	0	0	0	.17	------	53	0	0				
31	0	------	.33	.04	------	61	------	0	------			
TOTAL	26.30	7.61	37.77	7.23	2.9	235.17	10.24	1.3	0			
MEAN	.85	.25	1.22	.23	.10	7.59	.34	.042	0			
MAX	26	6.8	37	4.1	1.6	80	9.4	1.3	0			
MIN	0	0	0	0	0	0	0	0	0			
AC-FT	52	15	75	14	5.8	466	20	2.6	0			

CAL YR 1972 TOTAL 1,202.00 MEAN 3.28 MAX 278 MIN 0 AC-FT 2,380

PEAK DISCHARGE (BASE, 340 CFS).--No peak above base.

16700000 Waiakea Stream near Mountain View

LOCATION.--Lat 19°38'30", long 155°10'28", on left bank 200 ft (61 m) upstream from Olaa Flume Road, 7.3 mi (11.7 km) northwest of Mountain View, and 8.0 mi (12.9 km) southwest of Hilo Post Office.

DRAINAGE AREA.--17.4 mi^2 (45.1 km^2).

PERIOD OF RECORD.--September 1930 to current year. Prior to July 1960, published as "at middle flume house, near Mountain View."

GAGE.--Water-stage recorder and combined Parshall flume and concrete-weir control. Datum of gage is 1,934 ft (589 m) above mean sea level (by stadia survey). Prior to Jan. 21, 1938, at datum 0.23 ft (0.070 m) lower.

AVERAGE DISCHARGE.--43 years, 11.9 ft^3/s (0.337 m^3/s), 8,620 acre-ft/yr (10.6 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 142 ft^3/s (4.02 m^3/s) Nov. 18, gage height, 3.64 ft (1.109 m), from rating curve extended above 160 ft^3/s (4.53 m^3/s); minimum, 0.36 ft^3/s (0.010 m^3/s) Sept. 12, 13. Period of record: Maximum discharge, 565 ft^3/s (16.0 m^3/s) Mar. 14, 1942, Aug. 26, 1970, from rating curve extended above 160 ft^3/s (4.53 m^3/s); maximum gage height, 4.45 ft (1.356 m) Aug. 26, 1970; no flow at times.

REMARKS.--Records good. No diversion above station. Large part of flow comes from 3 tunnels. Selected determinations of minor elements for the water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 2137: 1939(M), 1942(M), 1944-45(M), 1947(M), 1949(P), 1950-51(M), 1952-53(P), 1955(P), 1956(M), 1957-58(P), 1960(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	13	12	2.9	7.9	7.6	52	12	17	4.6	2.2	.65
2	5.1	14	11	2.5	8.6	8.8	46	11	16	4.4	2.0	.60
3	15	20	9.9	2.9	8.9	9.6	39	11	15	4.5	1.9	.56
4	14	16	9.2	2.4	7.8	12	33	10	14	6.2	1.8	.52
5	11	20	8.3	2.1	7.0	10	28	9.6	13	6.5	1.7	.52
6	10	22	7.6	2.0	6.3	15	25	9.0	12	5.8	1.6	.48
7	14	34	7.0	1.9	5.8	28	21	8.9	11	5.4	1.5	.44
8	13	35	6.4	1.7	5.3	29	19	8.2	10	5.3	1.4	.40
9	13	33	6.1	1.7	5.7	32	18	8.5	9.7	5.2	1.4	.40
10	13	32	5.7	1.6	5.1	34	22	8.4	9.2	5.1	1.2	.40
11	12	55	5.3	1.4	4.7	32	19	8.4	8.5	5.2	3.0	.40
12	11	46	5.0	1.3	4.5	37	19	7.8	7.9	4.9	2.3	.40
13	11	42	4.7	1.3	4.6	38	22	7.5	7.3	4.7	2.2	1.5
14	9.6	36	4.5	1.2	4.4	36	20	7.2	6.9	4.6	2.3	4.9
15	8.9	35	4.5	1.0	4.1	36	20	7.1	6.4	5.5	2.0	2.0
16	8.8	36	4.2	1.0	4.0	41	19	6.7	10	4.6	1.7	1.5
17	7.9	44	4.0	.95	3.8	54	18	6.7	12	4.9	1.6	1.4
18	7.5	59	3.8	.90	3.5	48	18	7.7	9.9	4.4	1.5	1.1
19	7.0	52	3.6	1.2	3.4	48	17	9.9	8.9	4.2	1.4	1.0
20	6.5	46	3.3	2.0	3.1	44	16	8.8	8.5	4.0	1.3	1.4
21	6.6	40	3.0	1.3	5.9	43	16	8.5	8.0	3.9	1.2	1.0
22	8.9	34	2.9	1.1	4.1	36	15	8.9	7.5	3.8	1.2	.95
23	13	29	3.0	1.0	4.0	33	15	9.3	7.0	3.5	1.1	7.4
24	14	24	2.8	.95	3.9	43	15	12	6.5	3.4	1.0	8.1
25	16	20	2.6	.90	4.4	46	14	12	6.0	3.1	1.1	6.2
26	16	18	2.4	.80	7.5	46	14	12	6.0	3.0	.95	5.2
27	17	17	2.6	4.6	7.1	48	14	12	5.5	2.9	.90	4.9
28	16	16	4.0	9.1	6.7	44	14	16	5.3	2.8	.80	4.2
29	16	14	3.6	11	------	42	13	17	5.0	2.6	.85	5.4
30	15	13	3.1	8.8	------	60	13	17	4.8	2.4	.85	4.8
31	14	------	2.9	8.5	------	58	------	17	------	2.3	.75	------
TOTAL	357.1	917	159.0	82.00	152.1	1,099.0	634	316.1	274.8	133.7	46.70	68.72
MEAN	11.5	30.6	5.13	2.65	5.43	35.5	21.1	10.2	9.16	4.31	1.51	2.29
MAX	17	59	12	11	8.9	60	52	17	17	6.5	3.0	8.1
MIN	5.1	13	2.4	.80	3.1	7.6	13	6.7	4.8	2.3	.75	.40
AC-FT	708	1,820	315	163	302	2,180	1,260	627	545	265	93	136

CAL YR 1972 TOTAL 4,551.6 MEAN 12.4 MAX 59 MIN 1.4 AC-FT 9,030
WTR YR 1973 TOTAL 4,240.22 MEAN 11.6 MAX 60 MIN .40 AC-FT 8,410

PEAK DISCHARGE (BASE, 100 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 3	1700	3.62	136	11-18	0030	3.64	142
11-11	0100	3.48	106	3-30	1900	3.53	116

16701750 Wailuku River near Humuula

LOCATION.--Lat 19°42'55", long 155°18'36", on right bank 300 ft (91 m) upstream from trail terminus, 10 mi (16 km) east of Humuula, and 14 mi (22 km) west of Hilo.

DRAINAGE AREA.--34.8 mi^2 (90.1 km^2).

PERIOD OF RECORD.--February 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,250 ft (1,295 m), from topographic map.

AVERAGE DISCHARGE.--8 years, 2.67 ft^3/s (0.0756 m^3/s), 1,930 acre-ft/yr (2.38 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 614 ft^3/s (17.4 m^3/s) Mar, 30, gage height, 6.58 ft (2,006 m), from rating curve extended above 18 ft^3/s (0.51 m^3/s); no flow for many days.
Period of record: Maximum discharge, 2,600 ft^3/s (73.6 m^3/s) Aug. 8, 1967, gage height, 10.27 ft (3.130 m), from rating curve extended above 18 ft^3/s (0.51 m^3/s); no flow at times in 1965, 1969-73.

REMARKS.--Records good except those above 40 ft^3/s (1.13 m^3/s), which are poor. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.16	.45	.03	.05	.04	12	.42	.39	.09	.04	.02
2	.06	.73	.39	.03	.03	.08	7.0	.39	.36	.09	.04	.02
3	2.5	4.5	.36	.03	.04	.04	5.1	.36	.36	.16	.04	0
4	.99	.88	.30	.03	.03	.06	3.8	.39	.33	.45	.03	0
5	.26	.64	.26	.03	.01	.03	2.5	.33	.30	.45	.03	0
6	.13	.54	.24	.02	0	.63	1.7	.30	.26	.20	.03	0
7	.10	2.9	.20	.02	0	21	1.2	.33	.24	.13	.02	0
8	.08	1.5	.18	.02	0	5.9	.96	.26	.20	.11	.02	0
9	.09	1.0	.16	.01	0	2.8	.88	.26	.18	.11	.02	0
10	.06	1.0	.15	0	0	.96	1.7	.28	.16	.10	.02	0
11	.05	61	.14	0	0	.84	1.2	.33	.16	.09	.05	0
12	.04	7.1	.13	0	0	.60	.88	.33	.14	.08	.13	0
13	.06	2.9	.12	0	0	.96	.96	.30	.13	.08	.07	.10
14	.04	1.7	.11	0	0	.45	.88	.28	.13	.08	.08	1.2
15	.04	1.9	.13	0	0	.42	.80	.26	.12	.11	.06	.20
16	.03	16	.11	0	0	.72	.92	.22	.26	.10	.05	.12
17	.03	34	.10	0	0	27	.76	.26	.48	.11	.05	.11
18	.02	18	.09	0	0	5.1	.64	.39	.20	.08	.05	.08
19	.02	7.0	.10	0	0	2.3	.54	.51	.14	.08	.04	.08
20	.01	4.8	.09	0	0	1.3	.54	.28	.13	.08	.03	.07
21	.02	3.5	.06	.02	0	3.2	.72	.26	.12	.08	.03	.07
22	.10	2.3	.06	0	0	1.3	.80	.51	.11	.08	.05	.06
23	.39	1.6	.06	0	0	1.3	.92	.54	.11	.08	.15	.30
24	1.0	1.2	.06	0	0	11	.60	2.1	.11	.07	.07	.48
25	.22	.92	.06	0	0	4.0	.51	.72	.11	.07	.10	.24
26	.13	.80	.05	0	.02	1.7	.51	.54	.10	.06	.06	.13
27	.80	.72	.05	0	.05	1.8	.51	.45	.09	.05	.05	.11
28	.22	.64	.06	.06	.04	1.6	.51	.60	.13	.05	.05	.10
29	.12	.57	.05	.07	------	1.6	.54	1.3	.11	.06	.04	.13
30	.15	.51	.04	.05	------	94	.48	.68	.10	.05	.03	.12
31	.28	------	.04	.07	------	65	------	.45	------	.05	.03	------
TOTAL	8.24	181.01	4.40	.49	.27	257.73	51.06	14.63	5.76	3.48	1.56	3.74
MEAN	.27	6.03	.14	.016	.010	8.31	1.70	.47	.19	.11	.050	.12
MAX	2.5	61	.45	.07	.05	94	12	2.1	.48	.45	.15	1.2
MIN	.01	.16	.04	0	0	.03	.48	.22	.09	.05	.02	0
AC-FT	16	359	8.7	1.0	.5	511	101	29	11	6.9	3.1	7.4

CAL YR 1972 TOTAL 304.71 MEAN .83 MAX 61 MIN 0 AC-FT 604
WTR YR 1973 TOTAL 532.37 MEAN 1.46 MAX 94 MIN 0 AC-FT 1,060

PEAK DISCHARGE (BASE, 310 CFS).--Mar. 30 (2300) 614 cfs (6.58 ft).

16701800 Wailuku River near Kaumana

LOCATION.--Lat 19°43'15", long 155°16'08", on right bank 0.2 mi (0.3 km) upstream from Waipahoehoe Gulch and 8.4 mi (13.5 km) west of Kaumana.

DRAINAGE AREA.--43.4 mi^2 (112.4 km^2).

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,520 ft (1,073 m), from topographic map.

AVERAGE DISCHARGE.--7 years, 26.1 ft^3/s (0.739 m^3/s), 18,910 acre-ft/yr (23.3 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 3,120 ft^3/s (88.4 m^3/s) Mar. 30, gage height, 8.32 ft (2.536 m), from rating curve extended above 2,200 ft^3/s (62.3 m^3/s); minimum, 0.11 ft^3/s (0.003 m^3/s) Sept. 6, 7, 11-13. Period of record: Maximum discharge, 9,580 ft^3/s (271 m^3/s) Aug. 8, 1967, gage height, 13.35 ft (4.069 m), from rating curve extended above 2,200 ft^3/s (62.3 m^3/s); no flow Mar. 13, 14, 1970.

REMARKS.--Records good except those for periods of no gage-height record, which are fair. No diversion above station. Recording rain gage located at station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	4.1	2.7	.40	1.0	2.0	62	3.7	3.0	.85	.40	.15
2	1.0	18	2.4	.40	1.0	3.5	36	3.1	2.5	.85	.40	.15
3	86	77	2.2	.35	2.0	1.5	22	3.0	2.5	.95	.40	.15
4	14	13	1.8	.35	.70	2.5	16	3.7	2.0	5.5	.35	.15
5	4.1	11	1.6	.35	.60	1.0	13	2.8	2.0	5.0	.35	.13
6	3.4	9.7	1.4	.30	.50	20	10	2.4	1.5	1.0	.35	.11
7	3.1	61	1.4	.30	.35	350	8.3	2.4	1.5	.95	.30	.11
8	2.1	24	1.2	.30	.30	150	6.6	2.0	1.0	.90	.30	.15
9	2.2	18	1.1	.25	.50	25	8.3	1.8	1.0	.90	.25	.15
10	1.7	22	1.0	.25	.45	15	22	2.0	.95	.85	.25	.13
11	1.4	573	.97	.25	.30	10	15	2.1	.95	.85	.45	.13
12	1.3	76	.94	.25	.25	15	10	2.3	.90	.80	.90	.11
13	2.5	27	.88	.20	.45	18	20	1.7	.90	.80	.50	1.8
14	1.4	18	.85	.20	.35	11	15	2.0	.90	.75	.30	21
15	1.4	18	1.0	.20	.30	11	9.0	1.5	.85	.95	.25	1.5
16	1.2	198	.97	.15	.30	17	10	1.3	1.5	.90	.22	.91
17	1.1	358	.76	.15	.25	387	9.7	1.4	4.5	.88	.25	.88
18	.97	232	.67	.15	.25	68	7.4	2.7	1.0	.73	.22	.67
19	.91	61	1.3	.20	.25	38	6.1	5.7	.95	.67	.19	.67
20	.88	31	.97	.75	.20	24	5.7	2.5	.95	.61	.17	.61
21	.91	21	.64	.60	1.5	42	8.8	2.1	.90	.58	.15	.61
22	3.7	16	.60	.50	.40	18	10	4.6	.90	.55	.43	.46
23	12	13	.60	.30	.25	28	12	5.0	.85	.55	.97	6.9
24	15	10	.55	.30	.25	251	7.2	15	.85	.50	.40	7.5
25	4.0	7.8	.55	.30	.30	48	5.4	8.5	.85	.50	.73	3.5
26	3.0	6.6	.50	.25	2.5	21	5.0	5.0	.80	.50	.43	1.4
27	14	5.7	.50	.60	2.0	31	5.2	4.0	.75	.45	.28	1.2
28	4.6	4.7	.55	2.0	1.5	20	4.6	6.0	.90	.45	.31	1.1
29	3.0	4.1	.50	2.5	------	54	5.5	10	.85	.50	.25	1.6
30	3.4	3.4	.45	1.0	------	1,060	4.6	8.0	.85	.45	.22	1.5
31	5.1	------	.45	1.5	------	224	------	4.0	------	.45	.19	------
TOTAL	202.97	1,942.1	32.00	15.60	19.00	2,966.5	380.4	122.3	39.85	31.17	11.16	55.43
MEAN	6.55	64.7	1.03	.50	.68	95.7	12.7	3.95	1.33	1.01	.36	1.85
MAX	86	573	2.7	2.5	2.5	1,060	62	15	4.5	5.5	.97	21
MIN	.88	3.4	.45	.15	.20	1.0	4.6	1.3	.75	.45	.15	.11
AC-FT	403	3,850	63	31	38	5,880	755	243	79	62	22	110

CAL YR 1972 TOTAL 4,169.35 MEAN 11.4 MAX 573 MIN .28 AC-FT 8,270
WTR YR 1973 TOTAL 5,816.48 MEAN 15.9 MAX 1,060 MIN .11 AC-FT 11,540

PEAK DISCHARGE (BASE, 1,500 CFS).--Nov. 11 (0430) 1,660 cfs (6.49 ft); Mar. 30 (1930) 3,120 cfs (8.32 ft).

NOTE.--No gage-height record Dec. 22 to Mar. 13, May 23 to July 16.

16704000 Wailuku River at Piihonua

LOCATION.--Lat 19°42'58", long 155°09'13", on left bank 0.2 mi (0.3 km) downstream from Hookelekele Stream, 0.9 mi (1.4 km) west of Piihonua, and 4.1 mi (6.6 km) west of Hilo Post Office.

DRAINAGE AREA.--125 mi² (324 km²).

PERIOD OF RECORD.--July 1928 to July 1940, October 1940 to December 1947, April 1948 to current year. Monthly discharge only July 1928, published in WSP 1319. Prior to July 1960, published as "above Hilo Boarding School ditch intake, near Hilo."

GAGE.--Water-stage recorder. Altitude of gage is 1,070 ft (326 m), from topographic map.

AVERAGE DISCHARGE.--42 years (1928-39, 1941-47, 1948-73), 283 ft³/s (8.015 m³/s), 205,000 acre-ft/yr (253 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 15,000 ft³/s (425 m³/s) Mar. 30, gage height, 17.11 ft (5.215 m); minimum, 0.80 ft³/s (0.023 m³/s) Sept. 6, 7.
Period of record: Maximum discharge, 63,400 ft³/s (1,800 m³/s) Aug. 11, 1940, gage height, 28.6 ft (8.72 m), from floodmarks, from rating curve extended about 11,000 ft³/s (312 m³/s); minimum, 0.25 ft³/s (0.007 m³/s) Mar. 9, 1941.

REMARKS.--Records good. Hawaii County Board of Water Supply diverts about 6 ft³/s (0.17 m³/s) above station for domestic supply. Kapehu ditch diverted from Kapehu Stream into Wailuku River above station 1938-63. Selected determinations of minor elements for water year 1972 and records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (FISCAL YEARS).--WSP 865: 1929-36(M). WSP 965: 1941.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	200	164	59	20	107	125	756	100	123	26	6.9	4.5
2	71	260	52	19	94	211	561	85	102	25	6.5	3.0
3	1,660	1,040	46	39	173	111	359	76	93	66	6.2	2.0
4	545	374	41	26	86	185	312	93	80	252	6.1	1.5
5	252	448	37	25	60	103	248	81	76	264	5.8	1.0
6	281	430	34	22	46	674	191	70	62	94	5.6	.80
7	242	1,490	31	17	38	3,600	74	76	59	67	5.2	.80
8	182	896	29	15	32	1,650	94	74	57	56	5.6	1.0
9	133	541	26	14	52	795	140	81	48	50	5.5	1.0
10	103	612	24	11	46	615	544	91	41	44	5.4	1.5
11	79	4,900	22	9.7	30	514	310	76	38	46	18	1.0
12	66	908	21	8.7	24	591	251	71	35	36	38	1.0
13	91	509	19	7.1	40	658	489	63	35	32	17	31
14	61	352	18	6.5	36	377	332	68	33	29	14	439
15	50	444	20	6.0	26	496	309	72	30	59	8.3	78
16	62	1,760	23	4.9	23	853	320	52	248	41	6.2	40
17	47	2,590	18	4.9	21	3,580	262	60	398	41	9.5	41
18	37	3,090	15	4.7	22	1,130	194	94	131	28	7.2	26
19	32	995	30	5.4	20	932	87	205	89	22	5.9	25
20	28	558	32	47	18	645	90	103	72	20	5.3	29
21	26	386	17	22	70	1,060	157	84	62	20	35	25
22	145	283	13	11	32	485	177	128	56	19	52	18
23	372	217	16	7.6	21	462	287	140	50	16	19	212
24	537	175	17	6.9	17	3,140	225	550	43	14	14	321
25	200	145	17	6.1	33	1,010	78	222	38	13	28	261
26	193	121	21	5.4	154	490	79	167	34	11	19	117
27	342	104	25	27	112	974	153	158	36	9.9	13	77
28	183	92	72	184	88	555	111	407	50	9.7	11	57
29	127	78	57	217	------	469	128	338	37	9.0	9.2	146
30	218	67	35	129	------	5,580	117	215	29	7.5	7.5	105
31	200	------	24	169	------	2,790	------	152	------	7.2	6.2	------
TOTAL	6,765	24,049	911	1,097.9	1,521	34,840	7,433	4,232	2,285	1,434.3	402.1	2,067.10
MEAN	218	802	29.4	35.4	54.3	1,124	248	137	76.2	46.3	13.0	68.9
MAX	1,660	4,900	72	217	173	5,580	756	550	398	264	52	439
MIN	26	67	13	4.7	17	103	74	52	29	7.2	5.2	.80
AC-FT	13,420	47,700	1,810	2,180	3,020	69,110	14,740	8,390	4,530	2,840	796	4,100

CAL YR 1972 TOTAL 86,608.00 MEAN 237 MAX 4,900 MIN 3.3 AC-FT 171,800
WTR YR 1973 TOTAL 87,037.40 MEAN 238 MAX 5,580 MIN .80 AC-FT 172,600

PEAK DISCHARGE (BASE, 8,700 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 3	1715	16.61	13,500	3-17	0630	15.11	9,030
11-11	0345	16.11	12,000	3-30	2300	17.11	15,000
3- 7	0830	15.58	10,400				

16717000 Honolii Stream near Papaikou

(Hydrologic bench-mark station)

LOCATION.--Lat 19°46'00", long 155°09'16", on left bank 0.7 mi (1.1 km) downstream from Pohakupaa Stream, 4.1 mi (6.6 km) west of Papaikou, and 4.8 mi (7.7 km) northwest of Hilo Post Office.

DRAINAGE AREA.--11.6 mi^2 (30.0 km^2).

PERIOD OF RECORD.--June 1911 to March 1913 (published as "at Kaiwiki, near Hilo"), February 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,540 ft (469 m), from topographic map. Prior to Aug. 27, 1911, nonrecording gage and Aug. 27, 1911, to Mar. 24, 1913, water-stage recorder, at site 0.5 mi (0.8 km) upstream at different datum.

AVERAGE DISCHARGE.--7 years, 126 ft^3/s (3.568 m^3/s), 91,290 acre-ft/yr (113 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 7,960 ft^3/s (225 m^3/s) Mar. 30, gage height, 15.46 ft (4.712 m); minimum, 5.0 ft^3/s (0.14 m^3/s) Sept. 5-7.
Period of record: Maximum discharge, 9,450 ft^3/s (268 m^3/s) Aug. 3, 1967, gage height, 16.95 ft (5.166 m); minimum, 0.8 ft^3/s (0.023 m^3/s) Jan. 31, 1912.

REMARKS.--Records good. No diversion above station. During period 1911-13, Honolii ditch diverted an average of about 3.2 ft^3/s (0.091 m^3/s) above station for fluming cane and domestic use. Records of chemical analyses, water temperatures, and suspended sediment loads for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	140	70	20	16	64	108	88	43	39	18	13	7.9
2	43	229	18	16	101	132	79	37	36	20	13	7.2
3	938	541	17	36	135	60	54	39	38	57	11	6.6
4	203	116	16	20	45	132	46	56	33	298	9.6	6.2
5	70	162	16	33	31	55	41	38	37	173	9.4	5.7
6	47	203	15	20	26	564	38	34	29	47	9.3	5.4
7	55	1,070	14	15	22	1,440	33	47	34	33	8.9	9.7
8	46	399	14	14	20	713	29	36	33	31	8.7	14
9	38	183	14	13	52	227	38	47	26	28	8.4	10
10	32	334	13	12	46	231	291	46	22	26	8.4	11
11	27	2,180	12	11	28	162	93	41	21	29	12	8.2
12	25	166	12	9.6	22	192	83	50	21	22	22	6.8
13	42	78	12	9.0	45	224	229	34	25	20	19	80
14	27	65	11	9.0	36	91	97	43	22	18	19	305
15	23	227	12	9.1	25	250	101	40	24	47	14	54
16	31	1,020	16	8.4	22	451	102	27	222	26	12	31
17	24	889	12	7.9	20	1,570	83	41	212	27	11	38
18	19	1,150	11	7.5	21	364	65	80	57	20	11	20
19	17	158	13	11	20	389	43	156	37	18	9.8	16
20	15	72	15	54	21	198	40	53	29	17	8.9	19
21	15	56	11	22	162	446	76	43	27	20	11	17
22	117	49	9.5	14	41	88	76	87	28	18	29	13
23	284	41	13	12	27	213	118	80	25	16	19	179
24	339	36	15	12	22	1,400	113	263	23	16	16	179
25	76	32	14	12	54	219	47	79	20	15	32	127
26	102	29	16	11	172	85	45	56	19	14	18	40
27	212	27	32	83	92	420	61	42	23	14	15	28
28	54	25	61	249	77	82	45	131	36	14	16	23
29	38	23	54	267	------	135	73	130	22	14	14	71
30	223	21	28	104	------	2,590	52	64	19	13	13	47
31	121	------	19	124	------	667	------	44	------	13	9.4	------
TOTAL	3,443	9,651	555.5	1,241.5	1,449	13,898	2,379	2,007	1,239	1,142	430.8	1,385.7
MEAN	111	322	17.9	40.0	51.8	448	79.3	64.7	41.3	36.8	13.9	46.2
MAX	938	2,180	61	267	172	2,590	291	263	222	298	32	305
MIN	15	21	9.5	7.5	20	55	29	27	19	13	8.4	5.4
AC-FT	6,830	19,140	1,100	2,460	2,870	27,570	4,720	3,980	2,460	2,270	854	2,750

CAL YR 1972 TOTAL 37,968.0 MEAN 104 MAX 2,180 MIN 6.0 AC-FT 75,310
WTR YR 1973 TOTAL 38,821.5 MEAN 106 MAX 2,590 MIN 5.4 AC-FT 77,000

PEAK DISCHARGE (BASE, 4,400 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 3	1630	15.25	7,750	3-17	0515	11.87	4,500
11-11	0315	11.90	4,520	3-30	2130	15.46	7,960

16717800 Pohakupuka Stream near Papaaloa

LOCATION.--Lat 19°57'20", long 155°11'20", on right bank 200 ft (61 m) downstream from Highway 19, 2.8 mi (4.5 km) northwest of Honohina, and 3.0 mi (4.8 km) southeast of Papaaloa.

DRAINAGE AREA.--2.76 mi^2 (7.15 km^2).

PERIOD OF RECORD.--April 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 250 ft (76.2 m) above mean sea level (by stadia survey).

AVERAGE DISCHARGE.--11 years, 27.5 ft^3/s (0.779 m^3/s), 19,920 acre-ft/yr (24.6 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,740 ft^3/s (49.3 m^3/s) Nov. 11, gage height, 8.33 ft (2.539 m), from rating curve extended above 1,100 ft^3/s (31.2 m^3/s); minimum, 0.70 ft^3/s (0.020 m^3/s) Sept. 11, 12. Period of record: Maximun discharge, 5,340 ft^3/s (151 m^3/s) Nov. 26, 1967, gage height, 13.37 ft (4.075 m), from rating curve extended above 1,100 ft^3/s (31.2 m^3/s); minimum, 0.28 ft^3/s (0.008 m^3/s) Nov. 9, 1962.

REMARKS.--Records good. No diversion above station. Irrigation ditches in basin occasionally overflow, but amount reaching stream is small. Records of chemical analyses for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	6.7	6.0	3.8	18	52	18	7.3	5.2	2.3	1.5	1.1
2	5.8	44	5.9	3.7	20	33	14	7.3	4.8	2.2	1.4	1.1
3	54	93	5.9	8.6	28	10	11	11	5.1	3.2	1.4	1.0
4	16	24	5.9	4.0	6.3	31	26	12	4.6	38	1.4	1.0
5	11	49	6.3	3.6	4.5	8.9	11	7.5	5.7	32	1.4	1.0
6	8.0	47	5.9	3.5	3.8	153	9.5	6.4	4.5	6.0	1.3	1.0
7	6.4	320	5.5	3.4	3.4	308	9.1	10	3.9	3.9	1.4	1.6
8	4.4	114	5.4	3.3	3.3	177	11	7.6	5.1	4.7	1.4	2.2
9	3.9	32	10	3.3	40	37	10	7.9	3.9	4.9	1.5	1.3
10	3.6	80	6.4	3.1	19	41	66	6.7	3.4	4.7	1.4	1.0
11	3.4	490	5.5	3.1	5.7	27	29	8.1	3.2	3.5	1.3	.90
12	3.3	34	5.1	3.1	4.1	11	20	15	3.1	3.0	1.7	.91
13	3.3	17	5.0	3.0	14	16	33	6.7	3.6	2.6	1.6	9.8
14	3.2	14	4.8	3.7	5.7	9.2	17	29	4.0	2.5	2.8	23
15	2.9	60	4.8	3.3	3.7	98	14	17	3.3	16	1.6	4.1
16	3.8	249	4.7	3.1	3.3	125	16	7.2	33	4.7	1.3	2.5
17	2.9	219	4.5	2.9	3.1	408	14	21	36	3.6	1.2	2.2
18	2.7	224	4.4	2.9	3.0	58	12	44	7.3	3.1	1.1	1.7
19	2.6	24	5.3	3.1	2.9	105	9.4	60	4.1	2.4	1.1	1.2
20	2.5	14	4.5	7.8	3.6	53	8.7	10	3.6	2.2	1.1	26
21	2.5	11	4.2	3.6	253	148	8.4	7.6	3.6	2.0	1.4	3.7
22	36	9.5	4.0	3.1	9.3	17	8.6	29	3.6	2.2	4.6	1.9
23	78	8.5	4.7	2.9	5.2	63	10	16	3.2	2.0	1.8	14
24	63	7.9	5.1	2.9	6.1	351	18	51	3.0	1.9	1.3	19
25	8.0	7.4	4.4	3.0	79	39	8.5	10	2.8	1.8	2.3	14
26	5.7	7.2	11	2.8	106	14	7.5	7.7	2.6	1.7	1.8	3.1
27	26	6.8	10	110	28	61	7.5	7.2	2.5	1.6	1.3	2.1
28	5.8	6.5	5.4	108	25	21	7.5	7.5	2.3	1.6	1.2	1.8
29	4.2	6.4	6.1	74	------	30	7.4	44	2.4	1.6	1.1	23
30	27	6.2	4.9	16	------	329	7.4	10	2.4	1.6	1.1	7.2
31	23	------	4.1	19	------	110	------	6.1	------	1.5	1.1	------
TOTAL	445.9	2,232.1	175.7	421.6	707.0	2,944.1	449.5	501.8	176.0	165.0	47.9	174.41
MEAN	14.4	74.4	5.67	13.6	25.3	95.0	15.0	16.2	5.87	5.32	1.55	5.81
MAX	78	490	11	110	253	408	66	60	36	38	4.6	26
MIN	2.5	6.2	4.0	2.8	2.9	8.9	7.4	6.1	2.3	1.5	1.1	.90
AC-FT	884	4,430	349	836	1,400	5,840	892	995	349	327	95	346

CAL YR 1972 TOTAL 8,063.60 MEAN 22.0 MAX 490 MIN 2.5 AC-FT 15,990
WTR YR 1973 TOTAL 8,441.01 MEAN 23.1 MAX 490 MIN .90 AC-FT 16,740

PEAK DISCHARGE (BASE, 1,400 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
11-11	0415	8.33	1,740	3-17	0530	8.16	1,650
3- 8	1315	7.92	1,530	3-30	2000	7.68	1,410

16720000 Kawainui Stream near Kamuela

LOCATION.--Lat 20°05'18", long 155°40'58", on left bank 250 ft (76 m) upstream from Upper Hamakua ditch intake and 4.5 mi (7.2 km) north of Kamuela.

DRAINAGE AREA.--1.58 mi^2 (4.09 km^2).

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,060 ft (1,237 m), from topographic map.

AVERAGE DISCHARGE.--9 years, 13.7 ft^3/s (0.388 m^3/s), 9,930 acre-ft/yr (12.2 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 432 ft^3/s (12.2 m^3/s) Mar. 7, gage height, 4.97 ft (1.515 m), from rating curve extended as explained below; minimum, 0.16 ft^3/s (0.005 m^3/s) Oct. 20, 21.
Period of record: Maximum discharge, 2,400 ft^3/s (68.0 m^3/s) Jan. 11, 1967, gage height, 9.15 ft (2.789 m), from rating curve extended above 53 ft^3/s (1.50 m^3/s) on basis of computation of peak flow over dam; minimum, 0.03 ft^3/s (0.001 m^3/s) Oct. 5, 6, 1965.

REMARKS.--Records good. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	4.2	.54	12	23	33	13	18	11	16	1.6	1.3
2	4.1	61	.38	4.5	8.4	24	7.6	8.9	18	18	1.2	1.3
3	32	71	6.3	9.6	5.2	29	3.4	22	13	23	.86	1.6
4	16	64	3.3	4.5	2.9	40	3.9	24	10	56	.96	2.0
5	7.4	87	2.3	2.3	1.7	13	4.7	11	26	38	1.1	1.9
6	4.7	38	1.3	1.4	1.3	114	2.7	5.3	9.4	15	4.6	8.1
7	3.5	95	.90	6.4	2.7	159	1.8	14	8.7	24	5.7	19
8	2.0	35	2.0	5.4	3.6	16	9.1	9.5	24	53	2.8	4.0
9	1.5	12	32	2.2	79	15	29	9.2	5.0	63	1.8	2.0
10	1.2	30	4.5	1.4	19	32	86	7.4	4.7	16	1.1	1.3
11	.90	97	2.0	1.0	4.6	18	26	6.5	3.9	18	1.5	.93
12	.74	12	1.2	.76	2.7	6.1	42	7.3	10	12	2.3	.70
13	.74	5.9	.90	.63	7.3	3.8	29	5.2	17	5.8	2.5	3.6
14	.60	18	.62	.83	5.9	22	13	3.7	9.7	16	2.6	5.6
15	.48	56	30	.58	2.9	57	38	3.0	13	30	1.3	2.3
16	.60	149	4.2	.58	2.8	43	17	2.8	57	5.9	1.1	3.0
17	.60	64	1.7	6.1	1.7	132	15	30	38	4.3	1.5	4.8
18	.43	37	1.1	3.8	1.3	37	8.4	72	5.6	2.4	.89	1.9
19	.26	13	22	3.3	.95	109	3.2	61	3.4	1.5	6.9	1.2
20	.21	3.8	6.4	31	29	43	3.2	8.6	2.3	1.2	7.2	1.4
21	1.8	2.8	2.4	5.6	107	48	3.6	6.5	1.9	5.2	4.3	1.7
22	19	4.2	7.0	2.3	7.0	12	5.2	6.6	3.1	6.5	4.1	8.0
23	17	5.1	38	1.6	7.8	28	13	10	2.2	4.2	1.7	41
24	13	3.5	8.3	11	12	117	21	16	2.0	2.3	1.2	35
25	4.2	1.8	3.3	9.6	45	17	7.4	4.7	1.3	2.6	6.5	22
26	24	1.6	27	12	41	5.3	10	2.7	.98	2.4	3.1	7.7
27	19	1.9	20	139	12	27	32	2.0	.76	1.4	6.2	7.0
28	3.5	1.2	4.2	96	5.2	13	8.7	3.3	.61	9.8	3.8	4.2
29	1.8	.90	3.0	58	------	48	19	4.8	.68	4.2	2.4	45
30	3.8	.65	2.1	29	------	98	18	7.4	1.3	2.0	4.1	11
31	3.3	------	3.3	36	------	51	------	25	------	2.4	1.8	------
TOTAL	215.36	976.55	242.24	498.38	442.95	1,410.2	493.9	418.4	304.53	462.1	88.71	250.53
MEAN	6.95	32.6	7.81	16.1	15.8	45.5	16.5	13.5	10.2	14.9	2.86	8.35
MAX	32	149	38	139	107	159	86	72	57	63	7.2	45
MIN	.21	.65	.38	.58	.95	3.8	1.8	2.0	.61	1.2	.86	.70
AC-FT	427	1,940	480	989	879	2,800	980	830	604	917	176	497

CAL YR 1972 TOTAL 4,577.48 MEAN 12.5 MAX 247 MIN .10 AC-FT 9,080
WTR YR 1973 TOTAL 5,803.85 MEAN 15.9 MAX 159 MIN .21 AC-FT 11,510

PEAK DISCHARGE (BASE, 440 CFS).--No peak above base.

16720300 Kawaiki Stream near Kamuela

LOCATION.--Lat 20°05'13", long 155°40'59", on right bank 0.2 mi (0.3 km) upstream from Upper Hamakua ditch intake and 4.4 mi (7.1 km) north of Kamuela.

DRAINAGE AREA.--0.45 mi² (1.17 km²).

PERIOD OF RECORD.--June 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,090 ft (1,247 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 3.90 ft³/s (0.110 m³/s), 2,830 acre-ft/yr (3.49 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 87 ft³/s (2.46 m³/s) Mar. 7, gage height, 2.70 ft (0.823 m), from rating curve extended above 33 ft³/s (0.94 m³/s); minimum, 0.15 ft³/s (0.004 m³/s) Oct. 20, 21.
Period of record: Maximum discharge, 366 ft³/s (10.4 m³/s) Nov. 5, 1970, gage height, 4.83 ft (1.472 m), from rating curve extended above 33 ft³/s (0.94 m³/s); minimum, 0.03 ft³/s (0.008 m³/s) Nov. 12-15, 1968.

REMARKS.--Records good. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	1.3	.48	2.0	5.2	8.8	3.2	5.3	2.8	6.6	.61	.28
2	.92	14	.42	1.4	1.8	4.9	1.9	2.1	4.5	5.4	.54	.32
3	9.2	17	2.0	2.9	1.4	7.7	.88	6.1	3.7	5.0	.48	.48
4	3.9	16	.68	1.1	.77	10	.91	5.0	2.4	13	.48	.48
5	3.0	22	.61	.56	.53	3.3	1.0	2.5	6.1	9.0	.54	.68
6	2.3	6.6	.54	.40	.46	25	.77	1.5	2.3	3.7	1.5	2.1
7	1.4	23	.42	1.7	.79	32	.64	4.4	1.9	6.9	1.6	4.6
8	.73	6.1	1.4	1.3	1.6	3.1	3.1	2.9	3.9	14	.76	.76
9	.64	2.5	8.9	.52	22	3.0	9.1	3.2	.98	15	.61	.42
10	.55	5.5	1.2	.37	4.0	7.6	20	2.5	1.0	4.7	.42	.32
11	.47	20	.61	.31	.97	4.2	5.6	2.6	.80	3.9	.68	.28
12	.42	2.2	.48	.28	.64	1.6	11	2.6	3.0	3.5	1.2	.24
13	.40	1.6	.32	.26	1.7	1.0	5.8	1.8	4.2	1.8	1.2	1.6
14	.36	4.7	.27	.30	1.2	7.1	2.9	1.2	2.2	5.5	1.0	1.3
15	.32	13	8.1	.24	.72	15	9.7	.94	3.7	7.5	.54	.48
16	.40	30	.90	.27	.82	10	3.8	.96	14	1.8	.54	1.5
17	.35	10	.44	2.6	.51	27	4.0	8.5	8.3	1.8	.61	.95
18	.31	8.1	.33	1.1	.42	7.9	1.8	17	1.4	.85	.42	.42
19	.28	2.5	4.9	1.1	.36	22	.82	14	.86	.68	2.7	.28
20	.20	.95	1.2	7.7	8.5	10	.89	2.0	.60	.61	1.9	.42
21	.81	.85	.54	1.2	24	11	1.1	1.6	.56	2.5	1.6	.68
22	4.9	1.2	2.0	.52	1.5	3.2	1.7	1.7	1.4	2.7	1.2	2.2
23	4.0	1.5	8.6	.41	2.2	7.7	3.9	3.4	.88	1.8	.54	11
24	2.9	1.2	1.7	3.1	3.0	30	5.3	3.8	.94	.95	.42	7.5
25	.97	.68	.75	3.1	12	3.9	2.1	1.1	.58	1.2	1.6	3.7
26	6.3	.61	7.3	3.1	11	1.3	3.2	.68	.46	1.2	.68	2.1
27	4.6	.68	4.0	34	3.2	6.7	8.8	.57	.41	.76	1.3	1.8
28	.85	.54	.85	22	1.5	3.5	2.3	1.4	.36	3.9	.68	1.5
29	.48	.54	.64	13	------	12	4.0	2.0	.41	1.5	.48	12
30	1.8	.48	.47	7.4	------	19	4.5	3.2	1.0	.68	.85	3.0
31	1.4	------	.91	8.7	------	11	------	7.7	------	.76	.36	------
TOTAL	61.14	215.33	61.06	122.94	112.79	320.5	124.71	114.25	75.64	129.19	28.04	63.39
MEAN	1.97	7.18	1.97	3.97	4.03	10.3	4.16	3.69	2.52	4.17	.90	2.11
MAX	9.2	30	8.6	34	24	32	20	17	14	15	2.7	12
MIN	.20	.48	.27	.24	.36	1.0	.64	.57	.36	.61	.36	.24
AC-FT	121	427	121	244	224	636	247	227	150	256	56	126

CAL YR 1972 TOTAL 1,153.67 MEAN 3.15 MAX 57 MIN .08 AC-FT 2,290
WTR YR 1973 TOTAL 1,428.98 MEAN 3.92 MAX 34 MIN .20 AC-FT 2,830

PEAK DISCHARGE (BASE, 100 CFS).--No peak above base.

16720500 Upper Hamakua ditch below Kawaiki Stream, near Kamuela

LOCATION.--Lat 20°05'15", long 155°40'42", on right bank 800 ft (244 m) downstream from Kawaiki Stream intake and 4.4 mi (7.1 km) north of Kamuela.

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,020 ft (1,225 m), from topographic map.

AVERAGE DISCHARGE.--9 years, 9.26 ft^3/s (0.262 m^3/s), 6,710 acre-ft/yr (8.27 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 49 ft^3/s (1.39 m^3/s) Nov. 2, 1967; minimum daily, 0.05 ft^3/s (0.001 m^3/s) Oct. 4-6, 1965.

REMARKS.--Records good. Ditch diverts from Kawainui and Kawaiki Streams for irrigation in vicinity of Kamuela. Recording rain gage located at station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	4.8	.89	10	16	20	12	15	10	12	1.7	1.1
2	4.3	11	.84	5.0	7.8	15	7.6	8.4	14	13	1.4	1.1
3	17	17	6.4	9.6	5.6	12	3.9	12	12	14	.72	1.5
4	14	16	3.9	5.2	3.1	17	4.4	17	9.3	16	1.0	1.8
5	8.5	18	2.7	2.7	1.9	11	5.3	10	15	19	1.2	1.7
6	6.2	13	1.8	1.6	1.4	22	3.2	5.9	8.8	13	3.5	7.8
7	4.4	18	1.3	6.1	3.0	23	2.4	12	7.5	18	3.1	13
8	2.7	14	1.7	5.8	4.1	13	9.3	9.6	14	21	2.6	4.0
9	1.9	10	16	2.6	21	13	13	9.6	5.2	21	1.9	1.9
10	1.5	13	5.4	1.4	14	19	22	7.6	4.4	14	1.0	1.3
11	1.0	18	2.6	1.2	4.7	14	17	7.1	4.0	13	1.2	.89
12	.89	9.6	1.6	.94	3.0	6.8	16	7.9	7.7	10	2.5	.78
13	.78	6.5	1.2	.84	6.7	4.1	17	5.9	14	5.9	2.7	3.9
14	.67	12	.94	.94	5.4	18	11	4.1	9.2	15	2.7	5.6
15	.62	14	10	.72	3.2	21	16	3.6	8.8	17	1.4	2.3
16	.78	20	4.8	.72	3.4	18	14	3.2	18	5.8	1.2	3.2
17	.78	17	2.3	6.7	2.0	22	12	19	16	4.6	1.4	4.4
18	.67	17	1.4	4.1	1.4	17	8.2	20	5.9	2.5	.94	1.8
19	.62	11	11	3.5	1.2	22	3.8	19	3.9	1.7	5.6	1.0
20	.45	4.8	6.6	17	4.8	16	3.8	8.2	2.6	1.4	6.6	1.4
21	1.9	3.6	2.9	5.6	21	20	4.3	6.8	2.3	6.2	4.1	1.8
22	15	5.0	7.4	2.6	7.1	11	5.8	6.8	4.1	6.6	4.6	7.4
23	14	6.2	18	1.7	7.6	15	12	10	2.9	4.4	1.9	17
24	12	4.6	8.2	9.5	11	22	15	14	2.7	1.0	1.3	19
25	5.0	2.7	4.0	9.6	18	13	7.6	5.2	1.6	.89	6.0	17
26	7.0	2.4	14	11	21	5.8	10	3.2	1.2	1.4	3.1	7.3
27	13	2.6	14	21	11	15	18	2.5	.94	1.7	5.6	7.2
28	4.4	1.8	4.6	22	5.7	12	8.3	3.9	.78	4.4	3.6	4.7
29	2.5	1.4	3.4	21	------	17	14	5.6	.89	4.0	2.3	19
30	4.6	1.1	2.4	18	------	22	14	8.3	2.0	1.7	3.8	9.9
31	4.6	------	3.1	20	------	20	------	16	------	1.0	1.7	------
TOTAL	165.76	296.1	165.37	228.66	216.1	496.7	310.9	287.4	209.71	271.19	82.36	170.77
MEAN	5.35	9.87	5.33	7.38	7.72	16.0	10.4	9.27	6.99	8.75	2.66	5.69
MAX	17	20	18	22	21	23	22	20	18	21	6.6	19
MIN	.45	1.1	.84	.72	1.2	4.1	2.4	2.5	.78	.89	.72	.78
AC-FT	329	587	328	454	429	985	617	570	416	538	163	339

CAL YR 1972 TOTAL 2,946.65 MEAN 8.05 MAX 28 MIN .45 AC-FT 5,840
WTR YR 1973 TOTAL 2,901.02 MEAN 7.95 MAX 23 MIN .45 AC-FT 5,750

16724800 Upper Hamakua ditch above Alakahi Stream, near Kamuela

LOCATION.--Lat 20°04'31", long 155°40'26", on right bank 0.1 mi (0.2 km) upstream from Alakahi Stream and 3.6 mi (5.8 km) north of Kamuela.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,890 ft (1,186 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 7.28 ft^3/s (0.206 m^3/s), 5,270 acre-ft/yr (6.50 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 41 ft^3/s (1.16 m^3/s) Aug. 18, 1972; no flow at times each year.

REMARKS.--Records good. Ditch diverts from Kawainui and Kawaiki Streams for irrigation in vicinity of Kamuela.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	3.3	.40	9.7	30	26	16	18	11	12	.90	.40
2	3.4	12	.31	3.2	25	20	9.7	9.2	17	15	.56	.35
3	21	24	5.3	9.2	28	14	4.7	13	14	17	.33	.49
4	17	21	2.7	3.6	22	24	3.6	22	9.8	18	.33	.57
5	8.8	26	1.7	1.5	8.4	12	4.7	12	18	25	.37	.52
6	5.6	18	1.0	8.3	4.9	33	5.0	5.0	9.0	16	2.2	5.3
7	3.2	27	.64	5.2	2.5	38	1.9	13	7.1	22	4.0	12
8	1.6	19	.77	2.2	1.3	18	9.2	10	17	27	1.8	2.7
9	1.1	11	18	1.1	1.0	17	15	11	4.2	28	1.1	1.1
10	.86	14	4.4	.73	2.1	24	33	7.7	3.7	17	.52	.52
11	.54	25	1.7	7.5	10	20	25	6.8	3.1	16	.66	.30
12	.40	11	.94	2.1	24	7.2	23	7.7	7.7	11	1.7	.16
13	.35	5.7	.63	.99	4.9	3.5	26	5.0	17	4.8	1.3	2.5
14	.23	15	.43	.60	3.9	22	15	3.4	9.3	14	1.7	3.6
15	.18	17	15	.38	2.3	30	22	2.5	8.7	20	.66	.96
16	.26	29	3.7	.22	1.5	27	20	2.1	23	5.0	.45	1.5
17	.23	24	1.2	.33	.77	35	14	22	20	3.6	.66	2.7
18	.09	23	.72	.22	.96	26	9.7	27	5.3	1.8	.30	.78
19	.03	13	12	.15	13	34	3.5	28	2.9	1.1	5.0	.33
20	.01	3.9	5.9	3.0	4.4	24	2.7	9.1	1.7	.72	5.7	.45
21	.87	2.6	1.7	4.9	23	30	3.6	6.0	1.4	3.7	2.6	.45
22	16	3.8	5.4	1.4	12	16	4.6	6.4	3.0	5.9	3.2	3.9
23	15	4.9	23	18	21	21	11	11	1.9	3.5	.88	17
24	13	3.6	8.0	6.2	16	36	19	17	1.9	1.6	.45	22
25	3.5	1.6	2.7	1.8	24	19	8.0	4.2	.90	1.9	4.0	19
26	6.8	1.4	16	1.0	31	6.5	10	2.2	.59	1.9	1.6	6.1
27	16	1.5	16	9.2	24	22	24	1.4	.39	.90	3.7	6.1
28	3.1	.96	3.6	8.6	32	17	9.2	3.0	.25	7.9	2.2	3.0
29	1.3	.68	2.2	12	------	33	16	4.8	.33	3.1	1.1	21
30	3.9	.52	1.4	31	------	33	16	7.4	.61	1.2	2.2	10
31	3.5	------	1.8	34	------	30	------	19	------	1.3	.74	------
TOTAL	164.85	361.46	159.24	188.32	373.93	718.2	383.1	316.9	220.77	307.92	52.91	145.78
MEAN	5.32	12.0	5.14	6.07	13.4	23.2	12.8	10.2	7.36	9.93	1.71	4.86
MAX	21	29	23	34	32	38	33	28	23	28	5.7	22
MIN	.01	.52	.31	.15	.77	3.5	1.9	1.4	.25	.72	.30	.16
AC-FT	327	717	316	374	742	1,420	760	629	438	611	105	289

CAL YR 1972 TOTAL 2,038.25 MEAN 5.57 MAX 41 MIN 0 AC-FT 4,040
WTR YR 1973 TOTAL 3,393.38 MEAN 9.30 MAX 38 MIN .01 AC-FT 6,730

16725000 Alakahi Stream near Kanuela

LOCATION.--Lat 20°04'27", long 155°40'25", on right bank 25 ft (8 m) upstream from Upper Hamakua ditch intake and 3.5 mi (5.6 km) north of Kanuela.

DRAINAGE AREA.--0.87 mi^2 (2.25 km^2).

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,900 ft (1,189 m), from topographic map.

AVERAGE DISCHARGE.--9 years, 6.45 ft^3/s (0.183 m^3/s), 4,670 acre-ft/yr (5.76 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 79 ft^3/s (2.24 m^3/s) Feb. 21, gage height, 3.89 ft (1.186 m), from rating curve extended as explained below; minimum, 0.60 ft^3/s (0.017 m^3/s) Oct. 18-21.
Period of record: Maximum discharge, 1,420 ft^3/s (40.2 m^3/s) Jan. 11, 1967, gage height, 8.65 ft (2.637 m), from rating curve extended above 28 ft^3/s (0.79 m^3/s) on basis of computation of peak flow over dam; minimum, 0.03 ft^3/s (0.001 m^3/s) on several days in 1965.

REMARKS.--Records good. Parker Ranch pipeline diverts from tributary 0.4 mi (0.6 km) above station for ranch use in Kanuela area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	2.7	1.0	3.9	9.8	14	7.5	8.7	5.7	9.3	1.4	1.1
2	2.7	15	.95	2.5	4.0	11	4.8	4.1	7.9	8.6	1.2	1.0
3	14	29	3.3	5.8	2.9	7.1	3.0	10	6.2	9.8	1.2	1.0
4	6.5	21	2.2	2.8	2.1	20	2.5	9.5	4.6	18	1.2	1.0
5	3.0	31	1.7	1.6	1.5	5.0	2.4	4.9	9.3	20	1.1	1.0
6	4.5	16	1.4	1.2	1.3	30	2.1	3.3	4.4	6.9	1.2	3.2
7	2.8	33	1.2	1.9	1.4	45	1.6	5.5	3.6	12	2.4	6.6
8	1.8	18	1.2	2.9	2.1	6.7	4.0	5.3	7.1	23	1.9	2.6
9	1.4	4.9	12	1.4	37	6.0	9.5	5.6	2.8	29	1.5	1.4
10	1.3	7.9	3.2	1.1	9.6	7.4	33	4.6	2.4	9.4	1.2	1.1
11	1.0	29	1.8	.80	3.2	9.7	14	4.5	2.3	9.2	1.5	.95
12	.85	6.7	1.4	.70	2.2	4.3	16	5.2	3.7	6.9	2.8	.90
13	.80	3.4	1.1	.65	2.4	2.7	15	3.7	6.2	4.4	2.1	1.7
14	.70	6.5	.99	.70	2.8	12	5.8	2.9	4.2	8.2	2.7	3.4
15	.65	13	14	.65	1.7	28	16	2.6	5.7	15	1.5	1.7
16	.70	39	3.4	.70	2.0	17	9.4	2.0	21	4.5	1.3	1.4
17	.70	19	1.8	3.6	1.3	38	6.3	14	15	3.6	1.4	2.8
18	.60	16	1.3	2.9	1.1	13	4.9	23	4.0	2.6	1.2	1.4
19	.60	6.7	7.7	1.5	.91	32	2.5	26	2.8	1.8	3.0	1.0
20	.60	3.3	3.9	12	5.4	18	1.9	5.0	2.1	1.5	4.1	1.2
21	.80	2.5	1.9	3.3	35	18	2.3	3.8	1.7	2.0	2.4	1.3
22	5.0	2.4	2.2	1.5	4.3	6.1	3.2	3.9	5.0	5.7	5.4	2.5
23	5.1	2.7	14	1.2	3.2	13	7.2	5.8	2.6	4.6	1.7	15
24	4.9	2.9	4.3	3.9	5.6	43	9.5	7.8	2.5	2.6	1.2	12
25	2.5	1.9	2.4	4.8	19	8.8	4.0	3.4	1.6	2.4	2.2	9.0
26	7.4	1.6	10	6.2	21	3.6	4.8	2.2	1.3	2.8	1.7	4.6
27	9.3	1.5	8.1	43	7.8	12	15	1.7	1.2	1.8	2.2	4.8
28	2.7	1.4	2.8	36	3.4	6.2	4.3	2.3	1.0	6.0	1.8	2.8
29	1.4	1.2	1.7	24	------	16	6.4	4.1	1.0	4.5	1.4	19
30	2.7	1.1	1.4	13	------	26	7.3	5.8	1.0	2.2	1.4	6.1
31	3.5	------	1.1	18	------	23	------	13	------	1.5	1.2	------
TOTAL	99.90	340.3	115.44	204.20	194.01	502.6	226.2	204.2	138.1	239.8	56.5	113.55
MEAN	3.22	11.3	3.72	6.59	6.93	16.2	7.54	6.59	4.60	7.74	1.82	3.79
MAX	14	39	14	43	37	45	33	26	21	29	4.1	19
MIN	.60	1.1	.95	.65	.91	2.7	1.6	1.7	1.0	1.5	1.1	.90
AC-FT	198	675	229	405	385	997	449	405	274	476	112	225

CAL YR 1972 TOTAL 1,895.88 MEAN 5.18 MAX 67 MIN .25 AC-FT 3,760
WTR YR 1973 TOTAL 2,434.80 MEAN 6.67 MAX 45 MIN .60 AC-FT 4,830

PEAK DISCHARGE (BASE, 120 CFS).--No peak above base.

16733000 Lower Hamakua ditch wasteway near Kukuihaele

LOCATION.--Lat 20°07'07", long 155°35'09", on left bank 50 ft (15 m) downstream from Lower Hamakua ditch, 0.8 mi (1.3 km) west of Kukuihaele School, and 1.0 mi (1.6 km) northeast of Waipio.

PERIOD OF RECORD.--February 1964 to June 1973 (discontinued).

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 980 ft (299 m), from topographic map.

AVERAGE DISCHARGE.--8 years (1964-72), 2.31 ft^3/s (0.0654 m^3/s), 1,670 acre-ft/yr (2.06 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 19 ft^3/s (0.54 m^3/s) Dec. 30, 1965, Jan. 2, 1966, Dec. 9, 1972; no flow most of the time each year.

REMARKS.--Records good. The wasteway diverts excess water from Lower Hamakua ditch (see sta 16733100).

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1972 TO JUNE 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	0	10	4.2	16	13	13	0	1.5			
2	1.0	2.7	6.1	6.8	7.9	13	11	8.0	1.0			
3	9.4	14	6.1	5.4	1.4	9.0	11	10	2.0			
4	7.1	6.8	6.1	5.9	0	12	5.9	14	2.5			
5	.94	12	5.0	4.2	0	11	10	9.4	3.0			
6	7.5	12	3.0	2.0	0	14	11	6.7	0			
7	3.5	15	3.0	5.9	0	15	7.4	.76	0			
8	0	12	3.0	11	0	13	14	1.2	1.6			
9	0	10	19	5.1	13	10	14	5.1	0			
10	0	6.8	15	4.9	14	8.0	18	1.0	0			
11	0	11	11	4.9	5.1	11	13	2.3	0			
12	0	13	5.1	4.9	1.3	9.0	13	9.5	0			
13	0	3.3	5.1	4.9	0	7.6	14	5.8	0			
14	0	5.3	5.1	4.9	2.3	16	12	0	0			
15	0	13	7.8	4.9	0	17	12	0	0			
16	0	17	7.2	4.9	0	14	15	0	7.0			
17	0	16	7.2	9.6	0	14	11	12	7.8			
18	0	12	4.3	11	0	14	11	11	1.0			
19	0	11	7.2	5.0	0	15	10	3.1	0			
20	0	4.7	4.7	11	0	10	5.0	8.0	0			
21	0	0	.40	6.9	13	14	3.6	2.0	0			
22	5.2	0	6.5	0	11	13	5.7	0	0			
23	3.9	0	11	0	7.0	15	11	2.0	0			
24	3.5	0	4.4	3.3	17	14	16	5.0	0			
25	0	0	8.7	7.6	12	10	11	3.0	0			
26	0	0	11	6.3	11	9.6	3.4	1.0	0			
27	5.1	0	7.8	10	12	15	6.3	.50	0			
28	0	0	3.4	15	6.7	16	4.7	0	0			
29	0	1.4	6.1	15	------	15	0	0	0			
30	0	5.7	2.6	14	------	16	0	0	0			
31	3.5	------	2.4	15	------	16	------	0	------			------
TOTAL	60.04	204.7	205.30	214.5	150.7	399.2	293.0	121.36	27.4			
MEAN	1.94	6.82	6.62	6.92	5.38	12.9	9.77	3.91	.91			
MAX	9.4	17	19	15	17	17	18	14	7.8			
MIN	0	0	.40	0	0	7.6	0	0	0			
AC-FT	119	406	407	425	299	792	581	241	54			

CAL YR 1972 TOTAL 955.33 MEAN 2.61 MAX 19 MIN 0 AC-FT 1,890

16733100 Lower Hamakua ditch below main weir, near Kukuihaele

LOCATION.--Lat 20°07'07", long 155°35'09", on left bank 30 ft (9 m) upstream from main weir, 0.8 mi (1.3 km) west of Kukuihaele School, and 1.0 mi (1.6 km) northeast of Waipio.

PERIOD OF RECORD.--February 1964 to June 1973 (discontinued).

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 990 ft (302 m), from topographic map.

AVERAGE DISCHARGE.--8 years (1964-72), 45.6 ft^3/s (1.291 m^3/s), 33,040 acre-ft/yr (40.7 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 69 ft^3/s (1.95 m^3/s) Mar. 2, 1964, June 26, 1971; minimum daily, 0.08 ft^3/s (0.002 m^3/s) Dec. 6, 1965.

REMARKS.--Records good. At high flow, water can be diverted from the ditch 0.1 mi (0.2 km) upstream and at the gage (see sta 16733000) to prevent flume damage downstream.

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1972 TO JUNE 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	39	17	34	47	45	41	45	54			
2	41	42	33	34	44	43	43	46	54			
3	51	53	35	36	46	45	42	44	54			
4	53	58	34	34	44	47	41	44	51			
5	50	52	35	34	41	42	40	44	54			
6	47	47	36	36	41	50	40	43	50			
7	42	46	36	39	44	43	43	52	48			
8	44	48	35	37	44	41	44	57	54			
9	44	46	41	34	57	43	41	54	48			
10	47	45	30	33	47	46	43	56	45			
11	46	45	32	32	44	46	43	54	45			
12	46	45	36	31	44	45	42	51	45			
13	46	45	35	32	45	44	43	50	52			
14	45	50	35	33	46	46	43	53	50			
15	44	47	43	31	43	45	44	53	48			
16	45	48	34	31	45	44	42	50	57			
17	43	48	33	38	42	44	41	52	53			
18	43	51	34	34	41	44	43	52	51			
19	43	48	39	33	41	44	42	50	46			
20	43	47	31	39	41	43	46	53	45			
21	44	50	28	31	48	42	48	54	44			
22	52	47	31	36	43	41	47	54	50			
23	48	48	38	32	43	43	48	54	47			
24	50	48	36	41	44	44	44	58	48			
25	42	44	28	38	43	44	43	53	44			
26	42	44	32	29	43	43	42	50	43			
27	53	44	36	50	42	43	37	48	42			
28	41	42	31	47	43	41	39	48	43			
29	38	38	34	44	------	43	43	53	46			
30	43	35	36	43	------	42	43	53	47			
31	46	------	34	48	------	42	------	57	------			------
TOTAL	1,414	1,390	1,048	1,124	1,236	1,358	1,281	1,585	1,458			
MEAN	45.6	46.3	33.8	36.3	44.1	43.8	42.7	51.1	48.6			
MAX	53	58	43	50	57	50	48	58	57			
MIN	38	35	17	29	41	41	37	43	42			
AC-FT	2,800	2,760	2,080	2,230	2,450	2,690	2,540	3,140	2,890			

CAL YR 1972 TOTAL 15,205.3 MEAN 41.5 MAX 58 MIN 4.3 AC-FT 30,160

16733200 Honokaa diversion at Honokaa

LOCATION.--Lat 20°05'12", long 155°28'36", on left bank 50 ft (15 m) downstream from Lower Hamakua ditch and 0.5 mi (0.8 km) northwest of Honokaa Hospital.

PERIOD OF RECORD.--March 1964 to June 1973 (discontinued).

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 950 ft (290 m), from topographic map.

AVERAGE DISCHARGE.--8 years (1964-72), 15.5 ft^3/s (0.439 m^3/s), 11,230 acre-ft/yr (13.8 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 26 ft^3/s (0.74 m^3/s) Dec. 11, 1971; no flow Dec. 8, 1965, Jan. 23, 1972.

REMARKS.--Records good. The diversion is from Lower Hamakua ditch (see sta 16733300) for use in Honokaa Sugar Co. mill.

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1972 TO JUNE 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	14	7.8	15	20	23	24	22	19			
2	15	13	15	15	20	22	24	23	18			
3	15	16	15	15	19	22	24	22	19			
4	15	16	15	15	19	23	23	22	18			
5	14	16	14	15	19	22	23	22	18			
6	15	16	15	15	20	23	22	22	18			
7	14	16	14	15	20	23	23	22	16			
8	15	16	14	15	21	23	24	23	16			
9	14	16	16	14	22	23	24	23	16			
10	15	16	15	14	21	24	23	23	18			
11	15	16	15	14	20	24	23	23	17			
12	15	16	15	15	20	24	24	23	16			
13	14	16	15	15	21	24	24	23	16			
14	14	16	15	15	21	24	24	23	16			
15	15	16	15	14	21	24	24	23	16			
16	15	16	16	14	21	24	24	19	17			
17	15	16	15	14	21	24	24	17	17			
18	14	16	15	15	21	24	24	20	17			
19	14	16	16	14	20	24	23	22	17			
20	14	16	15	15	20	24	24	23	16			
21	15	16	14	15	22	24	24	23	16			
22	15	16	15	15	23	23	24	23	17			
23	15	16	16	14	21	24	24	23	16			
24	16	16	16	15	21	24	24	24	17			
25	16	16	15	15	21	24	24	24	16			
26	14	16	15	10	21	24	24	24	14			
27	16	16	15	14	21	25	22	24	14			
28	15	16	15	15	22	24	22	22	14			
29	14	15	15	18	------	24	22	20	15			
30	14	15	15	19	------	24	22	19	15			
31	14	------	15	20	------	24	------	19	------			------
TOTAL	457	473	458.8	463	579	732	704	685	495			
MEAN	14.7	15.8	14.8	14.9	20.7	23.6	23.5	22.1	16.5			
MAX	16	16	16	20	23	25	24	24	19			
MIN	14	13	7.8	10	19	22	22	17	14			
AC-FT	906	938	910	918	1,150	1,450	1,400	1,360	982			

CAL YR 1972 TOTAL 5,123.02 MEAN 14.0 MAX 19 MIN 0 AC-FT 10,160

16733300 Lower Hanakua ditch below Honokaa diversion, at Honokaa

LOCATION.--Lat 20°05'12", long 155°28'34", on right bank 50 ft (15 m) downstream from tunnel, 100 ft (30 m) downstream from Honokaa diversion, and 0.5 mi (0.8 km) northwest of Honokaa Hospital.

PERIOD OF RECORD.--February 1964 to June 1973 (discontinued).

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 950 ft (290 m), from topographic map.

AVERAGE DISCHARGE.--8 years (1964-72), 23.6 ft^3/s (0.668 m^3/s), 17,100 acre-ft/yr (21.1 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 40 ft^3/s (1.13 m^3/s) May 19, 1968; no flow Dec. 7, 8, 1965, Apr. 16, 1967.

REMARKS.--Records good. Excess water is spilled at wasteway 8.5 mi (13.7 km) above station (see sta 16733000) and water for Honokaa Sugar Co. mill is diverted 100 ft (30 m) above station (see sta 16733200).

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1972 TO JUNE 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	17	5.0	12	19	17	14	14	24			
2	22	16	13	13	18	15	15	17	23			
3	25	26	14	15	18	15	14	16	26			
4	27	27	13	12	18	17	16	16	23			
5	23	23	12	14	16	13	14	16	23			
6	24	22	14	14	15	19	14	15	20			
7	18	24	14	15	15	17	15	17	18			
8	22	24	14	15	15	15	17	19	22			
9	19	25	19	13	18	15	14	19	19			
10	22	22	12	12	18	16	16	19	18			
11	21	28	11	12	17	17	15	19	16			
12	20	24	12	11	16	16	15	19	16			
13	20	23	12	11	16	15	15	19	19			
14	19	26	12	12	17	17	15	19	18			
15	21	24	15	11	15	16	15	18	16			
16	20	27	15	11	16	16	15	19	22			
17	18	26	13	14	14	16	14	23	22			
18	18	28	14	14	14	17	15	21	20			
19	18	26	18	12	13	16	14	18	18			
20	18	24	14	16	13	15	15	23	17			
21	18	26	9.2	12	19	16	17	22	16			
22	26	25	11	16	18	13	15	21	18			
23	22	24	15	11	17	15	16	19	18			
24	24	25	16	15	18	16	15	21	18			
25	17	22	10	16	16	16	13	18	17			
26	15	22	11	11	17	14	12	17	17			
27	25	22	16	27	15	15	8.2	18	16			
28	21	21	11	27	14	14	12	17	16			
29	18	17	12	20	------	14	14	21	18			
30	18	13	14	15	------	15	14	23	20			
31	22	------	13	21	------	15	------	24	------			------
TOTAL	649	699	404.2	450	455	483	433.2	587	574			
MEAN	20.9	23.3	13.0	14.5	16.3	15.6	14.4	18.9	19.1			
MAX	28	28	19	27	19	19	17	24	26			
MIN	15	13	5.0	11	13	13	8.2	14	16			
AC-FT	1,290	1,390	802	893	902	958	859	1,160	1,140			

CAL YR 1972 TOTAL 8,079.4 MEAN 22.1 MAX 36 MIN 4.5 AC-FT 16,030

16756000 Kohakohau Stream near Kamuela

LOCATION.--Lat 20°02'38", long 155°41'10", on left bank 0.6 mi (1.0 km) upstream from Oolamakapehu Gulch and 1.7 mi (2.7 km) northwest of Kamuela.

DRAINAGE AREA.--2.51 mi^2 (6.50 km^2).

PERIOD OF RECORD.--March 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,273 ft (997.6 m) above mean sea level (by stadia survey by State Department of Land and Natural Resources). Prior to Jan. 11, 1967, at site 0.5 mi (0.8 km) upstream at different datums.

AVERAGE DISCHARGE.--17 years, 7.86 ft^3/s (0.223 m^3/s), 6,430 acre-ft/yr (7.93 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 189 ft^3/s (5.35 m^3/s) Mar. 7, gage height, 4.03 ft (1.228 m), from rating curve extended above 46 ft^3/s (1.30 m^3/s) on basis of computation of flow over dam at gage height 6.20 ft (1.890 m); no flow for many days.
Period of record: Maximum discharge, 3,880 ft^3/s (110 m^3/s) Aug. 7, 1958, gage height, 10.76 ft (3.280 m), site and datum then in use, from rating curve extended above 70 ft^3/s (1.98 m^3/s) by test of model of station site; no flow at times in 1968, 1971-73.

REMARKS.--Records good. Parker Ranch pipeline diverts above station at altitude 4,250 ft (1,295 m). Hawaii Division of Water and Land Development diverts by pipeline 0.3 mi (0.5 km) above station at altitude 3,400 ft (1,036 m) for domestic use in the Kamuela and Kawaihae areas since Aug. 20, 1973. Records of chemical analyses for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.6	1.0	.72	5.1	14	13	11	9.3	6.6	2.1	.40	0
2	1.8	19	.63	1.9	3.9	16	5.6	3.8	6.0	3.9	.26	0
3	9.8	49	3.3	4.5	2.2	9.2	3.3	7.4	3.6	8.1	.21	0
4	8.1	34	1.5	1.8	1.4	29	2.5	15	3.5	22	.15	0
5	2.6	57	1.1	1.1	1.1	5.1	2.1	5.5	10	30	.08	0
6	1.7	33	.85	.85	.97	55	1.8	2.7	3.2	6.4	.04	0
7	1.2	55	.66	.90	.86	96	1.6	2.5	2.5	9.4	.07	0
8	.99	30	.57	.94	.70	11	2.2	3.4	9.6	34	.05	0
9	.84	5.3	5.3	.62	53	8.1	7.1	4.0	2.4	46	.03	0
10	.66	9.0	2.0	.47	15	8.5	46	2.6	1.8	10	0	0
11	.53	57	1.1	.35	3.1	10	22	2.2	1.6	10	0	0
12	.48	12	.83	.25	1.7	3.5	16	2.3	1.5	6.6	.06	0
13	.45	3.2	.62	.17	1.3	2.2	21	2.4	4.1	3.4	.04	0
14	.36	4.5	.51	.21	1.3	6.7	6.0	1.9	4.6	6.2	.07	0
15	.32	19	23	.10	1.0	35	19	1.6	3.1	19	.02	0
16	.34	77	2.9	.07	.97	33	11	1.4	26	4.0	0	0
17	.29	36	1.2	.57	.66	64	5.7	10	27	2.4	0	0
18	.21	26	.94	.90	.54	29	5.1	29	3.6	1.9	0	0
19	.15	11	18	.36	.46	67	1.8	46	2.2	1.5	0	0
20	.13	3.2	4.9	5.0	.45	23	1.2	5.6	1.8	.92	.18	0
21	.15	2.1	1.5	1.9	57	41	1.1	3.0	1.5	1.2	.05	0
22	.34	1.7	1.1	.85	4.7	7.8	.97	2.6	1.4	2.1	.02	0
23	.59	1.5	15	.60	2.3	11	1.2	3.4	1.3	1.3	0	2.2
24	.92	1.5	4.5	1.1	3.7	67	5.8	6.2	1.2	.95	0	4.7
25	.69	1.3	1.6	1.7	22	20	2.1	2.8	1.0	.83	0	2.0
26	1.4	1.2	5.5	4.2	30	4.6	2.3	2.0	.84	.71	0	0
27	14	1.1	8.8	68	9.2	12	18	1.8	.70	.52	0	.60
28	1.5	.97	2.2	65	2.9	6.5	4.2	1.5	.61	2.6	0	1.4
29	.91	.88	1.2	41	------	17	3.3	1.5	.57	1.4	0	15
30	2.8	.82	.91	16	------	55	7.1	1.7	.48	.67	0	1.0
31	2.2	------	.86	28	------	41	------	9.5	------	.52	0	------
TOTAL	66.05	554.27	113.80	254.51	236.41	807.2	238.07	194.6	134.30	240.62	1.73	26.90
MEAN	2.13	18.5	3.67	8.21	8.44	26.0	7.94	6.28	4.48	7.76	.056	.90
MAX	14	77	23	68	57	96	46	46	27	46	.40	15
MIN	.13	.82	.51	.07	.45	2.2	.97	1.4	.48	.52	0	0
AC-FT	131	1,100	226	505	469	1,600	472	386	266	477	3.4	53

CAL YR 1972 TOTAL 2,497.36 MEAN 6.82 MAX 167 MIN 0 AC-FT 4,950
WTR YR 1973 TOTAL 2,868.46 MEAN 7.86 MAX 96 MIN 0 AC-FT 5,690

PEAK DISCHARGE (BASE, 310 CFS).--No peak above base.

16758000 Waikoloa Stream at Marine Dam, near Kamuela

LOCATION.--Lat 20°02'48", long 155°39'58", on right bank 160 ft (49 m) upstream from Marine Dam, 0.4 mi (0.6 km) east of Puu Ohu, and 1.6 mi (2.6 km) north of Kamuela.

DRAINAGE AREA.--1.18 mi^2 (3.06 km^2).

PERIOD OF RECORD.--May 1947 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,460 ft (1,055 m), from topographic map.

AVERAGE DISCHARGE.--26 years, 8.80 ft^3/s (0.249 m^3/s), 6,380 acre-ft/yr (7.87 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 148 ft^3/s (4.19 m^3/s) Feb. 21, gage height, 3.16 ft (0.963 m), from rating curve extended as explained below; minimum, 1.5 ft^3/s (0.042 m^3/s) Sept. 19, 20.
Period of record: Maximum discharge, 3,390 ft^3/s (96.0 m^3/s) Oct. 23, 1957, gage height, 6.99 ft (2.131 m), from rating curve extended above 120 ft^3/s (3.40 m^3/s) on basis of computations of flow over dam at gage heights 5.46 (1.664) and 5.96 ft (1.817 m); minimum, 0.59 ft^3/s (0.017 m^3/s) Oct. 3-6, 1965.

REMARKS.--Records good except those for period of no gage-height record, which are fair. Diversion above station for livestock and domestic use. Records of chemical analyses for the water year 1973 are published in Part 2 of this report.

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

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	3.4	2.5	5.8	12	23	15	10	11	6.7	2.5	1.7
2	3.6	22	2.5	6.1	6.4	16	10	8.2	11	9.8	2.4	1.7
3	15	42	7.5	10	4.4	10	7.2	12	8.6	10	2.3	1.7
4	8.3	20	4.0	4.8	3.8	18	6.4	15	7.5	24	2.3	1.7
5	4.5	25	3.5	3.4	3.3	7.8	6.6	9.6	9.7	26	2.2	1.7
6	4.0	20	3.0	2.9	3.2	51	6.0	7.0	7.4	10	2.2	2.2
7	3.2	25	2.5	3.6	3.3	55	5.4	7.5	6.6	14	2.3	2.6
8	2.8	20	2.5	4.1	3.3	9.8	10	10	9.5	26	2.4	2.2
9	2.7	8.0	9.0	3.1	41	6.9	19	12	6.5	29	2.4	1.8
10	2.6	15	5.0	2.7	13	9.8	50	8.6	6.0	14	2.2	1.7
11	2.5	25	3.5	2.6	5.6	10	22	8.3	5.7	13	2.4	1.6
12	2.4	15	3.0	2.5	4.2	6.4	23	9.4	5.6	15	3.0	1.6
13	2.4	5.0	2.5	2.5	4.2	6.0	19	9.0	6.5	9.2	2.6	1.8
14	2.3	7.0	2.5	2.6	4.2	18	9.7	7.3	6.7	12	2.6	2.1
15	2.3	20	18	2.5	3.9	41	15	6.8	8.8	19	2.2	1.7
16	2.4	28	5.0	2.5	4.1	21	13	6.6	24	8.8	2.2	1.7
17	2.2	20	3.1	5.7	3.6	50	7.8	20	19	6.8	2.0	1.8
18	2.2	18	2.7	4.7	3.3	30	6.6	25	7.9	6.0	1.9	1.6
19	2.1	15	13	3.3	3.2	75	5.7	37	6.5	5.5	3.0	1.5
20	2.0	7.0	6.2	7.9	6.9	25	5.3	11	5.9	3.2	3.0	1.6
21	2.2	5.0	3.3	4.6	63	50	5.2	8.0	5.7	4.3	2.5	1.6
22	3.1	4.0	3.0	3.1	8.2	10	5.5	7.4	6.4	6.0	2.6	1.6
23	4.0	4.0	8.9	2.9	7.3	15	7.5	9.5	6.4	4.3	2.2	5.7
24	3.9	4.0	5.3	4.1	11	75	12	11	6.8	3.6	1.9	7.7
25	2.9	3.5	3.6	6.3	28	25	7.4	7.1	5.6	3.5	1.9	6.3
26	3.5	3.5	8.0	8.0	32	9.0	6.9	6.3	5.2	3.3	1.9	5.3
27	6.2	3.5	8.1	55	14	12	16	6.0	5.0	2.8	1.9	5.7
28	3.0	3.0	3.9	47	6.9	11	9.0	5.9	4.9	5.3	1.9	3.1
29	2.4	3.0	3.2	25	------	16	8.0	6.2	4.9	4.3	1.8	17
30	6.1	3.0	2.8	16	------	46	9.8	8.4	4.8	2.9	1.8	7.6
31	6.4	------	2.8	20	------	35	------	16	------	2.6	1.8	------
TOTAL	121.4	396.9	154.4	275.3	307.3	793.7	350.0	332.1	236.1	310.9	70.3	97.6
MEAN	3.92	13.2	4.98	8.88	11.0	25.6	11.7	10.7	7.87	10.0	2.27	3.25
MAX	15	42	18	55	63	75	50	37	24	29	3.0	17
MIN	2.0	3.0	2.5	2.5	3.2	6.0	5.2	5.9	4.8	2.6	1.8	1.5
AC-FT	241	787	306	546	610	1,570	694	659	468	617	139	194

CAL YR 1972 TOTAL 2,513.3 MEAN 6.87 MAX 116 MIN 1.5 AC-FT 4,990
WTR YR 1973 TOTAL 3,446.0 MEAN 9.44 MAX 75 MIN 1.5 AC-FT 6,840

PEAK DISCHARGE (BASE, 180 CFS).--No peak above base.

NOTE.--No gage-height record Nov. 4 to Dec. 14.

16759000 Hauani Gulch near Kamuela

LOCATION.--Lat 20°02'28", long 155°39'05", on left bank 800 ft (244 m) downstream from small tributary and 1.8 mi (2.9 km) northeast of Kamuela.

DRAINAGE AREA.--0.47 mi^2 (1.22 km^2).

PERIOD OF RECORD.--March 1956 to current year. Prior to July 1960, published as Hauani Stream near Kamuela.

GAGE.--Water-stage recorder. Concrete control since Feb. 27, 1963. Datum of gage is 3,117.42 ft (950.190 m) above mean sea level (Hawaii County Board of Water Supply bench mark).

AVERAGE DISCHARGE.--17 years, 1.54 ft^3/s (0.0436 m^3/s), 1,120 acre-ft/yr (1.38 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 67 ft^3/s (1.90 m^3/s) Mar. 30, gage height, 2.48 ft (0.756 m), from rating curve extended above 54 ft^3/s (1.53 m^3/s); minimum, 0.02 ft^3/s (0.001 m^3/s) Sept. 19-22.
Period of record: Maximum discharge, 503 ft^3/s (14.2 m^3/s) Oct. 23, 1957, gage height, 4.65 ft (1.417 m), from rating curve extended above 11 ft^3/s (0.31 m^3/s) on basis of slope-conveyance study; no flow at times.

REMARKS.--Records good. Diversion above station for livestock and domestic use.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.69	.16	.18	.59	1.4	4.9	2.5	.82	.91	.64	.23	.09
2	.21	4.3	.18	.85	.80	2.2	1.3	.53	1.1	1.1	.23	.09
3	2.3	7.0	.29	1.3	.52	1.8	.89	1.0	.84	.82	.24	.09
4	.76	8.7	.22	.36	.38	3.7	.78	2.0	.73	4.5	.23	.09
5	.31	13	.19	.23	.32	1.5	.67	.83	1.1	3.8	.22	.09
6	.23	4.9	.17	.18	.28	13	.61	.51	.64	1.1	.22	.09
7	.19	12	.15	.39	.26	18	.56	.72	.53	2.1	.22	.10
8	.18	3.6	.18	.37	.28	1.6	1.4	1.4	.87	4.9	.21	.09
9	.18	.94	3.0	.19	6.0	.92	5.5	1.2	.46	6.4	.19	.08
10	.19	1.1	.42	.15	1.4	1.3	12	.67	.42	1.9	.18	.07
11	.15	6.3	.23	.13	.51	1.5	3.4	.57	.39	1.5	.41	.07
12	.13	1.5	.17	.12	.34	.89	4.1	.51	.40	2.3	.34	.07
13	.12	.67	.15	.12	.33	.63	2.4	.58	.45	.97	.22	.07
14	.11	.84	.13	.14	.34	2.1	1.0	.45	.37	1.1	.21	.09
15	.10	1.1	2.6	.11	.30	8.7	1.6	.40	1.0	2.0	.18	.07
16	.11	6.5	.42	.13	.33	7.4	1.2	.46	2.3	.81	.17	.06
17	.10	2.1	.20	.40	.26	11	.72	2.1	1.4	.59	.18	.08
18	.09	2.0	.16	.29	.22	4.2	.61	6.5	.57	.46	.15	.05
19	.08	.90	2.5	.15	.21	10	.56	5.6	.44	.39	.23	.03
20	.08	.54	.64	.31	3.2	2.9	.50	1.0	.36	.37	.30	.02
21	.10	.41	.26	.26	19	4.3	.45	.75	.33	.64	.19	.02
22	.13	.35	.20	.13	.94	1.4	.50	.68	.38	.79	.18	.02
23	.19	.32	1.2	.12	1.0	2.0	.78	.95	.37	.55	.15	.29
24	.24	.29	.48	.18	1.5	18	.89	.87	.38	.42	.15	.34
25	.12	.26	.26	.31	5.8	3.1	.56	.56	.30	.43	.15	.26
26	.11	.26	.95	.61	6.0	1.2	.56	.46	.27	.47	.14	.35
27	.26	.24	.80	20	1.7	1.2	2.0	.47	.25	.32	.14	.33
28	.12	.22	.29	13	.83	1.3	.61	.47	.22	.92	.13	.10
29	.08	.20	.21	5.4	------	2.6	.44	.55	.23	.44	.11	2.9
30	.35	.20	.17	2.4	------	14	.57	1.1	.23	.30	.11	.68
31	.42	------	.16	3.4	------	9.6	------	1.6	------	.26	.10	------
TOTAL	8.43	80.90	17.16	52.32	54.45	156.94	49.66	36.31	18.24	43.29	6.11	6.78
MEAN	.27	2.70	.55	1.69	1.94	5.06	1.66	1.17	.61	1.40	.20	.23
MAX	2.3	13	3.0	20	19	18	12	6.5	2.3	6.4	.41	2.9
MIN	.08	.16	.13	.11	.21	.63	.44	.40	.22	.26	.10	.02
AC-FT	17	160	34	104	108	311	99	72	36	86	12	13

CAL YR 1972 TOTAL 402.83 MEAN 1.10 MAX 40 MIN .05 AC-FT 799
WTR YR 1973 TOTAL 530.59 MEAN 1.45 MAX 20 MIN .02 AC-FT 1,050

PEAK DISCHARGE (BASE, 78 CFS).--No peak above base.

16759200 Right Branch Waiaha Stream near Holualoa

LOCATION.--Lat 19°38'41", long 155°54'55", on right bank 1,000 ft (305 m) upstream from reservoir, 1.0 mi (1.6 km) northeast of Holualoa Makai Camp, and 2.9 mi (4.7 km) northeast of Holualoa School.

DRAINAGE AREA.--1.89 mi^2 (4.90 km^2).

PERIOD OF RECORD.--April 1960 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,280 ft (1,000 m), from topographic map.

AVERAGE DISCHARGE.--13 years, 0.380 ft^3/s (0.0108 m^3/s), 275 acre-ft/yr (339,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 161 ft^3/s (4.56 m^3/s) Mar. 21, gage height, 3.96 ft (1.207 m), from rating curve extended as explained below; no flow for many days.
Period of record: Maximum discharge, 1,630 ft^3/s (46.2 m^3/s) Oct. 3, 1968, gage height, 5.78 ft (1.762 m), from rating curve extended above 9.1 ft^3/s (0.26 m^3/s) on basis of slope-area measurements at gage heights 4.07 (1.241) and 5.78 ft (1.762 m); no flow at times each year.

REMARKS.--Records good. No diversion above station. Recording rain gage located at station. Records of chemical analyses for the water year 1973 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 2137: 1963-65(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	0			0	.02	0	.07	.01	0	.03
2		0	0			0	.01	0	.04	.01	0	.03
3		0	0			0	.05	0	.02	.01	0	.03
4		0	0			0	.02	0	.03	.01	0	.02
5		0	0			0	.01	0	.02	.01	0	.04
6		0	0			0	0	0	.01	.01	.01	.05
7		0	0			0	0	0	.02	.01	.01	.07
8		0	0			0	0	0	.02	.01	.01	.08
9		0	0			0	0	0	.02	.01	0	.04
10		0	0			0	0	0	.01	.01	0	.02
11		0	0			0	0	0	.01	.01	0	.03
12		0	0			0	0	0	.01	.01	0	.03
13		0	0			0	0	0	.01	0	0	.02
14		0	0			0	0	0	.01	0	.01	.65
15		0	.04			0	0	0	.01	0	.01	.30
16		0	.01			0	0	0	.01	0	0	.11
17		.11	0			0	0	0	.14	0	0	.05
18		.01	0			0	0	0	.51	0	0	.03
19		0	.42			0	0	0	.23	0	0	.02
20		0	.09			0	0	.01	.09	0	0	.01
21		0	.03			13	0	.01	.06	0	0	.01
22		0	.01			1.6	0	.56	.05	0	0	.01
23		0	0			.25	0	.33	.04	0	0	.01
24		0	0			.16	0	.19	.03	0	0	.01
25		0	0			.12	0	.14	.03	0	0	.01
26		0	0			.05	0	.08	.01	0	.03	.01
27		0	0			.02	0	.04	.01	0	.08	.01
28		0	0			.01	0	.46	.01	0	.04	.01
29		0	0		------	.02	0	.30	.01	0	.04	0
30		0	0		------	.01	0	.12	.01	0	.04	0
31		------	.01		------	.01	------	.08	------	0	.06	------
TOTAL	0	.12	.61	0	0	15.25	.11	2.32	1.55	.12	.34	1.74
MEAN	0	.004	.020	0	0	.49	.004	.075	.052	.004	.011	.058
MAX	0	.11	.42	0	0	13	.05	.56	.51	.01	.08	.65
MIN	0	0	0	0	0	0	0	0	.01	0	0	0
AC-FT	0	.2	1.2	0	0	30	.2	4.6	3.1	.2	.7	3.5

CAL YR 1972 TOTAL 46.70 MEAN .13 MAX 8.2 MIN 0 AC-FT 93
WTR YR 1973 TOTAL 22.16 MEAN .061 MAX 13 MIN 0 AC-FT 44

PEAK DISCHARGE (BASE, 115 CFS).--Mar. 21 (2030) 161 cfs (3.96 ft).

16759800 Kiilae Stream near Honaunau

LOCATION.--Lat 19°24'52", long 155°50'56", on right bank 2.4 mi (3.9 km) northeast of Kealia and 3.0 mi (4.8 km) southeast of Honaunau Post Office.

DRAINAGE AREA.--0.67 mi^2 (1.74 km^2).

PERIOD OF RECORD.--April 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,898 ft (883.3 m) above mean sea level (by stadia traverse).

AVERAGE DISCHARGE.--15 years, 0.207 ft^3/s (0.0059 m^3/s), 150 acre-ft/yr (150,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 47 ft^3/s (1.33 m^3/s) Mar. 22, gage height, 1.78 ft (0.543 m); no flow for many days.
Period of record: Maximum discharge, 104 ft^3/s (2.95 m^3/s) Jan. 13, 1959, gage height, 2.32 ft (0.707 m), from rating curve extended above 5.7 ft^3/s (0.161 m^3/s); no flow at times each year.

REMARKS.--Records good. No diversion above station. Banks overflow at high stage and part of overflow is lost in lava. Recording rain gage located at station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.01	0	.05		0	.06	0	0	0	0	0
2	0	0	0	0		0	.14	0	0	.02	.01	0
3	0	0	0	0		0	.28	0	0	.02	0	0
4	0	0	0	0		0	.10	0	.02	0	0	0
5	0	0	0	0		0	.04	0	0	0	0	.01
6	0	0	0	0		0	.01	0	0	0	0	.54
7	.18	0	0	0		0	0	0	0	0	0	.05
8	0	0	0	.54		0	0	0	0	0	0	0
9	0	0	0	.06		0	0	0	.02	0	0	0
10	0	0	0	0		.01	.02	0	0	0	0	0
11	0	0	0	0		0	.03	0	0	0	0	0
12	0	0	0	0		0	0	0	0	0	0	0
13	0	0	0	0		0	0	0	0	0	0	0
14	0	0	0	0		0	0	.14	.21	0	0	.02
15	0	0	.21	0		0	0	.07	.05	0	0	.23
16	0	0	0	0		0	0	.02	0	0	0	.07
17	0	.17	0	0		.02	0	0	.05	0	0	0
18	.02	.02	0	0		0	0	0	.61	0	0	0
19	0	0	.74	0		0	0	.19	.12	0	0	0
20	0	0	0	0		.01	0	.09	.02	0	0	0
21	0	0	0	0		2.5	0	.14	.01	0	0	.01
22	0	0	0	0		4.8	0	1.5	0	0	0	0
23	0	0	0	0		1.8	0	.24	0	0	0	1.3
24	0	0	0	0		.40	0	.03	0	.01	0	.09
25	0	0	0	0		.15	0	0	0	.23	.08	0
26	0	0	0	0		.10	0	0	0	.02	1.1	0
27	0	0	0	0		.04	0	0	0	0	.03	0
28	0	0	0	0		.03	0	.03	0	0	.06	0
29	0	0	0	0	------	.02	0	.03	0	0	.01	0
30	0	0	0	0	------	.84	0	.03	0	0	0	0
31	0	------	0	0	------	.20	------	0	------	0	0	------
TOTAL	.20	.20	.95	.65	0	10.92	.68	2.51	1.11	.30	1.29	2.32
MEAN	.007	.007	.031	.021	0	.35	.023	.081	.037	.010	.042	.077
MAX	.18	.17	.74	.54	0	4.8	.28	1.5	.61	.23	1.1	1.3
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	.4	.4	1.9	1.3	0	22	1.3	5.0	2.2	.6	2.6	4.6

CAL YR 1972 TOTAL 41.56 MEAN .11 MAX 2.7 MIN 0 AC-FT 82
WTR YR 1973 TOTAL 21.13 MEAN .058 MAX 4.8 MIN 0 AC-FT 42

PEAK DISCHARGE (BASE, 25 CFS).--Mar. 22 (0230) 47 cfs (1.78 ft).

16764000 Hilea Gulch tributary near Honuapo

LOCATION.--Lat 19°10'27", long 155°35'58", on right bank 0.5 mi (0.8 km) upstream from mouth, 6.6 mi (10.6 km) northwest of Honuapo, and 6.7 mi (10.8 km) west of Punaluu.

DRAINAGE AREA.--9.17 mi^2 (23.75 km^2).

PERIOD OF RECORD.--February 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,940 ft (896 m), from topographic map.

AVERAGE DISCHARGE.--7 years, 7.41 ft^3/s (0.210 m^3/s), 5,370 acre-ft/yr (6.62 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,040 ft^3/s (29.5 m^3/s) Oct. 3, gage height, 6.00 ft (1.829 m), from rating curve extended above 75 ft^3/s (2.12 m^3/s); no flow for many days.
Period of record: Maximum discharge, 1,220 ft^3/s (34.6 m^3/s) Dec. 30, 1966, gage height, 6.35 ft (1.935 m), from rating curve extended above 75 ft^3/s (2.12 m^3/s); no flow at times each year.

REMARKS.--Records good. No diversion above station. Recording rain gage located at station. Records of chemical analyses for the water year 1973 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	1.8	.03	.01	0	.05	.41	.21	.38	.20	.02	.44
2	1.0	14	.03	0	0	.04	.32	.08	.38	.56	.01	1.5
3	60	12	.03	.01	3.6	0	.18	.03	.40	.39	.01	.44
4	8.0	1.6	.02	.01	.58	0	.12	.15	.33	11	0	.17
5	3.0	.41	.01	.09	.02	0	.06	.11	.30	4.5	.07	.13
6	4.0	.28	.01	.02	0	0	.03	.03	.23	.26	.02	.11
7	2.0	.23	0	.16	0	0	.02	.12	.23	.15	.01	1.4
8	3.0	.22	0	.09	0	0	.03	.14	.13	.11	0	.28
9	6.0	.15	0	.02	0	0	.18	16	.11	.12	.14	.10
10	2.5	.13	0	0	0	0	7.5	20	.08	.11	.03	.27
11	4.0	8.1	0	0	0	0	.82	5.8	.07	.05	1.8	.47
12	.50	1.0	0	0	0	0	.13	1.4	.04	.03	2.3	.46
13	.40	.18	0	0	0	0	2.5	1.0	.03	.03	11	26
14	.30	.13	0	0	0	0	.59	2.1	.96	3.5	19	141
15	20	.12	0	0	0	0	.12	2.4	1.7	2.0	5.4	5.7
16	8.0	.12	0	0	0	0	.07	1.1	36	12	3.7	1.2
17	1.0	3.0	0	0	0	2.1	.03	.76	28	5.4	1.1	.48
18	.80	10	0	0	0	.03	.02	1.0	14	2.0	.28	.26
19	.60	2.2	.22	0	0	0	.02	.33	3.5	.44	.20	.16
20	.50	.29	.08	0	0	.51	.08	.98	1.3	.33	.45	.21
21	.40	.21	.01	0	0	3.4	.58	.28	1.9	.17	1.6	.13
22	.30	.15	0	0	0	31	.20	32	.72	.12	.87	.10
23	50	.21	0	0	0	3.2	.14	16	.45	.08	.23	49
24	10	.13	0	0	.11	4.9	.10	31	.32	.58	.12	20
25	40	.46	0	0	.03	1.4	.12	10	.26	.62	.08	2.0
26	25	.18	0	0	.18	1.7	.09	4.0	.18	.70	.04	14
27	9.8	.11	0	0	.12	2.1	.02	.60	7.5	.13	.23	87
28	3.1	.10	.04	0	.07	.13	.03	42	4.3	.17	.16	10
29	.66	.07	.05	0	------	.05	6.2	30	1.1	.12	.08	26
30	.40	.05	.01	0	------	28	.84	5.6	.28	.06	.04	9.1
31	7.9	------	.02	0	------	1.7	------	.72	------	.03	.78	------
TOTAL	288.16	57.63	.56	.41	4.71	80.31	21.55	225.94	105.18	45.96	49.77	398.11
MEAN	9.30	1.92	.018	.013	.17	2.59	.72	7.29	3.51	1.48	1.61	13.3
MAX	60	14	.22	.16	3.6	31	7.5	42	36	12	19	141
MIN	.30	.05	0	0	0	0	.02	.03	.03	.03	0	.10
AC-FT	572	114	1.1	.8	9.3	159	43	448	209	91	99	790

CAL YR 1972 TOTAL 1,907.30 MEAN 5.21 MAX 78 MIN 0 AC-FT 3,780
WTR YR 1973 TOTAL 1,278.29 MEAN 3.50 MAX 141 MIN 0 AC-FT 2,540

PEAK DISCHARGE (BASE, 600 CFS).--Oct. 3 (about 1730) 1,040 cfs (6.00 ft).

NOTE.--No gage-height record Oct. 1-25.

16765000 Hilea Gulch tributary No. 2 near Honuapo

LOCATION.--Lat 19°10'17", long 155°36'05", on right bank 0.5 mi (0.8 km) upstream from mouth, 6.3 mi (10.1 km) northwest of Honuapo, and 6.6 mi (10.6 km) west of Punaluu.

DRAINAGE AREA.--1.86 mi² (4.82 km²).

PERIOD OF RECORD.--February 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,880 ft (878 m), from topographic map.

AVERAGE DISCHARGE.--7 years, 2.85 ft³/s (0.0807 m³/s), 2,060 acre-ft/yr (2.54 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 325 ft³/s (9.20 m³/s) Sept. 14, gage height, 6.04 ft (1.841 m), from rating curve extended above 41 ft³/s (1.16 m³/s); no flow for many days.
Period of record: Maximum discharge, 523 ft³/s (14.8 m³/s) Dec. 30, 1966, gage height, 7.16 ft (2.182 m), from rating curve extended above 41 ft³/s (1.16 m³/s); no flow many days each year.

REMARKS.--Records good. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	.10				0	0	0	0	0	0	0
2	.01	6.5				0	0	0	0	0	0	0
3	23	4.3				0	0	0	0	0	0	0
4	1.8	.21				0	0	0	0	4.9	0	0
5	.14	0				0	0	0	0	1.2	0	0
6	.38	0				0	0	0	0	0	0	0
7	.07	0				0	0	0	0	0	0	0
8	.19	0				0	0	0	0	0	0	0
9	.66	0				0	0	2.9	0	0	0	0
10	.20	0				0	.77	5.0	0	0	0	0
11	.38	3.9				0	.03	.64	0	0	.30	0
12	0	.35				0	0	.03	0	0	.03	0
13	0	0				0	0	0	0	0	4.4	11
14	0	0				0	0	0	0	.50	6.4	90
15	6.7	0				0	0	0	0	.02	.59	1.4
16	1.9	0				0	0	0	15	1.3	.22	.01
17	.03	.42				0	0	0	9.7	.34	.04	0
18	0	1.8				0	0	0	2.2	.18	0	0
19	0	.24				0	0	0	.44	0	0	0
20	0	0				0	0	0	0	0	0	0
21	0	0				0	0	0	0	0	0	0
22	0	0				13	0	16	0	0	0	0
23	19	0				.84	0	7.8	0	0	0	28
24	3.3	0				1.0	0	10	0	0	0	8.2
25	17	0				.22	0	1.6	0	0	0	.11
26	9.4	0				.72	0	.39	0	0	0	3.1
27	1.9	0				.52	0	0	.56	0	0	44
28	.29	0				0	0	17	.25	0	0	4.6
29	0	0			------	0	.52	12	.03	0	0	11
30	0	0			------	10	.02	1.1	0	0	0	2.8
31	.61	------			------	.23	------	0	------	0	0	------
TOTAL	92.26	17.82	0	0	0	26.53	1.34	74.46	28.18	8.44	11.98	204.22
MEAN	2.98	.59	0	0	0	.86	.045	2.40	.94	.27	.39	6.81
MAX	23	6.5	0	0	0	13	.77	17	15	4.9	6.4	90
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	183	35	0	0	0	53	2.7	148	56	17	24	405

CAL YR 1972 TOTAL 648.66 MEAN 1.77 MAX 38 MIN 0 AC-FT 1,290
WTR YR 1973 TOTAL 465.23 MEAN 1.27 MAX 90 MIN 0 AC-FT 923

PEAK DISCHARGE (BASE, 310 CFS).--Sept. 14 (0500) 325 cfs (6.04 ft).

16767000 Ninole Gulch near Punaluu

LOCATION.--Lat 19°10'44", long 155°33'46", on right bank 300 ft (91 m) downstream from forest-reserve boundary, 4.6 mi (7.4 km) northwest of Punaluu, and 6.0 mi (9.6 km) north of Honuapo.

DRAINAGE AREA.--15.5 mi^2 (40.1 km^2).

PERIOD OF RECORD.--March 1966 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 2,080 ft (634 m), from topographic map.

AVERAGE DISCHARGE.--7 years, 3.78 ft^3/s (0.107 m^3/s), 2,740 acre-ft/yr (3.38 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,980 ft^3/s (56.1 m^3/s) Oct. 3, gage height, 6.32 ft (1.926 m), from rating curve extended above 30 ft^3/s (0.85 m^3/s); no flow for many days.
Period of record: Maximum discharge, 2,430 ft^3/s (68.8 m^3/s) Apr. 11, 1970, gage height, 6.62 ft (2.018 m), from rating curve extended above 30 ft^3/s (0.85 m^3/s); no flow for many days each year.

REMARKS.--Records good except those above 60 ft^3/s (1.70 m^3/s), which are poor. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.47	.01				0		0	0	0	0	0
2	0	.34				0		0	0	0	0	0
3	71	.01				0		0	0	0	0	0
4	1.1	0				0		0	0	0	0	0
5	3.2	0				0		0	0	0	0	0
6	4.2	0				0		0	0	0	0	0
7	.93	0				0		0	0	0	0	0
8	2.1	0				0		0	0	0	0	0
9	2.8	0				0		.03	0	0	0	0
10	.65	0				0		.42	0	0	0	0
11	.19	0				0		.20	0	0	0	0
12	0	0				0		0	0	0	0	0
13	0	0				0		0	0	0	.19	27
14	0	0				0		.09	0	0	1.1	123
15	16	0				0		.04	0	0	0	.50
16	2.2	0				0		0	1.8	.11	0	0
17	.01	0				0		0	.35	0	0	0
18	0	.06				0		0	.14	0	0	0
19	0	0				0		0	.01	0	0	0
20	0	0				0		0	0	0	0	0
21	0	0				0		0	0	0	0	0
22	0	0				23		15	0	0	0	0
23	15	0				.32		.09	0	0	0	8.9
24	.44	0				0		1.9	0	0	0	.39
25	25	0				0		.31	0	0	0	0
26	3.4	0				0		.07	0	0	0	8.0
27	1.3	0				0		0	.04	0	0	79
28	.13	0				0		11	0	0	0	1.7
29	0	0			------	0		12	0	0	0	8.7
30	0	0			------	1.7		.17	0	0	0	.10
31	.11	------			------	.03	------	0	------	0	0	------
TOTAL	150.23	.42	0	0	0	25.05	0	41.32	2.34	.11	1.29	257.09
MEAN	4.85	.014	0	0	0	.81	0	1.33	.078	.004	.042	8.57
MAX	71	.34	0	0	0	23	0	15	1.8	.11	1.1	123
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	298	.8	0	0	0	50	0	82	4.6	.2	2.6	510

CAL YR 1972 TOTAL 706.81 MEAN 1.93 MAX 71 MIN 0 AC-FT 1,400
WTR YR 1973 TOTAL 477.85 MEAN 1.31 MAX 123 MIN 0 AC-FT 948

PEAK DISCHARGE (BASE, 1,000 CFS).--Oct. 3 (1815) 1,980 cfs (6.32 ft).

16770500 Paauau Gulch at Pahala

LOCATION.--Lat 19°12'39", long 155°28'48", on right bank 100 ft (30 m) downstream from bridge on Wood Valley Road and 0.7 mi (1.1 km) north of Pahala.

DRAINAGE AREA.--1.74 mi^2 (4.51 km^2).

PERIOD OF RECORD.--May 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 972 ft (296.3 m) above mean sea level (by stadia survey).

AVERAGE DISCHARGE.--11 years, 0.555 ft^3/s (0.0157 m^3/s), 402 acre-ft/yr (496,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 619 ft^3/s (17.5 m^3/s) Oct. 15, gage height, 4.31 ft (1.314 m); no flow most of time.
Period of record: Maximum discharge, 3,600 ft^3/s (102 m^3/s) Jan. 5, 1969, gage height, 5.90 ft (1.798 m), from rating curve extended above 360 ft^3/s (10.2 m^3/s) on basis of slope-area measurement at gage height 4.40 ft (1.341 m); no flow most of time.

REMARKS.--Records good. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0							0				0
2	0							0				0
3	6.4							0				0
4	.05							0				0
5	0							0				0
6	8.4							0				0
7	2.2							0				0
8	.11							0				0
9	.12							0				0
10	0							0				0
11	0							0				0
12	0							0				0
13	0							0				0
14	0							0				28
15	17							0				0
16	.34							0				0
17	0							0				0
18	0							0				0
19	0							0				0
20	0							0				0
21	0							0				0
22	0							0				0
23	0							0				0
24	0							.05				0
25	0							.09				0
26	0							0				0
27	0							0				2.7
28	0							0				1.0
29	0				------			0				0
30	0				------			0				0
31	0	------			------		------	0	------			------
TOTAL	34.62	0	0	0	0	0	0	.14	0	0	0	31.7
MEAN	1.12	0	0	0	0	0	0	.005	0	0	0	1.06
MAX	17	0	0	0	0	0	0	.09	0	0	0	28
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	69	0	0	0	0	0	0	.3	0	0	0	63

CAL YR 1972 TOTAL 89.61 MEAN .24 MAX 32 MIN 0 AC-FT 178
WTR YR 1973 TOTAL 66.46 MEAN .18 MAX 28 MIN 0 AC-FT 132

PEAK DISCHARGE (BASE, 180 CFS).--Oct. 6 (1900) 205 cfs (3.71 ft); Oct. 15 (2000) 619 cfs (4.31 ft).

16800000 Denni Spring

LOCATION.--Lat 15°11'57" N., long 145°46'05" E., 2.8 mi (4.5 km) southeast of Tanapag, 3.1 mi (5.0 km) east of Garapan, and 5.6 mi (9.0 km) northeast of Chalan Kanoa.

PERIOD OF RECORD.--August 1952 to June 1954 (published as Donni Spring near Garapan), March 1968, January 1969 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 261 ft (79.6 m), from U.S. Navy.

AVERAGE DISCHARGE.--5 years (1952-53, 1969-73), 0.536 ft^3/s (0.0151 m^3/s), 388 acre-ft/yr (478,000 m^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 2.7 ft^3/s (0.076 m^3/s) Aug. 11-16, 1972; minimum daily, 0.02 ft^3/s (0.001 m^3/s) Sept. 16, 17, 1969.

REMARKS.--Records poor.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.87	.60	.50	.34	.22	.14	.10	.10	.08	.06	.10	.15
2	.80	.60	.50	.34	.22	.12	.10	.10	.08	.06	.10	.15
3	1.1	.65	.50	.34	.22	.12	.10	.10	.08	.06	.10	.15
4	1.2	.75	.50	.34	.22	.12	.10	.10	.08	.06	.11	.15
5	1.3	.75	.50	.34	.22	.12	.10	.10	.08	.06	.11	.15
6	1.3	.75	.45	.34	.22	.12	.10	.10	.07	.06	.10	.15
7	1.3	.70	.45	.34	.22	.11	.10	.10	.07	.06	.10	.15
8	1.3	.70	.45	.33	.22	.11	.10	.10	.07	.06	.10	.17
9	1.2	.70	.45	.32	.22	.11	.10	.10	.07	.06	.10	.20
10	1.2	.65	.45	.31	.21	.11	.10	.10	.07	.06	.10	.20
11	1.1	.65	.45	.29	.20	.11	.10	.10	.07	.06	.10	.20
12	1.1	.60	.45	.28	.20	.12	.10	.10	.07	.06	.12	.20
13	1.0	.60	.45	.28	.20	.12	.10	.10	.07	.06	.11	.21
14	1.0	.60	.45	.28	.20	.12	.10	.10	.07	.06	.10	.23
15	1.0	.60	.43	.28	.20	.12	.10	.10	.07	.07	.11	.23
16	.90	.60	.42	.28	.20	.12	.10	.09	.07	.08	.11	.23
17	.80	.60	.41	.27	.19	.12	.10	.09	.07	.08	.11	.23
18	.80	.60	.41	.26	.19	.12	.10	.09	.07	.08	.12	.21
19	.80	.55	.41	.26	.18	.12	.10	.09	.07	.09	.12	.25
20	.75	.55	.40	.25	.17	.12	.10	.09	.07	.09	.13	.25
21	.70	.55	.40	.25	.17	.12	.10	.09	.07	.09	.13	.25
22	.70	.55	.39	.25	.16	.12	.10	.09	.07	.09	.12	.25
23	.65	.55	.38	.25	.16	.12	.10	.09	.07	.10	.11	.25
24	.65	.55	.37	.25	.15	.12	.10	.09	.06	.10	.11	.23
25	.65	.50	.37	.25	.15	.12	.10	.09	.06	.10	.11	.23
26	.65	.50	.37	.25	.15	.12	.10	.09	.06	.10	.11	.21
27	.65	.50	.37	.25	.15	.12	.10	.09	.06	.10	.13	.21
28	.65	.50	.36	.25	.15	.12	.10	.09	.06	.10	.15	.21
29	.70	.50	.35	.25	------	.10	.10	.09	.06	.10	.15	.21
30	.70	.50	.34	.25	------	.10	.10	.08	.06	.10	.15	.23
31	.65	------	.34	.25	------	.10	------	.08	------	.10	.15	------
TOTAL	28.17	18.00	13.07	8.82	5.36	3.63	3.00	2.92	2.08	2.41	3.57	6.14
MEAN	.91	.60	.42	.28	.19	.12	.10	.094	.069	.078	.12	.20
MAX	1.3	.75	.50	.34	.22	.14	.10	.10	.08	.10	.15	.25
MIN	.65	.50	.34	.25	.15	.10	.10	.08	.06	.06	.10	.15
AC-FT	56	36	26	17	11	7.2	6.0	5.8	4.1	4.8	7.1	12

CAL YR 1972 TOTAL 187.05 MEAN .51 MAX 2.7 MIN .12 AC-FT 371
WTR YR 1973 TOTAL 97.17 MEAN .27 MAX 1.3 MIN .06 AC-FT 193

16801000 South Fork Talofofo Stream

LOCATION.--Lat 15°12'58" N., long 145°46'31" E., on left bank 0.3 mi (0.5 km) upstream from confluence with Middle and North Forks, 1.4 mi (2.3 km) south of Ogso Dogas, and 2.2 mi (3.5 km) southeast of Tanapag.

DRAINAGE AREA.--0.69 mi^2 (1.79 km^2). Area at site used prior to Mar. 31, 1971, 0.73 mi^2 (1.89 km^2).

PERIOD OF RECORD.--October 1968 to current year. Low-flow records not equivalent prior to Mar. 31, 1971, due to undetermined amount of underflow between sites.

GAGE.--Water-stage recorder. Concrete control since Mar. 31, 1971. Altitude of gage is 30 ft (9 m), from topographic map. Prior to Mar. 31, 1971, at site 0.2 mi (0.3 km) downstream at different datum.

EXTREMES.--Current year: Maximum discharge, 170 ft^3/s (4.81 m^3/s) Oct. 2, gage height, 3.45 ft (1.052 m), from floodmark in well, from rating curve extended above 59 ft^3/s (1.67 m^3/s); minimum, 0.01 ft^3/s (<0.001 m^3/s) for many days in June, July.
Period of record: Maximum discharge, 1,230 ft^3/s (34.8 m^3/s) Nov. 19, 1968, gage height, 7.18 ft (2.188 m), site and datum then in use, from rating curve extended above 1.2 ft^3/s (0.034 m^3/s) on basis of estimate of discharge from high-water marks; maximum gage height, 8.14 ft (2.481 m) Nov. 2, 1968, site and datum then in use, from floodmark (backwater from vegetation); no flow at times prior to Mar. 31, 1971, at site then in use.

REMARKS.--Records fair. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.96	.80	.45	.25	.22	.09	.10	.06	.02	.01	.09	.22
2	5.4	2.5	.42	.28	.20	.09	.09	.05	.02	.01	.10	.20
3	6.5	4.3	.42	.25	.17	.09	.08	.05	.02	.01	.10	.17
4	5.9	2.2	.45	.22	.17	.09	.08	.05	.02	.01	.28	.38
5	2.8	1.5	.42	.22	.14	.08	.08	.06	.02	.01	.10	1.1
6	2.0	1.3	.40	.20	.14	.08	.06	.05	.01	.01	.06	.45
7	1.6	1.1	.38	.20	.14	.08	.06	.05	.01	.01	.06	.45
8	1.4	1.0	.45	.20	.14	.08	.06	.04	.01	.01	.05	3.7
9	1.9	.96	.40	.20	.20	.09	.06	.04	.01	.01	.05	1.4
10	1.4	.90	.38	.20	.14	.08	.08	.04	.01	.03	.04	.86
11	1.3	.90	.38	.20	.15	.09	.08	.03	.01	.05	.35	.72
12	1.1	.86	.38	.20	.14	.09	.09	.03	.01	.01	.22	.58
13	1.1	.81	.38	.20	.14	.09	.08	.03	.01	.05	.10	.72
14	1.0	.81	.35	.22	.14	.09	.06	.03	.10	.09	.10	.54
15	1.0	.81	.35	.20	.13	.09	.06	.03	.23	.12	.12	.45
16	.96	.76	.38	.20	.13	.09	.06	.03	.20	.25	.09	.45
17	.90	.72	.38	.22	.13	.09	.05	.03	.10	.08	.09	.42
18	.86	.68	.35	.20	.13	.08	.05	.03	.05	.10	.12	3.7
19	.86	.63	.35	.20	.12	.09	.05	.03	.03	.12	.20	1.1
20	.86	.63	.32	.20	.12	.09	.05	.02	.02	.10	.40	.72
21	.81	.58	.30	.20	.12	.09	.05	.02	.01	.08	.81	.58
22	.76	.54	.30	.20	.12	.09	.05	.02	.01	.10	.35	.45
23	.76	.54	.30	.20	.11	.09	.05	.02	.01	.12	.22	.40
24	.76	.54	.30	.20	.11	.06	.05	.10	.01	.20	.14	.35
25	.72	.50	.30	.20	.11	.08	.05	.14	.01	.14	.12	.32
26	1.1	.50	.30	.17	.10	.09	.05	.10	.01	.20	.40	.70
27	.90	.50	.28	.17	.10	.08	.08	.06	.01	.14	.68	.45
28	6.0	.50	.28	.17	.10	.08	.07	.04	.01	.10	.35	.45
29	1.5	.50	.28	.17	------	.08	.06	.03	.01	.17	.38	.40
30	1.2	.45	.25	.22	------	.12	.06	.03	.01	.06	.32	.35
31	1.0	------	.25	.25	------	.14	------	.03	------	.20	.25	------
TOTAL	55.31	29.32	10.93	6.41	3.86	2.74	1.95	1.37	1.01	2.60	6.74	22.78
MEAN	1.78	.98	.35	.21	.14	.088	.065	.044	.034	.084	.22	.76
MAX	6.5	4.3	.45	.28	.22	.14	.10	.14	.23	.25	.81	3.7
MIN	.72	.45	.25	.17	.10	.06	.05	.02	.01	.01	.04	.17
AC-FT	110	58	22	13	7.7	5.4	3.9	2.7	2.0	5.2	13	45

CAL YR 1972 TOTAL 460.76 MEAN 1.26 MAX 83 MIN .06 AC-FT 914
WTR YR 1973 TOTAL 145.02 MEAN .40 MAX 6.5 MIN .01 AC-FT 288

PEAK DISCHARGE (BASE, 400 CFS).--No peak above base.

NOTE.--No gage-height record Apr. 27 to June 30.

16801500 Middle Fork Talofofo Stream

LOCATION.--Lat 15°13'05" N., long 145°46'36" E., on left bank 700 ft (213 m) upstream from confluence with South and North Forks, 2.2 mi (3.5 km) southeast of Tanapag, and 3.7 mi (6.0 km) east of Garapan.

DRAINAGE AREA.--0.35 mi^2 (0.91 km^2).

PERIOD OF RECORD.--March 1968 to current year.

GAGE.--Water-stage recorder. Concrete control since Feb. 28, 1971. Altitude of gage is 25 ft (7.6 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 0.668 ft^3/s (0.0189 m^3/s), 484 acre-ft/yr (597,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 61 ft^3/s (1.73 m^3/s) Oct. 2, gage height, 3.10 ft (0.945 m), from rating curve extended above 15 ft^3/s (0.42 m^3/s); minimum, 0.07 ft^3/s (0.002 m^3/s) July 5, 6.
Period of record: Maximum discharge, 526 ft^3/s (14.9 m^3/s) Nov. 19, 1968, gage height, 5.22 ft (1.591 m), from rating curve extended above 5.1 ft^3/s (0.14 m^3/s); minimum, 0.07 ft^3/s (0.002 m^3/s) July 5, 6, 1973.

REMARKS.--Records fair. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.52	.46	.38	.35	.25	.22	.22	.21	.15	.18	.16	.18
2	1.6	.77	.38	.38	.25	.22	.20	.20	.14	.18	.29	.16
3	1.8	1.2	.38	.35	.25	.21	.20	.18	.14	.16	.32	.22
4	1.4	.70	.38	.32	.24	.21	.20	.17	.13	.12	.48	.38
5	.90	.56	.38	.32	.24	.22	.20	.16	.14	.12	.26	.48
6	.70	.52	.38	.29	.24	.20	.20	.16	.16	.11	.18	.26
7	.60	.48	.38	.29	.24	.19	.20	.16	.16	.12	.18	.26
8	.60	.48	.38	.29	.24	.17	.18	.16	.14	.16	.18	1.2
9	.65	.48	.35	.29	.24	.20	.18	.16	.14	.14	.18	.48
10	.60	.48	.35	.29	.24	.20	.20	.18	.16	.29	.19	.29
11	.56	.44	.35	.29	.24	.20	.20	.20	.14	.16	.89	.29
12	.52	.44	.35	.29	.24	.20	.22	.16	.14	.12	.35	.26
13	.52	.44	.35	.29	.23	.20	.20	.17	.18	.20	.22	.38
14	.52	.44	.35	.29	.23	.20	.20	.17	.14	.20	.20	.26
15	.48	.44	.35	.29	.23	.20	.20	.16	.13	.26	.22	.22
16	.48	.41	.35	.29	.23	.19	.18	.16	.12	.32	.18	.24
17	.48	.41	.35	.38	.23	.24	.18	.16	.14	.16	.16	.22
18	.48	.41	.35	.32	.23	.24	.16	.16	.12	.18	.18	.66
19	.48	.41	.35	.29	.23	.22	.16	.16	.12	.20	.16	.44
20	.48	.41	.38	.26	.23	.24	.16	.16	.12	.14	.71	.26
21	.48	.41	.38	.26	.23	.22	.18	.15	.12	.18	.44	.24
22	.48	.41	.38	.24	.23	.22	.20	.15	.12	.20	.24	.24
23	.48	.41	.35	.26	.23	.22	.20	.15	.12	.20	.20	.24
24	.48	.41	.35	.26	.23	.22	.20	.20	.14	.16	.20	.22
25	.48	.41	.35	.26	.22	.20	.22	.22	.20	.12	.20	.22
26	.70	.41	.35	.26	.22	.20	.22	.20	.22	.20	.32	.22
27	.56	.41	.32	.26	.22	.20	.29	.18	.16	.10	.44	.22
28	2.1	.38	.32	.26	.22	.20	.25	.17	.12	.18	.20	.26
29	.75	.38	.32	.25	------	.20	.24	.16	.12	.26	.20	.24
30	.56	.38	.32	.25	------	.26	.23	.16	.18	.18	.18	.22
31	.56	------	.32	.25	------	.24	------	.15	------	.32	.16	------
TOTAL	22.00	14.39	11.03	8.97	6.55	6.55	6.07	5.31	4.31	5.62	8.47	9.46
MEAN	.71	.48	.36	.29	.23	.21	.20	.17	.14	.18	.27	.32
MAX	2.1	1.2	.38	.38	.25	.26	.29	.22	.22	.32	.89	1.2
MIN	.48	.38	.32	.24	.22	.17	.16	.15	.12	.10	.16	.16
AC-FT	44	29	22	18	13	13	12	11	8.5	11	17	19

CAL YR 1972 TOTAL 207.13 MEAN .57 MAX 26 MIN .13 AC-FT 411
WTR YR 1973 TOTAL 108.73 MEAN .30 MAX 2.1 MIN .10 AC-FT 216

PEAK DISCHARGE (BASE, 150 CFS).--No peak above base.

NOTE.--No gage-height record Jan. 29 to Mar. 8, Apr. 27 to June 4.

16806000 Lupug Spring

LOCATION.--Lat 14°07'22" N., long 145°11'13" E., on right bank 20 ft (6 m) downstream from mouth of large cave where spring originates, 2.8 mi (4.5 km) east of Rota School, and 3.1 mi (5.0 km) west of Haaniya Cape.

PERIOD OF RECORD.--April 1971 to April 1972, current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,120 ft (341.4 m), from vertical-angle survey.

EXTREMES.--Period of record: Maximum daily discharge, 7.6 ft^3/s (0.22 m^3/s) Aug. 6, 1972; no flow for many days in 1973.

REMARKS.--Records fair. About 0.75 ft^3/s (0.021 m^3/s) is diverted from the cave above station for domestic use in the village of Songsong.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	.71	.60	.52	.33	.25	.14	.03			0	.04
2	1.3	.71	.60	.52	.33	.25	.14	.01			0	.07
3	1.3	.66	.60	.52	.33	.23	.14	0			0	.04
4	1.3	.66	.60	.52	.33	.23	.14	0			0	.01
5	1.2	.66	.60	.52	.33	.22	.13	0			0	.01
6	1.2	.66	.60	.52	.33	.22	.13	0			0	0
7	1.2	.66	.60	.52	.33	.20	.13	0			0	0
8	1.2	.66	.60	.52	.33	.20	.13	0			0	.01
9	1.2	.66	.60	.52	.31	.20	.12	0			0	.02
10	1.2	.60	.57	.52	.31	.20	.12	0			0	.04
11	1.2	.60	.57	.52	.31	.20	.12	0			0	.04
12	1.2	.60	.57	.49	.31	.20	.12	0			0	.04
13	1.2	.60	.57	.49	.30	.20	.12	0			0	.03
14	1.2	.60	.57	.46	.30	.20	.11	0			0	.08
15	1.2	.57	.55	.46	.30	.19	.11	0			0	.07
16	1.2	.57	.55	.46	.30	.19	.11	0			0	.06
17	1.1	.55	.55	.46	.30	.19	.10	0			0	.04
18	1.1	.52	.55	.44	.28	.19	.10	0			0	.03
19	1.1	.52	.55	.44	.27	.17	.10	0			0	.02
20	1.0	.52	.52	.41	.27	.17	.10	0			0	.01
21	1.0	.52	.52	.41	.27	.17	.09	0			0	.01
22	.98	.49	.52	.38	.27	.17	.09	0			0	.01
23	.93	.49	.52	.38	.27	.17	.09	0			0	.01
24	.93	.49	.52	.36	.25	.17	.06	0			0	.01
25	.93	.49	.52	.36	.25	.16	.04	0			0	0
26	.93	.49	.52	.36	.25	.16	.04	0			0	0
27	.88	.49	.52	.36	.25	.16	.04	0			.04	0
28	.88	.49	.52	.33	.25	.15	.04	0			.04	0
29	.82	.50	.52	.33	------	.15	.04	0			.03	0
30	.76	.55	.52	.33	------	.14	.04	0			.06	0
31	.71	------	.52	.33	------	.14	------	0	------		.06	------
TOTAL	33.65	17.29	17.24	13.76	8.26	5.84	2.98	.04	0	0	.23	.70
MEAN	1.09	.58	.56	.44	.30	.19	.099	.001	0	0	.007	.023
MAX	1.3	.71	.60	.52	.33	.25	.14	.03	0	0	.06	.08
MIN	.71	.49	.52	.33	.25	.14	.04	0	0	0	0	0
AC-FT	67	34	34	27	16	12	5.9	.08	0	0	.5	1.4

WTR YR 1973 TOTAL 99.99 MEAN .27 MAX 1.3 MIN 0 AC-FT 198

16808300 Finile Creek at Agat

LOCATION.--Lat 13°22'39" N., long 144°39'26" E., on right bank 0.4 mi (0.6 km) upstream from estuary and 0.4 mi (0.6 km) south of Agat School.

DRAINAGE AREA.--0.28 mi^2 (0.73 km^2).

PERIOD OF RECORD.--April 1960 to current year. Prior to October 1969, published as Finile River at Agat.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 20 ft (6.1 m), from topographic map.

AVERAGE DISCHARGE.--13 years, 1.44 ft^3/s (0.0408 m^3/s), 1,040 acre-ft/yr (1.28 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 256 ft^3/s (7.25 m^3/s) Sept. 11, gage height, 3.28 ft (1.000 m), from floodmark in well, from rating curve extended above 50 ft^3/s (1.42 m^3/s) on basis of slope-area measurement at gage height 3.66 ft (1.116 m); minimum, 0.04 ft^3/s (0.001 m^3/s) July 2-4, 6, 8, 9.
Period of record: Maximum discharge, 319 ft^3/s (9.03 m^3/s) Oct. 17, 1969, gage height, 3.81 ft (1.161 m), from floodmark in well, from rating curve extended above 30 ft^3/s (0.85 m^3/s) on basis of slope-area measurement at gage height 3.66 ft (1.116 m); minimum, 0.04 ft^3/s (0.001 m^3/s) July 2-4, 6, 8, 9, 1973.

REMARKS.--Records good. No diversion above station.

REVISIONS: WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	.96	.85	.66	.44	.33	.20	.33	.09	.09	.24	.51
2	1.2	2.2	.85	.66	.44	.33	.20	.33	.38	.09	.58	.44
3	1.2	2.0	.75	.75	.51	.33	.20	.33	.12	.06	.44	5.0
4	1.1	1.1	.85	.75	.51	.28	.28	.28	.12	.09	.24	.96
5	1.2	3.0	.75	.66	.51	.24	.20	.28	.20	.12	.20	.96
6	1.1	1.3	.66	.58	.51	.24	.20	.28	.20	.09	.20	3.9
7	1.6	1.3	.66	.58	.44	.24	.20	.28	.24	.09	.44	1.1
8	1.2	1.2	.66	.58	.44	.24	.24	.28	.24	.06	.24	1.3
9	1.1	1.6	4.8	.58	.44	.24	.20	.28	.24	.09	.20	.85
10	1.1	1.1	.85	.58	.51	.24	.20	.44	.24	.28	.20	.75
11	.96	1.3	.75	.58	.58	.24	.20	.24	.24	.58	.28	10
12	.96	.96	.75	.58	.58	.24	.20	.24	.20	.96	.51	1.0
13	1.1	.96	.75	.51	.44	.24	.20	.24	.16	.20	.38	.85
14	.96	.96	.66	.51	.44	.24	.20	.28	.20	.12	.28	.70
15	.85	1.5	.66	.51	.44	.24	.20	.28	.20	.09	.24	2.0
16	.85	1.1	.66	.51	.44	.24	.20	.28	.24	.16	.24	1.5
17	2.2	.96	.66	.51	.44	.24	.20	.28	.20	.16	.24	1.5
18	1.1	.96	.85	.51	.38	.20	.20	.28	.16	.16	.24	1.5
19	.96	.96	.96	.51	.38	.20	.20	.28	.16	.28	.24	1.2
20	.96	.85	.75	.58	.38	.20	.20	.24	.12	.16	.24	1.0
21	.96	.96	.75	.51	.33	.20	.20	.24	.12	.16	1.2	1.0
22	.96	1.1	.66	.51	.38	.20	.24	.24	.12	.16	2.0	.85
23	.85	.96	.66	.51	.38	.24	.28	.24	.16	.44	.96	.85
24	.85	1.2	.66	.51	.38	.20	.33	.24	.16	1.2	.51	.90
25	.85	.85	.66	.51	.33	.20	.38	.28	.12	.51	2.2	.80
26	.96	.85	.75	.51	.33	.24	.33	.24	.16	.28	1.2	1.0
27	1.2	.85	.66	.51	.33	.20	.28	.24	.20	.24	.85	.60
28	1.1	.85	.66	.51	.33	.20	.28	.20	.12	.20	.66	.50
29	.96	.85	.85	.51	------	.20	.28	.16	.12	.20	.58	.40
30	.96	1.1	.66	.51	------	.20	.33	.17	.09	.16	.51	.70
31	.96	------	.75	.44	------	.24	------	.09	------	.16	.51	------
TOTAL	33.51	35.84	26.85	17.23	12.04	7.31	7.05	8.09	5.32	7.64	17.05	44.62
MEAN	1.08	1.19	.87	.56	.43	.24	.24	.26	.18	.25	.55	1.49
MAX	2.2	3.0	4.8	.75	.58	.33	.38	.44	.38	1.2	2.2	10
MIN	.85	.85	.66	.44	.33	.20	.20	.09	.09	.06	.20	.40
AC-FT	66	71	53	34	24	14	14	16	11	15	34	89

CAL YR 1972 TOTAL 399.12 MEAN 1.09 MAX 16 MIN .09 AC-FT 792
WTR YR 1973 TOTAL 222.55 MEAN .61 MAX 10 MIN .06 AC-FT 441

PEAK DISCHARGE (BASE, 170 CFS).--Sept. 11 (about 0800) 256 cfs (3.28 ft).

NOTE.--No gage-height record Sept. 10-30.

16816000 Umatac River at Umatac

LOCATION.--Lat 13°17'48" N., long 144°39'46" E., on left bank 0.2 mi (0.3 km) upstream from mouth, 0.3 mi (0.5 km) southeast of Umatac, and 5.8 mi (9.3 km) northwest of Inarajan.

DRAINAGE AREA.--2.11 mi^2 (5.46 km^2).

PERIOD OF RECORD.--September 1952 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 8 ft (2.4 m), from topographic map. Prior to Oct. 16, 1953, at datum 0.62 ft (0.189 m) higher.

AVERAGE DISCHARGE.--21 years, 8.51 ft^3/s (0.241 m^3/s), 6,170 acre-ft/yr (7.61 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 2,200 ft^3/s (62.3 m^3/s) Oct. 4, gage height, 4.10 ft (1.250 m), from rating curve extended as explained below; minimum, 0.20 ft^3/s (0.006 m^3/s) May 21-25, May 29 to June 2. Period of record: Maximum discharge, 7,460 ft^3/s (211 m^3/s) Oct. 19, 1960, gage height, 7.04 ft (2.146 m), from rating curve extended above 320 ft^3/s (9.06 m^3/s) on basis of slope-area measurements at gage heights 3.51 (1.070) and 7.04 ft (2.146 m); minimum, 0.20 ft^3/s (0.006 m^3/s) June 23, 1960, May 21-25, May 29 to June 2, 1973.

REMARKS.--Records good. Upstream diversion at Piga Spring for domestic uso at Umatac. Recording rain gage located at station.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	4.4	2.4	2.6	1.3	1.0	.60	.40	.20	.50	.70	3.9
2	4.9	18	2.3	2.1	1.2	1.0	.70	.40	.30	.50	1.8	3.6
3	4.4	15	2.1	6.3	1.3	1.0	.70	.40	.60	.40	2.0	3.9
4	46	5.2	2.1	3.9	1.5	.90	.80	.40	.70	.40	1.2	3.4
5	21	5.2	2.9	3.4	2.4	.90	.80	.40	.40	.40	.90	10
6	7.3	30	2.3	2.4	2.0	.90	.70	.40	.40	.40	.80	36
7	6.6	6.2	2.0	2.1	1.6	.90	.70	.40	.40	.40	.70	7.3
8	4.7	5.6	2.0	2.1	1.5	.90	.70	.40	.40	.40	.70	12
9	4.4	5.2	41	2.0	1.3	.80	.60	.30	.40	.40	.70	5.5
10	4.4	3.9	4.7	1.8	1.6	.90	.60	.80	.40	1.5	.60	4.2
11	4.2	8.1	3.1	1.8	4.4	.80	.60	.70	.40	2.6	1.7	21
12	3.9	4.9	2.6	1.6	3.1	.80	.60	.60	.30	1.5	2.4	7.3
13	8.0	3.6	2.6	1.6	1.8	.90	.60	.60	.40	1.0	2.9	5.5
14	4.9	3.6	2.4	1.5	1.8	.80	.60	.50	.50	1.5	2.9	4.4
15	14	3.9	2.1	1.5	1.5	.80	.50	.40	.50	.90	1.8	11
16	4.4	3.6	2.1	1.3	1.3	.80	.60	.30	.70	.90	1.5	10
17	4.2	4.4	2.1	1.3	1.2	.80	.50	.40	.50	.80	1.3	10
18	10	4.2	2.3	1.2	1.0	.80	.40	.30	.50	.80	1.3	10
19	4.4	3.6	2.3	1.2	1.0	.70	.40	.30	.50	.70	1.3	7.6
20	3.9	3.4	2.1	1.2	1.0	.60	.40	.30	.50	.70	1.2	5.9
21	9.6	3.4	2.0	1.2	1.0	.80	.40	.20	.50	.60	4.7	5.9
22	5.8	3.1	2.0	1.2	1.0	.70	.40	.20	.50	.60	7.3	4.4
23	4.7	2.6	2.1	1.2	1.3	.70	.40	.20	.80	1.0	10	4.4
24	4.2	3.6	2.0	1.3	1.2	.70	.50	.20	.50	3.1	4.7	4.7
25	3.9	2.4	2.0	1.3	1.2	.60	1.2	.30	.50	2.9	16	4.2
26	3.9	2.4	2.0	2.6	1.0	.70	.60	.30	.50	1.5	13	5.8
27	9.4	2.3	1.8	1.6	1.0	.70	.60	.30	.60	1.0	10	3.9
28	7.4	2.3	1.8	1.5	1.0	.60	.50	.30	.50	.90	4.4	3.4
29	3.6	2.9	6.5	1.3	------	.60	.40	.20	.50	.70	2.9	3.1
30	3.4	4.4	2.3	1.3	------	.60	.50	.20	.50	.80	5.2	4.2
31	5.0	------	3.1	1.3	------	.70	------	.20	------	.80	4.7	------
TOTAL	230.9	171.4	115.1	58.7	42.5	24.40	17.60	11.30	14.40	30.60	111.30	226.5
MEAN	7.45	5.71	3.71	1.89	1.52	.79	.59	.36	.48	.99	3.59	7.55
MAX	46	30	41	6.3	4.4	1.0	1.2	.80	.80	3.1	16	36
MIN	3.4	2.3	1.8	1.2	1.0	.60	.40	.20	.20	.40	.60	3.1
AC-FT	458	340	228	116	84	48	35	22	29	61	221	449

CAL YR 1972 TOTAL 3,211.12 MEAN 8.77 MAX 483 MIN .64 AC-FT 6,370
WTR YR 1973 TOTAL 1,054.70 MEAN 2.89 MAX 46 MIN .20 AC-FT 2,090

PEAK DISCHARGE (BASE, 1,400 CFS).--Oct. 4 (0700) 2,200 cfs (4.10 ft).

16821000 Geus River near Merizo

LOCATION.--Lat 13°16'13" N., long 144°40'38" E., on left bank 0.7 mi (1.1 km) northeast of Merizo, 2.2 mi (3.5 km) southeast of Umatac, and 4.7 mi (7.6 km) west of Inarajan.

DRAINAGE AREA.--0.93 mi^2 (2.41 km^2).

PERIOD OF RECORD.--April 1953 to current year.

GAGE.--Water-stage recorder and broad-crested weir. Altitude of gage is 60 ft (18 m), from topographic map.

AVERAGE DISCHARGE.--20 years, 3.01 ft^3/s (0.0852 m^3/s), 2,180 acre-ft/yr (2.69 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 244 ft^3/s (6.91 m^3/s) Oct. 4, gage height, 2.44 ft (0.744 m), from floodmark in well, from rating curve extended above 58 ft^3/s (1.64 m^3/s) on basis of slope-area measurements at gage heights 4.00 (1.219) and 4.16 ft (1.268 m); no flow for many days.
Period of record: Maximum discharge, 2,940 ft^3/s (83.3 m^3/s) Oct. 19, 1960, gage height, 4.16 ft (1.268 m), from rating curve extended above 66 ft^3/s (1.87 m^3/s) on basis of slope-area measurements at gage heights 4.00 (1.219) and 4.16 ft (1.268 m); no flow at times in 1966, 1969-70, 1972-73.

REMARKS.--Records fair. Water is diverted 0.5 mi (0.8 km) upstream for domestic use and at station for irrigation.

REVISIONS (FISCAL YEARS).--WSP 1937: 1954(P), 1959(P). WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.1	.55	.14	.09	.03	.02		0	0	.09	.77
2	1.6	1.4	.43	.12	.09	.02	.02		0	0	.25	.45
3	1.4	7.4	.43	.23	.09	.02	.02		0	0	.03	.65
4	11	2.1	.43	.23	.08	.03	.01		0	0	0	.59
5	14	1.4	.55	.18	.14	.03	.03		0	0	0	6.7
6	3.9	6.6	.47	.14	.08	.06	.01		0	0	0	32
7	2.2	1.7	.43	.12	.08	.04	0		0	0	0	3.0
8	1.7	1.6	.43	.10	.07	.01	0		0	0	0	5.0
9	1.5	2.3	11	.09	.09	.01	0		.44	0	0	2.0
10	1.4	1.4	.72	.09	.12	.04	0		.04	.01	0	1.0
11	1.4	1.4	.43	.08	.25	0	0		0	.30	.07	2.2
12	1.2	1.4	.37	.08	.18	.01	0		0	.03	.59	1.0
13	1.2	1.1	.37	.06	.12	.01	0		0	.06	.91	.50
14	1.2	1.0	.31	.06	.14	.02	0		0	.65	2.4	.30
15	1.4	1.1	.28	.06	.10	.01	0		0	.24	.65	1.0
16	1.1	1.1	.20	.06	.10	0	0		0	.04	.45	.24
17	1.0	.93	.18	.07	.08	.01	0		0	.12	.30	2.3
18	2.3	.98	.16	.23	.07	.01	0		0	.12	.15	1.6
19	1.4	.93	.12	.25	.08	0	0		0	.10	.15	.77
20	1.1	.87	.08	.18	.07	0	0		0	0	.33	.45
21	5.1	.82	.17	.23	.09	.01	0		0	0	4.3	.45
22	4.6	.77	.14	.31	.07	.02	0		0	0	4.3	.39
23	1.6	.68	.12	.20	.09	0	0		0	.20	6.5	.33
24	1.4	.68	.10	.08	.06	0	0		0	.91	1.9	.33
25	1.4	.55	.10	.12	.08	0	.04		0	2.0	2.3	.21
26	1.4	.55	.09	.14	.06	0	.06		0	.91	28	1.1
27	2.2	.55	.09	.10	.03	0	0		0	.45	12	.27
28	1.1	.51	.10	.08	.03	0	0		0	.39	2.7	.12
29	1.0	.63	.16	.09	------	0	0		0	.10	1.0	.09
30	1.0	1.1	.14	.10	------	0	0		0	0	4.3	.09
31	1.2	------	.14	.09	------	.02	------		------	0	2.0	------
TOTAL	75.4	44.65	19.29	4.11	2.63	.41	.21	0	.48	6.63	75.67	65.90
MEAN	2.43	1.49	.62	.13	.094	.013	.007	0	.016	.21	2.44	2.20
MAX	14	7.4	11	.31	.25	.06	.06	0	.44	2.0	28	32
MIN	1.0	.51	.08	.06	.03	0	0	0	0	0	0	.09
AC-FT	150	89	38	8.2	5.2	.8	.4	0	1.0	13	150	131

CAL YR 1972 TOTAL 860.43 MEAN 2.35 MAX 57 MIN .05 AC-FT 1,710
WTR YR 1973 TOTAL 295.38 MEAN .81 MAX 32 MIN 0 AC-FT 586

PEAK DISCHARGE (BASE, 350 CFS).--No peak above base.

16835000 Inarajan River near Inarajan

LOCATION.--Lat 13°16'41" N., long 144°44'15" E., on right bank 0.6 mi (1.0 km) northwest of Inarajan and 4.9 mi (7.9 km) east of Merizo.

DRAINAGE AREA.--4.42 mi² (11.45 km²).

PERIOD OF RECORD.--September 1952 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 15 ft (4.6 m), from topographic map.

AVERAGE DISCHARGE.--21 years, 17.1 ft³/s (0.484 m³/s), 12,390 acre-ft/yr (15.3 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,040 ft³/s (29.5 m³/s) Oct. 4, gage height, 7.22 ft (2.201 m); minimum, 0.60 ft³/s (0.017 m³/s), Apr. 19-23, May 8, June 13, 14.
Period of record: Maximum gage height, 12.90 ft (3.932 m) Oct. 11, 1963 (discharge not determined); minimum discharge, 0.60 ft³/s (0.017 m³/s) Apr. 19-23, May 8, June 13, 14, 1973.

REMARKS.--Records fair. Stage-discharge relation not determined above gage height 11.0 ft (3.35 m) owing to ungaged overbank flow. Village of Inarajan diverts about 40,000 gallons (151 m³) a day above station for domestic use and during dry periods about 250,000 gallons (946 m³) a day for irrigation.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	8.7	6.5	5.4	2.9	2.7	1.6	1.1	1.1	1.6	1.6	6.2
2	11	13	6.0	4.8	3.1	2.7	1.7	1.1	1.6	1.4	2.9	5.6
3	11	32	5.8	6.5	2.9	2.7	1.6	1.1	1.9	1.4	2.9	6.2
4	63	9.7	5.8	5.4	3.1	2.7	1.7	.92	3.5	1.4	2.0	5.2
5	71	9.1	8.4	5.2	4.6	2.6	1.6	1.1	1.7	1.9	1.6	23
6	16	41	6.0	4.6	3.3	2.6	1.6	.92	1.6	1.6	1.4	77
7	12	11	5.8	4.4	2.9	2.4	1.6	.92	1.6	1.9	1.4	19
8	11	9.4	5.8	4.4	2.9	2.4	1.4	.92	1.4	1.9	1.7	23
9	11	14	84	4.2	2.7	2.2	1.2	.92	1.2	1.7	1.4	13
10	11	8.7	10	4.4	3.6	2.2	1.2	2.9	1.2	3.3	1.4	11
11	9.7	11	7.7	4.2	4.4	2.2	1.2	2.4	1.1	5.6	2.2	26
12	9.4	13	6.7	4.2	4.4	2.2	1.1	1.6	1.1	3.1	5.8	13
13	9.4	7.9	11	4.0	3.5	2.4	1.1	1.4	.92	4.0	6.5	10
14	9.1	7.7	7.0	4.0	3.8	2.2	.92	1.2	1.6	4.6	15	8.4
15	9.4	7.7	6.2	4.0	2.9	2.2	.92	1.4	1.4	2.4	3.8	16
16	8.7	7.9	5.8	3.8	2.9	2.2	.92	1.2	1.4	4.2	3.8	12
17	9.4	7.4	5.8	3.6	2.9	2.2	.92	1.6	1.2	2.4	3.3	26
18	28	7.4	6.2	3.6	2.6	2.0	.92	1.2	1.2	2.9	2.4	17
19	9.7	7.4	6.2	3.6	2.6	2.0	.92	1.2	1.1	2.0	4.0	11
20	8.7	6.7	5.6	3.8	2.9	2.2	.92	1.2	1.2	1.7	3.5	8.7
21	31	9.7	5.4	3.8	2.7	3.3	.92	1.1	1.2	1.6	17	8.4
22	18	9.4	5.4	3.8	2.9	2.4	.92	1.1	1.2	2.6	21	7.2
23	9.7	6.7	5.4	3.8	3.1	2.2	.92	1.1	1.7	3.1	18	7.0
24	8.7	8.7	5.2	3.6	2.9	2.0	1.2	1.2	1.4	4.2	7.4	7.2
25	8.2	6.7	5.2	3.5	3.1	1.7	2.2	1.6	1.4	4.8	7.2	6.2
26	7.9	6.5	5.2	3.5	3.3	1.7	1.2	1.6	1.4	2.9	60	5.8
27	21	6.2	4.8	3.5	3.1	1.6	1.4	1.2	3.6	2.0	47	5.6
28	13	6.0	4.8	3.5	2.9	1.4	1.1	2.0	2.0	1.9	14	5.4
29	9.1	7.0	8.2	3.3	------	1.6	1.1	1.4	1.6	1.6	7.9	5.2
30	8.2	13	5.2	3.3	------	1.4	1.1	1.1	1.6	1.9	14	5.8
31	10	------	5.8	3.1	------	1.6	------	1.1	------	1.6	8.2	------
TOTAL	484.3	320.6	272.9	126.8	88.9	67.9	37.10	40.80	46.12	79.2	290.3	401.1
MEAN	15.6	10.7	8.80	4.09	3.18	2.19	1.24	1.32	1.54	2.55	9.36	13.4
MAX	71	41	84	6.5	4.6	3.3	2.2	2.9	3.6	5.6	60	77
MIN	7.9	6.0	4.8	3.1	2.6	1.4	.92	.92	.92	1.4	1.4	5.2
AC-FT	961	636	541	252	176	135	74	81	91	157	576	796

CAL YR 1972 TOTAL 4,869.9 MEAN 13.3 MAX 235 MIN 1.6 AC-FT 9,660
WTR YR 1973 TOTAL 2,256.02 MEAN 6.18 MAX 84 MIN .92 AC-FT 4,470

PEAK DISCHARGE (BASE, 1,700 CFS).--No peak above base.

16840000 Tinaga River near Inarajan

LOCATION.--Lat 13°17'10" N., long 144°45'04" E., on right bank 0.3 mi (0.5 km) upstream from mouth, 0.9 mi (1.4 km) northeast of Inarajan, and 4.5 mi (7.2 km) south of Talofofo.

DRAINAGE AREA.--1.89 mi^2 (4.90 km^2).

PERIOD OF RECORD.--October 1952 to current year. Prior to October 1969, published as Pauliluc River near Inarajan.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 15 ft (4.6 m), from topographic map.

AVERAGE DISCHARGE.--21 years, 5.58 ft^3/s (0.158 m^3/s), 4,040 acre-ft/yr (4.98 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 224 ft^3/s (6.34 m^3/s) Nov. 3, gage height, 3.05 ft (0.930 m), from rating curve extended above 210 ft^3/s (5.95 m^3/s); minimum, 0.15 ft^3/s (0.004 m^3/s) June 13, 29, 30.
Period of record: Maximum discharge, 2,980 ft^3/s (84.4 m^3/s) Oct. 15, 1953, gage height, 13.11 ft (3.996 m), from rating curve extended above 210 ft^3/s (5.95 m^3/s); minimum, 0.15 ft^3/s (0.004 m^3/s) May 16, 21-23, 29, 1966, June 13, 29, 30, 1973.

REMARKS.--Records fair. No diversion above station.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	3.2	2.2	1.8	.78	.74	.50	.32	.19	.17	.44	1.2
2	3.0	7.7	2.0	1.6	.78	.78	.74	.32	.21	.16	.52	1.1
3	3.4	40	1.8	1.8	.78	.83	.58	.29	.23	.23	.52	1.1
4	17	4.1	1.6	1.9	.78	.70	.50	.32	.25	.27	.55	.96
5	7.0	3.5	2.4	1.9	1.4	.66	.47	.29	.23	.29	.44	2.2
6	4.5	18	1.8	1.8	1.1	.99	.44	.29	.23	.23	.41	10
7	3.9	4.3	1.7	1.6	.93	.70	.44	.29	.23	.29	.44	4.8
8	3.7	3.5	1.7	1.4	.88	.78	.41	.29	.21	.27	.48	13
9	3.5	4.7	19	1.3	.83	.62	.38	.29	.21	.27	.48	5.0
10	3.2	3.5	3.9	1.3	.93	.62	.35	.54	.21	.62	.41	3.3
11	3.0	4.5	2.5	1.2	1.2	.50	.35	.35	.19	.66	.41	6.1
12	2.9	5.5	2.4	1.2	1.4	.62	.35	.29	.19	.70	.60	4.0
13	2.9	3.5	2.5	1.2	.99	.83	.35	.29	.17	.78	.78	2.9
14	2.9	3.0	2.6	1.3	.99	.78	.35	.29	.25	.62	2.3	2.5
15	2.8	2.9	2.4	1.2	.93	.93	.38	.27	.21	.54	1.5	2.9
16	2.8	2.9	2.1	1.2	.88	.58	.35	.27	.19	.44	1.2	3.2
17	2.8	2.8	1.9	1.2	.88	.74	.35	.25	.23	.35	1.3	6.1
18	7.2	2.8	1.9	1.1	.88	.66	.32	.25	.29	.29	.96	4.7
19	3.4	2.9	2.0	1.1	.88	.54	.32	.25	.32	.29	.91	3.3
20	3.0	2.6	2.1	1.0	.88	.41	.32	.23	.32	.25	.78	2.5
21	6.1	2.8	2.0	1.0	.83	.50	.32	.21	.29	.25	4.0	2.2
22	4.3	3.2	1.8	.99	.78	.50	.32	.23	.23	.58	9.1	2.2
23	3.4	2.5	1.7	.99	.78	.50	.35	.23	.41	.54	3.6	1.9
24	2.9	2.9	1.8	.93	.83	.41	.35	.25	.38	.55	2.2	1.8
25	2.8	2.8	1.7	.88	.74	.41	.44	.29	.32	.64	1.4	1.7
26	2.5	2.6	1.6	.88	.83	.50	.38	.23	.32	.73	13	1.7
27	6.4	2.4	1.5	.88	.78	.41	.38	.23	.35	.55	10	1.5
28	4.3	2.1	1.6	.83	.74	.47	.35	.32	.21	.52	3.5	1.5
29	3.4	2.2	2.8	.83	------	.50	.32	.23	.17	.48	2.0	1.4
30	3.0	2.9	1.7	.83	------	.50	.32	.21	.19	.52	1.5	1.6
31	3.2	------	1.6	.78	------	.50	------	.19	------	.48	1.4	------
TOTAL	128.6	152.3	80.3	37.92	25.41	19.21	11.78	8.60	7.43	13.56	67.13	98.36
MEAN	4.15	5.08	2.59	1.22	.91	.62	.39	.28	.25	.44	2.17	3.28
MAX	17	40	19	1.9	1.4	.99	.74	.54	.41	.78	13	13
MIN	2.5	2.1	1.5	.78	.74	.41	.32	.19	.17	.16	.41	.96
AC-FT	255	302	159	75	50	38	23	17	15	27	133	195

CAL YR 1972 TOTAL 1,552.14 MEAN 4.24 MAX 86 MIN .44 AC-FT 3,080
WTR YR 1973 TOTAL 650.60 MEAN 1.78 MAX 40 MIN .16 AC-FT 1,290

PEAK DISCHARGE (BASE, 400 CFS).--No peak above base.

16847000 Imong River near Agat

LOCATION.--Lat 13°20'17" N., long 144°41'55" E., on left bank 500 ft (152 m) upstream from Fena Valley Reservoir, 1.4 mi (2.3 km) south of Fena Dam spillway, and 4.1 mi (6.6 km) southeast of Agat School.

DRAINAGE AREA.--1.95 mi^2 (5.05 km^2).

PERIOD OF RECORD.--March 1960 to March 1971. October 1971 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 120 ft (37 m), from topographic map.

AVERAGE DISCHARGE.--12 years, 10.2 ft^3/s (0.289 m^3/s), 7,390 acre-ft/yr (9.11 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,270 ft^3/s (36.0 m^3/s) Oct. 17, gage height, 5.57 ft (1.698 m), from rating curve extended as explained below; minimum, 0.87 ft^3/s (0.025 m^3/s) June 30, July 1, but may have been less during period July 2-9.
Period of record: Maximum discharge, 3,370 ft^3/s (95.4 m^3/s) Oct. 19, 1960, gage height, 10.06 ft (3.066 m), from rating curve extended above 110 ft^3/s (3.12 m^3/s) on basis of slope-area measurements at gage heights 7.46 (2.274) and 10.06 ft (3.066 m); minimum, 0.37 ft^3/s (0.010 m^3/s) May 21, 22, 26, 1966.

REMARKS.--Records fair. No diversion above station.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	4.0	3.2	3.0	2.2	1.8	1.4	1.1	1.0	.95	1.9	3.0
2	4.3	4.0	3.0	2.6	2.2	1.8	1.5	1.1	1.4	1.0	13	3.5
3	4.6	45	3.0	5.3	2.2	1.8	1.5	1.1	1.4	1.0	6.7	3.0
4	7.5	5.0	3.2	3.5	2.2	1.8	1.6	1.0	1.1	1.0	2.6	2.6
5	15	10	4.9	4.0	3.0	1.8	1.5	1.0	1.1	1.0	2.0	4.9
6	8.0	20	2.8	2.6	2.8	1.8	1.5	1.1	1.1	1.0	2.0	28
7	9.0	5.2	2.8	2.4	2.4	1.8	2.0	1.1	1.1	1.0	1.6	9.5
8	7.5	4.3	2.8	2.4	2.2	1.8	1.5	1.1	1.1	1.0	1.6	14
9	5.9	5.6	29	2.2	2.2	1.8	1.4	1.2	1.2	1.0	1.6	12
10	4.9	4.0	4.3	2.2	2.4	1.8	1.2	2.8	1.2	2.5	1.5	6.7
11	4.6	4.6	3.2	2.2	4.6	1.6	1.5	1.8	1.1	7.0	1.5	14
12	4.3	4.0	3.0	2.0	3.2	1.6	1.4	1.4	1.1	9.0	2.8	8.0
13	8.7	3.5	3.2	2.0	2.6	1.8	1.4	1.1	1.1	2.3	3.8	7.1
14	5.6	3.5	3.0	2.0	2.4	1.6	1.2	1.1	1.2	1.6	2.4	5.9
15	12	5.6	3.0	2.2	2.4	1.6	1.2	1.5	1.2	1.5	2.0	19
16	4.9	3.8	3.0	2.2	2.4	1.5	1.2	1.1	1.4	1.7	2.6	9.0
17	63	5.2	3.0	2.2	2.2	1.6	1.2	1.4	1.1	1.4	2.6	9.0
18	44	6.6	7.4	2.2	2.2	1.5	1.2	1.0	1.1	1.9	2.2	8.5
19	16	4.3	9.4	2.2	2.0	1.5	1.1	1.0	1.0	1.9	2.0	6.7
20	8.5	3.5	3.5	2.4	2.2	1.5	1.1	1.0	1.0	1.6	1.8	5.6
21	7.1	4.7	3.2	2.4	2.0	1.6	1.1	1.0	1.0	1.3	4.0	4.6
22	6.3	4.3	3.0	2.4	2.0	1.5	1.1	1.0	1.1	1.6	13	4.3
23	4.9	3.5	3.0	2.4	2.2	1.5	1.2	1.1	1.1	7.0	21	4.0
24	4.6	7.7	2.8	2.4	2.0	1.4	1.8	1.1	1.0	12	6.3	3.8
25	4.3	3.8	2.6	2.4	2.2	1.4	1.8	1.1	1.0	8.0	10	3.5
26	4.0	3.5	3.2	2.4	2.2	1.4	1.2	1.1	1.0	3.0	25	3.5
27	6.3	3.5	2.6	2.4	2.0	1.4	1.1	1.1	1.6	2.3	20	3.2
28	11	3.2	2.4	2.4	1.8	1.4	1.1	1.2	1.0	1.9	8.0	3.2
29	4.6	4.9	12	2.4	------	1.4	1.1	1.1	1.0	1.6	4.6	3.2
30	4.3	8.4	2.8	2.4	------	1.4	1.1	1.0	.95	1.5	4.3	3.5
31	4.0	------	6.4	2.4	------	1.5	------	1.1	------	1.4	3.2	------
TOTAL	304.0	199.2	144.7	78.2	66.4	49.7	40.2	36.9	33.75	82.95	177.6	216.8
MEAN	9.81	6.64	4.67	2.52	2.37	1.60	1.34	1.19	1.13	2.68	5.73	7.23
MAX	63	45	29	5.3	4.6	1.8	2.0	2.8	1.6	12	25	28
MIN	4.0	3.2	2.4	2.0	1.8	1.4	1.1	1.0	.95	.95	1.5	2.6
AC-FT	603	395	287	155	132	99	80	73	67	165	352	430

CAL YR 1972 TOTAL 3,541.4 MEAN 9.68 MAX 300 MIN 1.5 AC-FT 7,020
WTR YR 1973 TOTAL 1,430.40 MEAN 3.92 MAX 63 MIN .95 AC-FT 2,840

PEAK DISCHARGE (BASE, 1,400 CFS).--No peak above base.

NOTE.--No gage-height record July 2 to Aug. 2.

16848000 Almagosa Springs near Agat

LOCATION.--Lat 13°20'43" N., long 144°40'45" E., on left bank 2.9 mi (4.7 km) southeast of Agat and 3.5 mi (5.6 km) northeast of Umatac.

DRAINAGE AREA.--0.70 mi² (1.81 km²).

PERIOD OF RECORD.--September 1951 to December 1967, December 1971 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 620 ft (189 m), from topographic map.

AVERAGE DISCHARGE.--17 years (1951-67, 1972-73), 3.55 ft³/s (0.101 m³/s), 2,570 acre-ft/yr (3.17 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 52 ft³/s (1.47 m³/s) Oct. 17, gage height, 1.67 ft (0.509 m); minimum daily, about 0.25 ft³/s (0.007 m³/s) June 13, June 29 to July 4.
Period of record: Maximum discharge, 770 ft³/s (21.8 m³/s) Oct. 15, 1953, gage height, 5.02 ft (1.530 m), from rating curve extended above 53 ft³/s (1.50 m³/s); no flow at times.

REMARKS.--Records fair. Up to 3.9 ft³/s (0.11 m³/s) diverted above station for municipal use.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	1.5	1.4	1.9	.34	.28	.35	.32	.27	.25	.44	1.6
2	1.9	1.6	1.2	1.2	.34	.28	.35	.32	.35	.25	4.6	1.3
3	1.7	4.7	1.1	1.7	.41	.28	.35	.32	.32	.25	6.7	1.2
4	1.9	1.4	1.1	1.2	.41	.28	.35	.32	.29	.25	1.6	1.2
5	2.2	2.1	1.2	1.6	.48	.28	.35	.32	.29	.30	1.2	1.4
6	1.8	5.0	1.0	1.1	.48	.28	.35	.32	.29	.27	.85	12
7	2.3	3.2	.97	1.1	.48	.28	.35	.32	.29	.29	.75	11
8	1.7	1.9	.90	1.2	.41	.28	.35	.32	.29	.32	.70	12
9	1.2	1.9	11	1.2	.41	.28	.35	.32	.29	.32	.65	11
10	1.2	1.5	2.7	1.1	.41	.28	.35	.35	.29	.41	.60	7.2
11	1.2	1.5	1.5	1.0	.90	.28	.35	.35	.27	.75	.65	8.1
12	1.4	1.4	1.2	.97	.62	.28	.35	.32	.27	.85	1.1	6.4
13	2.3	1.5	1.5	.83	.48	.28	.35	.32	.25	.51	1.6	4.8
14	2.9	1.7	1.2	.69	.41	.28	.35	.32	.27	.41	1.2	3.6
15	4.7	1.9	1.2	.69	.41	.28	.35	.32	.29	.38	.91	12
16	2.6	1.6	1.0	.69	.34	.28	.35	.32	.30	.44	.85	10
17	6.0	1.9	1.0	.62	.34	.34	.35	.32	.29	.41	.85	7.2
18	15	1.6	1.7	.62	.34	.34	.35	.29	.29	.44	.75	5.0
19	7.8	1.5	2.2	.62	.34	.34	.35	.29	.28	.44	.70	3.7
20	4.4	1.5	1.2	.55	.28	.34	.35	.29	.28	.41	.65	2.8
21	3.2	1.4	1.0	.55	.28	.34	.35	.29	.28	.38	.80	2.0
22	2.3	1.4	.97	.48	.28	.34	.35	.29	.29	.41	4.1	1.7
23	1.6	1.2	1.1	.48	.28	.34	.38	.29	.32	.97	9.4	1.6
24	1.2	2.2	.90	.41	.28	.34	.38	.27	.29	3.9	6.1	1.6
25	1.2	1.5	.83	.41	.28	.34	.38	.29	.28	4.6	6.2	1.6
26	1.4	1.4	1.1	.41	.28	.34	.35	.29	.29	1.4	15	1.5
27	1.6	1.4	.83	.41	.28	.34	.35	.29	.34	.80	17	1.3
28	2.4	1.2	.76	.41	.28	.35	.35	.29	.28	.75	11	1.2
29	1.4	1.2	4.2	.34	------	.35	.35	.29	.25	.60	5.3	1.1
30	1.6	1.8	1.2	.34	------	.35	.32	.27	.25	.55	3.6	1.2
31	1.5	------	2.5	.34	------	.35	------	.28	------	.47	2.6	------
TOTAL	85.8	55.6	51.66	25.16	10.87	9.62	10.56	9.51	8.63	22.78	108.45	138.3
MEAN	2.77	1.85	1.67	.81	.39	.31	.35	.31	.29	.73	3.50	4.61
MAX	15	5.0	11	1.9	.90	.35	.38	.35	.35	4.6	17	12
MIN	1.2	1.2	.76	.34	.28	.28	.32	.27	.25	.25	.44	1.1
AC-FT	170	110	102	50	22	19	21	19	17	45	215	274

CAL YR 1972 TOTAL 1,310.68 MEAN 3.58 MAX 123 MIN 0 AC-FT 2,600
WTR YR 1973 TOTAL 536.94 MEAN 1.47 MAX 17 MIN .25 AC-FT 1,070

PEAK DISCHARGE (BASE, 90 CFS).--No peak above base.

16848100 Almagosa River near Agat

LOCATION.--Lat 13°20'43" N., long 144°41'36" E., on right bank 400 ft (122 m) upstream from Fena Valley Reservoir and 3.5 mi (5.6 km) southeast of Agat.

DRAINAGE AREA.--1.31 mi^2 (3.39 km^2).

PERIOD OF RECORD.--April 1972 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 155 ft (47 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, 1,050 ft^3/s (29.7 m^3/s) Oct. 17, gage height, 5.44 ft (1.658 m), from rating curve extended above 81 ft^3/s (2.29 m^3/s); minimum, 0.28 ft^3/s (0.008 m^3/s) July 2.
Period of record: Maximum discharge, 1,700 ft^3/s (48.1 m^3/s) Aug. 2, 1972, gage height, 6.64 ft (2.024 m), from rating curve extended above 81 ft^3/s (2.29 m^3/s); minimum, 0.19 ft^3/s (0.005 m^3/s) June 4, 5, 1972.

REMARKS.--Records good. Up to 3.9 ft^3/s (0.11 m^3/s) diverted above upstream station (see sta 16848000) for domestic use.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	2.1	1.8	1.7	1.0	.79	.67	.48	.48	.36	.98	2.8
2	2.7	3.6	1.7	1.4	1.0	.79	.79	.48	1.1	.36	13	2.4
3	2.4	13	1.7	2.9	1.0	.79	.73	.48	.73	.32	7.4	2.4
4	2.9	2.3	1.8	1.8	1.0	.79	.73	.44	.60	.36	2.2	2.2
5	4.6	4.5	2.1	3.1	1.3	.79	.73	.44	.60	.48	1.6	2.8
6	2.8	8.7	1.9	1.3	1.3	.79	.73	.44	.54	.44	1.3	25
7	3.0	3.8	1.8	1.3	.98	.79	.79	.44	.60	.54	1.1	13
8	2.7	2.8	1.8	1.3	.91	.79	.73	.44	.48	.48	.91	20
9	2.1	2.8	21	1.2	.91	.79	.73	.60	.48	.48	1.0	13
10	1.9	2.3	2.8	1.2	.91	.79	.73	1.1	.48	1.4	.91	8.4
11	1.8	2.2	2.2	1.1	2.0	.79	.73	.73	.44	2.8	.85	12
12	1.9	2.1	1.7	1.1	1.3	.79	.73	.60	.44	2.7	1.7	7.9
13	5.7	2.1	1.9	1.0	1.0	.79	.67	.48	.40	1.0	2.7	5.8
14	4.5	2.2	1.8	.98	1.0	.79	.60	.48	.44	.73	1.7	4.8
15	9.2	3.4	1.7	1.1	.91	.73	.60	.54	.48	.54	1.6	26
16	3.4	2.2	1.5	1.0	.85	.73	.60	.48	.60	.91	1.7	11
17	35	3.4	1.5	1.0	.79	.73	.60	.54	.44	.60	1.6	8.2
18	18	3.3	3.7	1.0	.79	.67	.60	.48	.44	.98	1.4	6.5
19	6.2	2.3	4.9	1.0	.79	.67	.60	.44	.44	.85	1.3	4.8
20	3.9	2.3	1.7	1.1	.73	.67	.60	.48	.44	.73	1.2	4.0
21	3.4	2.4	1.5	1.1	.73	.67	.54	.44	.44	.60	2.0	3.3
22	2.7	2.4	1.5	1.2	.73	.67	.54	.44	.48	.98	7.8	2.7
23	2.1	2.2	1.7	1.1	.73	.79	.67	.48	.60	3.0	15	2.7
24	1.9	6.0	1.4	1.0	.73	.67	.67	.44	.54	9.4	7.0	2.8
25	1.8	2.3	1.4	.98	.79	.67	.67	.54	.44	6.5	13	2.6
26	1.7	2.2	2.4	.98	.79	.73	.54	.48	.54	2.2	32	2.3
27	2.4	2.1	1.4	.98	.79	.67	.60	.48	.85	1.5	30	2.1
28	4.5	2.0	1.3	.98	.79	.67	.54	.60	.44	1.3	13	1.9
29	2.1	2.2	6.7	.98	------	.60	.54	.54	.40	.98	6.7	1.9
30	2.2	3.8	1.6	1.0	------	.60	.54	.54	.40	.98	4.8	2.0
31	2.1	------	4.6	1.0	------	.79	------	.60	------	.79	3.6	------
TOTAL	144.5	99.0	86.5	38.88	26.55	22.79	19.54	16.17	15.78	45.29	181.05	207.3
MEAN	4.66	3.30	2.79	1.25	.95	.74	.65	.52	.53	1.46	5.84	6.91
MAX	35	13	21	3.1	2.0	.79	.79	1.1	1.1	9.4	32	26
MIN	1.7	2.0	1.3	.98	.73	.60	.54	.44	.40	.32	.85	1.9
AC-FT	287	196	172	77	53	45	39	32	31	90	359	411

WTR YR 1973 TOTAL 903.35 MEAN 2.47 MAX 35 MIN .32 AC-FT 1,790

PEAK DISCHARGE (BASE, 800 CFS).--Oct. 17 (2030) 1,050 cfs (5.44 ft).

16848500 Maulap River near Agat

LOCATION.--Lat 13°21'14" N., long 144°41'44" E., on right bank 600 ft (183 m) upstream from Fena Valley Reservoir and 3.2 mi (5.1 km) southeast of Agat.
DRAINAGE AREA.--1.14 mi² (2.95 km²).
PERIOD OF RECORD.--January 1972 to current year.
GAGE.--Water-stage recorder and concrete control. Altitude of gage is 130 ft (40 m), from topographic map.
EXTREMES.--Current year: Maximum discharge, 545 ft³/s (15.4 m³/s) Oct. 17, gage height, 5.08 ft (1.548 m), from rating curve extended above 38 ft³/s (1.08 m³/s); minimum, 0.35 ft³/s (0.010 m³/s) July 2, 3.
Period of record: Maximum discharge, 1,200 ft³/s (34.0 m³/s), revised, Sept. 17, 1972, gage height, 7.06 ft (2.152 m), from floodmark in well, from rating curve extended above 38 ft³/s (1.08 m³/s); minimum, 0.35 ft³/s (0.010 m³/s) July 2, 3, 1973.
REVISIONS.--The maximum discharge for the water year 1972 has been revised to 1,200 ft³/s (34.0 m³/s), Sept. 17, 1972, gage height, 7.06 ft (2.152 m), superseding figure published in WRD for Hawaii and other Pacific Areas, 1972.
REMARKS.--Records fair. No diversion above station.
REVISIONS.--Revised figures of discharge, in cubic feet per second, for the water year 1972, superseding those published in Water Resources Data for Hawaii and other Pacific Areas, 1972, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1972		1972-Con.		1972-Con.	
June 22	21	July 11	15	July 27	10
27	21	12	14	28	76
July 7	18	23	57	29	11
8	16	24	28	Aug. 2	138
9	7.7	25	8.7	3	200
10	14	26	28	4	50
				27	28

Month	Cfs-days	Maximum	Minimum	Mean	Run-off in acre-feet
June 1972.....	91.58	21	.40	3.05	182
July.....	350.1	76	1.1	11.3	694
August.....	634.1	200	3.0	20.5	1,260

REVISED PEAK DISCHARGE.--1972: July 26 (1550) 666 cfs (5.52 ft); Aug. 2 (2200) 1,080 cfs (6.75 ft, from floodmark in well); Sept. 17 (0530) 1,200 cfs (7.06 ft); Sept. 24 (0300) 1,070 cfs (6.72 ft).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	2.4	2.0	2.4	1.2	.97	.88	.79	.60	.45	1.2	2.3
2	3.0	2.3	1.9	1.7	1.2	.88	.79	.70	2.2	.40	8.0	2.2
3	3.0	10	1.7	3.1	1.3	.88	.79	.70	.97	.40	3.2	4.4
4	5.0	5.0	1.7	2.9	1.2	.97	.88	.70	.65	.40	1.6	2.6
5	8.1	3.5	2.0	4.7	1.7	.88	.79	.70	.60	.45	1.2	2.9
6	3.9	7.0	1.9	1.9	1.9	.88	.79	.70	.55	.40	1.2	12
7	3.2	3.5	1.7	1.7	1.2	.88	.79	.70	.55	.45	1.1	3.9
8	3.0	2.6	1.7	1.7	1.2	.88	.70	.70	.50	.50	.88	10
9	3.0	3.5	32	1.5	1.2	.88	.70	.79	.50	.45	1.2	5.1
10	2.9	2.4	2.6	1.6	1.2	.88	.65	1.2	.60	1.5	1.1	3.7
11	2.9	3.0	2.3	1.5	3.5	.88	.65	.70	.55	3.9	1.3	21
12	2.7	2.3	2.0	1.5	2.0	.88	.65	.60	.55	5.6	2.4	7.3
13	7.3	2.0	2.6	1.4	1.4	.88	.60	.55	.50	1.4	3.9	5.3
14	12	1.9	2.0	1.3	1.4	.88	.60	.45	.55	.97	2.0	3.9
15	6.3	8.8	1.9	1.9	1.2	.88	.65	.45	.60	.88	1.5	16
16	2.9	2.4	1.7	1.5	1.2	.88	.60	.40	.65	1.1	1.6	6.7
17	24	9.0	1.7	1.4	1.2	.88	.60	.45	.55	.79	1.6	6.7
18	7.8	2.7	6.5	1.4	1.1	.88	.57	.40	.55	1.2	1.5	4.8
19	4.0	2.6	6.0	1.3	1.1	.88	.55	.45	.60	1.2	1.2	3.7
20	3.5	2.3	2.0	1.4	1.1	.88	.60	.45	.79	.97	1.2	3.2
21	3.0	2.7	1.9	1.3	.97	.97	.60	.40	.70	.70	3.0	2.9
22	2.7	3.0	2.3	1.3	1.1	.88	.60	.45	.79	.97	7.3	2.6
23	2.6	2.2	2.2	1.3	1.2	.97	.65	.42	.79	3.7	7.0	2.4
24	2.5	8.7	1.9	1.3	1.1	.97	.88	.45	.60	7.3	3.2	2.4
25	2.4	2.4	1.9	1.2	1.1	.88	.88	.50	.55	4.6	14	2.2
26	2.3	2.3	2.0	1.3	1.1	.97	.79	.50	.65	2.0	16	2.0
27	2.3	2.0	1.7	1.3	.97	.88	.79	.50	.79	1.4	8.0	1.9
28	5.0	2.0	1.7	1.2	.97	.88	.70	.55	.50	1.2	4.8	1.7
29	3.0	2.2	6.1	1.2	------	.88	.70	.55	.45	.97	4.2	1.7
30	2.6	5.5	1.9	1.3	------	.88	.79	.60	.40	.88	3.2	1.9
31	2.5	------	5.0	1.2	------	1.1	------	.65	------	.79	2.6	------
TOTAL	142.9	112.2	106.5	51.7	37.01	28.04	21.21	18.15	19.83	47.92	112.18	149.4
MEAN	4.61	3.74	3.44	1.67	1.32	.90	.71	.59	.66	1.55	3.62	4.98
MAX	24	10	32	4.7	3.5	1.1	.88	1.2	2.2	7.3	16	21
MIN	2.3	1.9	1.7	1.2	.97	.88	.55	.40	.40	.40	.88	1.7
AC-FT	283	223	211	103	73	56	42	36	39	95	223	296

CAL YR 1972 TOTAL 1,875.87 MEAN 5.13 MAX 200 MIN .40 AC-FT 3,720
WTR YR 1973 TOTAL 847.04 MEAN 2.32 MAX 32 MIN .40 AC-FT 1,680

PEAK DISCHARGE (BASE, 600 CFS).--No peak above base.

16849000 Fena Dam spillway near Agat

LOCATION.--Lat 13°21'28" N., long 144°42'12" E., on left bank 3.5 mi (5.6 km) southeast of Agat and 5.8 mi (9.3 km) southwest of Yona.

DRAINAGE AREA.--5.88 mi^2 (15.23 km^2).

PERIOD OF RECORD.--September 1951 to July 1952, November 1952 to current year.

GAGE.--Water-stage recorder and concrete-dam control. Datum of gage is 111.35 ft (33.939 m) above mean sea level (from U.S. Navy construction plans).

AVERAGE DISCHARGE.--20 years (1953-73), 17.9 ft^3/s (0.507 m^3/s), 12,970 acre-ft/yr (16.0 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 383 ft^3/s (10.8 m^3/s) Oct. 17, gage height, 0.80 ft (0.244 m); no flow most of the time.
Period of record: Maximum discharge, not determined, occurred Oct. 15, 1953, gage height, at least 4.5 ft (1.37 m); no flow for many days each year.

REMARKS.--Records fair. About 10 ft^3/s (0.28 m^3/s) is diverted from Fena Valley Reservoir and tributary springs for military and civilian use. Records represent only flow over spillway.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	0	.54	6.0								
2	2.8	1.6	0	.09								
3	1.5	84	0	1.0								
4	7.9	12	0	6.0								
5	14	20	0	7.9								
6	22	31	0	1.5								
7	9.9	20	0	0								
8	6.0	7.9	0	0								
9	.54	14	65	0								
10	0	7.9	14	0								
11	0	6.0	1.5	0								
12	0	4.3	0	0								
13	3.0	.75	0	0								
14	14	0	0	0								
15	22	8.6	0	0								
16	17	7.9	0	0								
17	65	17	0	0								
18	94	9.9	0	0								
19	20	12	4.3	0								
20	7.9	4.3	1.5	0								
21	4.3	1.0	0	0								
22	1.5	4.3	0	0								
23	.54	.44	0	0								
24	0	15	0	0								
25	0	12	0	0								
26	0	4.3	0	0								
27	.62	.14	0	0								
28	14	0	0	0								
29	6.0	0	0	0	------							
30	.54	3.4	0	0	------							
31	0	------	2.6	0	------		------		------			------
TOTAL	337.84	309.73	89.44	22.49	0	0	0	0	0	0	0	0
MEAN	10.9	10.3	2.89	.73	0	0	0	0	0	0	0	0
MAX	94	84	65	7.9	0	0	0	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	670	614	177	45	0	0	0	0	0	0	0	0

CAL YR 1972 TOTAL 4,825.11 MEAN 13.2 MAX 600 MIN 0 AC-FT 9,570
WTR YR 1973 TOTAL 759.50 MEAN 2.08 MAX 94 MIN 0 AC-FT 1,510

16858000 Ylig River near Yona

LOCATION.--Lat 13°23'28" N., long 144°45'06" E., on right bank 2.2 mi (3.5 km) upstream from mouth, 1.9 mi (3.1 km) southwest of Yona, and 5.6 mi (9.0 km) south of Agana.

DRAINAGE AREA.--6.48 mi^2 (16.78 km^2).

PERIOD OF RECORD.--June 1952 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 20 ft (6.1 m), from topographic map.

AVERAGE DISCHARGE.--21 years, 28.0 ft^3/s (0.793 m^3/s), 20,290 acre-ft/yr (25.0 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 3,240 ft^3/s (91.8 m^3/s) Nov. 3, gage height, 15.23 ft (4.642 m), from rating curve extended as explained below; minimum, 0.07 ft^3/s (0.002 m^3/s) May 20.
Period of record: Maximum discharge, 4,900 ft^3/s (139 m^3/s) Sept. 9, 1963, gage height, 19.77 ft (6.026 m), from floodmarks, from rating curve extended above 620 ft^3/s (17.6 m^3/s) on basis of slope-area measurements at gage heights 11.24 (3.426) and 15.87 ft (4.837 m); minimum, 0.07 ft^3/s (0.002 m^3/s) May 20, 1973, but may have been less during period of diversion from gage pool May 15 to June 20, 1966.

REMARKS.--Records fair. No diversion above station.

REVISIONS (FISCAL YEARS).--WSP 1937: 1957-58. WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	7.8	6.8	7.2	2.4	1.9	1.3	.60	.54	1.0	10	14
2	20	118	6.2	4.7	2.4	1.9	1.3	.55	1.0	.81	16	15
3	18	349	6.0	7.0	2.5	1.9	1.2	.45	5.1	.61	13	20
4	18	17	5.8	8.6	2.8	2.0	1.3	.66	2.0	.54	9.1	14
5	30	52	6.2	7.0	3.9	1.9	1.6	.66	1.4	.74	7.9	28
6	21	15	5.8	6.2	4.1	1.9	1.4	.66	1.2	1.5	8.5	94
7	43	21	5.5	5.8	2.9	1.9	1.2	.32	.74	1.2	8.9	28
8	16	13	5.3	5.5	2.5	1.8	1.1	.32	.54	.95	8.9	40
9	14	31	122	5.5	2.4	1.8	1.0	.21	.54	.88	7.7	36
10	13	13	9.5	5.3	2.7	1.8	.94	.60	.47	78	8.1	23
11	12	34	7.0	4.9	6.0	1.7	.87	.87	.49	9.6	8.1	414
12	12	12	6.2	4.7	6.0	1.7	.87	.66	.54	46	8.7	92
13	12	11	9.8	4.5	3.5	1.7	.87	.60	.67	5.0	14	44
14	11	10	6.2	4.3	3.1	1.7	.80	.45	.81	3.0	11	35
15	37	22	5.3	4.3	2.9	1.7	.80	.40	3.5	2.0	9.1	166
16	12	11	5.1	4.1	2.7	1.7	.73	.61	7.4	67	8.5	35
17	42	11	5.3	4.1	2.5	1.7	.66	.42	3.4	20	7.7	28
18	53	9.5	5.1	4.1	2.4	1.6	.66	.42	1.7	8.0	7.3	25
19	13	9.5	20	3.9	2.2	1.6	.60	.32	1.0	6.0	8.5	19
20	11	8.6	6.2	4.1	2.2	1.5	.60	.22	.95	5.0	7.9	18
21	11	8.3	5.3	3.7	2.1	1.5	.80	.27	.81	4.0	96	19
22	10	11	8.2	3.5	2.0	1.5	.60	.18	.81	4.0	237	18
23	9.5	8.6	8.3	3.4	2.1	1.4	.60	.14	2.6	6.0	74	15
24	8.9	11	5.1	3.4	2.0	1.4	.60	.14	2.0	15	30	14
25	8.6	8.3	4.9	3.1	2.0	1.4	.80	.27	1.4	50	29	29
26	8.6	8.0	5.1	2.9	2.0	1.4	.94	.61	1.6	20	98	16
27	13	7.2	4.5	2.8	1.9	1.5	.94	.61	1.9	10	37	14
28	15	7.0	4.1	2.8	1.9	1.5	.87	.95	1.9	10	26	13
29	10	7.0	13	2.5	------	1.5	.73	1.2	1.4	10	22	14
30	8.6	10	5.1	2.5	------	1.4	.55	.61	1.2	10	18	14
31	8.0	------	5.1	2.4	------	1.3	------	.54	------	10	16	------
TOTAL	537.2	861.8	324.0	138.8	78.1	51.2	27.23	15.52	49.61	406.83	871.9	1,354
MEAN	17.3	28.7	10.5	4.48	2.79	1.65	.91	.50	1.65	13.1	28.1	45.1
MAX	53	349	122	8.6	6.0	2.0	1.6	1.2	7.4	78	237	414
MIN	8.0	7.0	4.1	2.4	1.9	1.3	.55	.14	.47	.54	7.3	13
AC-FT	1,070	1,710	643	275	155	102	54	31	98	807	1,730	2,690

CAL YR 1972 TOTAL 9,817.1 MEAN 26.8 MAX 600 MIN 1.7 AC-FT 19,470
WTR YR 1973 TOTAL 4,716.19 MEAN 12.9 MAX 414 MIN .14 AC-FT 9,350

PEAK DISCHARGE (BASE, 2,000 CFS).--Nov. 3 (0030) 3,240 cfs (15.23 ft); Sept. 11 (0900) 2,760 cfs (13.72 ft).

16865000 Pago River near Ordot

LOCATION.--Lat 13°26'08" N., long 144°45'14" E., on left bank 0.8 mi (1.3 km) south of Ordot, 2.6 mi (4.2 km) south of Agana, and 3.6 mi (5.8 km) southeast of Asan.

DRAINAGE AREA.--5.67 mi² (14.69 km²).

PERIOD OF RECORD.--September 1951 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 25 ft (7.6 m), from topographic map. Prior to Apr. 10, 1972, at datum 1.00 ft (0.305 m) lower.

AVERAGE DISCHARGE.--22 years, 25.1 ft³/s (0.711 m³/s) 18,180 acre-ft/yr (22.4 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 3,350 ft³/s (94.9 m³/s) Sept. 11, gage height, 13.31 ft (4.057 m), from rating curve extended as explained below; minimum, 0.04 ft³/s (0.001 m³/s) May 23, 24.
Period of record: Maximum discharge, 9,470 ft³/s (268 m³/s) Aug. 2, 1962, gage height, 18.87 ft (5.752 m), from floodmarks, from rating curve extended above 320 ft³/s (9.06 m³/s) on basis of slope-area measurements at gage heights 13.22 (4.029), 15.07 (4.593) and 18.87 ft (5.752 m); no flow for many days in 1959 and 1966.

REMARKS.--Records good. No diversion above station.

REVISIONS (FISCAL YEARS).--WSP 1937: 1954(M), 1958(M). WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	7.4	5.1	4.8	2.0	1.6	.95	.28	.28	.65	3.6	12
2	13	14	4.4	3.6	2.0	1.6	.85	.28	1.0	.46	3.6	15
3	11	170	4.4	7.4	2.2	1.6	.75	.28	3.8	.37	4.8	15
4	11	13	4.0	7.4	2.9	1.6	.75	.19	1.4	.28	3.1	11
5	25	25	4.0	5.5	3.3	1.5	.95	.19	1.0	3.8	2.7	40
6	12	12	4.0	4.4	2.9	1.5	.85	.19	.95	1.8	2.5	97
7	26	11	4.0	3.6	2.7	1.5	.75	.19	1.2	1.0	2.5	31
8	12	9.8	3.8	3.8	2.5	1.5	.65	.28	.85	.85	2.7	23
9	9.8	42	46	3.6	2.5	1.5	.65	.19	.65	.55	2.5	23
10	8.8	11	6.7	3.6	2.5	1.4	.55	.46	.46	33	2.9	35
11	8.8	16	5.1	3.3	3.1	1.2	.46	1.4	.37	18	2.7	342
12	7.8	9.3	4.8	3.3	3.8	1.2	.46	.75	.37	11	4.0	44
13	7.4	8.3	7.4	2.9	2.7	1.2	.37	.46	.37	4.4	7.4	28
14	7.4	7.8	5.1	2.9	2.5	1.2	.37	.37	.75	2.9	5.5	21
15	30	9.3	4.4	2.9	2.2	1.3	.46	.85	1.2	2.0	3.3	39
16	8.8	7.8	4.0	2.9	2.2	1.4	.37	.65	4.7	63	3.1	21
17	7.8	7.4	4.8	2.9	2.2	1.4	.28	.37	2.0	14	2.9	23
18	45	7.0	4.8	2.9	2.2	1.4	.28	.37	.95	6.3	2.9	19
19	11	7.0	11	2.9	2.0	1.2	.37	.37	.65	4.8	2.9	16
20	8.8	6.3	5.1	3.1	2.0	1.2	.37	.19	.55	3.8	3.1	19
21	8.3	6.3	3.8	2.7	2.0	1.2	.37	.19	.75	3.1	58	16
22	9.3	8.8	17	2.7	2.0	1.2	.37	.11	.75	3.1	169	13
23	7.4	6.3	7.8	2.7	1.8	1.2	.37	.07	.55	4.0	50	11
24	6.7	9.3	4.4	2.7	1.8	1.2	.37	.65	.65	22	23	10
25	6.3	6.3	3.8	2.5	1.8	1.2	.65	.95	.55	31	17	15
26	6.3	5.9	4.0	2.5	1.8	1.2	.75	.75	.75	11	70	14
27	10	5.9	3.6	2.2	1.6	1.2	.65	.65	1.6	7.0	32	10
28	15	5.5	3.6	2.2	1.6	1.0	.55	.46	1.2	5.9	21	9.8
29	11	5.1	6.7	2.0	------	.95	.37	.46	.75	4.8	21	8.8
30	8.3	8.8	4.0	2.5	------	.75	.28	.46	.95	4.4	24	13
31	7.4	------	4.4	2.0	------	.75	------	.37	------	3.8	16	------
TOTAL	379.4	469.6	206.0	104.4	64.8	39.85	16.22	13.43	32.00	273.06	569.7	994.6
MEAN	12.2	15.7	6.65	3.37	2.31	1.29	.54	.43	1.07	8.81	18.4	33.2
MAX	45	170	46	7.4	3.8	1.6	.95	1.4	4.7	63	169	342
MIN	6.3	5.1	3.6	2.0	1.6	.75	.28	.07	.28	.28	2.5	8.8
AC-FT	753	931	409	207	129	79	32	27	63	542	1,130	1,970

CAL YR 1972 TOTAL 7,619.0 MEAN 20.8 MAX 521 MIN 1.2 AC-FT 15,110
WTR YR 1973 TOTAL 3,163.06 MEAN 8.67 MAX 342 MIN .07 AC-FT 6,270

PEAK DISCHARGE (BASE, 2,700 CFS).--Sept. 11 (0800) 3,350 cfs (13.31 ft).

16890600 Adeiddo River, Babelthuap

LOCATION.--Lat 7°36'01" N., long 134°35'38" E., on right bank at Ngardmau, 0.3 mi (0.5 km) upstream from left-bank tributary, and 0.6 mi (1.0 km) northwest of Mount Megilon.

DRAINAGE AREA.--4.43 mi^2 (11.47 km^2).

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 15 ft (4.6 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, 3,140 ft^3/s (88.9 m^3/s) Sept. 16, gage height, 15.35 ft (4.679 m), from rating curve extended above 82 ft^3/s (2.32 m^3/s); minimum, 2.7 ft^3/s (0.076 m^3/s) Mar. 24, 25, 31, Apr. 1. Period of record: Maximum discharge, 3,140 ft^3/s (88.9 m^3/s) Sept. 16, 1973, gage height, 15.35 ft (4.679 m), from rating curve extended above 82 ft^3/s (2.32 m^3/s); minimum, 2.7 ft^3/s (0.076 m^3/s) Mar. 24, 25, 31, Apr. 1, 1973.

REMARKS.--Records good. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	19	21	12	7.2	4.8	4.1	10	30	115	24	48
2	57	19	251	12	6.8	5.6	4.3	16	24	75	23	47
3	48	18	52	17	6.8	4.8	3.2	26	18	56	22	41
4	58	17	54	14	6.6	4.6	3.7	14	18	78	24	38
5	46	16	39	11	6.6	4.3	5.0	11	17	61	21	44
6	47	16	34	10	6.6	5.2	5.6	9.2	19	54	19	40
7	75	34	30	11	6.2	4.3	3.5	11	17	56	46	68
8	55	17	28	10	6.2	3.9	3.4	14	17	49	27	51
9	47	17	26	9.8	5.8	3.9	4.1	14	16	52	24	45
10	44	15	25	9.7	6.0	3.7	5.0	13	31	48	21	45
11	47	15	24	9.7	6.0	3.5	14	10	28	55	23	47
12	84	16	23	9.2	6.0	3.5	8.3	9.5	22	52	22	49
13	58	20	22	9.0	5.8	3.5	4.8	9.5	20	48	20	51
14	51	31	21	8.6	5.8	3.4	4.3	12	26	45	19	44
15	45	19	21	8.6	5.6	3.2	4.4	11	26	45	18	142
16	41	15	21	8.3	5.6	3.2	5.2	10	24	41	22	626
17	42	15	20	8.1	5.4	3.4	11	9.7	23	36	37	118
18	36	14	20	7.9	5.4	4.4	9.7	33	24	34	24	103
19	34	13	19	7.9	5.8	4.1	7.5	26	21	39	21	79
20	32	12	19	7.7	5.6	3.5	10	16	31	32	20	65
21	29	14	20	12	5.4	3.2	7.5	14	25	38	28	56
22	27	13	20	14	5.2	3.0	17	12	22	36	55	51
23	26	13	20	8.8	5.4	2.8	12	15	25	31	34	47
24	24	13	20	8.8	5.2	2.7	13	13	22	30	28	42
25	24	12	23	8.3	5.2	2.7	15	11	23	28	36	38
26	23	11	21	7.7	5.0	3.0	9.5	12	21	41	40	43
27	22	11	19	7.5	5.2	4.8	7.9	12	20	34	66	33
28	21	18	15	7.2	5.0	5.2	7.2	12	34	34	41	31
29	22	18	14	7.2	------	4.5	11	12	22	29	42	31
30	20	14	13	9.0	------	3.4	8.6	24	29	29	66	34
31	19	------	12	7.7	------	2.8	------	16	------	25	50	------
TOTAL	1,273	495	967	299.7	163.4	118.9	229.8	437.9	695	1,426	963	2,197
MEAN	41.1	16.5	31.2	9.67	5.84	3.84	7.66	14.1	23.2	46.0	31.1	73.2
MAX	84	34	251	17	7.2	5.6	17	33	34	115	66	626
MIN	19	11	12	7.2	5.0	2.7	3.2	9.2	16	25	18	31
AC-FT	2,520	982	1,920	594	324	236	456	869	1,380	2,830	1,910	4,360

CAL YR 1972 TOTAL 12,886 MEAN 35.2 MAX 395 MIN 10 AC-FT 25,560
WTR YR 1973 TOTAL 9,265.7 MEAN 25.4 MAX 626 MIN 2.7 AC-FT 18,380

PEAK DISCHARGE (BASE, 600 CFS).--Dec. 2 (0230) 1,770 cfs (11.90 ft); Sept. 16 (0200) 3,140 cfs (15.35 ft).

CAROLINE ISLANDS, PALAU ISLANDS

16890900 Tabagaten River, Babelthuap

LOCATION.--Lat 7°27'00" N., long 134°32'05" E., on left bank 0.3 mi (0.5 km) downstream from unnamed tributary, 0.7 mi (1.1 km) northeast of Mount Karukail, and 1.0 mi (1.6 km) south of Ngatpang.

DRAINAGE AREA.--6.34 mi^2 (16.42 km^2).

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 20 ft (6 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, 1,420 ft^3/s (40.2 m^3/s) Dec. 2, gage height, 6.95 ft (2.118 m), from rating curve extended above 124 ft^3/s (3.51 m^3/s); minimum, 0.80 ft^3/s (0.023 m^3/s) Mar. 23, 24.
Period of record: Maximum discharge, 1,980 ft^3/s (56.1 m^3/s) Aug. 24, 1972, gage height, 7.58 ft (2.310 m), from rating curve extended above 124 ft^3/s (3.51 m^3/s); minimum, 0.80 ft^3/s (0.023 m^3/s) Mar. 23, 24, 1973.

REMARKS.--Records good.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	20	56	9.7	4.0	2.1	1.5	13	103	177	20	61
2	108	31	338	9.4	3.8	2.1	4.0	14	54	130	20	65
3	72	20	84	12	3.6	1.9	2.0	46	39	75	18	51
4	51	15	87	10	3.4	1.6	2.8	28	33	67	22	44
5	43	13	47	8.5	3.2	1.7	7.3	26	30	51	17	128
6	43	12	39	7.9	3.0	2.7	6.8	22	33	43	15	76
7	102	18	33	8.5	2.9	1.9	2.9	21	27	41	80	76
8	46	22	30	7.6	3.0	1.5	3.4	27	24	37	30	88
9	39	18	27	7.3	2.7	1.4	4.2	26	22	40	22	65
10	43	18	26	7.0	2.6	1.4	8.5	18	68	36	20	71
11	37	18	24	7.0	2.9	1.6	86	15	45	39	36	63
12	64	18	22	6.5	2.7	1.7	22	14	34	33	27	68
13	41	17	20	6.2	2.7	1.4	8.5	15	32	29	22	89
14	36	23	19	6.0	2.8	1.4	6.2	18	49	34	18	61
15	30	19	18	5.8	2.8	1.2	16	13	34	30	17	62
16	31	17	19	5.5	2.7	1.1	17	11	30	25	25	163
17	34	18	17	5.2	2.4	.95	10	12	27	21	32	75
18	27	18	18	5.0	2.3	1.0	12	38	37	22	22	103
19	24	16	15	4.8	2.3	1.2	40	29	27	160	24	96
20	22	15	14	4.8	2.4	1.7	37	18	94	50	28	65
21	22	26	14	10	2.1	1.4	18	15	46	42	93	75
22	22	16	14	10	2.0	.95	18	14	36	38	155	51
23	20	13	14	5.8	2.0	.85	19	36	37	52	62	48
24	18	12	13	5.2	2.0	.80	27	33	47	36	44	42
25	17	15	12	4.8	2.0	.90	26	20	33	31	99	38
26	16	11	12	4.4	2.1	.95	15	18	31	31	60	41
27	15	12	16	4.2	2.1	1.4	12	38	36	27	65	34
28	15	52	16	4.0	2.3	3.6	12	25	38	30	58	31
29	20	71	17	4.0	------	3.7	22	22	30	25	53	37
30	14	26	12	5.2	------	2.0	23	46	76	22	64	123
31	25	------	11	4.4	------	1.5	------	28	------	20	50	------
TOTAL	1,205	620	1,104	206.7	74.8	49.60	490.1	719	1,252	1,494	1,318	2,090
MEAN	38.9	20.7	35.6	6.67	2.67	1.60	16.3	23.2	41.7	48.2	42.5	69.7
MAX	108	71	338	12	4.0	3.7	86	46	103	177	155	163
MIN	14	11	11	4.0	2.0	.80	1.5	11	22	20	15	31
AC-FT	2,390	1,230	2,190	410	148	98	972	1,430	2,480	2,960	2,610	4,150

CAL YR 1972 TOTAL 18,132 MEAN 49.5 MAX 531 MIN 10 AC-FT 35,960
WTR YR 1973 TOTAL 10,623.20 MEAN 29.1 MAX 338 MIN .80 AC-FT 21,070

PEAK DISCHARGE (BASE, 700 CFS).--Dec. 2 (0130) 1,420 cfs (6.95 ft).

16891200 Gihmel River, Babelthuap

LOCATION.--Lat 7°21'59" N., long 134°32'06" E., on right bank at Garuruon, 400 ft (122 m) downstream from dam, and 0.5 mi (0.8 km) upstream from coast road.

DRAINAGE AREA.--1.09 mi^2 (2.82 km^2).

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 15 ft (4.6 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, 115 ft^3/s (3.26 m^3/s) Aug. 22, gage height, 5.65 ft (1.722 m), from rating curve extended above 6.4 ft^3/s (0.18 m^3/s); no flow for many days.
Period of record: Maximum discharge, 117 ft^3/s (3.31 m^3/s) May 1, 1972, gage height, 6.32 ft (1.926 m), from rating curve extended above 6.4 ft^3/s (0.18 m^3/s); no flow for many days during 1973.

REMARKS.--Records poor. An 8-inch (20 cm) pipeline diverts an average of about 0.75 ft^3/s (0.021 m^3/s) from above the dam, 400 ft (122 m) upstream from the gage, for consumption on the island of Koror.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	.30	.48	.08	.01		.04	.02	5.5	7.2	.56	3.0
2	13	.50	15	.08	.01		0	.04	4.6	6.2	.52	4.3
3	6.0	.35	3.2	.08	.01		0	.08	2.6	3.0	.44	2.6
4	4.0	.30	1.8	.08	.01		.03	.01	1.7	2.6	1.7	2.0
5	2.9	.25	2.5	.08	0		0	.01	1.5	2.0	.48	4.9
6	4.4	.20	1.9	.08	0		.01	.01	1.6	1.5	.48	2.5
7	15	.50	1.0	.08	0		0	.02	1.4	1.6	4.4	2.5
8	6.2	.30	.78	.10	0		.01	.10	1.1	1.5	1.0	1.9
9	4.0	.20	.60	.10	0		.01	.08	.72	1.5	.72	1.7
10	3.3	.15	.52	.10	0		.01	.08	3.5	1.1	.52	1.6
11	3.2	.20	.40	.10	0		.38	.06	3.5	2.3	.52	1.6
12	6.0	.20	.32	.08	0		.13	.06	1.9	1.5	.56	2.2
13	8.0	.32	.36	.08	0		.10	.04	1.4	1.1	.36	2.6
14	4.0	.32	.28	.10	0		.08	.02	3.0	1.8	.40	1.9
15	2.0	.28	.24	.08	0		.10	.04	1.8	1.2	.40	1.9
16	1.0	.28	.20	.08	0		.10	.06	1.2	.78	.52	6.5
17	.90	.28	.20	.08	0		.06	.08	1.2	.78	.44	5.3
18	.80	.24	.20	.08	0		.04	.10	2.3	2.2	.44	7.8
19	1.5	.24	.20	.08	0		.06	.08	2.2	9.1	.40	5.8
20	.78	.24	.20	.08	0		.04	.08	6.6	4.6	.40	3.8
21	.60	.24	.16	.08	0		.02	.08	2.5	2.9	17	4.4
22	.60	.32	.16	.06	0		.02	.08	1.6	2.5	22	3.0
23	.52	.32	.16	.04	0		.02	.13	1.5	2.3	8.6	2.9
24	.44	.32	.13	.04	0		.08	.08	1.4	1.9	4.9	2.5
25	.44	.28	.13	.04	0		.02	.08	1.0	1.6	6.0	2.0
26	.40	.28	.10	.02	0		.02	.10	.84	1.6	4.7	2.0
27	.36	.28	.10	.04	0		.01	.25	.90	1.1	12	1.6
28	.36	.44	.10	.02	0		.01	.16	1.7	1.6	5.1	1.4
29	.32	.44	.10	.02	------		.04	.26	.75	1.0	3.8	1.5
30	.32	.44	.10	.02	------		.02	1.2	1.4	.78	3.2	5.6
31	.36	------	.10	.02	------		------	2.8	------	.56	2.6	------
TOTAL	98.70	9.01	31.72	2.10	.04	0	1.46	6.29	62.91	71.40	105.16	93.3
MEAN	3.18	.30	1.02	.068	.001	0	.049	.20	2.10	2.30	3.39	3.11
MAX	15	.50	15	.10	.01	0	.38	2.8	6.6	9.1	22	7.8
MIN	.32	.15	.10	.02	0	0	0	.01	.72	.56	.36	1.4
AC-FT	196	18	63	4.2	.08	0	2.9	12	125	142	209	185

CAL YR 1972 TOTAL 948.15 MEAN 2.59 MAX 22 MIN .10 AC-FT 1,880
WTR YR 1973 TOTAL 482.09 MEAN 1.32 MAX 22 MIN 0 AC-FT 956

PEAK DISCHARGE (BASE, 30 CFS).--Aug. 22 (0930) 115 cfs (5.65 ft).

16891300 Gaden River, Babelthuap

LOCATION.--Lat 7°22'57" N., long 134°33'40" E., on left bank 750 ft (229 m) upstream from confluence with Kumekumeyel River, 1.0 mi (1.6 km) southwest of Mount Kabekobekushi, and 1.8 mi (2.9 km) north of Airai.

DRAINAGE AREA.--4.23 mi^2 (10.96 km^2).

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 7 ft (2 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, 739 ft^3/s (20.9 m^3/s) Dec. 2, gage height, 9.16 ft (2.792 m), from rating curve extended above 61 ft^3/s (1.7 m^3/s); minimum, 1.6 ft^3/s (0.045 m^3/s) Mar. 23, 24.
Period of record: Maximum discharge, 2,170 ft^3/s (61.5 m^3/s) May 1, 1972, gage height, 15.73 ft (4.795 m), from rating curve extended above 61 ft^3/s (1.7 m^3/s); minimum, 1.6 ft^3/s (0.045 m^3/s) Mar. 23, 24, 1973.

REMARKS.--Records good. No diversion above gage.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	15	18	5.9	3.1	2.4	3.1	7.5	88	69	14	39
2	64	23	161	5.7	3.3	2.4	4.4	7.7	40	65	13	44
3	41	15	34	7.5	3.3	2.4	2.2	24	34	37	12	35
4	32	12	30	6.9	3.1	2.2	3.3	15	22	33	13	29
5	28	11	22	6.5	2.9	2.8	8.4	9.9	19	27	12	44
6	30	11	18	6.1	2.9	3.6	4.7	8.8	25	26	11	34
7	68	22	16	6.1	2.9	2.8	2.8	10	18	24	37	32
8	33	12	15	6.1	2.9	2.2	4.4	18	16	21	16	28
9	28	11	14	6.1	2.8	2.2	4.6	17	15	22	13	26
10	32	11	14	6.1	2.8	2.2	5.7	9.9	35	21	12	29
11	27	17	13	6.1	3.1	3.4	43	8.2	33	26	14	27
12	63	14	13	6.1	2.8	2.6	12	6.9	30	21	12	31
13	37	14	13	5.9	2.8	2.2	4.6	6.5	22	20	11	35
14	32	17	11	5.7	2.6	2.1	3.4	9.9	48	23	10	29
15	27	14	11	5.5	2.6	2.1	4.9	6.7	28	18	9.5	26
16	26	11	11	5.3	2.8	2.1	6.5	6.1	22	15	16	51
17	26	14	10	4.9	2.4	1.9	7.9	7.7	20	14	16	38
18	22	13	11	4.7	2.2	1.9	6.9	16	28	38	11	59
19	20	10	10	4.9	2.6	2.2	16	14	20	133	9.7	47
20	20	10	10	4.7	2.6	2.1	24	8.8	43	41	9.5	37
21	18	11	10	8.2	2.4	1.9	8.6	7.3	28	31	138	63
22	19	11	9.5	7.1	2.4	1.8	7.9	7.1	23	27	145	38
23	17	10	9.0	4.9	2.4	1.8	7.7	20	23	24	45	34
24	16	10	9.0	4.4	2.2	1.8	13	14	32	23	31	31
25	15	10	8.5	4.2	2.2	1.8	13	9.7	22	20	66	28
26	16	10	8.0	3.6	2.2	1.8	6.9	8.8	20	20	46	31
27	14	10	8.8	3.3	2.6	1.9	5.7	29	23	18	74	24
28	14	23	11	3.1	2.6	2.5	6.1	14	26	24	42	22
29	16	26	8.6	2.9	------	2.4	18	11	18	18	38	22
30	12	12	7.3	3.1	------	2.1	14	38	28	15	43	108
31	23	------	6.3	3.1	------	1.8	------	18	------	14	35	------
TOTAL	882	410	551.0	164.7	75.5	69.4	273.7	395.5	849	928	974.7	1,121
MEAN	28.5	13.7	17.8	5.31	2.70	2.24	9.12	12.8	28.3	29.9	31.4	37.4
MAX	68	26	161	8.2	3.3	3.6	43	38	88	133	145	108
MIN	12	10	6.3	2.9	2.2	1.8	2.2	6.1	15	14	9.5	22
AC-FT	1,750	813	1,090	327	150	138	543	784	1,680	1,840	1,930	2,220

CAL YR 1972 TOTAL 12,457.0 MEAN 34.0 MAX 520 MIN 6.3 AC-FT 24,710
WTR YR 1973 TOTAL 6,694.5 MEAN 18.3 MAX 161 MIN 1.8 AC-FT 13,280

PEAK DISCHARGE (BASE, 800 CFS).--No peak above base.

16891400 South Fork Ngardok River, Babelthuap

LOCATION.--Lat 7°26'15" N., long 134°35'03" E., on right bank 0.3 mi (0.5 km) upstream from left-bank tributary, 0.6 mi (1.0 km) northwest of Garasho Mountain, and 1.3 mi (2.1 km) west of village of Ngarsul.

DRAINAGE AREA.--2.26 mi^2 (5.85 km^2).

PERIOD OF RECORD.--March 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 65 ft (20 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, 635 ft^3/s (18.0 m^3/s) Sept. 30, gage height, 5.10 ft (1.554 m), from rating curve extended above 70 ft^3/s (1.98 m^3/s); minimum, 0.55 ft^3/s (0.016 m^3/s) Mar. 9.
Period of record: Maximum discharge, 1,200 ft^3/s (34.0 m^3/s) May 1, 1972, gage height, 7.10 ft (2.164 m), from rating curve extended above 70 ft^3/s (1.98 m^3/s); minimum, 0.55 ft^3/s (0.016 m^3/s) Mar. 9, 1973.

REMARKS.--Records good. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	9.2	12	3.8	2.1	1.0	1.0	5.2	25	70	7.7	29
2	35	18	95	3.8	2.1	1.0	1.8	5.7	17	41	7.7	28
3	26	11	43	5.2	2.1	1.0	.85	14	14	26	6.7	21
4	21	7.7	31	4.3	1.8	1.0	1.8	11	12	24	7.2	18
5	17	7.2	17	3.8	1.8	1.2	2.8	7.2	11	19	6.7	34
6	17	6.7	14	3.8	1.8	1.2	2.4	5.7	14	17	6.2	21
7	38	9.9	12	3.8	1.8	.85	1.0	6.7	11	17	28	21
8	19	9.2	11	3.3	1.8	.70	1.8	9.9	9.2	14	11	18
9	16	7.7	9.9	3.3	1.5	.70	2.8	6.7	8.4	25	8.4	17
10	18	6.7	9.9	3.3	1.5	.70	3.3	5.2	30	18	6.7	30
11	15	6.7	9.9	3.3	1.6	.85	31	4.8	21	17	8.4	21
12	33	7.2	9.2	3.3	1.8	.85	7.2	3.8	15	15	8.4	21
13	19	7.2	9.2	3.3	1.5	.85	3.3	3.8	12	13	6.7	46
14	17	9.9	7.7	3.3	1.5	.85	2.1	8.4	20	13	6.2	28
15	14	8.4	7.2	2.8	1.5	.70	5.2	4.8	14	12	5.7	26
16	13	6.7	7.2	2.8	1.5	.70	4.3	3.8	12	9.9	8.4	59
17	14	6.2	6.7	2.8	1.2	.70	3.8	4.3	11	9.2	17	30
18	11	6.7	7.7	2.8	1.2	.70	5.2	14	14	11	9.2	45
19	11	5.7	6.2	2.4	1.0	.70	20	11	9.9	86	8.4	37
20	9.2	5.2	5.7	2.4	1.0	.85	13	6.7	20	25	7.2	27
21	8.4	5.2	5.7	5.7	1.0	.85	6.2	5.2	13	19	42	39
22	9.2	4.7	5.7	4.8	1.0	.85	8.4	5.2	11	17	61	25
23	9.2	4.3	5.7	2.8	1.0	.85	9.2	15	14	16	25	22
24	8.4	4.3	5.2	2.8	.85	.85	16	11	17	14	18	21
25	8.4	4.8	5.2	2.4	.85	.85	12	7.2	11	12	34	17
26	8.4	3.8	4.8	2.4	.85	1.0	6.2	6.2	9.2	12	47	23
27	7.7	4.3	6.7	2.1	1.0	1.5	4.8	14	11	9.9	46	17
28	7.7	15	7.7	1.8	1.0	1.8	4.8	8.4	16	14	27	14
29	9.9	13	5.7	1.8	------	2.1	11	7.2	11	9.9	23	14
30	7.2	6.7	4.8	2.1	------	.94	7.7	14	23	8.4	23	92
31	11	------	4.3	2.1	------	.70	------	7.2	------	7.7	19	------
TOTAL	497.7	229.3	393.0	98.4	39.85	29.39	200.95	243.3	436.7	622.0	546.9	861
MEAN	16.1	7.64	12.7	3.17	1.42	.95	6.70	7.85	14.6	20.1	17.6	28.7
MAX	39	18	95	5.7	2.1	2.1	31	15	30	86	61	92
MIN	7.2	3.8	4.3	1.8	.85	.70	.85	3.8	8.4	7.7	5.7	14
AC-FT	987	455	780	195	79	58	399	483	866	1,230	1,080	1,710

CAL YR 1972 TOTAL 7,054.2 MEAN 19.3 MAX 187 MIN 3.8 AC-FT 13,990
WTR YR 1973 TOTAL 4,198.49 MEAN 11.5 MAX 95 MIN .70 AC-FT 8,330

PEAK DISCHARGE (BASE, 400 CFS).--Dec. 2 (0200) 462 cfs (4.31 ft); Sept. 30 (1500) 635 cfs (5.10 ft).

CAROLINE ISLANDS, YAP ISLANDS

16892400 Aringel Stream, Yap

LOCATION.--Lat 9°31'01" N., long 138°05'11" E., on right bank at Aringel and 0.3 mi (0.5 km) upstream from mouth.

DRAINAGE AREA.--0.24 mi^2 (0.62 km^2).

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 35 ft (10.7 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 1.03 ft^3/s (0.0292 m^3/s), 746 acre-ft/yr (920,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 457 ft^3/s (12.9 m^3/s) Sept. 15, gage height, 6.68 ft (2.036 m), from floodmark in well, from rating curve extended above 20 ft^3/s (0.57 m^3/s); no flow for several months.
Period of record: Maximum discharge, 457 ft^3/s (12.9 m^3/s) Sept. 15, 1973, gage height, 6.68 ft (2.036 m), from floodmark in well, from rating curve extended above 20 ft^3/s (0.57 m^3/s); no flow for many days most years.

REMARKS.--Records fair. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.23	.51					0	3.7	3.6	.50	.03
2	.06	.48	2.5					.10	.97	2.6	.47	1.0
3	.05	1.9	2.5					.41	.29	.77	.31	.40
4	1.5	.44	.53					.10	.16	.33	.13	.20
5	.19	.33	.27					.06	.11	.17	.11	.30
6	.08	.19	.14					.06	.37	.16	.10	1.1
7	.05	1.9	.10					.04	.21	.19	.81	.70
8	.03	3.6	.05					.03	.17	.44	.23	.30
9	.04	.44	.04					.03	.31	2.0	.13	.20
10	.02	.27	.03					.02	.65	2.5	.35	.10
11	.01	2.4	.01					.01	2.8	1.3	.73	.50
12	.02	1.0	.01					.01	1.5	1.6	.25	4.5
13	.02	.31	0					.01	.65	.97	.13	1.0
14	.04	.19	0					.01	.69	.47	.05	1.5
15	.02	.19	.02					.01	1.0	.29	.03	20
16	.01	.11	.04					0	.47	.60	.03	15
17	1.8	.61	.02					0	.23	.57	.02	1.0
18	.53	.44	.02					0	2.3	1.7	.01	5.0
19	.19	.21	.08					0	1.3	1.5	2.1	1.0
20	.10	.14	.23					.20	.81	.65	.19	.40
21	.06	7.5	.07					.21	.33	.37	.10	1.5
22	.08	.47	.03					.10	.21	.23	.85	.70
23	.16	.19	.03					.05	.17	.19	.31	.33
24	2.3	.13	.03					.03	.16	.16	.13	.21
25	.33	.07	.02					.02	.23	.21	.07	5.0
26	.13	.05	0					.01	2.2	.35	.05	6.0
27	.17	.07	0					.01	4.7	.29	.60	.47
28	.41	.53	0					.01	2.0	.69	.57	.39
29	.16	.16	0		------			.01	.57	.50	.21	.37
30	1.9	.13	0		------			0	.77	.27	.10	2.5
31	.61	------	0		------		------	0	------	.31	.05	------
TOTAL	11.21	24.68	7.28	0	0	0	0	1.55	30.03	25.98	9.72	71.70
MEAN	.36	.82	.23	0	0	0	0	.050	1.00	.84	.31	2.39
MAX	2.3	7.5	2.5	0	0	0	0	.41	4.7	3.6	2.1	20
MIN	.01	.05	0	0	0	0	0	0	.11	.16	.01	.03
AC-FT	22	49	14	0	0	0	0	3.1	60	52	19	142

CAL YR 1972 TOTAL 357.68 MEAN .98 MAX 27 MIN 0 AC-FT 709
WTR YR 1973 TOTAL 182.15 MEAN .50 MAX 20 MIN 0 AC-FT 361

PEAK DISCHARGE (BASE, 200 CFS).--Sept. 15 (about 2200) 457 cfs (6.68 ft).

NOTE.--No gage-height record Sept. 1-22.

16892800 Dalolab Stream, Yap

LOCATION.--Lat 9°31'04" N., long 138°06'04" E., on left bank at Talagu and 0.9 mi (1.4 km) upstream from mouth.

DRAINAGE AREA.--0.09 mi² (0.23 km²).

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 150 ft (46 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 0.348 ft³/s (0.0099 m³/s), 252 acre-ft/yr (311,000 m³/yr).

EXTREMES.--Current year: Maximum discharge, 180 ft³/s (5.10 m³/s) Sept. 15, gage height, 4.80 ft (1.463 m), from floodmark in well, from rating curve extended above 17 ft³/s (0.48 m³/s); no flow for many days.
Period of record: Maximum discharge, 180 ft³/s (5.10 m³/s) Sept. 15, 1973, gage height, 4.80 ft (1.463 m), from floodmark in well, from rating curve extended above 17 ft³/s (0.48 m³/s); no flow for many days each year.

REMARKS.--Records fair. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.02	.15					0	1.1	1.5	.17	.01
2	.02	.03	1.1					.02	.19	.44	.98	1.1
3	.02	.74	1.2					.01	.02	.08	.22	.12
4	.50	.06	.44					0	0	.02	.05	.03
5	.06	.03	.19					0	0	0	.10	.03
6	.03	.01	.08					0	.12	.01	.25	.02
7	.02	.66	.03					0	.01	.03	.49	.02
8	.01	1.5	.01					0	.01	.10	.06	.01
9	.02	.08	0					0	0	.51	.03	.01
10	.01	.05	0					0	.01	.65	1.9	.01
11	0	1.1	0					0	.74	.22	.54	.08
12	0	.71	0					0	.17	.84	.08	.99
13	.01	.08	0					0	.04	.27	.02	.19
14	.01	.03	0					0	.01	.08	.01	.30
15	0	.02	0					0	.02	.02	.01	16
16	0	.01	0					0	.01	.14	0	4.0
17	.90	.06	0					0	.01	.22	0	.30
18	.12	.08	0					0	.71	1.5	0	1.5
19	.01	.05	0					0	.22	.40	.36	.20
20	.01	.03	0					.02	.05	.08	.04	.10
21	0	2.0	0					0	.01	.02	.02	1.5
22	0	.20	0					0	0	.01	.89	.30
23	0	.10	0					0	0	.01	.10	.04
24	.36	.04	0					0	0	.01	.03	.02
25	.02	.02	0					0	.02	0	.01	1.3
26	.01	.01	0					0	.54	.01	.10	2.2
27	.04	.01	0					0	1.1	0	.30	.14
28	.04	.08	0					0	.49	.05	.27	.10
29	.01	.05	0		------			0	.06	.04	.08	.05
30	.10	.02	0		------			0	.30	.01	.04	1.7
31	.08	------	0		------		------	0	------	.04	.01	------
TOTAL	2.45	7.88	3.20	0	0	0	0	.05	5.96	7.31	7.16	32.37
MEAN	.079	.26	.10	0	0	0	0	.002	.20	.24	.23	1.08
MAX	.90	2.0	1.2	0	0	0	0	.02	1.1	1.5	1.9	16
MIN	0	.01	0	0	0	0	0	0	0	0	0	.01
AC-FT	4.9	16	6.3	0	0	0	0	.10	12	14	14	64

CAL YR 1972 TOTAL 116.25 MEAN .32 MAX 10 MIN 0 AC-FT 231
WTR YR 1973 TOTAL 66.38 MEAN .18 MAX 16 MIN 0 AC-FT 132

PEAK DISCHARGE (BASE, 75 CFS).--Sept. 15 (2200) 180 cfs (4.80 ft).

16892900 Pemgoy Stream, Yap

LOCATION.--Lat 9°31'07" N., long 138°06'18" E., on right bank at Talagu, 100 ft (30 m) upstream from Talagu Stream, and 0.8 mi (1.3 km) upstream from mouth.

DRAINAGE AREA.--0.17 mi^2 (0.44 km^2).

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 100 ft (30 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 0.496 ft^3/s (0.0140 m^3/s), 359 acre-ft/yr (443,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 240 ft^3/s (6.80 m^3/s) Sept. 15, gage height, 4.72 ft (1.439 m), from rating curve extended above 11 ft^3/s (0.31 m^3/s); no flow for many months.
Period of record: Maximum discharge, 240 ft^3/s (6.80 m^3/s) Sept. 15, 1973, gage height, 4.72 ft (1.439 m), from rating curve extended above 11 ft^3/s (0.31 m^3/s); no flow for many days most years.

REMARKS.--Records poor. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.10	.62						2.0	3.0	.40	.02
2	.06	.20	.86						.50	.50	1.5	1.7
3	.07	1.0	1.0						.10	.10	.18	.24
4	2.6	.20	.28						.05	.02	.07	.04
5	.16	.10	.11						.02	0	.05	.03
6	.08	.07	.05						.20	0	.05	.02
7	.06	.80	.04						.05	.03	.82	.02
8	.05	1.5	.04						.03	.20	.10	.02
9	.07	.20	.04						.02	.30	.03	.02
10	.04	.10	.04						.01	1.3	4.4	.03
11	.03	1.8	.03						1.0	.50	1.2	.27
12	.07	1.0	.03						.20	1.2	.12	2.8
13	.16	.13	.02						.05	.60	.03	.40
14	.13	.06	.02						.03	.12	.01	.34
15	.06	.06	.05						.02	.04	0	11
16	.04	.05	.04						.02	.86	0	7.0
17	2.9	.11	.04						.01	.29	0	.48
18	.45	.11	.04						.80	2.3	0	3.3
19	.05	.05	.07						.60	1.0	.10	.34
20	.04	.05	.04						.10	.12	.02	.15
21	.05	4.3	.03						.05	.04	.01	2.5
22	.04	.25	.01						.02	.02	1.1	.78
23	.04	.05	.01						.01	.04	.12	.25
24	.50	.04	.01						0	.02	.04	.10
25	.10	.04	.01						0	.04	.02	2.5
26	.07	.04	0						.60	.04	.03	4.0
27	.07	.05	0						1.5	.03	.18	.50
28	.06	.28	0						1.0	.07	.27	.30
29	.05	.06	0		------				.15	.05	.05	.20
30	.15	.05	0		------				.50	.02	.01	2.5
31	.12	------	0		------		------		------	.08	.01	------
TOTAL	8.43	12.85	3.53	0	0	0	0	0	9.64	12.93	10.92	41.85
MEAN	.27	.43	.11	0	0	0	0	0	.32	.42	.35	1.40
MAX	2.9	4.3	1.0	0	0	0	0	0	2.0	3.0	4.4	11
MIN	.03	.04	0	0	0	0	0	0	0	0	0	.02
AC-FT	17	25	7.0	0	0	0	0	0	19	26	22	83

CAL YR 1972 TOTAL 164.99 MEAN .45 MAX 13 MIN 0 AC-FT 327
WTR YR 1973 TOTAL 100.15 MEAN .27 MAX 11 MIN 0 AC-FT 199

PEAK DISCHARGE (BASE, 70 CFS).--Sept. 15 (2200) 240 cfs (4.72 ft).

NOTE.--No gage-height record May 31 to July 13.

16893000 Talagu Stream, Yap

LOCATION.--Lat 9°31'08" N., long 138°06'13" E., on left bank at Talagu, 300 ft (91 m) upstream fron mouth, and 0.9 mi (1.4 km) upstream from mouth of Pemgoy Stream.

DRAINAGE AREA.--0.07 mi^2 (0.18 km^2).

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 130 ft (40 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 0.332 ft^3/s (0.0094 m^3/s), 241 acre-ft/yr (297,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 213 ft^3/s (6.03 m^3/s) Sept. 15, gage height, 3.98 ft (1.213 m), from floodmark in well, from rating curve extended above 29 ft^3/s (0.82 m^3/s); no flow for many days.
Period of record: Maximum discharge, 213 ft^3/s (6.03 m^3/s) Sept. 15, 1973, gage height, 3.98 ft (1.213 m), from rating curve extended above 29 ft^3/s (0.82 m^3/s); no flow for many days most years.

REMARKS.--Records fair. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.04	.19						.94	1.7	.22	0
2	.01	.09	.47						.22	.25	.62	.40
3	.01	.43	.54						.04	.05	.28	.10
4	.45	.10	.18						0	.01	.15	.02
5	.06	.04	.09						0	0	.08	.01
6	.02	.03	.04						.11	0	.06	.01
7	.01	.35	.03						.03	.03	.43	.01
8	.01	.75	.03						.01	.15	.11	.01
9	.02	.15	.02						0	.22	.04	0
10	.01	.11	.01						0	.80	2.3	0
11	.01	.66	.01						.50	.37	.47	.09
12	.02	.43	.01						.11	.66	.08	.68
13	.03	.15	0						.03	.29	.02	.22
14	.02	.07	0						.01	.12	.01	.22
15	.01	.07	.01						.01	.02	.01	6.5
16	.01	.04	.01						.01	.31	.01	5.2
17	.73	.09	.01						0	.24	.01	.40
18	.20	.10	.01						.41	.89	.01	1.1
19	.04	.06	.02						.28	.50	.12	.30
20	.02	.04	.01						.05	.22	.02	.10
21	.02	1.9	.01						.02	.05	.01	1.2
22	.02	.18	0						0	.02	.32	.28
23	.02	.04	0						0	.02	.06	.09
24	.26	.03	0						0	.01	.02	.04
25	.05	.02	0						0	.01	.01	1.3
26	.03	.02	0						.32	.01	.03	1.8
27	.04	.02	0						.74	.01	.15	.26
28	.03	.13	0						.50	.04	.18	.18
29	.03	.04	0		------				.07	.05	.04	.12
30	.07	.03	0		------				.22	.01	.01	1.2
31	.06	------	0		------		------		------	.02	.01	------
TOTAL	2.34	6.21	1.70	0	0	0	0	0	4.63	7.08	5.89	21.84
MEAN	.076	.21	.055	0	0	0	0	0	.15	.23	.19	.73
MAX	.73	1.9	.54	0	0	0	0	0	.94	1.7	2.3	6.5
MIN	.01	.02	0	0	0	0	0	0	0	0	.01	0
AC-FT	4.6	12	3.4	0	0	0	0	0	9.2	14	12	43

CAL YR 1972 TOTAL 95.77 MEAN .26 MAX 9.6 MIN 0 AC-FT 190
WTR YR 1973 TOTAL 49.69 MEAN .14 MAX 6.5 MIN 0 AC-FT 99

PEAK DISCHARGE (BASE, 50 CFS).--Sept. 15 (2300) 213 cfs (3.98 ft).

16893100 Burong Stream, Yap

LOCATION.--Lat 9°31'59" N., long 138°07'05" E., on left bank at Dugor and 0.1 mi (0.2 km) upstream from mouth.

DRAINAGE AREA.--0.29 mi^2 (0.75 km^2).

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 15 ft (4.6 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 0.864 ft^3/s (0.0245 m^3/s), 626 acre-ft/yr (772,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 303 ft^3/s (8.58 m^3/s) Sept. 15, gage height, 5.09 ft (1.551 m), from rating curve extended above 15 ft^3/s (0.42 m^3/s); no flow for many days.
Period of record: Maximum discharge, 303 ft^3/s (8.58 m^3/s) Sept. 15, 1973, gage height, 5.09 ft (1.551 m), from rating curve extended above 15 ft^3/s (0.42 m^3/s); no flow for many days most years.

REMARKS.--Records good. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.34	.66						.20	2.6	.30	.01
2	.03	.51	1.0						.10	1.1	.30	1.0
3	.58	2.4	.58						.28	.30	.37	.40
4	2.9	.40	.28						.02	.08	.13	.17
5	.54	.15	.15						0	.02	.13	.30
6	.34	.08	.10						.02	0	.13	1.1
7	.17	.70	.06						.01	.15	.76	.70
8	.08	2.0	.04						0	1.1	.23	.30
9	.07	.25	.03						0	2.6	.15	.17
10	.05	.34	.02						0	3.3	2.0	.07
11	.06	.92	.02						.78	1.1	1.3	.48
12	.03	.92	.02						.13	1.1	.30	4.4
13	.04	.23	.01						0	2.6	.11	1.1
14	.05	.13	.01						0	.48	.03	1.3
15	.02	.11	.04						0	.15	.01	20
16	.24	.06	.04						0	2.9	0	15
17	4.7	.06	.06						0	.76	0	.82
18	.87	.06	.06						1.4	2.0	0	5.5
19	.19	.04	.23						.65	1.3	1.4	1.0
20	.08	.03	.06						.06	.28	.25	.40
21	.06	6.2	.02						0	.11	.21	1.7
22	.05	.58	.02						0	.04	2.7	.70
23	.05	.19	.02						0	.01	.44	.23
24	.30	.11	.02						0	0	.17	.13
25	.10	.07	.01						0	0	.08	5.3
26	.10	.06	.01						1.3	.05	.06	6.2
27	.65	.08	.01						1.1	.03	.28	.70
28	.13	.82	.01						1.1	.01	.30	.28
29	.08	.17	.01		------				.19	.01	.13	.17
30	.58	.08	.01		------				.33	.01	.07	2.6
31	.51	------	0		------		------		------	.10	.02	------
TOTAL	13.70	18.09	3.61	0	0	0	0	0	7.67	24.29	12.36	72.23
MEAN	.44	.60	.12	0	0	0	0	0	.26	.78	.40	2.41
MAX	4.7	6.2	1.0	0	0	0	0	0	1.4	3.3	2.7	20
MIN	.02	.03	0	0	0	0	0	0	0	0	0	.01
AC-FT	27	36	7.2	0	0	0	0	0	15	48	25	143

CAL YR 1972 TOTAL 303.01 MEAN .83 MAX 22 MIN 0 AC-FT 601
WTR YR 1973 TOTAL 151.95 MEAN .42 MAX 20 MIN 0 AC-FT 301

PEAK DISCHARGE (BASE, 75 CFS).--Sept. 15 (2300) 303 cfs (5.09 ft).

16893300 Bileiy Spring, Gagil-Tomil

LOCATION.--Lat 9°32'19" N., long 138°10'59" E., on right bank at Binau, 200 ft (61 m) downstream from main spring, and 0.6 mi (1.0 km) upstream from mouth.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 70 ft (21 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 0.121 ft^3/s (0.0034 m^3/s), 87.7 acre-ft/yr (108,000 m^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 1.5 ft^3/s (0.042 m^3/s) Sept. 8, 1972; no flow for many days in 1968, 1969 and 1973.

REMARKS.--Records fair. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.08	.05	.03	.01					0		0
2	.21	.07	.05	.03	.01					0		0
3	.22	.07	.06	.03	.01					0		0
4	.19	.07	.05	.03	0					0		0
5	.16	.07	.05	.03	0					0		0
6	.21	.08	.05	.03	.01					0		0
7	.19	.07	.04	.03	0					0		0
8	.17	.07	.04	.03	0					0		0
9	.16	.06	.04	.03	0					.01		0
10	.14	.07	.03	.03	0					0		0
11	.14	.07	.03	.02	.01					0		0
12	.14	.07	.03	.02	.01					0		0
13	.14	.07	.03	.02	.01					0		0
14	.13	.07	.03	.02	.01					0		0
15	.12	.06	.03	.02	.01					0		.05
16	.11	.06	.03	.02	.01					0		.68
17	.11	.06	.04	.02	0					0		.39
18	.10	.06	.04	.01	0					0		.42
19	.10	.06	.03	.02	0					0		.30
20	.10	.06	.03	.02	0					0		.22
21	.10	.08	.03	.01	0					0		.26
22	.09	.05	.04	.01	0					0		.21
23	.09	.05	.04	.01	0					0		.19
24	.09	.05	.04	.02	0					0		.17
25	.09	.04	.03	.01	0					0		.36
26	.09	.04	.03	.02	0					0		.60
27	.08	.05	.03	.02	0					0		.45
28	.08	.06	.03	.01	0					0		.33
29	.08	.05	.03	.01	------					0		.26
30	.08	.05	.04	.01	------					0		.26
31	.08	------	.04	.01	------		------		------	0		------
TOTAL	4.01	1.87	1.16	.63	.10	0	0	0	0	.01	0	5.15
MEAN	.13	.062	.037	.020	.004	0	0	0	0	.0003	0	.17
MAX	.22	.08	.06	.03	.01	0	0	0	0	.01	0	.68
MIN	.08	.04	.03	.01	0	0	0	0	0	0	0	0
AC-FT	8.0	3.7	2.3	1.2	.2	0	0	0	0	.02	0	10

CAL YR 1972 TOTAL 56.63 MEAN .15 MAX 1.5 MIN .02 AC-FT 112
WTR YR 1973 TOTAL 12.93 MEAN .035 MAX .68 MIN 0 AC-FT 26

16893700 Wichen River at altitude 55 m, Moen

LOCATION.--Lat 7°26'45" N., long 151°52'02" E., on left bank at Peniesence, 1.0 mi (1.6 km) upstream from mouth, and 1.6 mi (2.6 km) west of Saint Xaviers Academy.

DRAINAGE AREA.--0.23 mi^2 (0.60 km^2).

PERIOD OF RECORD.--June 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 180 ft (55 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 1.02 ft^3/s (0.0289 m^3/s), 739 acre-ft/yr (911,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 16 ft^3/s (0.45 m^3/s) Aug. 26, gage height, 2.02 ft (0.616 m), from rating curve extended above 3 ft^3/s (0.085 m^3/s); minimum, 0.01 ft^3/s (<0.001 m^3/s) for several days. Period of record: Maximum discharge, 193 ft^3/s (5.47 m^3/s) Nov. 25, 1969, gage height, 4.08 ft (1.241 m), from rating curve extended above 15 ft^3/s (0.42 m^3/s); minimum, 0.01 ft^3/s (<0.001 m^3/s) Mar. 29-31, 1969, and for several days in March and April 1973.

REMARKS.--Records fair. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	.23	.70	.54	.05	.04	.01	.03	.16	.66	.44	.49
2	3.1	.23	.54	.41	.05	.04	.02	.05	.30	.82	.34	.39
3	1.7	.23	.41	.35	.05	.03	.01	.13	.26	.41	.80	.34
4	1.7	.20	.35	.30	.05	.03	.01	.26	.16	.41	.49	.60
5	1.3	.20	.30	.30	.05	.06	.01	.16	.13	4.0	.39	2.0
6	1.2	.23	.30	.26	.05	.04	.01	.09	.13	2.8	.30	1.1
7	1.2	.23	.26	.23	.05	.03	.01	.07	.19	1.8	.26	.60
8	.90	.23	1.4	.23	.07	.05	.02	.05	.22	2.3	.87	.54
9	.80	.20	.62	.20	.06	.05	.13	.05	.16	2.0	.54	.44
10	.70	.20	.41	.20	.07	.23	.09	.04	.13	2.2	.34	.34
11	.62	.20	.35	.17	.09	.09	.03	.11	.73	2.1	.34	.34
12	.54	.23	.30	.17	.09	.06	.03	.05	.73	2.2	.44	1.0
13	.54	.41	.26	.15	.07	.05	.02	.05	.66	1.7	.30	.54
14	.47	.41	.26	.13	.06	.05	.02	.09	1.8	1.2	.26	.39
15	.47	.80	.23	.13	.06	.04	.02	.07	1.6	1.8	2.7	.34
16	.47	.41	.23	.13	.06	.04	.03	.05	.87	1.2	1.0	.30
17	.41	.30	.23	.13	.06	.04	.02	.04	.60	1.3	.66	.95
18	.35	.26	.30	.11	.06	.03	.80	.04	.44	2.6	.87	.80
19	.35	.23	1.3	.11	.06	.05	.07	1.3	.39	1.7	.80	.54
20	.54	.23	1.3	.09	.06	.05	.13	.54	.34	1.3	1.0	2.0
21	.47	.23	.70	.09	.06	.04	3.2	.26	.30	.87	1.3	2.2
22	.41	.23	.47	.07	.06	.03	.87	.16	.26	.87	.87	1.2
23	.35	.23	.41	.07	.05	.03	.30	.16	.22	1.3	.66	.87
24	.35	.41	.35	.07	.05	.02	.13	.11	.19	.95	.49	1.3
25	.35	.54	.35	.06	.05	.02	.09	.13	.22	1.2	.44	.87
26	.30	.54	.30	.06	.05	.02	.07	.19	.54	1.1	2.7	.66
27	.30	.70	.35	.06	.05	.01	.05	.13	.34	.80	3.1	.60
28	.30	1.1	.35	.05	.05	.01	.04	.09	1.1	.66	1.5	.80
29	.30	2.3	6.6	.05	------	.01	.04	.11	.73	.54	1.0	1.1
30	.26	1.4	1.6	.06	------	.01	.03	.11	.30	.49	.80	1.2
31	.26	------	.90	.05	------	.01	------	.26	------	.54	.60	------
TOTAL	23.71	13.34	22.43	5.03	1.64	1.31	6.31	4.98	14.20	43.82	26.60	24.84
MEAN	.76	.44	.72	.16	.059	.042	.21	.16	.47	1.41	.86	.83
MAX	3.1	2.3	6.6	.54	.09	.23	3.2	1.3	1.8	4.0	3.1	2.2
MIN	.26	.20	.23	.05	.05	.01	.01	.03	.13	.41	.26	.30
AC-FT	47	26	44	10.0	3.3	2.6	13	9.9	28	87	53	49

CAL YR 1972 TOTAL 507.65 MEAN 1.39 MAX 29 MIN .15 AC-FT 1,010
WTR YR 1973 TOTAL 188.21 MEAN .52 MAX 6.6 MIN .01 AC-FT 373

PEAK DISCHARGE (BASE, 70 CFS).--No peak above base.

16893800 Wichen River at altitude 18 m, Moen

LOCATION.--Lat 7°27'05" N., long 151°52'18" E., on left bank at Peniesence and 0.5 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--0.60 mi² (1.55 km²).

PERIOD OF RECORD.--April 1955 to March 1956 (published as "at Peniesence"), June 1968 to current year. All figures of discharge above 3 ft³/s (0.085 m³/s) prior to April 1956, published in WSP 1751, are unreliable and should not be used.

GAGE.--Water-stage recorder and concrete control since Mar. 29, 1973. Altitude of gage is 60 ft (18 m), from topographic map. Prior to Apr. 1, 1956, nonrecording gage at site 100 ft (30 m) downstream at different datum.

AVERAGE DISCHARGE.--5 years, 2.39 ft³/s (0.0677 m³/s), 1,730 acre-ft/yr (2.13 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 113 ft³/s (3.20 m³/s) Aug. 26, gage height, 3.08 ft (0.939 m), from rating curve extended above 10 ft³/s (0.28 m³/s); minimum, 0.04 ft³/s (0.001 m³/s) Apr. 4-7.
Period of record: Maximum discharge, 910 ft³/s (25.8 m³/s) June 4, 1972, gage height, 6.80 ft (2.073 m), from rating curve extended above 26 ft³/s (0.74 m³/s); minimum, 0.03 ft³/s (0.001 m³/s) Mar. 31, 1969.

REMARKS.--Records poor for the period Oct. 1 to Mar. 29 and fair Mar. 30 to Sept. 30. No diversion above station.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	.30	1.5	.96	.07	.06	.05	.06	.40	.55	.98	.98
2	7.0	.30	1.3	1.0	.07	.06	.05	.09	.74	1.6	.74	.74
3	4.8	.30	1.1	1.0	.07	.06	.05	.18	.64	.74	2.4	.64
4	4.6	.25	1.0	.95	.07	.06	.04	.55	.40	.74	1.1	1.2
5	3.2	.25	.95	.90	.07	.06	.04	.40	.34	15	1.1	6.6
6	2.2	.27	.90	.80	.07	.06	.04	.25	.21	8.2	.74	3.0
7	2.4	.27	.80	.70	.07	.06	.04	.15	.29	4.2	.74	1.4
8	1.9	.27	4.6	.65	.12	.06	.07	.13	.34	6.2	3.5	.98
9	1.7	.25	1.4	.60	.09	.06	.34	.11	.25	5.1	1.9	.74
10	1.5	.25	1.0	.55	.12	.65	.25	.09	.21	5.9	1.2	.55
11	1.4	.25	.90	.45	.16	.20	.13	.15	2.6	5.6	1.1	.55
12	1.3	.30	.72	.40	.16	.12	.13	.13	2.4	5.9	1.1	2.8
13	1.3	.65	.72	.35	.12	.09	.09	.11	1.9	3.8	.64	1.2
14	1.2	.65	.64	.30	.09	.09	.08	.15	6.4	2.6	.55	.64
15	1.2	1.4	.64	.30	.07	.07	.08	.15	5.1	4.2	11	.64
16	1.2	.75	.64	.30	.07	.07	.11	.11	2.1	2.6	4.0	.47
17	1.1	.70	.64	.30	.07	.07	.07	.11	1.1	3.0	2.6	2.5
18	1.0	.65	.88	.25	.07	.06	2.9	.09	.74	7.9	3.5	1.9
19	1.0	.60	2.7	.25	.07	.06	.29	4.0	.47	5.3	3.0	1.2
20	1.2	.55	2.6	.25	.07	.06	.53	1.6	.40	3.5	4.9	7.1
21	1.0	.55	1.6	.25	.07	.06	12	.55	.40	2.4	5.1	8.8
22	.90	.55	1.1	.20	.07	.06	3.0	.34	.25	2.1	3.0	3.8
23	.75	.55	.96	.20	.07	.06	.86	.29	.21	5.1	1.9	2.6
24	.75	1.0	.88	.18	.07	.06	.34	.18	.18	3.2	1.4	4.0
25	.75	1.2	.80	.15	.07	.06	.18	.21	.18	4.5	1.1	2.6
26	.65	1.2	.72	.10	.07	.06	.13	.29	.98	3.5	8.4	1.6
27	.55	1.5	.72	.09	.07	.06	.13	.25	.47	2.4	13	1.4
28	.55	3.0	.56	.07	.07	.06	.11	.18	3.2	1.7	5.6	2.6
29	.55	6.3	16	.07	------	.06	.09	.21	2.1	1.4	3.2	3.8
30	.45	4.6	3.8	.09	------	.05	.08	.25	.86	1.1	1.9	3.8
31	.40	------	1.7	.07	------	.05	------	.55	------	1.4	1.7	------
TOTAL	56.40	29.66	54.47	12.73	2.33	2.72	22.30	11.91	35.86	121.43	93.09	70.83
MEAN	1.82	.99	1.76	.41	.083	.088	.74	.38	1.20	3.92	3.00	2.36
MAX	7.9	6.3	16	1.0	.16	.65	12	4.0	6.4	15	13	8.8
MIN	.40	.25	.56	.07	.07	.05	.04	.06	.18	.55	.55	.47
AC-FT	112	59	108	25	4.6	5.4	44	24	71	241	185	140

CAL YR 1972 TOTAL 1,263.76 MEAN 3.45 MAX 76 MIN .19 AC-FT 2,510
WTR YR 1973 TOTAL 513.73 MEAN 1.41 MAX 16 MIN .04 AC-FT 1,020

PEAK DISCHARGE (BASE, 170 CFS).--No peak above base.

NOTE.--No gage-height record Oct. 8 to Nov. 28, Jan. 2 to Mar. 29.

16894200 Nachiponong Stream, Moen

LOCATION.--Lat 7°25'45" N., long 151°51'31" E., on left bank at Wichap, 300 ft (91 m) downstream from dam site, and 0.2 mi (0.3 km) upstream from mouth.

DRAINAGE AREA.--0.16 mi^2 (0.41 km^2).

PERIOD OF RECORD.--June 1968 to current year.

GAGE.--Water-stage recorder. Concrete control since Aug. 10, 1971. Altitude of gage is 33 ft (10.1 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 0.464 ft^3/s (0.0131 m^3/s), 336 acre-ft/yr (414,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 37 ft^3/s (1.05 m^3/s) Dec. 29, gage height, 2.06 ft (0.628 m), from rating curve extended above 11 ft^3/s (0.31 m^3/s); minimum, no flow for many days.
Period of record: Maximum discharge, 102 ft^3/s (2.89 m^3/s) June 4, 1972, gage height, 3.86 ft (1.177 m), from rating curve extended above 11 ft^3/s (0.31 m^3/s); no flow Mar. 26-31, 1969, March and April 1973.

REMARKS.--Records poor. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	.09	.24	.24	.04	.04	0	.01	.28	.13	.55	.37
2	1.6	.08	.20	.22	.04	.08	0	.09	.95	.31	.47	.31
3	1.1	.07	.15	.22	.03	.04	0	.34	.37	.15	.79	.34
4	.90	.06	.15	.18	.03	.04	0	.11	.20	.18	.47	.47
5	.70	.07	.11	.20	.03	.16	0	.06	.24	4.0	.55	1.1
6	.60	.15	.13	.15	.03	.13	0	.06	.22	.79	.40	.34
7	.50	.11	.11	.13	.03	.02	0	.05	.95	.43	.47	.26
8	.40	.09	.83	.11	.08	0	.01	.05	.47	1.4	1.2	.26
9	.35	.09	.15	.10	.08	.01	.26	.04	.24	.55	.51	.24
10	.30	.07	.11	.09	.09	.50	.10	.03	.24	.94	.34	.20
11	.25	.06	.09	.08	.09	.02	.02	.10	2.0	.79	.31	.22
12	.22	.06	.05	.07	.09	.01	.01	.05	.31	.84	.37	1.0
13	.20	.05	.04	.06	.05	.01	.01	.04	.37	.43	.34	.43
14	.18	.08	.04	.06	.05	.01	.01	.12	1.1	.34	.31	.28
15	.16	.15	.04	.05	.04	.01	.01	.20	.31	1.1	2.0	.31
16	.16	.07	.04	.05	.08	0	.01	.10	.22	.69	.40	.28
17	.15	.07	.03	.04	.05	0	0	.05	.15	1.1	.34	.51
18	.16	.12	.06	.04	.06	0	.55	.06	.18	1.2	.31	.34
19	.15	.07	2.0	.04	.05	.01	.02	1.5	.16	.84	.26	.34
20	.83	.06	.40	.03	.02	.02	.28	.10	.13	.74	.37	2.4
21	.31	.05	.16	.03	.06	.01	2.4	.05	.12	.47	.31	1.4
22	.20	.04	.11	.03	.09	0	.12	.04	.11	.43	.26	.69
23	.16	.07	.11	.03	.04	0	.06	.03	.11	2.9	.22	.59
24	.15	.22	.11	.04	.05	0	.06	.05	.12	.96	.28	.84
25	.15	.47	.10	.04	.03	0	.03	.32	.18	1.4	.26	.84
26	.15	.28	.10	.04	.02	0	.02	.20	.45	.84	2.2	.55
27	.13	.47	.13	.03	.04	0	.04	.12	.16	.64	1.6	.55
28	.12	.69	.10	.03	.01	0	.02	.11	2.4	.59	.47	1.0
29	.09	1.7	6.6	.03	------	.01	.02	.15	.31	.64	.38	.84
30	.09	.64	.74	.03	------	0	.01	.20	.16	.59	.34	.64
31	.08	------	.34	.03	------	0	------	.51	------	.79	.40	------
TOTAL	11.64	6.30	13.57	2.52	1.40	1.13	4.07	4.94	13.21	27.20	17.48	17.94
MEAN	.38	.21	.44	.081	.050	.037	.14	.16	.44	.88	.56	.60
MAX	1.6	1.7	6.6	.24	.09	.50	2.4	1.5	2.4	4.0	2.2	2.4
MIN	.08	.04	.03	.03	.01	0	0	.01	.11	.13	.22	.20
AC-FT	23	12	27	5.0	2.8	2.2	8.1	9.8	26	54	35	36

CAL YR 1972 TOTAL 315.19 MEAN .86 MAX 18 MIN .02 AC-FT 625
WTR YR 1973 TOTAL 121.40 MEAN .33 MAX 6.6 MIN 0 AC-FT 241

PEAK DISCHARGE (BASE, 40 CFS).--No peak above base.

16895000 Echapachik Stream, Tol

LOCATION.--Lat 7°20'57" N,, long 151°37'26" E., on right bank 0.2 mi (0.3 km) upstream from mouth and 0.6 mi (1.0 km) north of Mount Tumuital.

DRAINAGE AREA.--0.15 mi^2 (0.39 km^2).

PERIOD OF RECORD.--April 1955 to March 1957 (published as "at Fasan"), June 1968 to current year.

GAGE.--Water-stage recorder. Concrete control since Nov. 6, 1971. Altitude of gage is 10 ft (3 m), from topographic map. Prior to Apr. 1, 1957, nonrecording gage at same site at different datum.

AVERAGE DISCHARGE.--6 years (1955-56, 1968-73), 0.492 ft^3/s (0.0139 m^3/s), 356 acre-ft/yr (439,000 m^3/yr). 5 years, 0.516 ft^3/s (374 acre-ft per year); figures published in WRD for Hawaii and other Pacific Areas, 1972, in error.

EXTREMES.--Current year: Maximum discharge, 13 ft^3/s (0.37 m^3/s) Dec. 4, gage height, 2.38 ft (0.725 m), from rating curve extended above 13 ft^3/s (0.37 m^3/s); minimum, 0.01 ft^3/s (<0.001 m^3/s) for many days.
Period of record: Maximum discharge, 51 ft^3/s (1.44 m^3/s) Sept. 1, 1970, gage height, 3.23 ft (0.985 m), from rating curve extended above 0.7 ft^3/s (0.020 m^3/s); no flow Mar. 24, 25, 1957, and for many days in 1969.

REMARKS.--Records fair. No diversion above station.

REVISIONS.--WSP 2137: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	.16	.44	.18	.04	.04	.01	.03	.31	.10	.09	.23
2	.84	.12	.35	.16	.04	.04	.01	.16	.12	.07	.07	.12
3	.49	.12	.31	.14	.04	.04	.02	.31	.06	.06	.12	.10
4	.60	.12	3.2	.12	.06	.03	.02	.90	.12	.10	.12	.35
5	.49	.12	.66	.10	.06	.06	.01	.66	.07	3.0	.24	5.0
6	.44	.14	.44	.09	.09	.04	.01	.31	.06	1.1	.18	.97
7	.84	.14	.35	.09	.10	.04	.01	.12	.98	.44	.16	.78
8	.84	.14	1.6	.09	.43	.04	.04	.10	2.2	1.6	2.3	.54
9	.44	.12	.72	.09	.14	.07	.03	.07	.49	.66	.60	.27
10	.27	.10	.35	.07	.12	2.5	.02	.03	.21	1.7	.24	.16
11	.21	.09	.21	.07	.09	.54	.02	.09	.49	1.5	.28	.14
12	.21	.07	.18	.07	.07	.14	.06	.07	.60	.84	1.0	.49
13	.21	.07	.14	.07	.06	.07	.02	.09	1.4	.39	.72	.31
14	.16	.09	.12	.07	.06	.04	.03	.09	3.0	.24	.31	.18
15	.14	.10	.10	.07	.06	.03	.03	.07	1.8	.24	2.7	.14
16	.16	.10	.10	.07	.06	.03	.02	.02	.72	.16	.72	.14
17	.12	.14	.16	.07	.06	.03	.04	.01	.39	.12	.31	.14
18	.14	.12	.16	.07	.04	.02	.10	.01	.18	.12	.18	.10
19	.13	.12	3.7	.06	.04	.02	.02	.44	.12	.10	.18	.09
20	.21	.12	1.7	.06	.04	.02	1.2	.27	.09	.21	.18	.48
21	.18	.10	.97	.04	.04	.02	4.7	.10	.19	.18	.17	1.3
22	.18	.09	.44	.04	.04	.02	.78	.09	.12	.14	.49	.66
23	.16	.10	.27	.03	.03	.02	.24	.07	.10	.09	.49	.27
24	.14	.10	.24	.04	.04	.01	.09	.03	.07	.07	.21	.16
25	.14	.12	.21	.03	.04	.01	.03	.02	.09	.07	.14	.14
26	.12	.10	.16	.03	.06	.01	.02	.02	.12	.06	1.1	.18
27	.12	.10	.14	.03	.09	.01	.01	.02	1.3	.12	5.5	.33
28	1.4	.10	.10	.03	.06	.01	.01	.02	.90	.12	2.3	2.2
29	2.0	1.2	2.2	.03	------	.01	.01	.04	.31	.09	1.5	1.1
30	.49	1.4	.72	.03	------	.01	.01	.16	.16	.07	.78	.72
31	.21	------	.27	.04	------	.01	------	.66	------	.06	.84	------
TOTAL	13.78	5.71	20.71	2.18	2.10	3.98	7.62	5.08	16.77	13.82	24.22	17.79
MEAN	.44	.19	.67	.070	.075	.13	.25	.16	.56	.45	.78	.59
MAX	2.0	1.4	3.7	.18	.43	2.5	4.7	.90	3.0	3.0	5.5	5.0
MIN	.12	.07	.10	.03	.03	.01	.01	.01	.06	.06	.07	.09
AC-FT	27	11	41	4.3	4.2	7.9	15	10	33	27	48	35

CAL YR 1972 TOTAL 254.29 MEAN .69 MAX 6.1 MIN .04 AC-FT 504
WTR YR 1973 TOTAL 133.76 MEAN .37 MAX 5.5 MIN .01 AC-FT 265

PEAK DISCHARGE (BASE, 15 CFS).--No peak above base.

16896800 Chun Stream, Dublon Island

LOCATION.--Lat 7°22'36" N., long 151°52'13" E., on right bank at Chun, 0.4 mi (0.6 km) upstream from mouth, and 1.8 mi (2.9 km) west of Penienuk.

DRAINAGE AREA.--0.09 mi^2 (0.23 km^2).

PERIOD OF RECORD.--June 1968 to current year.

GAGE.--Water-stage recorder. Concrete control since Sept. 10, 1971. Altitude of gage is 50 ft (15 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 0.444 ft^3/s (0.0126 m^3/s), 322 acre-ft/yr (397,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 34 ft^3/s (0.96 m^3/s) Dec. 19, gage height, 3.10 ft (0.945 m), from rating curve extended above 1.1 ft^3/s (0.031 m^3/s); minimum, 0.01 ft^3/s (<0.001 m^3/s) for many days.
Period of record: Maximum discharge, 39 ft^3/s (1.10 m^3/s) Feb. 18, 1970, gage height, 3.00 ft (0.914 m), from rating curve extended above 0.8 ft^3/s (0.023 m^3/s); minimum, 0.01 ft^3/s (<0.001 m^3/s) many days February to April, 1969, March and April, 1973.

REMARKS.--Records poor. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	.15	.18	.18	.06	.02	.01	.04	.18	.09	.80	.23
2	2.0	.15	.26	.15	.05	.03	.01	.11	.20	.15	.56	.18
3	.70	.15	.20	.15	.06	.03	.01	.06	.15	.09	.75	.18
4	.60	.13	.42	.15	.06	.04	.01	.26	.11	.08	.52	.29
5	.50	.18	.18	.15	.05	.04	.01	.15	.11	1.6	.61	1.4
6	.40	.20	.20	.13	.05	.04	.01	.09	.11	.61	.52	.37
7	.35	.18	.13	.11	.05	.03	.01	.06	.11	.33	.42	.37
8	.30	.20	.26	.11	.09	.03	.01	.05	.11	.70	.52	.37
9	.25	.18	.18	.12	.08	.03	.04	.04	.06	.61	.42	.33
10	.25	.15	.13	.11	.08	.15	.02	.04	.08	.70	.42	.29
11	.25	.15	.11	.11	.08	.04	.01	.09	.42	.95	.35	.26
12	.23	.18	.11	.11	.06	.04	.06	.04	.11	.90	.41	.65
13	.23	.15	.11	.11	.08	.04	.01	.05	.20	.56	.35	.33
14	.20	.18	.10	.11	.06	.03	.04	.04	.18	.47	.30	.26
15	.23	.26	.09	.11	.05	.03	.02	.03	.13	1.6	1.3	.23
16	.23	.18	.11	.11	.05	.02	.01	.02	.09	.85	.40	.37
17	.20	.29	.11	.11	.08	.04	.01	.02	.08	.85	.33	.33
18	.20	.23	.26	.09	.08	.04	.01	.03	.08	1.2	.30	.26
19	.29	.18	3.0	.09	.06	.06	.01	.23	.08	1.0	.30	.29
20	.54	.18	.47	.08	.06	.05	.64	.06	.11	.85	.35	1.3
21	.56	.18	.23	.08	.06	.05	2.4	.04	.08	.70	.30	1.0
22	.33	.15	.18	.08	.06	.05	.33	.03	.08	1.0	.29	.65
23	.26	.20	.15	.08	.05	.05	.11	.04	.06	2.0	.29	.56
24	.23	.20	.13	.09	.05	.05	.06	.03	.08	1.0	.29	1.0
25	.20	.47	.13	.11	.04	.03	.04	.11	.15	1.1	.29	.65
26	.20	.29	.11	.11	.05	.04	.03	.13	.38	.85	2.2	.61
27	.20	.56	.11	.08	.04	.01	.05	.13	.42	.70	1.6	2.2
28	.18	.26	.09	.08	.03	.01	.04	.09	.20	.61	.35	2.0
29	.15	.26	1.7	.09	------	.01	.03	.18	.15	.56	.30	1.2
30	.15	.20	.37	.09	------	.01	.02	.23	.11	.56	.26	1.0
31	.15	------	.20	.08	------	.01	------	.29	------	.56	.26	------
TOTAL	12.06	6.42	10.01	3.36	1.67	1.15	4.07	2.81	4.41	23.83	16.36	19.16
MEAN	.39	.21	.32	.11	.060	.037	.14	.091	.15	.77	.53	.64
MAX	2.0	.56	3.0	.18	.09	.15	2.4	.29	.42	2.0	2.2	2.2
MIN	.15	.13	.09	.08	.03	.01	.01	.02	.06	.08	.26	.18
AC-FT	24	13	20	6.7	3.3	2.3	8.1	5.6	8.7	47	32	38

CAL YR 1972 TOTAL 211.94 MEAN .58 MAX 6.9 MIN .05 AC-FT 420
WTR YR 1973 TOTAL 105.31 MEAN .29 MAX 3.0 MIN .01 AC-FT 209

PEAK DISCHARGE (BASE, 16 CFS).--Dec. 19 (0430) 34 cfs (3.10 ft); Sept. 27 (2300) 18 cfs (2.73 ft).

16897200 Tumunu Stream, Dublon Island

LOCATION.--Lat 7°22'42" N., long 151°52'51" E., on left bank at Roro, 0.1 mi (0.2 km) upstream from mouth, and 1.1 mi (1.8 km) west of Penienuk.

DRAINAGE AREA.--0.26 mi^2 (0.67 km^2).

PERIOD OF RECORD.--June 1968 to current year.

GAGE.--Water-stage recorder. Concrete control since Aug. 13, 1971. Altitude of gage is 15 ft (4.6 m), from topographic map.

AVERAGE DISCHARGE.--5 years, 0.912 ft^3/s (0.0258 m^3/s), 661 acre-ft/yr (815,000 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 22 ft^3/s (0.62 m^3/s) Dec. 19, gage height, 2.33 ft (0.710 m), from rating curve extended above 2.0 ft^3/s (0.057 m^3/s); minimum, 0.01 ft^3/s (<0.001 m^3/s) Mar. 29, Apr. 1-7.
Period of record: Maximum discharge, 168 ft^3/s (4.76 m^3/s) Feb. 18, 1970, gage height, 5.08 ft (1.548 m), from rating curve extended above 5.4 ft^3/s (0.15 m^3/s); minimum, 0.01 ft^3/s (<0.001 m^3/s) Mar. 29, Apr. 1-7, 1973.

REMARKS.--Records fair for the period Dec. 15 to July 13 and poor for all other periods. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	.32	.55	.79	.12	.05	.01	.05	.32	.32	1.7	.66
2	3.0	.30	.70	.70	.09	.05	.01	.42	.49	.38	1.3	.60
3	1.7	.30	.60	.62	.12	.05	.01	.28	.35	.32	1.4	.60
4	1.5	.30	.80	.58	.09	.05	.01	.53	.35	.28	1.2	.90
5	1.3	.40	.50	.53	.09	.05	.01	.45	.38	1.4	1.3	2.6
6	1.1	.40	.50	.45	.09	.05	.01	.35	.18	1.1	1.0	1.2
7	1.0	.35	.40	.42	.09	.05	.01	.21	.21	.83	.90	.99
8	.90	.35	.60	.38	.18	.05	.07	.18	.18	1.1	.95	.99
9	.80	.35	.40	.38	.12	.05	.18	.15	.12	.93	.90	.83
10	.70	.35	.35	.38	.15	.38	.15	.09	.09	1.1	.82	.79
11	.60	.40	.35	.35	.18	.12	.07	.18	.79	1.0	.75	.79
12	.57	.40	.35	.32	.15	.09	.32	.07	.53	1.2	.75	1.3
13	.49	.40	.35	.32	.09	.09	.09	.07	.62	1.0	.70	.93
14	.45	.40	.32	.28	.09	.12	.09	.07	.62	.90	.64	.79
15	.42	.50	.25	.28	.07	.12	.07	.07	.45	2.6	2.2	.79
16	.42	.45	.25	.25	.09	.09	.04	.07	.32	1.8	.90	.80
17	.40	.60	.25	.25	.09	.07	.02	.07	.25	1.6	.65	.70
18	.40	.55	.42	.21	.07	.07	.15	.07	.21	2.5	.60	.60
19	.50	.50	3.2	.21	.09	.07	.05	.53	.21	2.4	.55	.65
20	1.0	.50	1.7	.18	.07	.07	.38	.18	.35	1.9	.55	2.5
21	1.1	.50	1.1	.15	.12	.05	2.6	.12	.21	1.6	.50	2.2
22	.75	.45	.87	.12	.12	.05	.70	.07	.18	2.0	.50	1.5
23	.65	.60	.74	.12	.09	.05	.42	.09	.12	3.2	.50	1.2
24	.60	.60	.66	.12	.09	.04	.32	.09	.09	2.0	.50	2.0
25	.50	1.3	.58	.12	.07	.04	.21	.26	.21	2.1	.50	1.5
26	.40	.70	.49	.12	.09	.02	.15	.45	.62	1.8	3.3	1.3
27	.32	1.4	.45	.12	.09	.02	.12	.35	.87	1.7	2.8	5.0
28	.38	.70	.38	.12	.05	.02	.09	.32	.70	1.5	1.0	4.5
29	.35	.70	2.4	.12	------	.01	.07	.42	.53	1.4	.80	3.0
30	.35	.65	1.2	.12	------	.04	.05	.38	.42	1.4	.80	2.6
31	.35	------	.87	.12	------	.02	------	.53	------	1.3	.79	------
TOTAL	25.50	15.72	22.58	9.23	2.85	2.10	6.48	7.17	10.97	44.66	31.75	44.81
MEAN	.82	.52	.73	.30	.10	.068	.22	.23	.37	1.44	1.02	1.49
MAX	3.0	1.4	3.2	.79	.18	.38	2.6	.53	.87	3.2	3.3	5.0
MIN	.32	.30	.25	.12	.05	.01	.01	.05	.09	.28	.50	.60
AC-FT	51	31	45	18	5.7	4.2	13	14	22	89	63	89

CAL YR 1972 TOTAL 424.93 MEAN 1.16 MAX 12 MIN .08 AC-FT 843
WTR YR 1973 TOTAL 223.82 MEAN .61 MAX 5.0 MIN .01 AC-FT 444

PEAK DISCHARGE (BASE, 30 CFS).--No peak above base.

NOTE.--No gage-height record Nov. 2 to Dec. 14, July 14 to Aug. 30.

16897600 Nanepil River

LOCATION.--Lat 6°55'11" N., long 158°12'36" E., on left bank 1.4 mi (2.3 km) northeast of Mount Tamatamansakir and 1.4 mi (2.3 km) southeast of Rekisau.

DRAINAGE AREA.--2.93 mi^2 (7.59 km^2).

PERIOD OF RECORD.--March 1970 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 390 ft (119 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, 5,400 ft^3/s (153 m^3/s) Apr. 27, gage height, 7.40 ft (2.256 m), from floodmark in well, from rating curve extended above 130 ft^3/s (3.68 m^3/s); minimum, 1.6 ft^3/s (0.045 m^3/s) Nov. 17-23, Feb. 6.
Period of record: Maximum discharge, 8,200 ft^3/s (232 m^3/s) May 31, 1972, gage height, 8.04 ft (2.451 m), from floodmark in well, from rating curve extended above 130 ft^3/s (3.68 m^3/s); minimum, 1.6 ft^3/s (0.045 m^3/s) Nov. 17-23, 1972, Feb. 6, 1973.

REMARKS.--Records good except those above 200 ft^3/s (5.66 m^3/s), which are poor. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	8.6	185	9.0	14	288	4.5	137	21	20	8.3	10
2	117	48	51	7.2	6.2	122	4.0	299	59	15	10	11
3	49	14	18	11	3.4	68	2.8	136	26	10	11	14
4	27	9.0	11	21	2.8	38	6.6	94	222	20	8.3	24
5	27	7.2	8.6	15	2.2	19	6.9	45	54	150	16	14
6	27	5.8	6.9	11	1.6	12	158	20	19	40	10	193
7	102	7.2	9.4	11	17	9.4	85	16	27	20	46	28
8	62	10	16	8.6	14	14	218	14	24	15	38	23
9	23	6.2	23	11	26	47	404	42	13	10	56	27
10	14	4.5	18	7.6	13	102	103	91	47	10	23	16
11	11	3.4	11	6.9	54	28	28	71	187	11	39	50
12	8.3	2.2	26	5.5	24	29	228	59	138	104	23	43
13	7.6	3.4	16	3.4	9.4	44	168	28	129	32	28	17
14	6.6	8.0	9.4	5.5	6.6	15	477	14	554	18	29	39
15	6.2	5.0	7.2	10	5.8	10	37	70	44	12	153	99
16	7.6	2.8	27	14	6.2	16	20	56	20	11	118	53
17	8.0	2.2	24	29	5.0	12	95	19	16	9.7	27	79
18	14	1.6	56	23	2.8	9.7	41	41	11	66	83	51
19	8.3	1.6	54	13	3.4	115	100	21	10	21	72	80
20	19	1.6	109	8.6	6.9	17	50	14	9.7	11	68	38
21	12	1.6	28	6.6	3.4	12	30	14	11	30	93	18
22	7.6	1.6	21	4.5	6.2	16	20	40	12	29	80	14
23	6.2	4.3	14	8.0	9.0	11	15	18	35	12	38	10
24	4.5	5.5	14	11	7.2	7.6	10	14	22	39	19	12
25	4.0	5.8	10	9.0	7.2	8.0	15	20	19	69	14	38
26	5.0	16	203	5.5	171	10	100	27	43	30	124	22
27	134	63	39	10	95	6.6	375	101	108	78	61	26
28	16	125	69	7.6	78	8.0	48	49	150	28	212	99
29	46	29	19	5.0	------	6.6	162	44	100	14	33	30
30	31	22	13	2.8	------	5.8	46	72	40	16	18	16
31	13	------	12	9.6	------	8.0	------	41	------	12	14	------
TOTAL	898.9	426.1	1,128.5	310.9	601.3	1,114.7	3,057.8	1,727	2,170.7	962.7	1,572.6	1,194
MEAN	29.0	14.2	36.4	10.0	21.5	36.0	102	55.7	72.4	31.1	50.7	39.8
MAX	134	125	203	29	171	288	477	299	554	150	212	193
MIN	4.0	1.6	6.9	2.8	1.6	5.8	2.8	14	9.7	9.7	8.3	10
AC-FT	1,780	845	2,240	617	1,190	2,210	6,070	3,430	4,310	1,910	3,120	2,370

CAL YR 1972 TOTAL 24,993.3 MEAN 68.3 MAX 1,080 MIN 1.6 AC-FT 49,570
WTR YR 1973 TOTAL 15,165.2 MEAN 41.5 MAX 554 MIN 1.6 AC-FT 30,080

PEAK DISCHARGE (BASE, 4,000 CFS).--Apr. 27 (0730) 5,400 cfs (7.40 ft).

16897900 Lui River

LOCATION.--Lat 6°55'36" N., long 158°12'55" E., on right bank 300 ft (91 m) upstream from right-bank tributary and 1.3 mi (2.1 km) southeast of Rekisau.

DRAINAGE AREA.--0.47 mi^2 (1.22 km^2).

PERIOD OF RECORD.--March 1970 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 270 ft (82 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, 516 ft^3/s (14.6 m^3/s) June 14, gage height, 4.32 ft (1.317 m), from rating curve extended above 37 ft^3/s (1.05 m^3/s); minimum, 0.13 ft^3/s (0.004 m^3/s) Feb. 2-4.
Period of record: Maximum discharge, 970 ft^3/s (27.5 m^3/s) May 4, 1972, gage height, 5.64 ft, from rating curve extended above 37 ft^3/s (1.05 m^3/s); minimum, 0.13 ft^3/s (0.004 m^3/s) Feb. 2-4, 1973.

REMARKS.--Records good. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	.80	14	.41	.47	21	.29	18	2.5	1.9	.73	1.3
2	13	2.6	6.7	.35	.18	18	.35	31	3.1	1.3	.66	1.9
3	6.4	1.1	2.3	.47	.13	7.0	.35	8.1	2.1	1.2	.66	1.6
4	3.4	.73	1.0	.80	.18	3.7	.35	11	17	1.9	.60	2.3
5	2.5	.60	.73	.60	.23	1.5	.60	8.4	5.5	13	1.1	1.4
6	2.3	.53	.66	.41	.41	.73	7.4	3.6	2.6	3.4	.66	21
7	12	.60	.60	.41	.88	.53	7.0	2.8	5.7	2.0	3.7	3.7
8	5.5	.80	.53	.41	.47	.47	21	2.5	3.2	1.3	3.7	3.2
9	2.4	.60	.60	.60	.47	1.1	39	4.8	1.8	1.0	7.0	3.8
10	1.5	.41	.60	.35	.41	6.6	7.8	8.4	3.7	.96	2.5	2.6
11	1.1	.41	.47	.35	1.9	1.9	3.1	12	9.8	1.3	2.6	7.8
12	.96	.35	.35	.23	.96	1.0	23	6.4	12	1.9	1.9	4.8
13	.80	.35	.29	.23	.41	1.5	17	3.4	13	2.0	7.0	2.1
14	.73	.80	.23	.35	.23	.60	36	1.9	58	1.1	4.7	3.4
15	.73	.35	.23	.47	.41	.41	5.0	26	6.1	.73	15	4.2
16	.80	.29	.35	.60	.29	.80	3.1	12	3.4	.66	10	4.2
17	.66	.23	.53	1.2	.23	.53	8.2	3.7	4.0	.73	2.8	8.1
18	.66	.23	1.7	1.0	.23	.35	5.3	4.2	2.3	8.5	9.9	4.6
19	.53	.18	2.1	.47	.29	1.9	5.7	3.0	2.6	2.8	6.3	10
20	1.5	.23	6.2	.29	.29	.73	5.0	2.0	2.1	1.2	6.3	4.0
21	.88	.23	2.1	.23	.29	.47	3.0	1.7	1.9	1.7	12	2.5
22	.60	.20	1.2	.18	.35	.80	1.5	3.8	2.0	3.2	4.4	2.3
23	.47	.23	2.3	.23	.35	.41	1.0	2.5	5.2	1.2	3.1	1.7
24	.41	.29	1.5	.29	.35	.35	.73	2.1	3.6	4.8	2.1	2.5
25	.41	.47	.66	.23	.41	.47	1.2	3.0	2.6	4.2	1.8	8.9
26	.53	1.1	12	.23	3.8	.47	6.8	4.0	6.1	2.5	13	4.8
27	5.6	7.0	3.0	.23	3.4	.29	41	6.1	7.8	2.1	8.4	7.7
28	1.0	12	2.6	.23	3.6	.35	5.5	5.5	16	1.7	23	16
29	3.0	3.2	1.0	.23	------	.35	12	6.4	7.6	.96	4.4	5.0
30	3.4	2.5	.73	.23	------	.29	4.2	9.8	3.2	1.0	2.5	2.5
31	1.2	------	.53	.79	------	.35	------	4.8	------	1.0	2.0	------
TOTAL	82.57	39.41	67.79	13.10	21.62	74.95	272.47	222.9	216.5	73.24	164.51	149.9
MEAN	2.66	1.31	2.19	.42	.77	2.42	9.08	7.19	7.22	2.36	5.31	5.00
MAX	13	12	14	1.2	3.8	21	41	31	58	13	23	21
MIN	.41	.18	.23	.18	.13	.29	.29	1.7	1.8	.66	.60	1.3
AC-FT	164	78	134	26	43	149	540	442	429	145	326	297

CAL YR 1972 TOTAL 2,286.09 MEAN 6.25 MAX 138 MIN .18 AC-FT 4,530
WTR YR 1973 TOTAL 1,398.96 MEAN 3.83 MAX 58 MIN .13 AC-FT 2,770

PEAK DISCHARGE (BASE, 500 CFS).--June 14 (0900) 516 cfs (4.32 ft).

16898200 Lui River at mouth

LOCATION.--Lat 6°57'07" N., long 158°13'16" E., on right bank 0.4 mi (0.6 km) upstream from mouth and 1.3 mi (2.1 km) west of Tolenot Peak.

DRAINAGE AREA.--2.06 mi^2 (5.34 km^2).

PERIOD OF RECORD.--March 1970 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 40 ft (12 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, 4,440 ft^3/s (126 m^3/s) June 14, gage height, 6.42 ft (1.957 m), from rating curve extended above 92 ft^3/s (2.61 m^3/s); minimum, 0.26 ft^3/s (0.007 m^3/s) Jan. 20, when gate in dam 500 ft (152 m) upstream was closed.
Period of record: Maximum discharge, 7,440 ft^3/s (211 m^3/s) July 17, 1971, gage height, 7.92 ft (2.414 m), from rating curve extended above 92 ft^3/s (2.61 m^3/s); minimum, 0.26 ft^3/s (0.007 m^3/s) Jan. 20, 1973.

REMARKS.--Records good except those above 150 ft^3/s (4.25 m^3/s), which are poor. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	5.2	55	3.6	3.0	57	1.0	85	12	12	5.2	8.7
2	56	9.0	30	3.4	1.5	58	.94	205	12	9.4	4.9	8.9
3	30	5.7	12	3.5	1.3	20	.86	35	9.6	8.9	4.6	8.0
4	17	5.0	8.3	3.9	1.2	9.4	.70	45	77	10	4.5	9.2
5	13	4.7	7.0	3.4	1.2	6.4	.94	39	31	54	5.2	7.5
6	11	4.3	6.0	3.0	1.2	4.5	13	18	14	17	3.5	82
7	48	4.7	5.7	2.9	2.9	3.6	16	12	22	12	9.4	18
8	22	5.0	5.2	2.7	2.5	3.1	58	11	15	9.2	13	15
9	12	4.0	5.2	2.9	2.2	4.3	184	18	10	8.3	22	18
10	9.6	3.8	4.7	2.6	2.0	13	32	25	13	7.4	9.8	12
11	8.3	3.6	4.5	2.5	4.6	6.3	12	44	33	8.9	9.2	32
12	7.4	3.5	4.0	2.3	3.8	4.6	72	23	52	8.6	8.0	22
13	6.8	3.2	3.6	2.2	2.2	4.9	74	15	58	9.0	17	12
14	6.1	4.3	3.4	2.3	1.8	3.5	254	9.8	467	9.4	11	13
15	5.7	3.2	3.2	2.9	1.8	2.7	25	150	35	7.0	64	16
16	6.0	3.0	3.5	3.4	1.8	3.1	16	76	19	6.4	41	15
17	5.6	2.9	3.5	4.2	1.5	2.6	32	22	22	6.8	15	25
18	5.0	2.6	5.9	4.0	1.3	2.2	22	24	14	50	39	22
19	4.9	2.6	6.0	3.1	1.3	5.3	24	17	16	9.0	29	39
20	7.7	2.6	15	2.5	1.6	3.4	25	12	13	6.7	30	24
21	5.9	2.7	7.5	2.3	1.3	2.9	14	9.8	14	6.8	42	14
22	5.0	2.9	5.9	2.2	1.4	2.9	9.2	13	11	9.4	19	11
23	4.5	2.9	6.3	2.2	1.3	2.0	7.7	11	13	6.6	13	9.0
24	4.3	3.0	5.7	2.3	1.1	1.7	6.6	9.4	12	24	9.8	11
25	4.0	3.4	4.3	2.3	1.0	2.0	7.1	10	11	12	8.7	35
26	4.7	5.7	22	1.9	3.8	2.2	18	11	25	8.5	30	19
27	15	21	8.5	1.9	8.0	1.5	247	17	41	8.7	31	26
28	5.9	43	8.3	1.7	4.3	1.6	26	17	55	8.1	98	90
29	11	12	5.7	1.3	------	1.3	62	20	30	6.7	23	31
30	11	9.2	4.7	1.3	------	1.2	18	30	17	6.6	14	16
31	6.4	------	4.2	1.6	------	1.1	------	20	------	6.3	11	------
TOTAL	395.8	188.7	274.8	82.3	62.9	238.3	1,279.04	1,054.0	1,173.6	373.7	644.8	669.3
MEAN	12.8	6.29	8.86	2.65	2.25	7.69	42.6	34.0	39.1	12.1	20.8	22.3
MAX	56	43	55	4.2	8.0	58	254	205	467	54	98	90
MIN	4.0	2.6	3.2	1.3	1.0	1.1	.70	9.4	9.6	6.3	3.5	7.5
AC-FT	785	374	545	163	125	473	2,540	2,090	2,330	741	1,280	1,330

CAL YR 1972 TOTAL 12,394.0 MEAN 33.9 MAX 664 MIN 2.6 AC-FT 24,580
WTR YR 1973 TOTAL 6,437.24 MEAN 17.6 MAX 467 MIN .70 AC-FT 12,770

PEAK DISCHARGE (BASE, 3,000 CFS).--June 14 (0930) 4,440 cfs (6.42 ft).

16898300 Tawannu River

LOCATION.--Lat 6°56'57" N., long 158°12'50" E., on left bank 1.3 mi (2.1 km) northeast of Rekisau and 1.8 mi (2.9 km) west of Tolenot Peak.

DRAINAGE AREA.--1.00 mi^2 (2.59 km^2).

PERIOD OF RECORD.--March 1970 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 110 ft (34 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, about 1,000 ft^3/s (28.3 m^3/s) June 14, gage height, about 4.5 ft (1.37 m), from rating curve extended above 76 ft^3/s (2.15 m^3/s); no flow for many days.
Period of record: Maximum discharge, 1,550 ft^3/s (43.9 m^3/s) July 17, 1971, gage height, 5.58 ft (1.701 m), from rating curve extended above 76 ft^3/s (2.15 m^3/s); no flow for many days during January and February 1973.

REMARKS.--Records fair. During dry periods, up to 360,000 gal per day (1,368 m^3/day) is diverted 100 ft (30 m) above station for domestic use in Kolonia.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	.95	20	.60	.50	10	.10	31	5.0	6.0	.84	3.5
2	19	3.4	9.7	.50	.30	14	.05	52	5.8	4.8	.80	3.1
3	11	1.3	3.8	.45	.10	8.7	.03	15	4.5	3.5	.75	2.7
4	6.9	.98	2.7	.40	.05	3.0	.02	20	26	4.2	.70	3.0
5	4.8	.83	2.3	.35	.03	1.5	.05	12	12	38	.80	2.2
6	3.3	1.8	1.9	.30	.02	1.0	4.0	7.8	6.9	8.1	.60	21
7	13	3.4	1.8	.25	.40	.75	2.3	6.0	8.1	6.0	1.5	6.6
8	8.1	1.5	1.6	.20	.30	.60	12	5.0	6.6	5.0	4.1	5.5
9	4.5	1.4	1.6	.20	.25	1.0	52	4.5	4.8	3.5	9.2	6.0
10	3.0	1.3	1.2	.15	.20	2.6	15	7.8	5.5	2.2	3.3	4.5
11	2.8	1.2	1.0	.10	1.0	2.1	6.0	11	16	3.4	2.9	12
12	2.5	1.1	.70	.05	.75	1.0	17	6.9	22	2.7	2.4	8.1
13	2.3	1.0	.50	.03	.25	1.0	25	5.5	21	2.7	3.0	4.8
14	2.1	1.5	.40	.02	.20	.80	72	3.8	134	4.2	1.9	5.2
15	2.0	1.1	.30	.01	.15	.60	12	28	15	2.5	20	5.2
16	2.1	1.0	.40	.05	.10	.60	7.2	21	9.7	1.8	14	4.2
17	1.9	.90	.40	.10	.05	.60	11	8.7	11	1.7	6.6	8.4
18	1.4	.80	2.0	.03	.03	.50	10	10	7.2	2.1	12	7.5
19	1.3	.80	2.0	.01	.01	1.0	9.7	8.1	8.1	2.1	10	12
20	2.6	.75	5.4	0	.02	.55	11	5.8	7.2	1.3	9.0	7.8
21	1.6	.80	1.1	0	.01	.40	7.5	4.8	7.8	.88	18	5.2
22	1.2	.90	.75	0	.01	.35	5.0	4.2	5.8	2.0	9.0	4.0
23	.91	1.0	.80	0	.01	.30	3.5	4.0	6.3	1.0	6.6	2.5
24	.80	1.0	.75	0	0	.25	2.4	3.3	5.8	2.3	5.0	2.7
25	.70	1.2	.70	0	0	.30	2.7	3.1	6.3	2.2	3.4	11
26	1.5	2.0	5.5	0	.70	.30	8.3	3.5	10	1.6	8.1	6.0
27	6.0	8.1	2.4	0	1.0	.25	69	5.2	15	1.4	17	7.3
28	1.5	15	2.1	0	.50	.25	12	6.6	18	1.2	47	39
29	4.0	5.0	1.0	0	------	.20	22	6.0	11	1.1	9.7	14
30	4.0	2.4	.80	0	------	.15	8.7	9.7	8.1	1.1	6.0	8.1
31	2.3	------	.70	0	------	.10	------	7.2	------	.97	5.0	------
TOTAL	134.11	64.41	76.30	3.80	6.94	54.75	407.55	327.5	430.5	121.55	239.19	233.1
MEAN	4.33	2.15	2.46	.12	.25	1.77	13.6	10.6	14.4	3.92	7.72	7.77
MAX	19	15	20	.60	1.0	14	72	52	134	38	47	39
MIN	.70	.75	.30	0	0	.10	.02	3.1	4.5	.88	.60	2.2
AC-FT	266	128	151	7.5	14	109	808	650	854	241	474	462

CAL YR 1972 TOTAL 3,816.56 MEAN 10.4 MAX 162 MIN .30 AC-FT 7,570
WTR YR 1973 TOTAL 2,099.70 MEAN 5.75 MAX 134 MIN 0 AC-FT 4,160

PEAK DISCHARGE (BASE, 600 CFS).--June 14 (0900) about 1,000 cfs (about 4.5 ft).

16898600 Lupwor River

LOCATION.--Lat 6°54'15" N., long 158°09'45" E., on left bank about 300 ft (91 m) upstream from 50-ft (15 m) waterfall, 1.8 mi (2.9 km) above mouth, and 2.1 mi (3.4 km) west of Mount Tamatamansakir.
DRAINAGE AREA.--1.12 mi^2 (2.90 km^2).
PERIOD OF RECORD.--September 1972 to current year.
GAGE.--Water-stage recorder. Altitude of gage is 100 ft (30 m), from topographic map.
EXTREMES.--September 1972: Maximum discharge, 1,370 ft^3/s (38.8 m^3/s) Sept. 14, gage height, 6.13 ft (1.868 m), from rating curve extended above 11 ft^3/s (0.31 m^3/s); minimum, 1.2 ft^3/s (0.034 m^3/s) Sept. 25.
Current year: Maximum discharge, 1,180 ft^3/s (33.4 m^3/s) Apr. 27, gage height, 5.92 ft (1,804 m), from rating curve extended above 11 ft^3/s (0.31 m^3/s); minimum, 0.40 ft^3/s (0.011 m^3/s) Feb. 18, 19.
Period of record: Maximum discharge, 1,370 ft^3/s (38.8 m^3/s) Sept. 14, 1972, gage height, 6.13 ft (1.868 m), from rating curve extended above 11 ft^3/s (0.31 m^3/s); minimum, 0.40 ft^3/s (0.011 m^3/s) Feb. 18, 19, 1973.
REMARKS.--Records fair except those above 50 ft^3/s (1.42 m^3/s) and those for period of no gage-height record, which are poor.

Discharge measurements made prior to beginning of continuous discharge record

Date	Discharge (cfs)	Date	Discharge (cfs)
June 8, 1972	2.8	July 13	13
20	2.8	Aug. 11	4.3
July 5	5.0	29	3.8

DISCHARGE, IN CUBIC FEET PER SECOND, SEPTEMBER 1972

DAY	SEP	DAY	SEP	DAY	SEP	DAY	SEP	DAY	SEP	DAY	SEP
1	31	6	16	11	7.8	16	6.4	21	2.0	26	5.1
2	18	7	24	12	18	17	4.5	22	1.7	27	42
3	8.0	8	19	13	34	18	3.6	23	1.6	28	29
4	7.8	9	8.2	14	158	19	2.8	24	1.5	29	32
5	48	10	45	15	12	20	2.7	25	26	30	68
TOTAL											683.7
MEAN											22.8
MAX											158
MIN											1.5
AC-FT											1,360

PEAK DISCHARGE (BASE, 900 CFS).--Sept. 14 (0630) 1,370 cfs (6.13 ft); Sept. 25 (1300) 993 cfs (5.69 ft).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	2.0	17	1.4	1.1	31	.81	21	2.9	3.2	1.3	2.5
2	19	3.8	4.2	1.2	.69	15	.77	49	6.0	2.8	1.5	3.5
3	9.0	2.4	1.8	1.5	.61	6.5	.79	12	3.6	2.8	1.3	3.0
4	6.5	1.6	1.4	1.8	.65	2.6	.90	17	23	3.3	1.1	4.0
5	5.4	1.4	1.1	1.6	.65	1.4	.85	10	10	5.6	1.6	2.3
6	4.9	1.2	1.0	1.4	.69	1.1	3.1	6.4	5.9	3.4	1.2	30
7	10	1.4	1.0	1.2	1.2	.85	5.0	5.3	5.1	2.7	3.8	7.0
8	6.7	1.5	1.0	1.2	1.0	.85	19	4.2	4.2	2.4	3.5	6.0
9	4.5	1.3	1.1	1.2	.95	2.2	54	5.4	3.2	2.3	10	7.0
10	3.4	1.2	1.0	1.0	.85	6.0	10	7.3	4.9	2.2	5.0	5.0
11	2.9	1.2	.90	1.0	2.2	1.9	4.6	9.8	22	2.5	5.0	13
12	2.4	1.0	.95	.90	1.2	2.4	15	9.0	20	4.0	3.0	8.0
13	2.1	1.0	.90	.85	.77	3.4	21	5.6	23	4.0	14	4.0
14	1.9	1.2	.81	.95	.65	1.6	72	4.1	89	2.0	8.0	6.0
15	1.8	1.0	.73	1.1	.61	1.2	8.6	9.0	12	1.5	25	7.0
16	2.0	.90	.85	1.3	.53	2.0	5.1	6.4	6.8	1.3	20	7.0
17	1.8	.85	.85	1.8	.53	1.4	11	4.4	5.3	1.2	5.0	15
18	1.9	.81	1.9	2.1	.49	1.3	6.5	6.0	4.0	15	20	8.0
19	1.5	.77	2.0	1.2	.45	4.0	6.8	4.8	3.8	5.0	10	16
20	1.5	.77	6.1	1.0	.57	1.8	6.8	4.0	3.9	2.5	10	7.0
21	1.4	.66	2.6	1.0	.49	1.4	5.1	3.4	3.1	3.5	20	5.0
22	1.2	.57	2.4	.95	.57	1.5	3.3	5.4	2.8	5.0	8.0	4.0
23	1.0	.69	2.7	1.0	.57	1.3	2.9	3.6	4.4	2.5	6.0	3.5
24	1.0	.61	2.6	1.2	.49	1.2	2.7	3.1	4.0	7.0	4.0	5.0
25	.95	.65	2.7	1.1	.45	1.3	3.7	3.0	3.0	7.4	3.5	15
26	.90	1.2	21	.90	6.2	1.5	12	3.6	8.0	3.3	25	8.0
27	9.6	2.5	3.7	.85	7.5	1.3	70	8.6	10	4.2	15	13
28	2.0	8.3	3.7	.81	7.0	1.3	10	4.6	20	3.3	40	30
29	3.9	2.6	1.9	.77	------	1.1	24	5.3	8.0	2.4	8.0	9.0
30	3.1	1.8	1.7	.73	------	1.0	8.8	5.9	4.9	2.3	5.0	5.0
31	2.0	------	1.6	.81	------	1.0	------	4.4	------	1.9	4.0	------
TOTAL	127.25	46.88	93.19	35.82	39.66	102.40	395.12	251.6	326.8	112.5	288.8	258.8
MEAN	4.10	1.56	3.01	1.16	1.42	3.30	13.2	8.12	10.9	3.63	9.32	8.63
MAX	19	8.3	21	2.1	7.5	31	72	49	89	15	40	30
MIN	.90	.57	.73	.73	.45	.85	.77	3.0	2.8	1.2	1.1	2.3
AC-FT	252	93	185	71	79	203	784	499	648	223	573	513

WTR YR 1973 TOTAL 2,078.82 MEAN 5.70 MAX 89 MIN .45 AC-FT 4,120

PEAK DISCHARGE (BASE, 900 CFS).--Apr. 27 (0730) 1,180 cfs (5.92 ft).
NOTE.--No gage-height record Aug. 8 to Sept. 30.

16899500 Mutunte River

LOCATION.--Lat 5°22'25" N., long 163°00'24" E., on left bank at dam, 0.3 mi (0.5 km) upstream from mouth, and 1.1 mi (1.8 km) northwest of Mount Buache.

DRAINAGE AREA.--0.60 mi^2 (1.55 km^2).

PERIOD OF RECORD.--May 1971 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 46 ft (14.0 m), from stadia survey.

EXTREMES.--Current year: Maximum discharge, 770 ft^3/s (21.8 m^3/s) Aug. 14, gage height, 2.60 ft (0.792 m), from rating curve extended above 140 ft^3/s (3.96 m^3/s); minimum, 1.4 ft^3/s (0.040 m^3/s) Apr. 2-5.
Period of record: Maximum discharge, 1,290 ft^3/s (26.5 m^3/s) Sept. 11, 1972, gage height, 2.87 ft (0.875 m), from rating curve extended above 140 ft^3/s (3.96 m^3/s); minimum, 1.4 ft^3/s (0.040 m^3/s) Apr. 2-5, 1973.

REMARKS.--Records good. Water is diverted from the gage pool through a 3 in (7.6 cm) pipe for domestic use in Tafunsak.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	2.6	3.8	2.3	1.7	3.8	1.5	30	2.6	2.5	2.3	4.1
2	9.3	2.6	15	2.5	1.7	2.8	1.4	21	2.6	3.0	2.8	3.4
3	8.3	2.5	5.6	2.2	1.8	2.6	1.4	5.1	3.8	6.0	7.6	15
4	3.6	2.5	3.6	2.2	1.8	3.6	1.4	3.9	9.2	2.6	7.6	5.3
5	3.2	2.8	3.0	2.3	1.8	3.4	1.4	4.7	6.4	2.3	10	3.8
6	3.9	3.0	3.2	2.3	1.8	2.3	2.0	3.8	3.0	2.2	12	7.5
7	6.8	8.5	3.0	2.3	1.8	2.2	4.0	3.8	2.3	2.3	4.5	5.1
8	3.6	7.9	2.8	2.2	1.8	2.3	8.8	3.2	2.3	2.3	3.8	6.2
9	2.8	3.2	2.6	2.0	1.8	1.5	3.7	2.8	2.6	3.2	2.6	3.6
10	2.6	3.0	4.1	2.2	1.8	2.2	4.5	5.6	3.0	4.5	2.8	3.4
11	2.6	2.6	3.0	2.2	1.8	3.0	2.3	4.3	2.3	3.0	7.8	3.4
12	2.5	2.5	2.8	2.0	1.8	3.0	5.5	34	3.0	2.5	2.8	2.3
13	2.5	2.5	2.6	2.2	1.8	2.3	13	5.3	2.6	6.3	2.3	2.5
14	2.5	2.5	2.5	2.3	1.7	2.2	19	3.0	11	3.6	43	19
15	2.5	2.5	2.5	2.0	1.7	7.6	4.7	31	3.0	8.7	4.5	42
16	2.5	2.5	2.5	2.2	1.8	5.8	3.0	6.2	2.5	5.6	3.4	13
17	2.5	2.5	3.0	2.2	1.8	3.0	9.6	4.1	3.3	2.6	4.3	4.9
18	2.5	2.3	2.5	2.0	1.7	2.5	7.5	5.3	2.8	2.3	14	3.9
19	2.5	2.3	8.0	2.2	1.7	2.2	8.7	6.4	2.2	2.2	32	31
20	2.5	2.2	15	2.2	1.8	2.0	25	4.3	3.9	2.2	5.6	5.1
21	2.3	2.0	5.8	1.7	1.7	2.0	13	3.4	2.8	2.2	5.8	4.1
22	2.5	2.0	3.6	1.7	1.5	1.8	10	2.8	2.6	2.0	6.1	3.6
23	2.5	2.0	3.6	2.0	3.0	5.2	3.9	5.8	3.6	12	18	3.2
24	2.5	1.8	4.3	1.8	18	3.4	4.3	3.4	3.0	4.9	5.3	3.0
25	2.8	2.2	17	1.7	17	2.3	3.9	2.6	2.6	2.5	4.1	3.4
26	7.4	2.0	14	2.0	13	2.0	3.4	2.3	3.0	2.3	6.4	3.6
27	4.1	7.4	6.0	1.8	3.4	1.8	2.8	3.8	3.0	2.0	4.9	11
28	13	18	4.1	1.7	3.2	1.7	6.2	2.8	2.6	2.3	4.7	6.6
29	5.5	6.8	2.8	1.7	------	1.7	6.1	2.3	2.0	2.3	3.9	3.6
30	16	3.9	2.5	1.7	------	1.5	5.8	2.2	1.8	2.2	14	2.8
31	3.0	------	2.3	1.7	------	1.5	------	3.2	------	2.3	6.9	------
TOTAL	134.4	111.1	157.1	63.5	96.2	85.2	187.8	222.4	101.4	106.9	255.8	229.4
MEAN	4.34	3.70	5.07	2.05	3.44	2.75	6.26	7.17	3.38	3.45	8.25	7.65
MAX	16	18	17	2.5	18	7.6	25	34	11	12	43	42
MIN	2.3	1.8	2.3	1.7	1.5	1.5	1.4	2.2	1.8	2.0	2.3	2.3
AC-FT	267	220	312	126	191	169	373	441	201	212	507	455

CAL YR 1972 TOTAL 2,485.7 MEAN 6.79 MAX 83 MIN 1.8 AC-FT 4,930
WTR YR 1973 TOTAL 1,751.2 MEAN 4.80 MAX 43 MIN 1.4 AC-FT 3,470

PEAK DISCHARGE (BASE, 600 CFS).--Aug. 14 (0730) 770 cfs (2.60 ft).

16899600 Okat River

LOCATION.--Lat 5°20'32" N., long 162°59'30" E., on left bank 1.6 mi (2.6 km) upstream from mouth and 1.9 mi (3.1 km) northwest of Mount Crozer.

DRAINAGE AREA.--1.60 mi^2 (4.14 km^2).

PERIOD OF RECORD.--July 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 10 ft (3.0 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, 930 ft^3/s (26.3 m^3/s) Sept. 15, gage height, 6.36 ft (1.939 m), from floodmark in well, from rating curve extended above 43 ft^3/s (1.22 m^3/s); minimum, 1.7 ft^3/s (0.048 m^3/s) Feb. 15, 20, 21.
Period of record: Maximum discharge, 1,330 ft^3/s (37.7 m^3/s) May 22, 1972, gage height, 7.70 ft (2.347 m), from rating curve extended above 43 ft^3/s (1.22 m^3/s); minimum, 1.7 ft^3/s (0.048 m^3/s) Feb. 15, 20, 21, 1973.

REMARKS.--Records fair except those above 100 ft^3/s (2.83 m^3/s) and periods of faulty gage-height record, which are poor. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	5.3	11	7.9	2.8	14	3.3	96	10	7.0	5.3	11
2	30	4.6	46	7.9	2.8	10	3.1	106	9.4	11	5.9	9.1
3	20	4.0	32	7.0	2.8	8.1	3.1	35	13	26	12	48
4	11	4.0	10	6.3	2.6	8.7	3.1	26	38	9.1	14	17
5	9.5	3.6	7.4	6.3	2.6	6.3	3.3	25	28	6.3	20	14
6	12	3.6	6.6	5.9	2.6	5.6	5.3	20	11	5.3	23	44
7	18	17	5.3	6.3	2.8	5.3	4.8	20	8.7	5.0	13	23
8	8.3	5.9	4.6	5.3	2.6	6.3	43	17	7.9	5.0	11	29
9	7.0	4.0	4.3	5.3	2.4	5.3	13	14	9.1	7.0	7.9	16
10	6.3	4.3	68	5.3	2.4	4.6	11	18	9.1	20	7.0	13
11	5.9	4.0	12	5.0	2.8	5.0	7.4	16	7.9	15	15	13
12	5.6	3.6	7.0	5.0	2.4	5.6	7.0	100	18	7.0	7.9	9.5
13	5.3	3.6	5.2	5.0	2.2	4.3	20	35	14	28	6.3	9.1
14	5.0	3.3	4.8	5.3	2.2	3.6	33	26	30	15	51	42
15	4.6	3.6	4.5	5.0	1.9	21	15	71	12	55	12	114
16	4.6	3.6	4.3	5.3	2.2	15	10	32	8.7	26	9.1	66
17	4.0	3.6	4.7	5.0	2.4	8.3	33	25	13	14	10	31
18	4.0	4.0	4.3	4.3	1.9	5.6	19	23	10	11	20	23
19	4.6	4.0	8.0	5.0	2.2	5.0	30	19	7.9	9.1	121	125
20	4.0	3.6	54	5.0	2.2	4.3	97	15	19	8.3	27	32
21	3.6	3.2	21	4.0	1.9	4.0	28	14	10	7.9	33	22
22	4.0	3.6	10	3.6	2.2	3.6	20	15	10	6.6	25	17
23	4.0	3.3	10	4.3	7.3	16	15	19	11	27	91	13
24	4.3	3.1	8.7	4.0	56	9.1	16	20	8.7	14	26	12
25	4.6	5.0	36	3.6	35	7.0	19	17	6.6	8.3	20	12
26	19	4.6	34	5.6	63	5.9	16	15	7.9	6.6	20	13
27	8.3	12	18	4.0	16	5.3	13	13	7.0	6.3	13	56
28	40	21	13	3.3	12	5.0	21	11	6.6	6.3	12	25
29	14	14	10	3.1	------	4.3	25	10	5.3	6.3	10	14
30	21	8.6	8.3	3.1	------	3.6	25	9.6	5.0	5.6	43	11
31	6.6	------	7.9	2.8	------	3.3	------	11	------	7.4	20	------
TOTAL	312.1	171.6	480.9	154.8	242.2	219.0	562.4	893.6	362.8	392.4	720.4	883.7
MEAN	10.1	5.72	15.5	4.99	8.65	7.06	18.7	28.8	12.1	12.7	23.2	29.5
MAX	40	21	68	7.9	63	21	97	106	38	55	121	125
MIN	3.6	3.1	4.3	2.8	1.9	3.3	3.1	9.6	5.0	5.0	5.3	9.1
AC-FT	619	340	954	307	480	434	1,120	1,770	720	778	1,430	1,750

CAL YR 1972 TOTAL 9,382.1 MEAN 25.6 MAX 224 MIN 3.1 AC-FT 18,610
WTR YR 1973 TOTAL 5,395.9 MEAN 14.8 MAX 125 MIN 1.9 AC-FT 10,700

PEAK DISCHARGE (BASE, 1,000 CFS).--No peak above base.

NOTE.--No gage-height record May 2 to June 4.

16899750 Malem River

LOCATION.--Lat 5°18'21" N., long 163°01'46" E., on left bank 1.2 mi (1.9 km) upstream from mouth and 1.8 mi (2.9 km) southeast of Mount Crozer.

DRAINAGE AREA.--0.48 mi^2 (1.24 km^2).

PERIOD OF RECORD.--July 1971 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 95 ft (29 m), from stadia survey.

EXTREMES.--Current year: Maximum discharge, 425 ft^3/s (12.0 m^3/s) Dec. 3, gage height, 4.75 ft (1.448 m), from rating curve extended above 110 ft^3/s (3.12 m^3/s); minimum, 0.26 ft^3/s (0.007 m^3/s) Apr. 7.
Period of record: Maximum discharge, 980 ft^3/s (27.8 m^3/s) July 6, 1971, gage height, 5.60 ft (1.707 m), from rating curve extended above 110 ft^3/s (3.12 m^3/s); minimum, 0.26 ft^3/s (0.007 m^3/s) Apr. 7, 1973.

REMARKS.--Records good. No diverion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	2.9	3.7	2.9	1.7	4.0	1.5	38	3.5	2.9	1.8	4.5
2	8.6	2.6	19	3.2	1.6	2.5	1.4	36	3.2	3.5	1.8	3.8
3	6.6	2.3	32	2.6	1.5	2.0	1.4	9.4	4.7	11	4.8	11
4	4.7	2.0	5.4	2.3	1.4	1.9	1.2	6.9	3.6	4.3	5.4	6.0
5	4.1	1.9	3.8	2.5	1.4	1.7	1.4	19	7.7	3.0	5.6	5.1
6	5.8	1.9	3.7	2.5	1.4	1.6	1.4	7.7	4.0	2.5	4.5	23
7	5.2	7.9	2.9	3.0	1.4	1.6	1.5	12	2.9	2.3	3.5	7.7
8	3.8	3.5	2.5	2.2	1.4	1.8	15	8.0	3.0	2.2	2.9	9.4
9	3.5	2.2	2.5	2.2	1.3	1.8	6.2	6.0	2.7	4.7	1.9	5.4
10	3.2	2.1	12	2.2	1.4	1.4	5.1	7.3	2.6	7.9	2.0	4.5
11	2.9	1.9	3.7	2.1	1.4	1.5	2.6	5.6	2.6	6.9	4.3	4.3
12	2.7	1.9	2.9	2.0	1.3	2.2	2.5	61	5.6	4.9	2.1	3.5
13	2.6	1.9	2.6	2.0	1.2	1.5	12	12	7.6	11	1.8	3.3
14	2.6	1.9	2.3	2.5	1.2	1.4	18	8.0	19	6.4	14	12
15	2.7	2.0	2.2	2.0	1.2	9.8	7.1	30	5.1	17	3.5	35
16	2.6	1.9	2.1	2.7	1.3	4.9	4.1	11	3.8	8.2	2.5	21
17	2.3	1.9	2.3	2.9	1.2	2.3	15	8.0	3.2	4.7	2.5	7.5
18	3.0	1.8	2.1	1.8	1.2	1.8	6.6	9.8	2.8	3.7	5.8	6.4
19	2.3	1.8	3.6	2.0	1.1	1.6	7.1	7.5	2.5	3.0	48	39
20	2.5	1.8	18	1.9	1.2	1.5	36	6.4	3.2	3.2	8.2	8.7
21	2.2	1.8	7.9	1.8	1.2	1.4	14	5.4	2.5	3.0	10	6.6
22	2.7	1.8	3.7	1.8	1.3	1.5	8.7	4.7	4.2	2.5	12	6.0
23	2.3	1.8	3.7	3.3	2.5	6.1	5.6	9.5	2.3	5.5	42	5.1
24	2.6	1.7	3.3	1.8	14	2.9	5.1	5.4	2.2	4.0	10	4.5
25	3.5	1.8	21	1.8	7.9	2.0	6.2	4.7	2.0	2.3	7.1	4.1
26	6.4	1.8	12	6.5	15	2.2	5.4	4.0	2.3	2.2	7.5	3.7
27	3.7	4.5	9.7	2.2	3.8	2.7	4.1	4.1	2.3	2.0	5.2	29
28	14	5.5	5.6	1.9	4.0	3.0	12	3.8	2.7	1.9	5.2	10
29	5.6	7.4	4.1	1.8	------	1.9	8.3	3.2	2.0	1.9	4.1	5.8
30	8.4	3.2	3.5	1.8	------	1.7	9.7	3.0	1.8	1.8	12	4.7
31	4.0	------	3.2	1.7	------	1.5	------	3.3	------	1.9	7.5	------
TOTAL	132.3	79.4	207.0	73.9	76.5	75.7	226.2	360.7	117.6	142.3	249.5	300.6
MEAN	4.27	2.65	6.68	2.38	2.73	2.44	7.54	11.6	3.92	4.59	8.05	10.0
MAX	14	7.9	32	6.5	15	9.8	36	61	19	17	48	39
MIN	2.2	1.7	2.1	1.7	1.1	1.4	1.2	3.0	1.8	1.8	1.8	3.3
AC-FT	262	157	411	147	152	150	449	715	233	282	495	596

CAL YR 1972 TOTAL 3,117.1 MEAN 8.52 MAX 90 MIN 1.7 AC-FT 6,180
WTR YR 1973 TOTAL 2,041.7 MEAN 5.59 MAX 61 MIN 1.1 AC-FT 4,050

PEAK DISCHARGE (BASE, 500 CFS).--No peak above base.

16899800 Tofol River

LOCATION.--Lat 5°19'53" N., long 163°01'25" E., on left bank 25 ft (7.6 m) downstream from right-bank tributary, 0.7 mi (1.1 km) upstream from mouth, and 1.2 mi (1.9 km) northeast of Mount Crozer.

DRAINAGE AREA.--0.44 mi^2 (1.14 km^2).

PERIOD OF RECORD.--June 1971 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 98 ft (29.9 m), from stadia survey.

EXTREMES.--Current year: Maximum discharge, 398 ft^3/s (11.3 m^3/s) Sept. 15, gage height, 3.94 ft (1.201 m), from rating curve extended above 79 ft^3/s (2.24 m^3/s); minimum, 0.82 ft^3/s (0.023 m^3/s) Feb. 21.
Period of record: Maximum discharge, 1,050 ft^3/s (29.7 m^3/s) July 6, 1971, gage height, 5.24 ft (1.597 m), from rating curve extended above 79 ft^3/s (2.24 m^3/s); minimum, 0.82 ft^3/s (0.023 m^3/s) Feb. 21, 1973.

REMARKS.--Records fair. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	2.2	3.0	2.8	1.2	3.1	1.4	26	3.1	2.4	1.8	4.4
2	8.8	2.0	13	3.3	1.2	2.3	1.4	22	3.2	3.0	1.8	3.8
3	5.4	1.9	23	2.6	1.2	1.8	1.3	9.0	3.7	8.2	2.5	12
4	3.9	1.7	4.0	2.4	1.1	1.9	1.3	7.5	8.9	3.2	3.4	5.8
5	3.4	1.6	3.1	2.3	1.1	1.5	1.4	10	5.0	2.4	3.1	5.7
6	4.4	1.7	3.1	2.2	1.1	1.4	1.7	6.3	3.3	2.2	3.0	17
7	3.9	4.4	2.5	2.3	1.2	1.4	1.6	6.5	3.0	2.0	2.4	8.2
8	2.9	4.3	2.2	2.1	1.0	1.8	10	5.2	2.8	2.1	2.2	10
9	2.6	2.0	2.0	2.0	1.0	1.5	3.7	4.4	3.0	2.5	1.8	6.0
10	2.5	2.0	10	1.9	.97	1.3	3.1	8.2	2.8	4.8	1.8	5.4
11	2.3	1.8	2.9	1.8	1.3	1.7	2.2	6.0	2.9	4.7	3.6	5.0
12	2.1	1.6	2.2	1.8	1.0	2.2	2.2	34	4.6	2.8	2.0	4.2
13	2.0	1.6	2.0	1.9	.97	1.4	7.2	11	4.5	5.6	1.9	4.7
14	1.9	1.5	1.9	2.0	.91	1.3	7.9	7.5	9.3	3.7	12	13
15	1.9	1.8	1.8	1.8	.91	7.2	4.1	24	3.8	9.9	3.3	27
16	1.8	1.5	1.7	2.1	.91	4.1	3.1	10	3.1	4.8	2.6	14
17	1.7	1.5	1.9	2.1	.91	2.4	12	7.7	3.0	3.2	3.0	7.7
18	1.6	1.4	1.6	1.7	.91	1.9	4.8	9.4	2.8	2.6	5.8	6.7
19	2.2	1.3	3.1	2.1	.86	1.7	5.8	7.0	2.5	2.5	37	31
20	1.7	1.2	14	2.0	.86	1.6	24	5.8	2.8	2.3	6.3	8.7
21	1.5	1.2	5.2	1.6	.82	1.6	11	5.2	2.4	2.4	8.7	6.7
22	1.8	1.2	2.9	1.5	.91	1.4	7.5	4.7	3.1	2.2	7.1	6.0
23	1.5	1.4	2.7	1.8	2.4	4.6	5.2	9.0	2.6	5.0	21	5.2
24	1.8	1.2	2.6	1.4	10	2.9	6.0	4.7	2.3	3.2	7.2	4.7
25	2.2	1.2	12	1.4	8.1	2.8	7.2	4.2	2.2	2.3	6.0	4.4
26	6.0	1.5	8.7	1.9	13	2.5	5.0	3.7	2.3	2.2	6.7	4.8
27	2.7	3.8	5.6	1.4	3.4	2.6	4.2	3.6	2.2	2.0	4.8	15
28	9.7	4.0	4.1	1.4	2.9	2.4	9.1	3.3	2.2	1.9	4.5	7.2
29	4.6	5.0	3.4	1.3	------	1.9	7.0	3.2	1.9	1.8	4.1	4.7
30	4.4	2.8	3.1	1.2	------	1.8	7.7	3.1	1.9	1.8	11	4.0
31	2.6	------	3.0	1.2	------	1.6	------	3.6	------	1.8	6.1	------
TOTAL	100.3	62.3	152.3	59.3	62.14	69.6	170.1	275.8	101.2	101.5	188.5	263.0
MEAN	3.24	2.08	4.91	1.91	2.22	2.25	5.67	8.90	3.37	3.27	6.08	8.77
MAX	9.7	5.0	23	3.3	13	7.2	24	34	9.3	9.9	37	31
MIN	1.5	1.2	1.6	1.2	.82	1.3	1.3	3.1	1.9	1.8	1.8	3.8
AC-FT	199	124	302	118	123	138	337	547	201	201	374	522

CAL YR 1972 TOTAL 2,384.8 MEAN 6.52 MAX 58 MIN 1.2 AC-FT 4,730
WTR YR 1973 TOTAL 1,606.04 MEAN 4.40 MAX 37 MIN .82 AC-FT 3,190

PEAK DISCHARGE (BASE, 450 CFS).--No peak above base.

16912000 Pago Stream at Afono

LOCATION.--Lat 14°16'03" S., long 170°39'02" W., on left bank 0.2 mi (0.3 km) south of Afono and 0.3 mi (0.5 km) upstream from mouth.

DRAINAGE AREA.--0.60 mi² (1.55 km²).

PERIOD OF RECORD.--October 1958 to current year. Prior to July 1960, published as Afono Stream at Afono.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 30 ft (9 m), from topographic map.

AVERAGE DISCHARGE.--14 years (1959-73), 3.36 ft³/s (0.0952 m³/s), 2,430 acre-ft/yr (3.00 hm³/yr).

EXTREMES.-- Current year: Maximum discharge, 595 ft³/s (16.9 m³/s) Jan. 30, gage height, 4.35 ft (1.326 m), from rating curve extended above 12 ft³/s (0.34 m³/s); minimum, 0.42 ft³/s (0.012 m³/s) Sept. 25, 27.
Period of record: Maximum discharge, 1,350 ft³/s (38.2 m³/s) July 5, 1969, gage height, 5.49 ft (1.673 m), from rating curve extended above 22 ft³/s (0.62 m³/s); minimum, 0.25 ft³/s (0.007 m³/s) at times in 1961, 1968 and 1972.

REMARKS.--Records fair. About 0.06 ft³/s (0.002 m³/s) is diverted above station for domestic use in Afono.

REVISIONS.--WSP 1937: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	18	.85	16	9.8	1.3	3.0	2.6	1.5	1.8	2.3	1.0
2	5.0	4.9	.78	8.2	9.4	1.4	1.4	1.5	1.8	1.2	1.9	1.8
3	10	18	.71	4.9	7.9	1.2	1.0	1.1	1.5	1.0	1.5	1.4
4	8.0	9.3	.64	3.8	4.9	1.0	.78	1.0	1.3	1.0	1.6	1.0
5	6.0	4.2	.71	3.0	4.0	1.0	.71	.93	1.2	1.8	28	.85
6	5.0	3.4	.64	2.6	3.2	.93	3.9	1.2	1.0	29	16	.93
7	3.0	2.8	.64	2.2	2.8	.85	4.9	.93	1.0	5.4	5.2	1.1
8	6.0	2.3	.64	7.9	3.2	.85	2.6	.85	.93	2.8	3.2	.93
9	3.0	2.2	.64	3.4	3.8	2.2	3.0	.78	.85	2.2	3.0	.93
10	2.5	1.8	.78	2.5	3.4	1.5	2.3	.71	.85	1.9	6.9	1.3
11	2.0	3.2	.85	2.0	4.0	1.0	1.9	.71	.78	1.6	4.7	1.8
12	1.5	2.2	.78	1.8	2.6	1.1	1.3	.64	.85	3.0	2.8	1.1
13	1.5	3.8	.71	1.6	2.2	1.1	1.1	.64	.85	3.4	2.2	.93
14	1.3	3.0	.71	1.5	2.0	1.5	.93	.64	.71	1.9	1.9	.78
15	2.5	3.0	.71	1.4	1.8	1.2	.93	.64	.78	1.5	1.8	.64
16	1.5	2.3	1.0	1.6	1.5	1.8	.85	.78	.78	1.3	1.5	.64
17	1.3	1.8	.85	2.3	1.8	1.8	.78	.58	.64	1.3	1.4	.58
18	1.1	1.6	.85	1.9	1.5	1.2	.71	.58	.64	1.2	1.3	.58
19	1.1	1.4	.85	5.3	1.4	1.4	.71	.58	.85	1.0	1.2	.58
20	20	1.5	.78	2.6	1.4	1.1	.64	.52	.64	1.4	1.2	.52
21	10	1.3	.78	3.4	1.4	.93	.64	.58	1.0	1.1	.93	.52
22	5.0	1.2	3.9	2.2	1.3	.85	.64	2.5	1.3	1.1	.93	.85
23	4.0	1.1	1.8	2.2	1.2	.78	.64	38	1.8	1.0	.93	.64
24	3.0	1.0	2.9	2.3	1.1	.78	.58	4.0	1.6	.85	.85	.52
25	2.5	1.0	1.8	2.8	1.8	.71	3.7	2.2	1.6	.78	.78	.58
26	10	1.0	43	62	2.8	.78	4.0	10	1.4	.78	3.0	.58
27	9.4	.93	13	54	1.5	1.4	1.5	5.7	1.9	.71	2.2	.52
28	3.8	.93	5.7	16	1.2	1.4	1.5	3.0	11	2.1	1.4	.52
29	2.3	.85	8.8	19	------	.85	1.5	2.6	6.0	28	1.4	.64
30	2.0	.85	12	120	------	.85	9.5	2.2	2.5	3.2	1.2	.58
31	2.4	------	25	21	------	1.9	------	1.8	------	2.8	.93	------
TOTAL	151.7	100.86	133.80	381.4	84.9	36.66	57.64	90.49	49.55	108.12	104.15	25.34
MEAN	4.89	3.36	4.32	12.3	3.03	1.18	1.92	2.92	1.65	3.49	3.36	.84
MAX	20	18	43	120	9.8	2.2	9.5	38	11	29	28	1.8
MIN	1.1	.85	.64	1.4	1.1	.71	.58	.52	.64	.71	.78	.52
AC-FT	301	200	265	757	168	73	114	179	98	214	207	50

CAL YR 1972 TOTAL 1,399.20 MEAN 3.82 MAX 104 MIN .37 AC-FT 2,780
WTR YR 1973 TOTAL 1,324.61 MEAN 3.63 MAX 120 MIN .52 AC-FT 2,630

PEAK DISCHARGE (BASE, 210 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
12-26	1430	3.82	362	5-23	0830	3.59	282
1-26	0500	3.97	418	7- 6	1230	3.47	246
1-27	0130	3.87	380	7-29	0030	3.68	313
1-30	0400	4.35	595				

16917500 Leele Stream at mouth, at Fagasa

LOCATION.--Lat 14°17'28" S., long 170°43'09" W., on left bank at Fagasa and 200 ft (61 m) upstream from mouth.

DRAINAGE AREA.--0.23 mi^2 (0.60 km^2).

PERIOD OF RECORD.--July 1966 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 10 ft (3 m), from topographic map.

AVERAGE DISCHARGE.--7 years, 1.65 ft^3/s (0.0467 m^3/s), 1,200 acre-ft/yr (1.48 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 365 ft^3/s (10.3 m^3/s) Jan. 30, gage height, 3.77 ft (1.149 m), from floodmark in well, from rating curve extended as explained below; minimum, 0.20 ft^3/s (0.006 m^3/s) Dec. 9, May 20, 21.
Period of record: Maximum discharge, 390 ft^3/s (11.0 m^3/s) Aug. 30, 1970, gage height, 3.82 ft (1.164 m), from rating curve extended above 13 ft^3/s (0.37 m^3/s) on basis of slope-area measurement at gage height 3.61 ft (1.100 m); minimum, 0.09 ft^3/s (0.003 m^3/s) Oct. 13-17, 1971.

REMARKS.--Records good. Small diversion above station for local village use.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.5	9.7	.34	11	2.2	.66	.28	.56	.66	1.0	1.4	.64
2	2.2	3.1	.31	4.6	5.4	.72	.26	.40	.56	.66	.98	.56
3	8.0	8.7	.28	2.5	3.3	.47	.26	.37	2.4	.56	.78	.40
4	6.8	3.9	.26	1.8	1.8	.40	.24	.31	.85	.85	2.1	.37
5	2.6	1.8	.24	1.2	3.0	.40	.22	.31	.56	2.2	20	.34
6	1.9	1.1	.24	1.2	2.5	.37	2.6	.28	.47	19	3.5	.34
7	1.5	.85	.24	1.2	5.7	.34	1.5	.28	.43	3.3	1.5	.34
8	2.4	.78	.22	5.7	1.8	.34	1.2	.31	.42	1.2	1.1	.34
9	1.6	.72	.20	1.9	1.2	.34	.92	.26	.34	.85	1.0	.34
10	1.2	.66	.31	1.2	1.3	.34	.51	.24	.34	.61	9.2	.51
11	1.0	2.2	1.6	1.1	1.2	.31	.37	.31	.31	.51	2.4	.40
12	.78	1.1	.40	.92	.85	.34	.34	1.3	.40	.51	1.2	.37
13	.78	1.7	.26	.85	.72	.47	.34	.34	.31	.56	.85	.34
14	.72	1.4	.24	.85	.56	.34	.34	.26	.28	.40	.78	.31
15	1.2	1.5	.22	1.2	.51	.37	.43	.26	.72	.37	.78	.28
16	.78	1.2	.40	1.2	.47	1.7	.34	.43	.40	.34	.66	.26
17	.66	.85	.56	2.7	.43	.51	.28	.28	.31	.37	.56	.26
18	.51	1.6	.34	1.4	.51	.37	.28	.24	.37	.37	.51	.26
19	.56	1.0	.24	4.2	.40	.37	.28	.22	.61	.34	.51	.26
20	11	.72	.22	1.9	.40	.31	.22	.20	.34	.98	.51	.28
21	7.1	.56	.31	1.9	.56	.31	.22	.22	2.6	.40	.51	.26
22	2.4	.51	2.0	1.1	.51	.31	.22	1.8	2.4	1.8	.43	2.5
23	2.4	.43	.61	1.1	.43	.31	.22	16	2.4	.85	.40	.47
24	1.8	.41	10	.92	.37	.31	.22	2.0	1.2	.51	.47	.28
25	1.2	.40	2.4	.78	4.1	.28	4.6	2.5	1.2	.47	.47	.26
26	5.1	.37	15	2.7	2.5	.26	3.1	10	.72	.40	.97	.31
27	5.6	.34	8.7	13	.78	.80	1.3	2.9	1.4	.34	.61	.24
28	2.0	.34	4.6	5.8	.56	.37	.72	1.3	5.8	3.0	.47	.31
29	1.2	.31	7.3	5.7	------	.34	.56	.85	5.0	11	.40	.26
30	1.0	.31	11	50	------	.34	1.6	.92	1.6	1.5	.40	.24
31	2.4	------	16	4.3	------	.28	------	1.0	------	2.5	.37	------
TOTAL	86.89	48.56	85.04	135.92	44.06	13.38	23.97	46.65	35.40	57.75	55.82	12.33
MEAN	2.80	1.62	2.74	4.38	1.57	.43	.80	1.50	1.18	1.86	1.80	.41
MAX	11	9.7	16	50	5.7	1.7	4.6	16	5.8	19	20	2.5
MIN	.51	.31	.20	.78	.37	.26	.22	.20	.28	.34	.37	.24
AC-FT	172	96	169	270	87	27	48	93	70	115	111	24

CAL YR 1972 TOTAL 661.52 MEAN 1.81 MAX 38 MIN .17 AC-FT 1,310
WTR YR 1973 TOTAL 645.77 MEAN 1.77 MAX 50 MIN .20 AC-FT 1,280

PEAK DISCHARGE (BASE, 78 CFS)

NOTE.--No gage-height record Jan. 30.

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
12-24	0730	3.04	99	7- 6	1400	2.97	86
1-30	/0200	3.77	365	7-29	0100	2.93	79
5-23	0800	3.33	176				

/ About.

16920500 Aasu Stream at Aasu

LOCATION.--Lat 14°17'51" S., long 170°45'30" W., on right bank at Aasu and 200 ft (61 m) upstream from mouth.

DRAINAGE AREA.--1.03 mi² (2.67 km²).

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 5 ft (1.5 m), by hand levels from high-tide mark.

AVERAGE DISCHARGE.--14 years (1959-73), 6.31 ft³/s (0.179 m³/s), 4,570 acre-ft/yr (5.63 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 262 ft³/s (7.42 m³/s) Jan. 30, gage height, 4.03 ft (1.228 m), from rating curve extended as explained below; minimum, 0.58 ft³/s (0.016 m³/s) Sept. 29, 30.
Period of record: Maximum discharge, 498 ft³/s (14.1 m³/s) Sept. 7, 1972, gage height, 5.16 ft (1.573 m), from rating curve extended above 20 ft³/s (0.57 m³/s) on basis of slope-area measurement at gage height 4.57 ft (1.393 m); minimum, 0.45 ft³/s (0.013 m³/s) Oct. 1, 2, 11-15, 18, 1971.

REMARKS.--Records good. Small diversion above station for domestic use. Recording rain gage located at station.

REVISIONS.--WSP 1937: Drainage area. (FISCAL YEARS).--WSP 2137: 1959-60(P), (WATER YEARS) 1960(P), 1961(M), 1962-65(P).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	23	2.7	33	21	3.2	1.4	1.7	4.0	6.1	5.9	1.7
2	10	11	2.4	24	18	3.0	1.1	1.6	3.8	5.2	4.9	1.9
3	18	18	2.4	17	14	2.8	1.1	1.4	4.4	4.7	4.7	1.3
4	18	16	2.2	13	12	2.5	1.0	1.4	3.4	4.7	6.8	1.3
5	12	12	2.1	10	9.7	2.5	.94	1.4	3.0	6.4	39	1.3
6	10	11	1.8	8.6	8.6	2.4	2.6	1.4	2.8	22	18	1.3
7	9.0	9.7	1.7	8.0	8.0	2.1	2.5	1.3	2.7	13	13	1.2
8	9.0	8.3	1.7	12	8.3	2.4	4.0	1.3	2.5	8.6	12	1.2
9	8.0	7.3	1.7	8.0	8.6	2.4	3.4	1.4	2.4	7.6	8.6	1.6
10	6.6	6.9	2.4	6.4	8.6	2.1	2.1	1.2	2.1	6.9	12	1.7
11	5.9	8.6	3.6	5.6	8.6	1.9	1.7	1.3	2.1	6.1	8.3	1.2
12	5.4	6.6	2.1	5.2	6.6	2.1	1.7	1.4	2.2	5.6	6.6	1.1
13	4.9	6.6	1.7	4.4	6.1	3.6	3.1	1.1	2.1	6.1	6.1	1.1
14	4.4	6.6	1.6	4.2	5.6	2.1	2.1	1.1	2.1	4.7	5.4	1.0
15	5.4	7.3	1.4	4.2	5.4	2.4	1.9	1.0	4.2	4.0	5.2	.94
16	4.2	6.6	1.4	8.9	4.9	4.6	1.8	1.1	2.5	3.6	4.2	.94
17	3.6	5.9	2.1	14	4.9	2.7	1.4	1.0	2.1	3.4	3.8	.94
18	3.2	6.9	1.4	8.6	4.9	1.9	1.4	.85	2.2	3.2	3.4	.94
19	3.2	5.9	1.6	7.6	4.2	1.8	1.3	.77	4.2	2.7	3.2	.94
20	19	5.4	1.4	6.4	3.8	1.6	1.2	.77	2.4	3.4	2.8	.85
21	21	4.9	1.4	6.9	4.0	1.4	1.1	.85	5.5	2.7	2.8	.94
22	10	4.9	3.8	6.1	3.6	1.3	1.1	1.3	6.4	6.9	2.5	2.0
23	9.0	4.2	1.9	7.6	3.4	1.3	1.1	22	7.3	5.4	2.4	1.1
24	7.6	4.0	9.2	8.9	3.0	1.3	1.2	5.9	5.4	3.6	2.2	.77
25	6.9	3.8	4.0	8.6	6.6	1.3	6.1	4.0	4.4	3.4	2.1	.77
26	9.4	3.6	26	8.6	6.6	1.2	4.2	7.6	3.6	3.6	2.1	.70
27	11	3.2	24	21	4.4	1.4	2.4	5.9	3.4	2.8	2.5	.77
28	7.3	3.0	14	24	3.4	1.3	1.8	5.6	11	7.6	1.9	.77
29	6.1	3.0	15	19	------	1.3	2.4	5.4	9.3	18	1.7	.64
30	5.6	2.8	24	69	------	1.6	1.9	4.9	6.4	6.9	1.7	.64
31	5.6	------	32	29	------	1.3	------	4.4	------	6.1	1.6	------
TOTAL	280.3	227.0	194.7	417.8	206.8	64.8	61.04	92.34	119.9	195.0	197.4	33.55
MEAN	9.04	7.57	6.28	13.5	7.39	2.09	2.03	2.98	4.00	6.29	6.37	1.12
MAX	21	23	32	69	21	4.6	6.1	22	11	22	39	2.0
MIN	3.2	2.8	1.4	4.2	3.0	1.2	.94	.77	2.1	2.7	1.6	.64
AC-FT	556	450	386	829	410	129	121	183	238	387	392	67

CAL YR 1972 TOTAL 2,393.74 MEAN 6.54 MAX 157 MIN .94 AC-FT 4,750
WTR YR 1973 TOTAL 2,090.63 MEAN 5.73 MAX 69 MIN .64 AC-FT 4,150

PEAK DISCHARGE (BASE, 180 CFS).--Dec. 26 (2100) 210 cfs (3.70 ft); Jan. 30 (0300) 262 cfs (4.03 ft).

16931000 Atauloma Stream at Afao

LOCATION.--Lat 14°20'10" S., long 170°48'02" W., on left bank at Afao, 100 ft (30 m) upstream from highway bridge, and 300 ft (91 m) upstream from mouth.

DRAINAGE AREA.--0.24 mi^2 (0.62 km^2).

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 20 ft (6 m), by hand levels from high-tide mark.

AVERAGE DISCHARGE.--14 years (1959-73), 1.49 ft^3/s (0.0422 m^3/s), 1,080 acre-ft/yr (1.33 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 168 ft^3/s (4.76 m^3/s) Dec. 26, gage height, 2.58 ft (0.786 m), from rating curve extended above 26 ft^3/s (0.58 m^3/s); minimum, 0.14 ft^3/s (0.004 m^3/s) Sept. 17-20.
Period of record: Maximum discharge, 605 ft^3/s (17.1 m^3/s) Aug. 10, 1967, gage height, 3.99 ft (1.216 m), from rating curve extended above 26 ft^3/s (0.74 m^3/s); minimum, 0.06 ft^3/s (0.002 m^3/s) Oct. 21, 1963.

REMARKS.--Records good. No diversion above station. Recording rain gage located at station.

REVISIONS.--WSP 1937: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	6.8	.43	15	2.4	.68	.58	.43	.74	1.2	2.3	.43
2	2.2	1.8	.43	4.6	3.3	.73	.38	.38	.58	.86	1.4	.53
3	4.9	3.2	.43	2.6	2.3	.53	.38	.38	.63	.68	1.1	.53
4	4.0	2.4	.43	1.9	1.5	.48	.34	.34	.48	.63	4.1	.53
5	2.4	1.5	.38	1.5	1.3	.68	.34	.30	.43	1.2	20	.48
6	1.7	1.3	.38	1.4	1.2	.58	1.4	.30	.43	13	3.5	.58
7	1.4	1.1	.34	1.1	.99	.48	.99	.30	.43	3.7	2.0	.63
8	1.3	.92	.30	3.0	1.1	1.5	1.6	.30	.38	1.8	1.7	.38
9	1.1	.92	.30	1.4	1.1	1.8	.99	.48	.38	1.4	1.1	.34
10	1.1	.86	.78	1.2	2.3	1.1	.68	.30	.34	1.2	1.6	.49
11	.92	1.1	.93	1.1	1.9	.74	.53	.43	.34	1.1	1.3	.26
12	.86	.86	.38	.92	1.2	.86	.48	.30	.38	1.1	1.1	.30
13	.86	1.1	.34	.86	1.9	3.8	.68	.26	.34	1.5	.92	.23
14	.80	1.5	.30	.80	.92	1.7	.48	.26	.30	.99	.86	.20
15	.80	1.4	.23	.80	1.1	1.2	.63	.23	1.3	.86	.80	.20
16	.74	1.5	.30	2.1	.92	1.3	.74	.23	.43	.80	.80	.20
17	.68	.92	.34	4.7	1.1	.92	.43	.20	.34	.68	.68	.20
18	.63	1.3	.34	2.0	1.1	.80	.53	.20	.43	.68	.63	.20
19	.63	.92	.30	1.8	.99	.74	.38	.20	1.8	.63	.63	.20
20	7.2	.74	.26	1.8	.92	.63	.34	.20	.63	.80	.58	.48
21	5.3	.68	.34	1.7	.86	.63	.43	.26	3.6	.63	.58	.34
22	1.5	.74	.43	1.4	.86	.63	.30	.38	2.4	1.5	.53	.64
23	1.3	.63	.30	1.4	.86	.58	.30	9.6	1.8	1.1	.48	.30
24	1.1	.53	.80	1.6	.86	.58	.34	1.3	1.1	.80	.48	.26
25	1.3	.58	.43	1.4	1.9	.58	1.9	.80	.74	.74	.48	.26
26	1.8	.48	18	1.2	1.7	.53	1.4	2.2	.74	.86	.48	.48
27	2.3	.53	4.7	5.7	.86	.63	.58	1.2	.53	.63	.53	.30
28	1.3	.43	2.8	9.4	.68	.58	.53	.92	1.1	1.1	.48	.34
29	.99	.43	3.8	3.9	------	.48	.92	.86	1.1	7.8	.38	.30
30	.86	.43	11	28	------	.53	.53	1.1	.80	2.2	.38	.26
31	.92	------	13	4.0	------	.48	------	.92	------	1.5	.58	------
TOTAL	58.79	37.60	63.52	110.28	38.12	27.48	20.13	25.56	25.02	53.67	52.48	10.87
MEAN	1.90	1.25	2.05	3.56	1.36	.89	.67	.82	.83	1.73	1.69	.36
MAX	7.2	6.8	18	28	3.3	3.8	1.9	9.6	3.6	13	20	.64
MIN	.63	.43	.23	.80	.68	.48	.30	.20	.30	.63	.38	.20
AC-FT	117	75	126	219	76	55	40	51	50	106	104	22

CAL YR 1972 TOTAL 588.76 MEAN 1.61 MAX 47 MIN .12 AC-FT 1,170
WTR YR 1973 TOTAL 523.52 MEAN 1.43 MAX 28 MIN .20 AC-FT 1,040

PEAK DISCHARGE (BASE, 160 CFS).--Dec. 26 (1830) 168 cfs (2.58 ft); Jan. 30 (0330) 166 cfs (2.57 ft).

16944200 Papa Stream at Nuuuli

LOCATION.--Lat 14°18'48" S., long 170°42'33" W., on right bank 500 ft (150 m) downstream from Tauese Stream and 0.8 mi (1.3 km) northwest of Nuuuli.

DRAINAGE AREA.--0.78 mi^2 (2.02 km^2).

PERIOD OF RECORD.--July 1966 to September 1967, November 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 30 ft (9.1 m), from topographic map.

AVERAGE DISCHARGE.--5 years (1966-67, 1969-73), 4.33 ft^3/s (0.123 m^3/s), 3,140 acre-ft/yr (3.87 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 935 ft^3/s (26.5 m^3/s) Jan. 30, gage height, 4.27 ft (1.301 m), from rating curve extended as explained below; no flow for many days.
Period of record: Maximum discharge, 1,110 ft^3/s (31.4 m^3/s) Aug. 30, 1970, gage height, 4.59 ft (1.399 m), from floodmark in well, from rating curve extended above 66 ft^3/s (1.87 m^3/s) on basis of flow-over-road measurement at gage height 3.32 ft (1.012 m); no flow for many days each year.
Flood of Oct. 9, 1967, reached a stage of 3.32 ft (1.012 m), from floodmarks, discharge, 470 ft^3/s (13.3 m^3/s), from rating curve extended as explained above.

REMARKS.--Records poor. Diversion by frequent pumping from gage pool for public water supply.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	33	0	36	8.9	1.3	0	.95	1.8	2.3	3.4	.63
2	5.1	8.1	0	13	15	1.3	0	.32	.95	1.6	3.0	2.1
3	14	28	0	7.0	10	.38	0	.01	6.0	1.1	2.8	.54
4	20	14	0	4.5	6.6	.27	0	0	2.1	2.1	4.0	.32
5	7.7	6.6	0	3.4	5.1	.18	0	0	.95	4.8	81	.15
6	5.7	4.8	0	2.3	3.9	.06	11	0	.54	76	14	.12
7	3.6	3.4	0	1.8	3.6	.01	4.2	0	.38	13	6.6	.01
8	6.6	2.5	0	13	4.2	0	3.4	0	.06	5.7	6.0	0
9	4.2	2.1	0	3.9	2.8	0	3.1	0	.04	3.4	3.9	0
10	2.8	2.1	.14	2.3	3.9	0	1.1	0	.02	2.1	21	.02
11	2.0	3.4	3.8	1.6	3.6	0	.54	.06	0	1.8	7.0	.04
12	1.5	2.0	.50	1.1	2.1	.01	.03	1.8	.04	1.3	4.2	0
13	.95	3.6	0	.78	1.6	0	.04	.19	0	1.8	2.8	.09
14	.64	4.1	0	.78	1.3	.02	0	0	0	1.1	2.3	0
15	1.5	5.1	0	1.3	.78	.02	.40	0	1.1	.64	2.3	0
16	.64	3.1	.16	1.5	.64	3.5	.25	.03	.38	.46	1.8	0
17	.38	2.0	.04	3.9	.64	.38	0	0	.01	.38	1.3	0
18	.27	2.1	0	1.6	.95	0	0	0	.04	.32	.95	0
19	.22	1.3	0	12	.54	.07	0	0	1.3	.22	.64	0
20	35	1.1	0	5.3	.64	.01	0	0	.32	1.5	.64	0
21	27	.64	0	4.5	.95	0	0	0	6.3	.64	.64	0
22	6.6	.64	4.0	2.5	.64	0	0	15	4.5	5.9	.46	4.8
23	5.7	.54	.23	3.9	.09	0	0	150	5.9	2.3	.38	.54
24	5.1	.32	35	3.4	0	0	0	10	4.5	.78	.63	.04
25	3.9	.27	4.5	2.5	8.5	0	18	13	5.1	.46	.32	0
26	7.1	.06	79	6.1	6.0	0	9.0	75	2.0	.32	4.2	.11
27	17	0	22	40	2.0	.90	4.5	15	3.4	.18	2.0	0
28	5.1	0	10	21	.95	.14	2.0	10	9.0	3.2	.95	0
29	3.1	0	17	21	------	.05	1.5	4.0	7.4	45	.46	0
30	2.3	0	30	170	------	.13	2.5	2.8	3.9	5.4	.27	0
31	4.4	------	51	15	------	0	------	3.1	------	5.1	.27	------
TOTAL	229.10	134.87	257.37	406.96	95.92	8.73	61.56	301.26	68.03	190.90	180.21	9.51
MEAN	7.39	4.50	8.30	13.1	3.43	.28	2.05	9.72	2.27	6.16	5.81	.32
MAX	35	33	79	170	15	3.5	18	150	9.0	76	81	4.8
MIN	.22	0	0	.78	0	0	0	0	0	.18	.27	0
AC-FT	454	268	510	807	190	17	122	598	135	379	357	19

CAL YR 1972 TOTAL 2,109.83 MEAN 5.76 MAX 175 MIN 0 AC-FT 4,180
WTR YR 1973 TOTAL 1,944.42 MEAN 5.33 MAX 170 MIN 0 AC-FT 3,860

PEAK DISCHARGE (BASE, 300 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
10- 1	2400	3.09	371	5-23	Unknown	3.82	710
12-24	0800	3.27	446	7- 6	1300	3.32	469
12-26	1800	3.71	655	7-29	0100	3.65	625
1-30	0200	4.27	935	8- 5	1300	3.04	351
4- 6	2200	2.97	324				

16948000 Afuelo Stream at Matuu

LOCATION.--Lat 14°18'07" S., long 170°41'07" W., on left bank 0.2 mi (0.3 km) northwest of Matuu and 0.3 mi (0.5 km) upstream from mouth.

DRAINAGE AREA.--0.25 mi² (0.65 km²).

PERIOD OF RECORD.--March 1958 to current year. Prior to July 1960, published as Matuu Stream at Matuu.

GAGE.--Water-stage recorder. Altitude of gage is 80 ft (24.4 m), from topographic map.

AVERAGE DISCHARGE.--15 years, 1.48 ft³/s (0.0419 m³/s), 1,070 acre-ft/yr (1.32 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 262 ft³/s (7.42 m³/s) Jan. 30, gage height, 3.67 ft (1.119 m), from rating curve extended as explained below; minimum, 0.06 ft³/s (0.002 m³/s) Dec. 8-10.
Period of record: Maximum discharge, 490 ft³/s (13.9 m³/s) Oct. 9, 1967, gage height, 4.55 ft (1.387 m), from rating curve extended above 8.4 ft³/s (0.24 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.06 ft³/s (0.002 m³/s) Oct. 25, 26, 1971, Dec. 8-10, 1972.

REMARKS.--Records good. Small diversion above station for domestic use since September 1972.

REVISIONS.--WSP 1937: Drainage area. (FISCAL YEARS).--WSP 2137: 1958-60, (WATER YEARS) 1960-65.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	8.2	.18	11	2.2	.71	.14	.56	.52	.61	1.2	.20
2	1.4	1.8	.18	3.2	4.5	.61	.10	.34	.37	.41	.86	.28
3	3.6	6.8	.14	1.6	2.4	.34	.10	.25	2.1	.25	.71	.18
4	6.2	3.4	.14	1.0	1.3	.22	.09	.20	.76	.41	1.7	.16
5	2.0	1.4	.14	.81	.93	.20	.08	.16	.37	1.1	20	.14
6	1.5	.93	.12	.61	.81	.20	2.5	.16	.25	17	3.8	.14
7	1.0	.76	.12	.56	.76	.18	1.4	.16	.20	2.4	1.6	.14
8	2.3	.66	.12	4.8	.91	.12	.95	.16	.18	1.0	2.5	.12
9	1.4	.56	.06	1.2	.81	.12	.93	.14	.16	.76	1.3	.14
10	.81	.56	.20	.76	1.0	.12	.44	.12	.12	.66	7.6	.16
11	.61	.86	2.4	.56	1.2	.10	.44	.22	.12	.52	2.2	.16
12	.52	.61	.30	.48	.66	.14	.25	.18	.12	.56	1.0	.14
13	.48	1.3	.20	.37	.56	.16	.22	.16	.12	.93	.81	.14
14	.41	1.4	.16	.31	.48	.18	.20	.12	.10	.52	.66	.12
15	.52	1.6	.10	.34	.44	.12	.37	.14	.28	.34	.52	.10
16	.34	.81	.31	.56	.44	.58	.37	.18	.16	.31	.44	.09
17	.28	.52	.28	1.0	.48	.31	.16	.14	.10	.28	.37	.09
18	.25	.61	.18	.48	.48	.16	.12	.12	.16	.28	.31	.09
19	.22	.44	.12	3.8	.52	.18	.14	.10	.66	.22	.28	.08
20	5.5	.41	.10	1.5	.48	.16	.12	.09	.18	.66	.25	.08
21	5.4	.31	.18	1.8	.48	.12	.10	.09	1.3	.46	.22	.08
22	1.2	.28	2.9	.81	.48	.10	.12	.75	1.2	4.1	.18	1.5
23	1.2	.25	.56	.76	.44	.10	.10	12	1.5	1.4	.16	.25
24	2.4	.22	7.6	.81	.44	.09	.10	1.1	1.0	.66	.22	.16
25	1.0	.20	1.2	.86	2.0	.09	3.8	.73	2.5	.48	.16	.14
26	2.5	.20	26	3.9	1.8	.08	2.1	7.0	.71	.37	1.4	.16
27	5.0	.18	4.9	13	.76	.49	.71	2.2	.52	.25	.71	.12
28	1.2	.18	2.6	5.3	.61	.31	.66	1.3	3.6	.77	.44	.14
29	.71	.18	4.7	8.0	------	.18	.48	1.0	2.6	11	.41	.10
30	.56	.20	7.0	41	------	.25	2.0	1.0	1.2	1.5	.25	.14
31	1.0	------	14	4.0	------	.12	------	.81	------	1.6	.22	------
TOTAL	59.51	35.83	77.19	115.18	28.37	6.84	19.29	31.68	23.16	51.81	52.48	5.54
MEAN	1.92	1.19	2.49	3.72	1.01	.22	.64	1.02	.77	1.67	1.69	.18
MAX	8.0	8.2	26	41	4.5	.71	3.8	12	3.6	17	20	1.5
MIN	.22	.18	.06	.31	.44	.08	.08	.09	.10	.22	.16	.08
AC-FT	118	71	153	228	56	14	38	63	46	103	104	11

CAL YR 1972 TOTAL 626.90 MEAN 1.71 MAX 38 MIN .06 AC-FT 1,240
WTR YR 1973 TOTAL 506.88 MEAN 1.39 MAX 41 MIN .06 AC-FT 1,010

PEAK DISCHARGE (BASE, 95 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
12-26	1430	3.42	212	7-29	0100	2.95	136
1-30	0130	3.67	262	8- 5	1300	2.68	101
5-22	0830	2.93	133	8-10	0200	2.75	110
7- 6	1300	2.82	119				

16960000 Alega Stream at Alega

LOCATION.--Lat 14°16'58" S., long 170°38'19" W., on left bank 300 ft (91 m) upstream from left-bank tributary, 0.2 mi (0.3 km) northwest of Alega, and 0.3 mi (0.5 km) upstream from mouth.

DRAINAGE AREA.--0.19 mi^2 (0.49 km^2).

PERIOD OF RECORD.--March 1958 to current year. Prior to July 1960, published as West Branch Alega Stream at Alega.

GAGE.--Water-stage recorder. Altitude of gage is 180 ft (55 m), from topographic map.

AVERAGE DISCHARGE.--15 years, 1.27 ft^3/s (0.0358 m^3/s), 920 acre-ft/yr (1.13 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 175 ft^3/s (4.96 m^3/s) Dec. 26, gage height, 4.04 ft (1.231 m), from rating curve extended above 8.3 ft^3/s (0.24 m^3/s); minimum, 0.21 ft^3/s (0.006 m^3/s) May 14, 15.
Period of record: Maximum discharge, 232 ft^3/s (6.57 m^3/s) Apr. 8, 1970, gage height, 4.48 ft (1.366 m), from recorded range in stage, from rating curve extended above 8.3 ft^3/s (0.24 m^3/s); minimum, 0.21 ft^3/s (0.006 m^3/s) May 14, 15, 1973.

REMARKS.--Records good. No diversion above station.

REVISIONS.--WSP 1937: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	4.5	.42	5.2	3.8	.72	.67	.42	.62	.96	.78	.47
2	1.2	1.5	.42	2.8	3.7	.67	.42	.37	.57	.84	.57	.52
3	2.7	4.5	.42	1.9	2.8	.67	.42	.32	.57	.52	.52	.42
4	5.1	2.6	.42	1.4	2.0	.62	.37	.27	.52	.52	.52	.42
5	2.0	1.6	.37	1.1	1.6	.57	.37	.27	.47	.42	6.9	.42
6	1.7	1.4	.37	1.0	1.4	.57	.60	.32	.42	6.7	6.0	.42
7	1.4	1.1	.37	.89	1.3	.52	.52	.27	.42	1.7	2.0	.37
8	1.5	1.1	.37	2.7	1.3	.52	.57	.27	.42	1.0	1.4	.37
9	1.2	.96	.37	1.1	1.2	.67	.57	.27	.42	.84	1.1	.42
10	1.1	.96	.42	.96	1.2	.52	.52	.27	.37	.72	2.7	.62
11	1.0	1.1	.37	.84	1.1	.52	.42	.27	.32	.62	1.7	.84
12	.96	.84	.32	.78	.96	.57	.37	.24	.37	1.0	1.1	.96
13	.84	1.3	.32	.72	.96	.57	.32	.24	.42	.90	1.0	.96
14	.78	.96	.32	.72	.84	.57	.32	.21	.37	.62	.90	.96
15	.84	.96	.32	.67	.78	.47	.32	.24	.37	.57	.84	.96
16	.72	.84	.32	.78	.78	.52	.32	.27	.37	.47	.78	.90
17	.72	.72	.32	.78	.78	.47	.27	.24	.37	.47	.72	.90
18	.67	.72	.32	.62	.72	.42	.27	.24	.37	.47	.62	.90
19	.62	.67	.32	1.1	.67	.47	.27	.24	.36	.42	.62	.90
20	1.4	.72	.32	.90	.67	.42	.27	.24	.37	.47	.62	.96
21	2.9	.62	.32	1.2	.67	.42	.27	.24	.47	.42	.57	.96
22	.96	.57	.67	.78	.57	.42	.24	.78	.52	.42	.52	1.1
23	.96	.52	.32	.84	.57	.42	.24	6.8	.84	.37	.52	.90
24	.90	.52	.77	.72	.52	.42	.24	.90	.57	.37	.47	.90
25	1.1	.47	.37	.72	.67	.37	.90	.62	.57	.32	.42	.96
26	2.0	.47	11	8.6	.98	.37	.62	3.7	1.3	.32	1.5	.90
27	3.0	.47	3.2	13	.78	.57	.37	1.9	.78	.32	.84	.90
28	1.3	.42	1.5	5.4	.72	.42	.37	1.1	2.2	.52	.57	.90
29	1.0	.42	2.5	6.5	------	.42	.37	.90	1.1	4.5	.52	.90
30	.90	.42	2.8	23	------	.42	1.5	.78	1.1	.84	.47	.90
31	.94	------	7.1	7.2	------	.62	------	.67	------	.78	.42	------
TOTAL	45.81	33.95	37.75	94.92	34.04	15.92	13.30	23.87	17.94	29.41	38.21	23.01
MEAN	1.48	1.13	1.22	3.06	1.22	.51	.44	.77	.60	.95	1.23	.77
MAX	5.1	4.5	11	23	3.8	.72	1.5	6.8	2.2	6.7	6.9	1.1
MIN	.62	.42	.32	.62	.52	.37	.24	.21	.32	.32	.42	.37
AC-FT	91	67	75	188	68	32	26	47	36	58	76	46

CAL YR 1972 TOTAL 467.29 MEAN 1.28 MAX 21 MIN .32 AC-FT 927
WTR YR 1973 TOTAL 408.13 MEAN 1.12 MAX 23 MIN .21 AC-FT 810

PEAK DISCHARGE (BASE, 52 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
12-26	1430	4.04	175	1-30	0400	2.80	60
1-27	0100	2.95	70				

16963900 Leafu Stream near Auasi

LOCATION.--Lat 14°16'27" S., long 170°34'26" E., on right bank 35 ft (11 m) upstream from upper village intake, 0.1 mi (0.2 km) north of Auasi and 0.2 mi (0.3 km) upstream from mouth.

DRAINAGE AREA.--0.11 mi² (0.28 km²).

PERIOD OF RECORD.--February 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 120 ft (37 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, 222 ft³/s (6.29 m³/s) July 29, gage height, 2.56 ft (0.780 m), from recorded range in stage, from rating curve extended as explained below; minimum, 0.04 ft³/s (0.001 m³/s) June 18, Sept. 16-30.
Period of record: Maximum discharge, 222 ft³/s (6.29 m³/s) July 29, 1973, gage height, 2.56 ft (0.780 m), from recorded range in stage, from rating curve extended above 5.0 ft³/s (0.14 m³/s); minimum, 0.04 ft³/s (0.001 m³/s) for several days in 1972 and 1973.

REMARKS.--Records good. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	3.3	.06	2.8	.80	.11	.08	.25	.13	.15	.25	.05
2	.34	.50	.05	.80	.73	.13	.07	.13	.11	.11	.15	.06
3	1.6	4.9	.05	.38	.60	.10	.06	.11	.10	.08	.10	.06
4	2.1	1.4	.05	.28	.40	.08	.06	.08	.08	.07	.12	.06
5	.38	.42	.05	.20	.30	.07	.05	.07	.08	.08	5.0	.06
6	.31	.25	.05	.15	.25	.07	.11	.07	.07	2.1	2.0	.06
7	.23	.18	.05	.15	.20	.07	.15	.07	.07	.46	1.2	.05
8	.20	.16	.05	.30	.50	.07	.37	.07	.07	.20	.80	.05
9	.15	.15	.06	.17	.50	.06	.18	.07	.07	.16	.75	.05
10	.13	.13	.06	.13	.30	.06	.15	.07	.06	.13	1.3	.07
11	.11	.15	.07	.11	.40	.06	.16	.07	.06	.11	1.0	.06
12	.11	.11	.07	.10	.20	.06	.08	.07	.06	.13	.40	.05
13	.11	.41	.06	.08	.15	.06	.07	.06	.06	.13	.25	.06
14	.11	.20	.06	.07	.13	.10	.07	.05	.05	.11	.15	.05
15	.11	.25	.07	.07	.13	.07	.07	.05	.06	.10	.12	.05
16	.10	.16	.07	.08	.11	.10	.07	.06	.06	.10	.10	.04
17	.08	.13	.07	.08	.11	.07	.06	.06	.05	.10	.09	.04
18	.08	.11	.06	.07	.11	.06	.06	.05	.04	.07	.08	.04
19	.08	.11	.06	.18	.11	.07	.06	.05	.05	.06	.07	.04
20	.31	.13	.06	.11	.10	.06	.06	.05	.05	.08	.07	.04
21	.92	.10	.06	.13	.10	.06	.05	.05	.05	.06	.06	.04
22	.18	.08	.10	.08	.10	.06	.05	.06	.08	.06	.06	.04
23	.16	.08	.07	.11	.08	.06	.05	1.2	.50	.05	.06	.04
24	.13	.08	.08	.16	.08	.06	.05	.18	.15	.05	.06	.04
25	.11	.08	.08	.23	.13	.06	.46	.11	.11	.05	.06	.04
26	.25	.08	4.7	2.3	.11	.05	.28	1.5	.07	.05	.10	.04
27	1.3	.07	.66	4.2	.10	.05	.18	1.3	.06	.05	.11	.04
28	.25	.06	.34	1.8	.08	.05	.20	.46	.73	.30	.07	.04
29	.16	.06	.84	2.9	------	.05	.18	.34	.38	7.0	.08	.04
30	.13	.06	.60	15	------	.05	.50	.23	.23	.80	.06	.04
31	.14	------	2.3	1.6	------	.07	------	.16	------	.40	.06	------
TOTAL	11.37	13.90	11.01	34.82	6.91	2.15	4.04	7.15	3.74	13.40	14.78	1.44
MEAN	.37	.46	.36	1.12	.25	.069	.13	.23	.12	.43	.48	.048
MAX	2.1	4.9	4.7	15	.80	.13	.50	1.5	.73	7.0	5.0	.07
MIN	.08	.06	.05	.07	.08	.05	.05	.05	.04	.05	.06	.04
AC-FT	23	28	22	69	14	4.3	8.0	14	7.4	27	29	2.9

WTR YR 1973 TOTAL 124.71 MEAN .34 MAX 15 MIN .04 AC-FT 247

PEAK DISCHARGE (BASE, 47 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
11- 1	0730	2.00	47	1-27	0100	2.03	52
11- 3	1630	2.21	89	1-30	0230	2.25	100
12-26	1900	2.17	79	7-29	Unknown	2.56	222

NOTE.--No gage-height record July 18 to Aug. 22.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of the stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1973

Station No.	Station name	Location	Drainage area sq mi (sq km)	Period of record	Measurements	
					Date	Discharge (cfs)
		Hawaii, Island of Kauai				
16011000	Waiakoali Stream near Waimea	Lat 22°07'42", long 159°37'27", 0.3 mi (0.5 km) upstream from mouth and 12 mi (19 km) northeast of Waimea.	1.58 (4.09)	1909-13≠, 1914-17, 1919-25≠, 1961-62, 1964, 1966-70, 1972-73	1-18-73 5-15-73 8-3-73	1.7 1.9 .86
16012000	Kauaikinana Stream near Waimea	Lat 22°08'12", long 159°37'58", 0.6 mi (1.0 km) upstream from mouth and 12 mi (19 km) northeast of Waimea.	a.84 (2.18)	1911-13, 1915-17, 1919-25≠, 1961-62, 1964, 1966-73	1-18-73 5-15-73 8-3-73	1.2 1.2 .57
16029500	Mokihana Stream near Waimea	Lat 21°59'38", long 159°40'07", 500 ft (152 m) upstream from mouth and 2.5 mi (4.0 km) north of Waimea.	4.83 (12.51)	1962, 1964-73	1-30-73 5-16-73 8-30-73	1.6 1.2 0
		Hawaii, Island of Oahu				
16201000	Right Branch of North Fork Kaukonahua Stream near Wahiawa	Lat 21°31'11", long 157°56'53" (revised), 200 ft (61 m) upstream from mouth and 4.5 mi (7.2 km) east of Leilehua High School in Wahiawa.	1.17 (3.03)	1913-53≠, 1960-62, 1966, 1968-73	12-7-72 4-27-73 9-10-73	.84 6.1 .51
16214000	Pearl Harbor Springs at Waiawa, near Pearl City	Lat 21°23'36", long 157°59'11", 0.7 mi (1.1 km) west of Pearl City and 1.5 mi (2.4 km) east of Waipahu Post Office.	-	1931-34≠, 1937-64≠, 1967-68, 1970-73	7-2-73 9-25-73	8.3 7.9
16224000	Pearl Harbor Springs at Kalauao, near Aiea	Lat 21°23'05", long 157°56'46", 300 ft (91 m) downstream from Highway 90 and 0.8 mi (1.3 km) west of Aiea Post Office.	-	1931-62≠, 1964-65≠, 1966-68, 1970-73	7-2-73 9-24-73	14 11
16264100	Kahanaiki Stream at Highway 61, near Kailua	Lat 21°22'49", long 157°46'06", at bridge on Highway 61 and 1.9 mi (3.1 km) southwest of Kailua Post Office.	1.45 (3.76)	1960-63, 1965-66, 1971-73	9-16-73	.40
*16274499	Keaahala Stream at Kamehameha Highway, at Kaneohe	Lat 21°25'13", long 157°48'16", 36 ft (11 m) upstream from bridge at Kamehameha Highway in Kaneohe.	.62 (1.61)	1961-63, 1965-66, 1971-73	9-16-73	2.9
16283400	Kahaluu Stream near Kahaluu	Lat 21°27'14", long 157°50'17", 600 ft (183 m) above Ahuimanu Stream and 0.6 mi (1.0 km) south of Kahaluu.	1.29 (3.34)	1962-63, 1966, 1972-73	9-21-73	.90

* Also a crest-stage partial-record station.
≠ Operated as a continuous-record gaging station.
a Revised.

Discharge measurements made at low-flow partial-record stations during water year 1973--Continued

Station No.	Station name	Location	Drainage area sq mi (sq km)	Period of record	Measurements	
					Date	Discharge (cfs)
		Hawaii, Island of Oahu--Continued				
*16283480	Ahuimanu Stream near Kahaluu	Lat 21°27'06" (revised), long 157°50'13", at bridge on Ahuimanu Road and 0.8 mi (1.3 km) south of Kahaluu.	2.31 (5.98)	1962-63, 1965-66, 1968, 1972-73	9-21-73	0.90
		Hawaii, Island of Molokai				
16403400	Kapuhi Stream at altitude 1,000 ft (305 m) near Pelekunu	Lat 21°07'50", long 156°53'02", 500 ft (152 m) upstream from Kawailena Stream, 2.2 mi (3.5 km) south of former village of Pelekunu, and 5.4 mi (8.7 km) north of Kamalo.	.51 (1.32)	1968-73	11-16-72 1-17-73 4-25-73 6-5-73 8-1-73 9-12-73	1.6 .96 1.9 1.5 .91 .67
16403500	Kawailena Stream near Pelekunu	Lat 20°07'52", long 156°53'05", 800 ft (244 m) upstream from mouth, 2.2 mi (3.5 km) south of former village of Pelekunu, and 5.5 mi (8.8 km) north of Kamalo.	.65 (1.68)	1968-73	11-16-72 1-17-73 4-25-73 6-5-73 8-1-73 9-12-73	1.4 1.3 2.3 1.8 1.3 1.2
16403700	Kawainui Stream at altitude 1,000 ft (305 m) near Pelekunu	Lat 20°07'46", long 156°52'31", 400 ft (122 m) upstream from Kawaipoko Stream, 2.4 mi (3.9 km) south of former village of Pelekunu, and 5.4 mi (8.7 km) north of Kamalo.	.79 (2.05)	1968-73	11-15-72 1-16-73 4-24-73 7-31-73 9-11-73	4.7 2.0 4.2 1.6 1.1
16403800	Kawaipoko Stream near Pelekunu	Lat 21°07'48", long 156°52'30", 300 ft (91 m) upstream from mouth, 2.4 mi (3.9 km) south of former village of Pelekunu, and 5.4 mi (8.7 km) north of Kamalo.	.26 (.67)	1968-73	11-15-72 1-16-73 4-24-73 7-31-73 9-11-73	1.1 .39 1.1 .33 .14
		Hawaii, Island of Maui				
*16502000	Hahalawe Gulch near Kipahulu	Lat 20°40'54", long 156°02'50", at old ditch intake, 0.7 mi (1.1 km) upstream from mouth, and 1.8 mi (2.9 km) northeast of Kipahulu Church.	.43 (1.11)	1927-69≠, 1970-73	11-21-72 1-10-73 5-16-73 6-28-73 8-15-73	2.4 1.0 1.3 2.4 .99
		Mariana Islands, Island of Saipan				
16800500	Hasngot Stream	Lat 15°12'44"N., long 145°46'23"E., 750 ft (229 m) upstream from right-bank tributary, 0.5 mi (0.8 km) upstream from mouth, and 3.4 mi (5.5 km) east of Garapan.	.43 (1.11)	1968-73	10-28-72 11-30-72 12-28-72 1-23-73 2-8-73 3-5-73 4-6-73 4-13-73 4-26-73 5-18-73 5-25-73 6-15-73 6-22-73 7-6-73 8-2-73 9-28-73	.22 .16 .14 .10 .10 .05 .06 .02 .05 .06 .05 .04 .02 .02 .12 .23
16802000	Talofofo Stream	Lat 15°13'04"N., long 145°46'44"E., 200 ft (61 m) downstream from confluence of South, Middle and North Forks, 2.4 mi (3.9 km) southeast of Tanapag, and 3.8 mi (6.1 km) east of Garapan.	1.56 (4.04)	1968-73	10-28-72 11-30-72	.30 .20
16802500	East Achugau Spring	Lat 15°14'06"N., long 145°46'43"E., at spring 0.4 mi (0.6 km) east of Mount Dogas and 2.0 mi (3.2 km) east of Tanapag.	-	1965, 1969-73	12-1-72 12-29-72 1-24-73 3-20-73	.22 .12 .16 0

* Also a creat-stage partial-record station.
≠ Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1973--Continued

Station No.	Station name	Location	Drainage area sq mi (sq km)	Period of record	Measurements	
					Date	Discharge (cfs)
		Mariana Islands, Island of Rota				
16806100	Asonan Springs	Lat 14°07'14"N., long 145°12'00"E., at base of cliff out of which the three springs emerge, 2.2 mi (3.5 km) west of Haaniya Cape, and 3.6 mi (5.8 km) east of Rota School.	-	1971-73	12-22-72	0.18
					1-19-73	.14
					1-31-73	.14
					3-30-73	.16
					5-1-73	.15
					5-9-73	.17
					5-12-73	.16
					5-20-73	.16
					5-26-73	.15
					6-3-73	.17
					6-9-73	.15
					6-16-73	.15
					6-24-73	.11
					7-1-73	.12
					7-8-73	.12
					7-15-73	.11
					7-22-73	.09
					8-5-73	.10
					8-19-73	.09
					9-2-73	.13
					9-9-73	.12
					9-16-73	.10
					9-23-73	.11
					9-30-73	.11
		Mariana Islands, Island of Guam				
16807300	Fonte River at dam, near Nimitz Hill	Lat 13°27'26"N., long 144°43'37"E., at old diversion dam, 0.4 mi (0.6 km) south of Navy Headquarters building on Nimitz Hill, and 1.3 mi (2.1 km) south of Coontz Junction at Adelup.	.69 (1.79)	1961-73	3-21-73	.14
					4-24-73	.04
					6-6-73	.06
16807700	Masso River at dam, near Piti	Lat 13°27'21"N., long 144°41'33"E., at foot of spillway of old earthfill dam 200 ft (61 m) downstream from left-bank tributary, and 0.2 mi (0.3 km) southeast of New Piti School.	.67 (1.74)	1962, 1964-65, 1967-70, 1973	3-21-73	.13
					4-24-73	.03
					6-6-73	.07
16808200	Faata Springs at Agat	Lat 13°22'35"N., long 144°39'47"E., 0.7 mi (1.1 km) south of Agat Junior High School and 0.8 mi (1.3 km) southwest of Santa Rita Catholic Church.	-	1963-73	3-21-73	.17
					4-24-73	.11
					6-6-73	.11
16808500	Taleyfac River near Agat	Lat 13°21'35"N., long 144°38'57"E., 800 ft (244 m) upstream from bridge on Highway 2 at Biyae and 1.7 mi (2.7 km) south of Mount Carmel School in Agat.	1.94 (5.02)	1959-70, 1972-73	3-21-73	.73
					4-24-73	.37
16809200	Cetti River above tributary, near Umatac	Lat 13°18'59"N., long 144°39'24"E., 20 ft (6.1 m) upstream from left-bank tributary, 0.2 mi (0.3 km) upstream from mouth, and 1.3 mi (2.1 km) north of Sanchez School in Umatac.	.37 (.96)	1961-62, 1964-66, 1969-70, 1972-73	3-23-73	.21
					4-30-73	.19
					6-1-73	.19
16809400	Cetti River near Umatac	Lat 13°18'58"N., long 144°39'23"E., 30 ft (9.1 m) downstream from left-bank tributary, 0.2 mi (0.3 km) upstream from mouth, and 1.3 mi (2.1 km) north of Sanchez School in Umatac.	.74 (1.92)	1960-67≠, 1968-70, 1972-73	3-23-73	.22
					4-30-73	.21
					6-1-73	.18
16809600	La Sa Fua River near Umatac	Lat 13°18'23"N., long 144°39'45"E., 0.6 mi (1.0 km) north of Sanchez School in Umatac and 0.8 mi (1.3 km) upstream from mouth.	1.06 (2.75)	1953-60≠, 1961-63, 1966, 1969-70, 1972-73	2-12-73	1.3
					3-23-73	.36
					4-30-73	.47
					6-1-73	.20
16812000	Madog River near Umatac	Lat 13°17'24"N., long 144°40'30"E., 50 ft (15 m) downstream from right-bank tributary and 1.1 mi (1.8 km) southeast of Sanchez School in Umatac.	.36 (.93)	1960-73	1-30-73	.15
					2-20-73	.20
					4-16-73	.07
					5-30-73	.09
16813000	Piga Stream near Umatac	Lat 13°17'56"N., long 144°40'49"E., on left bank of Aataban River right-bank tributary, 0.3 mi (0.5 km) west of Mount Bolsnoa, and 1.3 mi (2.1 km) east of Sanchez School in Umatac.	-	1955, 1961-65, 1967-73	2-5-73	.16
					2-20-73	.14
					4-16-73	.13
					5-10-73	.13
					5-29-73	.14

≠ Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1973--Continued

Station No.	Station name	Location	Drainage area sq mi (sq km)	Period of record	Measurements	
					Date	Discharge (cfs)
		Mariana Islands, Island of Guam--Continued				
16814000	Astaban River at Umatac	Lat 13°17'41"N., long 144°40'15"E., 200 ft (61 m) upstream from mouth and 0.7 mi (1.1 km) southeast of Sanchez School in Umatac.	0.38 (.98)	1960-73	1-30-73 4-16-73 5-30-73	0.13 .03 e.01
16815800	Laalaa River at Umatac	Lat 13°17'50"N., long 144°39'51"E., 100 ft (30 m) upstream from mouth and 0.2 mi (0.3 km) east of Sanchez School in Umatac.	.96 (2.49)	1960-73	2-20-73 4-23-73 5-30-73	.46 .15 .18
16817000	Toguan River near Umatac	Lat 13°17'03"N., long 144°39'36"E., at Highway 4 bridge, 100 ft (30 m) upstream from mouth, and 0.9 mi (1.4 km) south of Umatac.	.48 (1.24)	1952, 1960-73	2-20-73 4-23-73 5-30-73	.12 .03 0
16820000	Geus River above Siligin Spring tributary, near Merizo	Lat 13°16'38"N., long 144°40'56"E., 100 ft (30 m) upstream from Siligin Spring tributary, 0.1 mi (0.2 km) upstream from dam, and 1.5 mi (2.4 km) northeast of Merizo School.	.51 (1.32)	1960-73	2-1-73 2-20-73 4-23-73 5-1-73 5-31-73	.16 .13 .12 .15 .14
16820500	Siligin Spring near Merizo	Lat 13°16'38"N., long 144°40'55"E., 120 ft (37 m) upstream from mouth of Siligin Spring tributary, 0.1 mi (0.2 km) upstream from diversion dam, and 1.5 mi (2.4 km) northeast of Merizo School.	-	1954, 1961-73	1-3-73 2-1-73 2-20-73 3-2-73 4-13-73 5-30-73 7-3-73 8-31-73	.06 .04 .04 .04 .03 .01 <.01 .02
16820700	Geus River below Siligin Spring tributary, near Merizo	Lat 13°16'35"N., long 144°40'53"E., 100 ft (30 m) upstream from diversion dam, 300 ft (91 m) downstream from Siligin Spring tributary, and 1.4 mi (2.3 km) northeast of Merizo School.	.68 (1.76)	1962-73	2-1-73 2-20-73 4-23-73 5-1-73 5-16-73 5-31-73	.56 .38 .30 .26 .24 .25
16825000	Ajayan River near Inarajan	Lat 13°15'16"N., long 144°42'56"E., 0.4 mi (0.6 km) upstream from mouth and 2.4 mi (3.9 km) southwest of Inarajan Catholic Church.	1.16 (3.00)	1962-73	3-27-73 5-16-73 6-15-73	.26 .09 .12
16828000	Agfayan River near Inarajan	Lat 13°16'05"N., long 144°43'42"E., 0.6 mi (1.0 km) upstream from mouth and 1.2 mi (1.9 km) west of Inarajan Catholic Church.	1.66 (4.30)	1962-65, 1967-73	2-21-73 5-16-73 6-15-73	.20 .05 .10
16830000	Pasamano River near Inarajan	Lat 13°16'59"N., long 144°43'26"E., 25 ft (7.6 m) upstream from confluence with Yledigao River and 1.7 mi (2.7 km) northwest of Inarajan Catholic Church.	1.42 (3.68)	1960-73	3-22-73 5-2-73 5-31-73	.93 .53 .42
16831000	Yledigao River near Inarajan	Lat 13°17'00"N., long 144°43'26"E., 75 ft (23 m) upstream from confluence with Pasamano River and 1.7 mi (2.7 km) northwest of Inarajan Catholic Church.	1.08 (2.80)	1960-73	3-22-73 5-1-73 5-31-73	.85 .60 .51
16833000	Fintasa River near Inarajan	Lat 13°17'18"N., long 144°43'54"E., 100 ft (30 m) upstream from falls, 0.4 mi (0.6 km) upstream from confluence with Fensol River, and 1.5 mi (2.4 km) northwest of Inarajan Catholic Church.	.80 (2.07)	1960-73	12-18-72 1-19-73 2-21-73 5-2-73 5-31-73 7-10-73 8-1-73 8-31-73	1.8 .95 .89 .28 .22 .24 .26 1.3
16834000	Fensol River near Inarajan	Lat 13°17'09"N., long 144°44'08"E., 300 ft (91 m) upstream from confluence with Fintasa River and 1.1 mi (1.8 km) northwest of Inarajan Catholic Church.	.40 (1.04)	1960-73	2-21-73 5-2-73 5-31-73	.12 .09 .03
16842000	Asalonso River near Talofofo	Lat 13°19'43"N., long 144°45'34"E., 10 ft (3.0 m) downstream from left-bank tributary, 500 ft (152 m) downstream from bridge on Highway 4, and 1.6 mi (2.6 km) south of Talofofo.	1.85 (4.79)	1952, 1961-73	3-22-73 5-2-73 5-30-73	.39 .26 .28

e Estimated.

Discharge measurements made at low-flow partial-record stations during water year 1973--Continued

Station No.	Station name	Location	Drainage area sq mi (sq km)	Period of record	Measurements	
					Date	Discharge (cfs)
		Mariana Islands, Island of Guam--Continued				
16853000	Ugum River above Bubulao River, near Talofofo	Lat 13°19'08"N., long 144°43'46"E., 50 ft (15 m) upstream from Bubulao River, 0.8 mi (1.3 km) northwest of NASA Tracking Station, and 2.8 mi (4.5 km) southwest of Talofofo.	2.64 (6.84)	1961-70, 1973	3-22-73 5-2-73 6-7-73	2.3 1.4 2.0
16854000	Bubulao River near Talofofo	Lat 13°19'08"N., long 144°43'45"E., 50 ft (15 m) upstream from mouth, 0.8 mi (1.3 km) northwest of NASA Tracking Station, and 2.8 mi (4.5 km) southwest of Talofofo.	2.91 (7.54)	1961-70, 1973	3-22-73 5-2-73 6-7-73	3.9 2.1 2.3
16855000	Ugum River near Talofofo	Lat 13°20'02"N., long 144°44'55"E., 0.4 mi (0.6 km) upstream from confluence with Talofofo River, 1.3 mi (2.1 km) south of Talofofo, and 4.2 mi (6.8 km) north of Inarajan.	6.96 (18.02)	1952-71≠, 1973	3-22-73 5-2-73 6-7-73	7.7 4.3 5.6
16859000	Manengon River near Yona	Lat 13°24'02"N., long 144°45'01"E., 200 ft (61 m) downstream from left-bank tributary, 0.2 mi (0.3 km) upstream from mouth, and 1.7 mi (2.7 km) west of Saint Francis School at Yona.	2.01 (5.21)	1960-62, 1964-66, 1968-70, 1973	2-8-73 3-15-73 4-3-73 5-31-73	1.1 .49 .28 .20
16867000	Janum Spring near Yigo	Lat 13°30'56"N., long 144°54'47"E., in cave at sea level in limestone cliff on edge of reef, 1.3 mi (2.1 km) south of Mount Santa Rosa, and 2.2 mi (3.5 km) southeast of Yigo.	-	1953-56, 1958, 1960-62, 1964-65, 1967-70, 1973	4-5-73 5-4-73 6-1-73 7-2-73	2.7 3.1 3.2 3.5
		Caroline Islands, Palau Islands				
16890700	Almokan River, Babelthuap	Lat 7°31'12"N., long 134°33'51"E., 0.5 mi (0.8 km) upstream from unnamed tributary and 4.6 mi (7.4 km) northeast of Ngatpang village.	7.05 (18.26)	1973	2-28-73 3-17-73 4-21-73 5-11-73 6-1-73 6-23-73 7-16-73 8-11-73 9-5-73	4.7 3.4 16 22 43 56 57 45 128
16890800	Ngatpang River, Babelthuap	Lat 7°27'40"N., long 134°32'15"E., 0.2 mi (0.3 km) upstream from unnamed tributary and 0.4 mi (0.6 km) southeast of Ngatpang village.	.35 (.91)	1973	3-17-73 4-21-73 5-11-73 6-1-73 6-23-73 7-16-73 8-11-73 9-5-73	.09 .98 .74 5.9 1.5 1.2 1.3 5.3
16891320	Kumekumeyel River, Babelthuap	Lat 7°23'01"N., long 134°33'34"E., 100 ft (30 m) upstream from confluence with Gaden River, 1.1 mi (1.8 km) west of Mount Kahekobekushi, and 1.9 mi (3.1 km) north of Airai.	1.55 (4.02)	1970-73	10-19-72 11-10-72 12-8-72 12-26-72 1-23-73 2-13-73 3-8-73 3-28-73 4-20-73 5-15-73 6-7-73 6-29-73 7-27-73 9-15-73	7.9 4.1 5.7 2.7 1.4 .97 .52 .55 16 3.4 6.9 7.2 7.2 7.7
16891500	Geligal Marsh outlet, Babelthuap	Lat 7°36'07"N., long 134°38'08"E., 0.7 mi (1.1 km) northeast of Mount Gulitel and 1.6 mi (2.6 km) southwest of Uliman village.	.34 (.88)	1971-73	12-5-72 2-7-73 3-1-73 4-3-73 5-2-73 6-5-73	2.0 .26 .17 .13 .17 .70

≠ Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1973--Continued

Station No.	Station name	Location	Drainage area sq mi (sq km)	Period of record	Measurements	
					Date	Discharge (cfs)
		Caroline Islands, Palau Islands--Continued				
16891700	Unnamed west coast stream, Arakabesan	Lat 7°21'14"N., long 134°27'10"E., 0.1 mi (0.2 km) upstream from mouth and 0.15 mi (0.24 km) north of village of Arakabesan.	0.03 (.08)	1970-73	10-4-72	0.09
					10-25-72	.08
					11-28-72	.10
					12-11-72	.07
					1-3-73	.06
					2-5-73	.01
					3-2-73	.02
					3-14-73	.02
					4-4-73	.01
					5-7-73	.03
					5-29-73	.05
					6-21-73	.04
					7-13-73	.06
					8-10-73	.05
					8-30-73	.05
16891750	Unnamed south coast stream, Arakabesan	Lat 7°20'41"N., long 134°27'29"E., 0.1 mi (0.2 km) upstream from mouth and 0.6 mi (1.0 km) soutbeast of village of Arakabesan.	.03 (.08)	1970-73	10-4-72	.07
					10-25-72	.09
					11-28-72	.08
					12-11-72	.09
					1-3-73	.08
					2-5-73	.03
					3-2-73	.02
					3-14-73	.02
					4-4-73	.03
					5-7-73	.03
					5-29-73	.08
					7-21-73	.06
					8-10-73	.06
					8-30-73	.05
					9-28-73	.11
16891770	Unnamed west coast stream, Malakal	Lat 7°19'44"N., long 134°27'25"E., 200 ft (61 m) upstream from mouth and 1.5 mi (2.4 km) southwest of Madalai.	.01 (.03)	1971-73	10-5-72	.01
					10-26-72	<.01
					11-30-72	<.01
					12-12-72	.01
					1-3-73	0
					3-14-73	0
					4-4-73	0
					6-21-73	.01
					7-13-73	.02
					8-16-73	.01
					9-6-73	.02
16891780	Unnamed north coast stream, Malakal	Lat 7°19'51"N., long 134°27'33"E., 0.2 mi (0.3 km) upstream from mouth and 1.3 mi (2.1 km) southwest of Madalai.	.02 (.05)	1971-73	10-5-72	.02
					10-26-72	.01
					11-30-72	.01
					12-12-72	.01
					1-3-73	0
					2-27-73	0
					3-14-73	0
					4-4-73	0
					6-21-73	.01
					7-13-73	.02
					8-16-73	.01
					9-6-73	.03
		Caroline Islands, Yap Islands				
16892450	Para Swamp outlets, Yap	Lat 9°29'06"N., long 138°04'06"E. and lat 9°29'12"N., long 138°04'03"E., 0.9 mi (1.4 km) northwest of Lamer and 4.1 mi (6.6 km) southwest of Colonia.	.29 (.75)	1968-73	10-12-72	.06
16892460	Galngun Swamp outlet, Yap	Lat 9°29'02"N., long 138°04'23"E., 0.5 mi (0.8 km) northwest of Lamer and 3.9 mi (6.3 km) southwest of Colonia.	.16 (.41)	1968-73	10-12-72	.23
16892500	Tamaney Stream, Yap	Lat 9°29'45"N., long 138°05'34"E., at abandoned German dam, 0.5 mi (0.8 km) northwest of Inuf, and 2.3 mi (3.7 km) southwest of Colonia.	.21 (.54)	1968-73	10-12-72	.02
16892600	Ripu Stream, Yap	Lat 9°30'05"N., long 138°06'02"E., 1,000 ft (305 m) upstream from mouth and 1.6 mi (2.6 km) southwest of Colonia.	.24 (.62)	1968-73	10-12-72	.04
					7-16-73	.10

Discharge measurements made at low-flow partial-record stations during water year 1973--Continued

Station No.	Station name	Location	Drainage area sq mi (sq km)	Period of record	Measurements	
					Date	Discharge (cfs)
		Caroline Islands, Yap Islands--Continued				
16892700	Thalomar Stream, Yap	Lat 9°30'27"N., long 138°06'05"E., 5 ft (1.5 m) upstream from confluence with Dinay Stream and 1.4 mi (2.2 km) southwest of Colonia.	0.14 (.36)	1965, 1968-73	10-13-72	0.03
					1-11-73	.02
16893200	Mukong Stream, Gagil-Tomil	Lat 9°32'06"N., long 138°09'59"E., 0.2 mi (0.3 km) upstream from mouth and 1.6 mi (2.6 km) southwest of Gatjapar.	.36 (.93)	1972-73	10-12-72	1.1
					10-16-72	1.2
					12-19-72	1.1
					1-9-73	.28
					1-29-73	.21
					2-16-73	.06
					2-26-73	.12
					5-7-73	.18
					6-20-73	.35
					7-2-73	3.7
					8-15-73	.79
					8-29-73	1.2
16893310	Bileiy Stream, Gagil-Tomil	Lat 9°32'15"N., long 138°11'11"E., 0.3 mi (0.5 km) downstream from Bileiy Spring, 0.4 mi (0.6 km) upstream from mouth, and 0.4 mi (0.6 km) south of Gatjapar.	.15 (.39)	1968-73	10-12-72	.39
					1-9-73	.04
					7-11-73	e.02
		Caroline Islands, Truk Islands				
16895100	Afeibung Stream, Tol	Lat 7°20'55"N., long 151°37'22"E., 0.3 mi (0.5 km) upstream from mouth and 0.6 mi (1.0 km) northwest of Mount Tunuital.	.08 (.21)	1968-71, 1973	1-23-73	.02
					3-28-73	e.01
					5-21-73	.05
					6-6-73	.06
					9-1-73	.15
		Caroline Islands, Island of Ponape				
16897550	Meitik River	Lat 6°56'24"N., long 158°13'58"E., 0.3 mi (0.5 km) upstream from mouth and 1.4 mi (2.2 km) south of Tolenot Peak.	5.27 (13.65)	1971, 1973	1-15-73	10
					4-2-73	4.4
16897800	Tawenjokolo River at mouth	Lat 6°56'42"N., long 158°13'50"E., 0.1 mi (0.2 km) upstream from mouth and 1.4 mi (2.2 km) southwest of Tolenot Peak.	10.9 (28.2)	1970-71, 1973	1-15-73	39
					4-2-73	20
16898000	Lui River tributary No. 2	Lat 6°55'20"N., long 158°12'55"E., 0.3 mi (0.5 km) upstream from mouth and 1.5 mi (2.4 km) southeast of Rekisau.	.04 (.10)	1970-73	11-9-72	.18
					12-6-72	.23
16898100	Lui River tributary	Lat 6°57'04"N., long 158°13'15"E., at mouth and 1.4 mi (2.2 km) southwest of Tolenot Peak.	.36 (.93)	1970-73	12-4-72	.68
16898500	Pilenkiel River	Lat 6°56'23"N., long 158°11'26"E., 100 ft (30 m) downstream from right-bank tributary, 0.6 mi (1.0 km) west of Rekisau, and 0.9 mi (1.4 km) upstream from mouth.	1.93 (5.00)	1971-73	10-11-72	7.5
					11-7-72	3.1
					11-21-72	2.5
					12-5-72	6.5
					12-20-72	18
					1-3-73	5.1
					1-16-73	2.9
					1-31-73	1.8
					2-15-73	2.2
					2-28-73	4.4
					4-3-73	1.8
					7-10-73	7.9
					9-5-73	7.6
16898550	Kirictilang River	Lat 6°55'25"N., long 158°10'15"E., at small right-bank tributary, 0.1 mi (0.2 km) downstream from road bridge and 0.1 mi (0.2 km) southeast of Tolen Palikir Mountain.	.96 (2.49)	1972-73	10-11-72	4.4
					11-7-72	1.9
					11-21-72	1.1
					12-5-72	3.0
					12-20-72	15
					1-3-73	2.6
					1-16-73	1.6
					1-31-73	.88
					2-15-73	1.1
					2-28-73	1.8
					4-3-73	1.0
					7-10-73	3.3
					9-5-73	4.2

e Estimated.

Discharge measurements made at low-flow partial-record stations during water year 1973--Continued

Station No.	Station name	Location	Drainage area sq mi (sq km)	Period of record	Measurements	
					Date	Discharge (cfs)
		Caroline Islands, Island of Ponape--Continued				
16898700	Lehnmasi River	Lat 6°49'23"N., long 158°10'43"E., 0.8 mi (1.3 km) upstream from mouth and 0.8 mi (1.3 km) northwest of Kipar.	8.75 (22.66)	1971, 1973	1-25-73 2-26-73 4-6-73	19 28 32
16899000	Senpen River	Lat 6°52'33"N., long 158°16'53"E., 0.1 mi (0.2 km) downstream from confluence of two branches, 0.6 mi (1.0 km) southeast of Tolemarawi Peak, and 1.4 mi (2.2 km) southwest of Retau.	6.13 (15.88)	1971, 1973	1-19-73 2-27-73	21 65
16899100	Latav River	Lat 6°53'04"N., long 158°16'52"E., 0.1 mi (0.2 km) upstream from left-bank tributary, 0.5 mi (0.8 km) northeast of Tolemarawi Peak, and 1.3 mi (2.1 km) west of Retau.	2.54 (6.58)	1971, 1973	1-19-73 2-27-73	7.9 35
		Caroline Islands, Island of Kusaie				
16899830	Innem River	Lat 5°20'25"N., long 163°01'43"E., at concrete road bridge 0.3 mi (0.5 km) upstream from mouth and 1.9 mi (3.1 km) northeast of Mount Crozer.	2.51 (6.50)	1971-73	10-13-72 11-17-72 12-11-72 1-10-73 2-16-73 3-13-73 4-3-73 6-8-73 6-20-73 8-1-73 9-24-73	6.2 2.1 7.5 4.5 3.8 3.6 6.0 8.4 6.7 4.2 6.6
16899900	Yekula River	Lat 5°22'34"N., long 163°01'16"E., 0.2 mi (0.3 km) upstream from mouth and 1.3 mi (2.1 km) northeast of Mount Buache.	.37 (.96)	1971-73	12-11-72 1-10-73 1-15-73 3-13-73 4-3-73 4-24-73 6-20-73	.41 0 0 0 0 1.2 .50
		Samoa Islands, Island of Tutuila				
16934000	Leafu Stream near Leone	Lat 14°19'47"S., long 170°46'55"W., 30 ft (9.1 m) upstream from reservoir 0.9 mi (1.4 km) upstream from mouth, and 1.0 mi (1.6 km) north of Leone.	.69 (1.79)	1959-64, 1968, 1971-73	12-15-72	1.3
16935000	Fuafua Stream at Malaeloa	Lat 14°19'58"S., long 170°46'12"W., 40 ft (12 m) downstream from unnamed tributary, 0.8 mi (1.3 km) north of Malaeloa, and 2.1 mi (3.4 km) upstream from mouth.	.29 (.75)	1959-61, 1963-65, 1971, 1973	12-15-72	.23

Crest-stage partial-record station

Crest-stage partial-record station records for the State of Hawaii are published in an annual progress report entitled "An Investigation of Floods in Hawaii." The following teble contains annual maximum discharge for crest-stege stations not included in that report. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurementa of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, and discharge measurements may have been made for purposes of eetablishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record station during water year 1973

Station No.	Station name	Location	Drainage area (sq mi) (sq km)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
Mariana Islands, Island of Guam							
16808100	Nazo River at Santa Rita	Lat 13°23'28"N., long 144°40'00"E., at upstream side of road bridge at Santa Rosa and 0.5 mi (0.8 km) northwest of Santa Rita.	1.18 (3.06)	1972-73	9-17-72 9-11-73	- 4.87	a750 1,000

a Revised.

Discharge measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations are given in the following table.

Discharge measurements made at miscellaneous sites during water year 1973

Stream	Tributary to	Location	Drainage area sq mi (sq km)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Hawaii, Island of Molokai						
Left-bank tributary	Pilipililau Stream	Lat 21°08'11", long 156°53'07", 200 ft (61 m) upstream from mouth, 1.9 mi (3.1 km) south of former village of Pelekunu, and 5.8 mi (9.3 km) north of Kamalo.		1969-73	11-16-72 1-17-73 4-25-73	0.13 .14 .26
Waikolu Stream	Pacific Ocean	Lat 21°08'54", long 156°55'25", at altitude 780 ft (238 m), 0.4 mi (0.6 km) northwest of Molokai tunnel east portal, and 5.4 mi (8.7 km) southeast of lighthouse near Kalaupapa.		1960-61, 1969-73	11-8-72 1-19-73	1.1 1.2
Waikolu Stream	Pacific Ocean	Lat 21°09'10", long 156°55'33", at altitude 600 ft (183 m), 0.7 mi (1.1 km) northwest of Molokai tunnel east portal, and 5.1 mi (8.2 km) southeast of lighthouse near Kalaupapa.		1969-73	11-18-72 1-19-73	2.4 2.2
Hawaii, Island of Hawaii						
Olaa Flume Spring		Lat 19°42'00", long 155°11'13", 3.3 mi (5.3 km) northwest of Kaumana School and 7.0 mi (11.3 km) above Hilo.		1918-20≠, 1973	9-17-73	11

≠ Operated as a continuous-record gaging atation.

PART 2. WATER QUALITY RECORDS

HAWAII, ISLAND OF OAHU

16212800 KIPAPA STREAM NEAR WAHIAWA

LOCATION.--Lat 21°28'13", long 157°57'40", on left bank 1,700 ft (518 m) downstream from forest-reserve boundary, 4.9 mi (7.9 km) southeast of Wahiawa Post Office, and 6.3 mi (10.1 km) northeast of Waipahu.

DRAINAGE AREA.--4.29 mi² (11.11 km²).

PERIOD OF RECORD.--Chemical analyses: Water years 1970-73 (partial-record station).
Sediment records: Water years 1970-71 (partial-record station), February to September 1973.

EXTREMES.--February to September 1973.
Sediment concentrations: Maximum daily 76 mg/l July 9; minimum daily, 1 mg/l on many days during the period.
Sediment discharge: Maximum daily, 33 tons (30 tonnes) July 9; minimum daily, 0 tons (0 tonnes) on many days.

REMARKS.--Chemical analyses for this station on pages 244-246.

SUSPENDED-SEDIMENT DISCHARGE, FEBRUARY TO SEPTEMBER 1973

	FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.25	2	0	.55	3	0
2	.41	3	0	.60	3	0
3	21	54	8.4	1.1	8	.02
4	3.0	13	.11	1.9	7	.04
5	.86	3	.01	1.2	5	.02
6	.45	2	0	2.0	5	.03
7	.30	2	0	.90	2	0
8	.25	1	0	8.0	10	.47
9	.25	1	0	4.1	6	.07
10	.25	1	0	2.2	4	.02
11	.17	1	0	21	16	1.3
12	.11	1	0	9.4	3	.08
13	.03	1	0	7.8	3	.06
14	.37	1	0	4.3	3	.03
15	.54	1	0	2.5	2	.01
16	.33	1	0	3.9	2	.02
17	.49	2	0	4.3	2	.02
18	.37	2	0	3.5	3	.03
19	.27	2	0	6.4	4	.07
20	24	17	3.9	25	7	.47
21	18	12	.58	10	4	.11
22	1.7	4	.02	5.3	3	.04
23	.72	4	.01	30	14	1.1
24	9.1	6	.27	9.1	4	.10
25	26	9	.63	4.9	2	.03
26	3.0	5	.04	5.1	3	.04
27	1.1	4	.01	5.8	3	.05
28	.66	3	.01	4.3	2	.02
29	--	--	--	6.3	3	.05
30	--	--	--	13	5	.18
31	--	--	--	11	6	.18
TOTAL	113.90	--	13.99	215.45	--	4.66

I6212800 KIPAPA STREAM NEAR WAHIAWA--Continued

SUSPENDED-SEDIMENT DISCHARGE, FEBRUARY TO SEPTEMBER 1973

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	8.5	4	.09	2.0	2	.01	1.4	3	.01
2	3.4	3	.03	1.7	2	.01	1.2	2	.01
3	2.5	2	.01	1.8	2	.01	1.1	2	.01
4	2.5	3	.02	1.9	2	.01	1.1	1	0
5	2.2	2	.01	1.1	2	.01	2.2	3	.02
6	1.4	1	0	1.1	1	0	3.0	4	.03
7	1.1	1	0	.98	1	0	7.5	7	.14
8	.98	1	0	1.1	2	.01	3.5	3	.03
9	3.4	3	.03	17	30	2.4	1.6	2	.01
10	125	68	29	5.3	7	.10	1.2	2	.01
11	16	7	.30	17	19	2.0	1.1	2	.01
12	26	10	1.1	11	18	.53	1.4	2	.01
13	15	5	.20	4.3	6	.07	15	18	.73
14	6.0	2	.03	1.9	4	.02	27	31	3.0
15	6.0	4	.06	1.4	3	.01	5.3	8	.11
16	4.5	4	.05	1.1	2	.01	58	65	19
17	10	9	.24	1.1	3	.01	20	25	1.4
18	4.5	3	.04	8.1	12	.26	6.3	12	.20
19	2.8	2	.02	6.4	9	.16	7.0	10	.19
20	3.4	3	.03	27	46	6.7	4.5	4	.05
21	26	39	3.7	13	12	.42	2.5	3	.02
22	11	7	.21	14	9	.34	1.8	2	.01
23	6.8	5	.09	7.3	5	.10	7.7	8	.17
24	4.3	3	.03	23	40	5.2	2.0	3	.02
25	3.2	2	.02	13	18	.63	1.4	3	.01
26	3.2	3	.03	4.5	8	.10	1.1	2	.01
27	3.4	2	.02	3.2	5	.04	.98	2	.01
28	3.6	3	.03	2.4	3	.02	.90	2	0
29	3.2	2	.02	2.7	3	.02	.84	2	0
30	2.2	1	.01	1.9	3	.02	2.0	6	.03
31	--	--	--	1.6	3	.01	--	--	--
TOTAL	312.08	--	35.42	199.88	--	19.23	190.62	--	25.25

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	31	31	5.8	.60	2	0	.30	2	0
2	19	12	.62	.90	3	.01	.52	4	.01
3	17	15	.69	2.2	3	.02	.98	3	.01
4	10	10	.27	15	60	4.9	.50	3	0
5	4.1	5	.06	3.1	20	.17	1.6	5	.02
6	3.6	3	.03	4.2	22	.25	.98	3	.01
7	2.5	3	.02	14	22	.83	.73	6	.01
8	9.4	7	.18	2.7	6	.04	.38	5	.01
9	78	76	33	1.5	4	.02	.24	4	0
10	49	59	19	11	36	2.0	.16	3	0
11	18	8	.39	2.2	14	.08	.12	3	0
12	8.1	5	.11	2.7	10	.07	.10	3	0
13	6.8	4	.07	1.5	5	.02	.10	3	0
14	3.9	2	.02	.90	3	.01	9.7	46	2.0
15	15	10	.41	.98	4	.01	2.0	16	.09
16	5.6	7	.11	.98	4	.01	.66	8	.01
17	4.3	5	.06	5.2	10	.14	.38	4	0
18	2.8	3	.02	2.0	4	.02	.38	5	.01
19	2.0	2	.01	.84	3	.01	.27	4	0
20	1.7	2	.01	.78	3	.01	12	39	3.2
21	1.5	2	.01	.60	2	0	3.4	26	.24
22	1.3	2	.01	.68	4	.01	1.2	12	.04
23	1.2	3	.01	4.0	8	.09	17	68	9.0
24	1.4	4	.02	4.4	10	.12	19	47	3.4
25	1.9	4	.02	.98	5	.01	3.9	20	.21
26	1.8	3	.01	.50	4	.01	1.3	14	.05
27	1.8	2	.01	.46	3	0	3.7	16	.16
28	1.1	2	.01	.42	3	0	9.3	20	.50
29	1.1	2	.01	.38	3	0	20	48	5.0
30	.98	2	.01	.34	2	0	3.4	16	.15
31	.72	2	0	.30	2	0	--	--	--
TOTAL	306.60	--	61.00	86.34	--	8.86	114.30	--	24.13

TOTAL DISCHARGE FOR PERIOD (CFS-DAYS) 1,539.25
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR PERIOD (TONS) 192.54

16213000 WAIKELE STREAM AT WAIPAHU

LOCATION.--Lat 21°23'11", long 158°00'49", on left bank 300 ft (91 m) upstream from bridge on Highway 90 and 0.3 mi (0.5 km) southwest of sugar refinery at Waipahu.

DRAINAGE AREA.--45.7 mi^2 (118.4 km^2).

PERIOD OF RECORD.--Chemical analyses: Water years 1969-73 (partial-record station), July 1972 to September 1973.
Specific conductance: April to September 1973.
Water temperatures: April to September 1973.
Sediment records: Water years 1967-72 (partial-record station), July 1972 to September 1973.

EXTREMES.--1972-73:
Sediment concentrations: Maximum daily, 515 mg/l Oct. 4; minimum daily, 7 mg/l Dec. 7, 11, 12.
Sediment discharge: Maximum daily, 682 tons (619 tonnes) Oct. 4; minimum daily, 0.21 ton (0.19 tonnes) Dec. 7.

Period of record:
Sediment concentrations: Maximum daily, 515 mg/l Oct. 4, 1972; minimum daily, 7 mg/l Dec. 7, 11, 12, 1972.
Sediment discharge: Maximum daily, 682 tons (619 tonnes) Oct. 4, 1972; minimum daily, 0.21 ton (0.19 tonnes) Dec. 7, 1972.

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	DISSOLVED OXYGEN (MG/L)
Feb., 1973		
27...	0945	8.6
Mar.		
06...	1430	9.8
06...	1500	7.6
06...	1600	8.9
06...	1700	8.4
06...	1800	10.1
06...	1900	7.3
06...	2000	6.6
06...	2100	6.6
06...	2200	7.6
06...	2300	6.0
06...	2400	5.4
07...	0100	5.2
07...	0200	5.7
07...	0300	5.1
07...	0400	5.4
07...	0500	5.2
07...	0600	5.2
07...	0700	5.0
07...	0800	5.0
07...	0900	6.0
07...	1000	7.0
07...	1100	7.7
07...	1200	8.0
07...	1300	8.2
07...	1400	8.6
07...	1500	8.8
07...	1600	8.3
07...	1700	8.3
07...	1800	7.7
07...	1900	8.5
07...	2000	7.6
07...	2100	7.3
Mar., 1973		
07...	2200	6.6
07...	2300	6.8
07...	2400	6.2
08...	0100	6.8
08...	0200	6.7
08...	0300	6.5
08...	0400	7.2
08...	0500	6.9
08...	0600	6.1
08...	0700	6.3
08...	0800	6.3
08...	0900	6.6
08...	1000	6.8
08...	1100	7.0
Apr.		
24...	1000	5.4
June		
25...	0940	6.0
26...	1000	5.1
26...	1100	5.1
27...	1100	6.4
27...	1200	6.1
27...	1300	6.5
27...	1400	6.5
27...	1500	5.5
27...	1600	4.8
27...	1700	4.6
27...	1800	4.2
27...	1900	4.6
27...	2000	5.2
27...	2100	4.1
27...	2200	4.4
27...	2300	4.3
27...	2400	4.4
June, 1973		
28...	0100	4.2
28...	0200	4.2
28...	0300	4.3
28...	0400	4.0
28...	0500	4.6
28...	0600	4.4
28...	0700	4.3
28...	0800	4.8
28...	0900	6.4
28...	1000	6.9
28...	1100	6.5
28...	1200	7.3
28...	1300	9.2
28...	1400	9.4
28...	1500	7.5
28...	1600	8.1
28...	1700	6.2
28...	1800	6.3
28...	1900	5.3
28...	2000	5.1
28...	2100	5.0
28...	2200	4.5
28...	2300	4.5
28...	2400	4.4
29...	0100	3.1
29...	0200	2.8
29...	0300	3.6
29...	0400	4.0
29...	0500	3.8
29...	0600	4.0
29...	0700	4.2
29...	0800	3.6
29...	0900	4.1

16213000 WAIKELE STREAM AT WAIPAHU--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)
JAN,												
30...	1000	13	65	11	10	64	3.5	83	0	24	83	.4
30...	1000	--	--	--	--	--	--	--	--	--	--	--
FEB,												
27...	0945	21	55	9.8	8.8	57	2.7	77	0	23	75	.3
27...	0945	21	--	--	--	--	--	--	--	--	--	--
MAR,												
27...	1100	17	47	9.7	7.3	46	2.8	62	0	18	58	.3
APR,												
24...	1000	20	42	11	7.1	46	2.8	70	0	15	54	.1
24...	1000	20	--	--	--	--	--	--	--	--	--	--
MAY												
24...	1100	--	--	--	--	--	--	--	--	--	--	--
24...	1100	30	--	--	--	--	--	--	--	--	--	--
24...	1115	30	42	9.0	7.0	44	2.6	58	0	16	58	.3
JUNE												
26...	1100	13	57	10	8.7	56	3.0	86	0	23	73	.3
26...	1100	14	--	--	--	--	--	--	--	--	--	--
28...	1000	--	--	--	--	--	--	--	--	--	--	--
JULY												
25...	0800	9.7	54	10	8.7	58	3.0	81	0	22	70	.3
25...	0800	9.7	--	--	--	--	--	--	--	--	--	--
AUG,												
29...	0915	10	63	13	9.7	67	3.6	97	0	22	76	.2
SEP,												
20...	0945	10	62	11	9.4	67	3.3	87	0	21	79	.3

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TURBIDITY (JTU)	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)
JAN,												
30...	--	.63	1.1	326	69	1	474	7.1	5	6800	42	500
30...	--	--	--	--	--	--	490	7.0	--	--	--	--
FEB,												
27...	1.9	.14	.79	278	61	0	419	7.4	5	53000	420	570
27...	--	--	--	--	--	--	400	6.8	--	--	--	--
MAR,												
27...	2.0	.33	1.5	243	54	3	340	7.0	8	9500	22	260
APR,												
24...	1.1	.50	1.0	230	57	0	337	6.8	30	--	38	3200
24...	--	--	--	--	--	--	340	6.8	--	--	--	--
MAY												
24...	--	--	--	--	--	--	--	--	--	--	140	440
24...	--	--	--	--	--	--	320	6.6	--	--	--	--
24...	1.1	--	--	234	51	4	336	6.0	20	--	--	--
JUNE												
26...	1.6	.38	1.1	309	61	0	438	7.8	10	--	--	--
26...	--	--	--	--	--	--	420	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	690	120	--
JULY												
25...	2.1	.36	1.8	288	61	0	425	7.8	9	ND	ND	ND
25...	--	--	--	--	--	--	420	7.3	--	--	--	--
AUG,												
29...	1.3	.16	1.3	311	72	0	491	7.2	6	24000	ND	780
SEP,												
20...	1.6	.23	1.4	323	66	0	448	7.1	10	13000	510	590

HAWAII, ISLAND OF OAHU

16213000 WAIKELE STREAM AT WAIPAHU--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TOTAL NITRITE PLUS NITRATE IN BOT, DEP, (MG/KG)	TOTAL KJEL, NITROGEN IN BOTTOM DEP, (MG/KG)	TOTAL PHOSPHORUS IN BOTTOM DEPOSITS (MG/KG)	TOTAL ORGANIC CARBON (C) (MG/L)	ORGANIC CARBON IN BED MATERIAL (C) (G/KG)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL ARSENIC IN BOTTOM DEPOSITS (UG/G)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CADMIUM (CD) (UG/L)
MAR, 27...	--	--	--	2.5	--	3	20	--	0	<10
JUNE 26...	.0	4100	220	2.5	27	3	4	1	0	<10
SEP, 20...	--	--	--	2.0	--	1	2	--	0	<10

DATE	TOTAL CADMIUM IN BOTTOM DEPOSITS (UG/G)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL CHROMIUM IN BOTTOM DEPOSITS (UG/G)	DISSOLVED COBALT (CO) (UG/L)	TOTAL COBALT (CO) (UG/L)	TOTAL COBALT IN BOTTOM DEPOSITS (UG/G)	DISSOLVED COPPER (CU) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM DEPOSITS (UG/G)
MAR, 27...	--	0	0	--	0	<20	--	9	20	--
JUNE 26...	1	0	10	38	1	<20	42	10	10	220
SEP, 20...	--	0	0	--	0	0	--	4	<10	--

DATE	DISSOLVED IRON (FE) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL IRON IN BOTTOM DEPOSITS (UG/G)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LEAD IN BOTTOM DEPOSITS (UG/G)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	TOTAL MANGANESE IN BOTTOM DEPOSITS (UG/G)
MAR, 27...	50	570	--	1	<100	--	30	40	--
JUNE 26...	50	1200	5800	4	<100	80	30	70	1300
SEP, 20...	70	930	--	4	<50	--	90	90	--

DATE	DISSOLVED ZINC (ZN) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM DEPOSITS (UG/G)	DISSOLVED SELENIUM (SE) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	TOTAL SELENIUM IN BOTTOM DEPOSITS (UG/G)	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL MERCURY IN BOTTOM DEPOSITS (UG/G)
MAR, 27...	10	10	--	1	2	--	.0	.1	--
JUNE 26...	10	20	99	3	3	10	.0	.0	.1
SEP, 20...	30	30	--	8	12	--	.0	.0	--

16213000 WAIKELE STREAM AT WAIPAHU--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25° C), APRIL TO SEPTEMBER 1973

	APRIL			MAY			JUNE		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	470	436	453	453	447	450
2	---	---	---	438	416	426	524	449	475
3	---	---	---	421	412	417	533	499	523
4	---	---	---	432	421	427	492	440	454
5	---	---	---	445	429	435	442	414	433
6	504	445	464	531	451	505	427	403	414
7	492	460	470	533	451	503	410	387	397
8	509	490	497	458	429	446	408	383	395
9	511	479	497	436	297	415	470	385	410
10	477	40	205	306	281	294	488	442	477
11	230	95	158	342	306	326	440	401	412
12	315	234	275	345	178	218	416	405	411
13	254	160	186	349	277	299	427	416	422
14	342	193	254	399	318	351	425	210	318
15	392	342	359	419	356	376	308	234	268
16	405	374	391	483	421	455	320	120	253
17	425	367	402	522	423	469	266	140	184
18	354	293	306	421	396	410	288	150	217
19	372	311	347	396	210	286	347	290	320
20	427	351	388	311	160	266	349	299	316
21	468	329	414	165	140	152	358	306	328
22	354	327	341	213	163	195	390	360	371
23	396	356	385	252	198	220	462	392	418
24	394	378	385	336	254	291	486	434	470
25	412	396	402	279	203	246	434	392	404
26	416	412	415	363	259	292	410	399	406
27	421	408	416	399	268	359	432	410	417
28	425	394	404	390	266	311	479	432	447
29	475	427	450	483	390	433	574	481	520
30	483	473	478	481	438	466	535	473	488
31	---	---	---	481	451	469	---	---	---
MONTH	---	---	---	533	140	362	574	120	394

	JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	598	293	521	464	425	442	494	453	469
2	297	213	259	442	416	429	494	458	472
3	268	145	196	440	421	431	473	460	467
4	252	195	220	499	412	457	460	453	457
5	349	257	294	387	290	307	458	453	454
6	381	347	355	360	302	340	460	453	456
7	396	378	384	394	313	361	460	442	452
8	460	396	428	347	297	312	458	442	453
9	473	175	358	383	351	365	458	442	450
10	215	143	169	425	385	400	464	451	458
11	252	220	241	473	408	436	---	---	---
12	322	227	262	483	436	464	---	---	---
13	358	322	341	432	416	422	---	---	---
14	410	338	355	442	425	435	---	---	---
15	460	416	440	464	438	448	---	---	---
16	396	293	317	483	458	467	---	---	---
17	347	308	327	501	442	472	---	---	---
18	360	351	358	529	458	488	477	455	464
19	392	354	363	568	486	535	483	464	472
20	427	392	407	481	451	460	486	460	466
21	436	410	421	460	447	453	535	464	494
22	455	429	440	460	449	455	524	445	469
23	442	414	426	470	458	467	524	447	483
24	436	419	428	464	447	457	455	284	367
25	429	410	420	511	445	469	383	270	329
26	438	403	425	533	499	525	385	354	366
27	401	374	388	492	445	460	479	381	413
28	470	392	423	453	445	448	503	447	462
29	488	449	472	468	445	459	464	412	443
30	451	434	441	488	468	481	405	329	355
31	442	425	435	488	455	477	---	---	---
MONTH	598	143	365	568	290	439	---	---	---

HAWAII, ISLAND OF OAHU

16213000 WAIKELE STREAM AT WAIPAHU--Continued

TEMPERATURE (°C) OF WATER, APRIL TO SEPTEMBER 1973

	APRIL			MAY			JUNE		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	23.5	21.5	22.5	26.0	23.0	24.0
2	---	---	---	24.5	21.0	22.5	27.5	22.5	25.0
3	---	---	---	25.0	21.5	23.0	28.0	23.5	26.5
4	---	---	---	25.0	21.5	23.0	25.0	22.5	23.5
5	---	---	---	27.0	21.5	23.5	25.0	22.5	23.5
6	22.0	20.5	21.5	30.0	26.5	28.0	25.5	22.5	23.5
7	22.5	19.5	21.0	27.5	23.0	26.0	25.0	22.5	23.5
8	23.0	21.0	22.0	25.0	21.5	23.0	24.5	22.5	23.5
9	24.5	21.5	22.5	25.0	22.0	23.0	28.0	22.5	24.5
10	22.0	19.5	20.5	25.0	21.5	23.0	28.5	24.0	26.5
11	23.0	19.0	21.0	25.5	22.0	23.5	25.5	23.0	24.0
12	23.0	21.0	21.5	24.5	22.0	23.0	25.0	22.5	23.5
13	24.0	20.5	22.0	24.0	21.5	23.0	24.5	22.5	23.5
14	25.0	22.0	23.5	25.0	21.0	22.5	25.0	22.5	23.5
15	24.0	22.5	23.5	27.0	20.5	23.0	25.5	23.0	24.0
16	23.5	22.5	23.0	27.5	24.5	26.5	26.0	23.5	24.0
17	24.5	22.0	23.0	28.0	22.5	25.5	26.5	23.5	24.5
18	24.0	21.5	22.5	24.0	21.5	22.5	25.0	22.5	23.5
19	23.5	21.5	22.5	25.0	21.5	23.0	25.0	22.5	23.5
20	23.5	21.0	22.0	24.5	22.5	23.5	26.0	22.5	24.0
21	24.5	21.5	23.0	23.5	21.5	22.5	25.5	23.0	24.0
22	25.5	22.5	24.0	24.5	22.0	23.0	24.5	22.0	23.5
23	25.5	23.5	24.5	25.0	22.0	23.0	28.0	22.0	25.0
24	25.0	23.0	24.0	27.5	23.0	24.5	28.0	24.0	27.0
25	24.0	22.0	23.0	27.5	22.0	24.5	26.0	23.0	24.0
26	24.0	22.0	23.0	25.5	23.0	24.0	25.0	22.5	23.5
27	24.5	21.5	22.5	26.5	22.0	24.5	25.0	21.5	23.0
28	26.0	21.5	23.5	27.5	22.0	24.0	24.0	21.5	22.5
29	28.0	25.5	26.5	28.0	22.5	25.0	25.0	22.0	23.0
30	25.5	22.0	24.0	28.0	23.0	25.0	26.0	22.0	23.5
31	---	---	---	25.5	22.5	24.0	---	---	---
MONTH	---	---	---	30.0	20.5	24.0	28.5	21.5	24.0

	JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	26.5	23.0	25.0	24.5	21.5	23.0	28.0	22.0	24.0
2	26.0	22.0	23.5	24.0	22.0	23.0	26.5	22.0	23.5
3	25.0	23.0	24.0	24.5	21.5	22.5	25.5	23.0	24.0
4	25.0	22.5	24.0	26.5	22.0	24.5	24.5	22.0	23.0
5	25.5	23.0	24.0	25.5	23.5	24.5	25.0	21.5	23.0
6	26.0	23.0	24.0	25.0	23.5	24.0	25.0	22.0	23.5
7	25.5	23.0	24.0	26.0	22.5	24.0	25.0	22.0	23.5
8	27.5	23.0	25.0	25.5	23.0	24.0	25.0	22.0	23.5
9	25.5	23.5	24.0	24.5	22.0	23.0	25.0	21.5	23.5
10	26.5	22.5	24.0	25.0	22.0	23.5	24.5	21.5	23.0
11	26.0	23.5	24.5	27.0	22.0	25.0	---	---	---
12	27.0	23.5	25.0	27.0	23.5	25.5	---	---	---
13	26.0	23.5	24.5	25.0	22.5	23.5	---	---	---
14	27.5	23.5	25.5	24.5	22.0	23.0	---	---	---
15	28.0	24.5	25.5	25.0	22.0	23.5	---	---	---
16	25.5	23.5	24.5	24.5	22.0	23.5	---	---	---
17	26.0	22.5	24.0	25.5	22.5	23.5	---	---	---
18	25.5	22.0	23.5	26.5	22.0	23.5	25.0	21.5	23.0
19	25.0	22.0	23.5	26.5	21.5	24.0	24.5	21.5	23.0
20	25.0	22.0	23.0	24.5	22.5	23.5	26.0	21.0	23.5
21	25.5	21.5	23.5	25.0	22.0	23.5	27.0	23.5	25.5
22	25.0	22.0	23.5	23.5	22.0	22.5	25.0	22.0	23.5
23	24.5	22.0	23.0	23.5	22.0	22.5	25.0	23.5	24.5
24	25.0	22.0	23.5	23.5	22.0	23.0	25.5	22.5	24.0
25	25.0	22.5	23.5	28.0	22.5	24.5	25.0	23.0	24.0
26	25.0	22.0	23.5	28.0	24.0	26.5	25.0	21.5	23.0
27	25.5	22.5	23.5	25.0	22.5	24.0	24.5	22.0	23.0
28	27.5	22.5	25.0	25.5	22.5	23.5	24.5	21.5	23.0
29	26.5	23.5	25.5	25.0	23.0	24.0	26.0	22.5	24.0
30	25.0	22.5	23.5	25.5	22.0	23.5	26.0	23.0	25.0
31	24.5	22.0	23.5	25.0	22.5	23.5	---	---	---
MONTH	28.0	21.5	24.0	28.0	21.5	23.5	---	---	---

16213000 WAIKELE STREAM AT WAIPAHU--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	12	13	.42	13	11	.39	12	8	.26
2	12	13	.42	13	20	.70	12	8	.26
3	26	99	48	12	17	.55	12	9	.29
4	241	515	682	11	20	.59	12	9	.29
5	40	28	3.0	12	15	.49	11	9	.27
6	18	18	.87	45	62	12	11	8	.24
7	14	14	.53	113	175	73	11	7	.21
8	15	14	.57	27	14	1.0	11	8	.24
9	12	13	.42	28	13	.98	12	8	.26
10	15	16	.65	37	13	1.3	12	8	.26
11	15	16	.65	31	12	1.0	12	7	.23
12	10	14	.38	28	13	.98	12	7	.23
13	11	14	.42	18	13	.63	13	9	.32
14	15	13	.53	14	13	.49	12	9	.29
15	22	9	.53	14	13	.49	12	10	.32
16	12	11	.36	12	12	.39	12	10	.32
17	13	15	.53	14	11	.42	23	18	1.1
18	11	11	.33	12	11	.36	61	230	55
19	11	10	.30	13	13	.46	77	221	51
20	9.8	11	.29	12	12	.39	25	35	2.4
21	9.6	11	.29	11	11	.33	22	21	1.2
22	10	11	.30	11	12	.36	19	17	.87
23	9.2	11	.27	12	14	.45	20	19	1.0
24	8.9	10	.24	12	13	.42	15	19	.77
25	9.3	9	.23	13	12	.42	15	15	.61
26	11	12	.36	19	13	.67	15	14	.57
27	10	12	.32	12	12	.39	15	15	.61
28	25	74	25	12	13	.42	15	16	.65
29	47	162	23	13	12	.42	15	15	.61
30	20	18	.97	12	9	.29	19	15	.77
31	13	12	.42	--	--	--	24	14	.91
TOTAL	707.8	--	792.60	606	--	100.78	569	--	122.36

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	24	14	.91	11	18	.53	19	22	1.1
2	24	14	.91	11	18	.53	17	22	1.0
3	20	13	.70	22	24	1.4	24	18	1.2
4	16	15	.65	30	22	1.8	30	16	1.3
5	14	15	.57	20	18	.97	28	16	1.2
6	17	20	.92	16	18	.78	18	17	.83
7	16	18	.78	16	17	.73	19	17	.87
8	15	20	.81	18	17	.83	19	16	.82
9	14	18	.68	21	18	1.0	18	16	.78
10	14	19	.72	19	18	.92	18	16	.78
11	13	19	.67	18	18	.87	32	40	3.5
12	14	18	.68	20	18	.97	33	32	2.9
13	15	17	.69	20	17	.92	23	20	1.2
14	15	16	.65	17	17	.78	16	18	.78
15	13	16	.56	17	17	.78	11	17	.50
16	13	15	.53	17	18	.83	12	15	.49
17	13	13	.46	15	16	.65	25	18	1.2
18	13	15	.53	14	16	.60	22	18	1.1
19	13	17	.60	17	16	.73	19	18	.92
20	14	17	.64	19	16	.82	19	18	.92
21	18	16	.78	43	40	4.6	32	35	3.0
22	18	17	.83	20	22	1.2	18	27	1.3
23	12	16	.52	20	20	1.1	51	78	16
24	13	16	.56	21	17	.96	46	40	5.0
25	13	16	.56	39	30	3.2	27	25	1.8
26	16	16	.69	28	25	1.9	18	20	.97
27	22	16	.95	21	21	1.2	22	20	1.2
28	33	16	1.4	21	21	1.2	20	18	.97
29	21	17	.96	--	--	--	21	14	.79
30	14	18	.68	--	--	--	24	15	.97
31	14	18	.68	--	--	--	34	18	1.7
TOTAL	504	--	22.27	571	--	32.80	735	--	57.09

16213000 WAIKELE STREAM AT WAIPAHU--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	34	18	1.7	13	15	.53	14	30	1.1
2	20	15	.81	13	15	.53	19	22	1.1
3	18	15	.73	13	16	.56	19	20	1.0
4	13	15	.53	12	16	.52	9.6	20	.52
5	11	15	.45	16	12	.52	11	18	.53
6	10	18	.49	23	12	.75	11	20	.59
7	15	18	.73	16	15	.65	11	30	.89
8	17	16	.73	11	20	.59	13	20	.70
9	15	16	.65	21	25	1.4	17	20	.92
10	110	150	60	24	20	1.3	18	30	1.5
11	52	40	5.6	18	16	.78	12	25	.81
12	26	18	1.3	46	30	3.7	12	20	.65
13	50	30	4.1	29	18	1.4	11	18	.53
14	30	24	1.9	18	18	.87	30	35	2.8
15	22	18	1.1	15	18	.73	22	25	1.5
16	16	12	.52	18	18	.87	60	63	19
17	19	12	.62	16	16	.69	62	55	9.2
18	23	12	.75	13	16	.56	23	25	1.6
19	18	12	.58	34	20	1.8	14	20	.76
20	16	12	.52	41	35	3.9	17	20	.92
21	42	40	4.5	59	37	5.9	14	22	.83
22	48	18	2.3	40	27	2.9	14	21	.79
23	30	15	1.2	30	22	1.8	17	20	.92
24	22	18	1.1	34	28	2.6	18	18	.87
25	17	18	.83	43	28	3.3	13	18	.63
26	17	20	.92	27	22	1.6	12	16	.52
27	17	20	.92	31	30	2.5	14	14	.53
28	20	20	1.1	31	40	3.3	20	14	.76
29	26	16	1.1	21	35	2.0	15	16	.65
30	19	14	.72	21	30	1.7	15	16	.65
31	--	--	--	16	30	1.3	--	--	--
TOTAL	793	--	98.50	763	--	51.55	557.6	--	53.77

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	23	25	1.6	9.5	18	.46	11	30	.89
2	30	25	2.0	9.0	18	.44	9.9	25	.67
3	48	28	3.6	8.3	18	.40	7.8	25	.53
4	31	25	2.1	21	30	1.7	4.4	25	.30
5	19	20	1.0	30	40	3.2	3.7	30	.30
6	20	18	.97	12	28	.91	3.6	30	.29
7	19	18	.92	18	30	1.5	4.1	30	.33
8	19	20	1.0	15	30	1.2	7.0	30	.57
9	64	70	16	11	25	.74	4.2	30	.34
10	144	159	83	12	20	.65	3.7	30	.30
11	41	70	7.7	18	18	.87	3.4	35	.32
12	28	45	3.4	16	20	.86	3.2	35	.30
13	19	35	1.8	9.5	22	.56	3.2	30	.26
14	24	35	2.3	9.5	22	.56	3.2	30	.26
15	25	40	2.7	9.6	20	.52	3.4	30	.28
16	25	40	2.7	9.3	20	.50	3.4	35	.32
17	16	30	1.3	10	20	.54	4.5	35	.43
18	16	30	1.3	18	20	.97	6.3	35	.60
19	11	30	.89	17	18	.83	6.2	30	.50
20	11	30	.89	11	16	.48	7.3	30	.59
21	13	30	1.1	10	40	1.1	11	35	1.0
22	12	25	.81	8.4	40	.91	9.0	35	.85
23	9.2	25	.62	8.5	40	.92	7.7	35	.73
24	7.1	20	.38	9.2	40	.99	16	50	2.2
25	9.5	20	.51	17	40	1.8	17	45	2.1
26	12	20	.65	17	35	1.6	9.7	35	.92
27	13	20	.70	7.6	40	.82	13	35	1.2
28	15	20	.81	9.1	40	.98	5.9	30	.48
29	13	18	.63	9.8	35	.93	16	35	1.5
30	10	18	.49	9.5	35	.90	19	35	1.8
31	9.4	18	.46	8.7	35	.82	--	--	--
TOTAL	756.2	--	144.33	388.5	--	29.66	227.8	--	21.16

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 7178.9
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS) 1526.87

16227500 MOANALUA STREAM NEAR KANEOHE

LOCATION.--Lat 21°23'29", long 157°51'05", on left bank 3.3 mi (5.3 km) northeast of Tripler Hospital and 3.6 mi (5.8 km) southwest of Kaneohe Post Office.

DRAINAGE AREA.--0.94 mi² (2.43 km²).

PERIOD OF RECORD.--Chenical analyses: Water years 1970-71 (partial-record station).
Sediment records: Water years 1970-71 (partial-record station), October 1971 to Septenber 1973.

EXTREMES.--1972-73:
Sediment concentrations: Maximun daily, 54 mg/l July 9; minimun daily, no flow for many days.
Sediment discharge: Maximum daily, 5.8 tons (5.3 tonnes) July 9; minimun daily, 0 tons on many days.

Period of record:
Sediment concentrations: Maximun daily, 256 mg/l Apr. 14, 1972; no flow on many days each year.
Sediment discharge: Maximun daily, 76 tons (69 tonnes) Jan. 22, 1972; minimun daily, 0 tons on many days each year.

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	4.5	23	2.1	0	0	0	0	0	0
4	5.2	22	.37	0	0	0	0	0	0
5	.43	4	0	0	0	0	0	0	0
6	.03	2	0	1.6	12	.38	0	0	0
7	0	0	0	2.6	16	.11	0	0	0
8	0	0	0	.22	3	0	0	0	0
9	0	0	0	.69	5	.01	0	0	0
10	0	0	0	.67	4	.01	0	0	0
11	0	0	0	.22	2	0	0	0	0
12	0	0	0	.01	1	0	0	0	0
13	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	2.0	16	.16
19	0	0	0	0	0	0	3.3	16	.14
20	0	0	0	0	0	0	.11	3	0
21	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
31	0	0	0	--	--	--	0	0	0
TOTAL	11.16	--	2.47	6.01	--	.51	5.41	--	.30

16227500 MOANALUA STREAM NEAR KANEOHE--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	0	0	0	0	0	0	.08	2	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	0	3.1	0	0	0	0	0
21	0	0	0	.76	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	1.9	10	.05
24	0	0	0	8.5	20	1.3	.99	5	.01
25	0	0	0	23	37	5.2	.41	3	0
26	0	0	0	1.5	6	.02	.21	2	0
27	0	0	0	.55	3	0	.04	2	0
28	0	0	0	.28	2	0	0	0	0
29	0	0	0	--	--	--	0	0	0
30	0	0	0	--	--	--	0	0	0
31	0	0	0	--	--	--	.03	2	0
TOTAL	0	--	0	37.69	--	6.52	3.66	--	.06

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.01	1	0	.22	2	0	0	0	0
2	0	0	0	.17	2	0	0	0	0
3	0	0	0	.10	2	0	0	0	0
4	0	0	0	.01	2	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0
9	1.4	8	.60	.85	10	.02	0	0	0
10	24	38	3.0	.64	8	.01	0	0	0
11	4.5	7	.09	1.0	10	.03	0	0	0
12	2.1	5	.03	.68	5	.01	0	0	0
13	1.5	3	.01	.34	4	0	0	0	0
14	.83	3	.01	.20	3	0	0	0	0
15	.57	2	0	.09	2	0	0	0	0
16	.44	2	0	.01	2	0	2.4	12	.08
17	.40	2	0	0	0	0	.95	6	.02
18	.33	2	0	0	0	0	.31	4	0
19	.26	2	0	0	0	0	.16	2	0
20	.21	2	0	0	0	0	.03	2	0
21	11	33	2.6	2.3	10	.06	0	0	0
22	1.8	7	.03	1.5	6	.02	0	0	0
23	.86	4	.01	.54	4	.01	0	0	0
24	.57	3	0	.76	4	.01	0	0	0
25	.50	3	0	.75	4	.01	0	0	0
26	.48	3	0	.56	3	0	0	0	0
27	.51	3	0	.39	2	0	0	0	0
28	.39	2	0	.30	2	0	0	0	0
29	.31	2	0	.21	2	0	0	0	0
30	.28	2	0	.11	2	0	0	0	0
31	--	--	--	.03	2	0	--	--	--
TOTAL	53.25	--	6.38	11.78	--	.18	3.85	--	.10

16227500 MOANALUA STREAM NEAR KANEOHE--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.55	5	.01	0	0	0	0	0	0
2	2.6	8	.06	0	0	0	0	0	0
3	1.4	6	.02	0	0	0	0	0	0
4	.47	4	.01	0	0	0	0	0	0
5	.25	3	0	0	0	0	0	0	0
6	.13	2	0	0	0	0	0	0	0
7	.02	2	0	0	0	0	0	0	0
8	.07	3	0	0	0	0	0	0	0
9	29	54	5.8	0	0	0	0	0	0
10	11	18	.53	0	0	0	0	0	0
11	3.2	6	.05	0	0	0	0	0	0
12	1.4	5	.02	0	0	0	0	0	0
13	.79	3	.01	0	0	0	0	0	0
14	.56	3	0	0	0	0	0	0	0
15	.83	5	.01	0	0	0	0	0	0
16	.55	3	0	0	0	0	0	0	0
17	.48	2	0	0	0	0	0	0	0
18	.41	2	0	0	0	0	0	0	0
19	.32	2	0	0	0	0	0	0	0
20	.27	2	0	0	0	0	0	0	0
21	.21	2	0	0	0	0	0	0	0
22	.16	2	0	0	0	0	0	0	0
23	.12	1	0	0	0	0	0	0	0
24	.12	1	0	0	0	0	0	0	0
25	.09	1	0	0	0	0	0	0	0
26	.04	1	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	--	--	--
TOTAL	55.04	--	6.52	0	--	0	0	--	0

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 187.85
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS) 23.04

16270500 KAMOOALII STREAM BELOW KUOU STREAM, NEAR KANEOHE

LOCATION.--Lat 21°23'42", long 157°48'26", on right bank 100 ft (30 m) downstream from Kuou Stream, 1.1 mi (1.8 km) southwest of Castle High School, and 1.9 mi (3.1 km) south of Kaneohe Post Office.

DRAINAGE AREA.--3.21 mi^2 (8.31 km^2).

PERIOD OF RECORD.--Chemical analyses: Water years 1969-71, 1973 (partial-record station).
Sediment records: Water years 1967-71 (partial-record station), January 1972 to September 1973.

EXTREMES.--1972-73:
Sediment concentrations: Maximum daily, 45 mg/l Apr. 10; minimum daily, 0 mg/l on several days in October.
Sediment discharge: Maximum daily, 1.6 tons (1.5 tonnes) Apr. 10; minimum daily, 0 tons on several days in October.

Period of record:
Sediment concentrations: Maximum daily, 271 mg/l Jan. 22, 1972; minimum daily, 0 mg/l on several days in October 1972.
Sediment discharge: Maximum daily, 205 tons (186 tonnes) Jan. 22, 1972; minimum daily, 0 tons on several days in October 1972.

REMARKS.--Chemical analyses for this station on page 259.

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	5.4	15	.22	5.2	12	.17	4.7	1	.01
2	4.4	1	.01	5.2	15	.21	5.2	1	.01
3	6.8	1	.02	5.4	5	.07	4.7	3	.04
4	6.2	4	.07	5.4	4	.06	4.7	4	.05
5	5.4	2	.03	5.4	3	.04	4.4	4	.05
6	4.9	1	.01	8.5	22	.50	4.2	4	.05
7	5.2	0	0	7.1	6	.12	4.2	4	.05
8	4.9	0	0	6.2	4	.07	4.7	5	.06
9	5.7	3	.05	7.1	8	.15	3.9	6	.06
10	5.4	1	.01	6.5	6	.11	4.2	5	.06
11	4.9	1	.01	5.7	8	.12	4.2	4	.05
12	4.9	2	.03	5.4	10	.15	4.2	3	.03
13	5.2	3	.04	5.4	11	.16	4.2	2	.02
14	4.9	1	.01	5.4	10	.15	4.2	2	.02
15	4.7	1	.01	5.7	10	.15	4.2	1	.01
16	4.9	1	.01	5.4	11	.16	5.4	4	.06
17	4.7	1	.01	5.4	11	.16	7.1	11	.21
18	4.4	0	0	5.4	10	.15	12	18	.58
19	4.2	0	0	5.4	10	.15	8.2	13	.29
20	4.2	0	0	5.2	8	.11	5.4	6	.09
21	4.2	0	0	5.2	8	.11	5.2	5	.07
22	4.2	0	0	5.2	8	.11	4.9	5	.07
23	4.2	0	0	5.4	8	.12	4.9	5	.07
24	4.2	1	.01	5.2	8	.11	4.7	4	.05
25	4.2	1	.01	5.7	8	.12	5.2	5	.07
26	4.4	0	0	6.2	5	.08	4.9	6	.08
27	4.2	0	0	4.9	4	.05	4.7	5	.06
28	7.6	10	.21	4.9	3	.04	4.9	5	.07
29	6.2	4	.07	4.9	3	.04	4.7	5	.06
30	5.2	2	.03	4.7	3	.04	4.9	6	.08
31	4.9	2	.03	--	--	--	5.4	5	.07
TOTAL	154.8	--	.90	168.7	--	3.78	158.4	--	2.55

16270500 KAMOOALII STREAM BELOW KUOU STREAM, NEAR KANEOHE--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	4.9	5	.07	4.9	4	.05	5.7	6	.09
2	4.9	5	.07	4.7	5	.06	5.7	5	.08
3	4.9	5	.07	9.8	25	.66	5.7	4	.06
4	4.7	5	.06	5.4	7	.10	5.4	4	.06
5	4.9	4	.05	5.2	5	.07	5.7	3	.05
6	12	30	.97	5.4	5	.07	5.2	3	.04
7	7.6	15	.31	5.2	4	.06	4.7	4	.05
8	6.2	6	.10	5.4	5	.07	4.9	6	.08
9	5.7	5	.08	5.2	4	.06	4.7	5	.06
10	5.2	7	.10	4.7	5	.06	4.9	5	.07
11	5.2	6	.08	4.7	10	.13	4.9	5	.07
12	4.9	5	.07	4.7	11	.14	5.4	5	.07
13	4.9	5	.07	4.7	9	.11	4.9	5	.07
14	4.7	5	.06	4.7	10	.13	4.9	5	.07
15	4.7	5	.06	4.7	8	.10	4.9	5	.07
16	4.7	5	.06	4.7	8	.10	5.2	4	.06
17	4.4	4	.05	4.7	6	.08	4.7	5	.06
18	4.7	5	.06	4.7	5	.06	5.2	5	.07
19	4.7	4	.05	4.4	4	.05	4.9	5	.07
20	4.7	3	.04	5.9	9	.14	5.4	6	.09
21	4.7	5	.06	4.9	8	.11	4.7	8	.10
22	4.4	3	.04	4.7	3	.04	5.4	8	.12
23	4.7	2	.03	4.9	2	.03	7.6	12	.25
24	4.4	2	.02	13	35	1.2	5.2	5	.07
25	4.4	2	.02	16	25	1.1	4.9	4	.05
26	4.4	3	.04	7.1	8	.15	4.7	4	.05
27	5.2	3	.04	6.2	7	.12	4.7	3	.04
28	4.7	3	.04	5.9	6	.10	4.4	4	.05
29	4.4	3	.04	--	--	--	4.9	4	.05
30	4.7	2	.03	--	--	--	5.4	3	.04
31	4.4	3	.04	--	--	--	4.9	3	.04
TOTAL	159.0	--	2.88	166.5	--	5.15	159.8	--	2.20

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	4.7	2	.03	4.7	5	.06	4.4	3	.04
2	4.4	2	.02	4.7	4	.05	4.2	4	.05
3	4.7	3	.04	4.4	4	.05	3.9	3	.03
4	4.2	4	.05	4.4	4	.05	4.4	3	.04
5	4.2	5	.06	4.4	4	.05	4.7	3	.04
6	4.2	4	.05	4.2	4	.05	4.4	4	.05
7	4.2	4	.05	4.4	4	.05	4.4	3	.04
8	4.2	5	.06	4.7	3	.04	4.2	3	.03
9	7.1	20	.38	5.9	3	.05	4.2	3	.03
10	13	45	1.6	4.7	2	.03	3.9	3	.03
11	7.1	12	.23	4.9	2	.03	4.2	3	.03
12	5.9	9	.14	4.9	2	.03	3.9	3	.03
13	5.7	9	.14	4.7	2	.03	4.7	5	.06
14	5.2	4	.06	4.2	3	.03	5.2	5	.07
15	5.4	4	.06	3.9	4	.04	4.4	4	.05
16	5.2	3	.04	3.9	4	.04	5.2	5	.07
17	5.4	3	.04	3.9	3	.03	4.4	4	.05
18	4.7	4	.05	4.4	3	.04	3.9	4	.04
19	4.7	4	.05	4.2	3	.03	4.2	3	.03
20	5.1	4	.06	4.2	4	.05	3.9	2	.02
21	5.7	6	.09	6.8	8	.15	3.7	2	.02
22	4.9	3	.04	5.5	3	.04	3.7	2	.02
23	4.7	3	.04	4.7	3	.04	3.7	2	.02
24	4.7	4	.05	6.2	10	.17	3.7	2	.02
25	4.9	5	.07	5.4	5	.07	3.9	2	.02
26	5.2	5	.07	5.7	5	.08	3.9	2	.02
27	4.9	5	.07	5.2	4	.06	3.9	2	.02
28	4.7	5	.06	4.7	4	.05	3.9	2	.02
29	4.7	5	.06	4.7	4	.05	3.7	2	.02
30	4.9	8	.11	4.4	5	.06	4.7	4	.05
31	--	--	--	4.4	4	.05	--	--	--
TOTAL	158.6	--	3.87	147.4	--	1.65	125.5	--	1.06

16270500 KAMOOALII STREAM BELOW KUOU STREAM, NEAR KANEOHE--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	5.4	4	.06	3.7	2	.02	3.4	2	.02
2	7.1	4	.08	4.3	3	.03	3.9	2	.02
3	4.7	3	.04	4.4	3	.04	4.2	2	.02
4	4.4	3	.04	5.2	4	.06	4.4	2	.02
5	4.4	3	.04	4.4	3	.04	3.7	2	.02
6	4.4	3	.04	4.4	3	.04	3.9	2	.02
7	4.4	3	.04	4.4	4	.05	4.2	2	.02
8	5.4	4	.06	3.9	3	.03	3.7	1	.01
9	10	10	.27	3.9	3	.03	3.7	1	.01
10	8.5	4	.09	3.9	4	.04	3.7	1	.01
11	6.5	4	.07	3.4	4	.04	3.4	1	.01
12	5.4	3	.04	3.4	4	.04	3.7	3	.03
13	4.9	3	.04	3.4	3	.03	3.9	4	.04
14	4.7	3	.04	3.4	3	.03	3.9	3	.03
15	6.0	8	.13	3.4	3	.03	3.4	3	.03
16	5.2	4	.06	3.7	4	.04	3.7	5	.05
17	4.4	3	.04	3.7	3	.03	3.4	3	.03
18	4.4	3	.04	3.7	3	.03	3.9	3	.03
19	4.4	2	.02	3.7	2	.02	3.4	3	.03
20	4.4	2	.02	3.7	2	.02	3.7	3	.03
21	4.4	2	.02	3.4	2	.02	3.4	3	.03
22	4.4	2	.02	3.7	3	.03	3.4	3	.03
23	4.4	2	.02	4.5	8	.10	3.7	3	.03
24	4.4	2	.02	3.9	6	.06	3.4	3	.03
25	4.7	3	.04	3.7	5	.05	3.4	3	.03
26	4.9	3	.04	3.9	4	.04	3.4	3	.03
27	4.4	2	.02	4.2	2	.02	4.9	8	.11
28	4.4	2	.02	3.7	2	.02	3.7	2	.02
29	3.9	2	.02	3.7	2	.02	4.7	3	.04
30	3.9	2	.02	3.7	2	.02	3.9	2	.02
31	3.9	2	.02	3.4	2	.02	--	--	--
TOTAL	146.7	--	1.52	119.8	--	1.09	113.1	--	.85

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 1788.3
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS) 27.50

16717000 HONOLII STREAM NEAR PAPAIKOU
(Hydrologic bench-mark station)

LOCATION.--Lat 19°46'00", long 155°09'16", at gaging station 0.7 mi (1.1 km) downstream from Pohakupaa Stream, 4.1 mi (6.6 km) west of Papaikou, and 4.8 mi (7.7 km) northwest of Hilo Post Office.

DRAINAGE AREA.--11.6 mi² (30.0 km²).

PERIOD OF RECORD.--Chemical analyses: September 1969 to September 1973.
Sediment records: Water years 1969-73 (partial-record station).

WATER QUALITY DATA, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)
OCT.												
31...	1145	181	2.6	1.1	.8	1.7	.0	5	0	3.4	2.5	.1
31...	1145	--	--	--	--	--	--	--	--	--	--	--
NOV.												
28...	1100	25	13	3.8	2.4	2.8	.0	27	0	1.0	3.0	.1
28...	1100	--	--	--	--	--	--	--	--	--	--	--
JAN.												
30...	1120	88	2.8	1.3	.9	2.0	.2	6	0	2.4	3.0	.1
30...	1120	--	--	--	--	--	--	--	--	--	--	--
FEB.												
28...	1102	78	2.6	1.3	.9	1.8	1.0	7	0	.0	3.5	.0
28...	1102	--	--	--	--	--	--	--	--	--	--	--
MAR.												
28...	1130	111	3.2	1.0	.8	1.7	.2	6	0	.0	3.0	.0
28...	1130	--	--	--	--	--	--	--	--	--	--	--
MAY												
07...	1045	54	6.9	2.0	1.5	2.3	.3	14	0	.0	4.5	.0
07...	1045	54	--	--	--	--	--	--	--	--	--	--
JUNE												
20...	1105	29	12	4.3	1.9	2.5	.0	25	0	.0	3.0	.1
20...	1105	29	--	--	--	--	--	--	--	--	--	--
AUG.												
03...	1420	10	24	9.5	4.7	4.9	2.3	45	0	3.0	4.8	.1
SEP.												
28...	1100.	23	12	4.1	1.9	2.8	.3	20	0	4.3	3.5	.0

DATE	DISSOLVED NITRATE (N) (MG/L)	TOTAL ORTHO PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TURBIDITY (JTU)	COLOR (PLATINUM-COBALT UNITS)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
31...	<.10	.00	15	.02	6	2	24	6.0	5	70	--	--
31...	--	--	--	--	--	--	--	5.6	--	--	8.4	B960
NOV.												
28...	.10	.00	40	.05	19	0	56	6.7	1	7	--	--
28...	--	--	--	--	--	--	56	7.5	--	--	9.7	826
JAN.												
30...	<.10	.00	16	.02	7	2	26	6.2	2	40	--	--
30...	--	--	--	--	--	--	26	5.4	--	--	9.1	92
FEB.												
28...	.00	--	15	.02	7	1	27	6.2	2	40	--	--
28...	--	--	--	--	--	--	22	5.5	--	--	8.3	250
MAR.												
28...	.00	--	13	.02	6	1	22	6.4	2	35	--	--
28...	--	--	--	--	--	--	21	6.2	--	--	7.6	49
MAY												
07...	<.10	--	24	.03	11	0	37	6.9	3	20	--	--
07...	--	--	--	--	--	--	39	8.0	--	--	6.6	--
JUNE												
20...	<.10	--	36	.05	19	0	47	7.3	1	--	--	--
20...	--	--	--	--	--	--	46	6.5	--	--	8.7	3
AUG.												
03...	--	--	76	.10	43	6	91	7.7	--	--	--	ND
SEP.												
28...	--	--	39	.05	18	2	47	7.2	--	--	--	8

B Results based on non-ideal colony count.
ND Analyzed for but not detected.

16717000 HONOLII STREAM NEAR PAPAIKOU--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	ALDRIN (UG/L)	DDD (UG/L)	DDE (UG/L)	DDT (UG/L)	DIELDRIN (UG/L)	ENDRIN (UG/L)	HEPTACHLOR (UG/L)
DEC.										
07...	1500	18.0	14	.00	.00	.00	.00	.00	.00	.00
SEP.										
28...	1015	19.0	23	.00	.00	.00	.00	.00	.00	.00

DATE	HEPTACHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	CHLORDANE (UG/L)	DIAZINON (UG/L)	MALATHION (UG/L)	METHYL PARATHION (UG/L)	PARATHION (UG/L)	2,4-D (UG/L)	SILVEX (UG/L)	2,4,5-T (UG/L)
DEC.										
07...	.00	.00	.0	.00	.00	.00	.00	.00	.00	.00
SEP.										
28...	.00	.00	.0	.00	.00	.00	.00	.00	.00	.00

DATE	ALDRIN IN BOTTOM DEPOSITS (UG/KG)	DDD IN BOTTOM DEPOSITS (UG/KG)	DDE IN BOTTOM DEPOSITS (UG/KG)	DDT IN BOTTOM DEPOSITS (UG/KG)	DIELDRIN IN BOTTOM DEPOSITS (UG/KG)	ENDRIN IN BOTTOM DEPOSITS (UG/KG)	HEPTACHLOR EPOXIDE IN BOTTOM DEPOSITS (UG/KG)	LINDANE IN BOTTOM DEPOSITS (UG/KG)	CHLORDANE IN BOTTOM DEPOSITS (UG/KG)
DEC.									
07...	.0	.0	.0	.0	.0	.0	.0	.0	0
SEP.									
28...	.0	.0	.0	.0	.0	.0	.0	.0	0

DATE	TIME	DISSOLVED URANIUM (U) (UG/L)	DISSOLVED RA-226 (RADON METHOD) (PC/L)	DISSOLVED GROSS ALPHA AS U-NAT. (UG/L)	DISSOLVED GROSS BETA AS SR90 /Y90 (PC/L)	DISSOLVED GROSS BETA AS CS-137 (PC/L)	TOTAL FILTRABLE RESIDUE (MG/L)	SUSPENDED GROSS ALPHA AS U-NAT. (UG/L)	SUSPENDED GROSS BETA AS SR90 /Y90 (PC/L)	SUSPENDED GROSS BETA AS CS-137 (PC/L)	TOTAL NONFILTRABLE RESIDUE (MG/L)
NOV.											
28...	1035	.02	.01	1.4	1.2	1.0	52	<.4	<.4	.4	<1

DATE	TOTAL CADMIUM (CD) (UG/L)	HEXAVALENT CHROMIUM (CR6) (UG/L)	TOTAL COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)
JAN.												
30...	0	0	0	0	450	0	10	0	<0	0	0	100

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS
WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
Nov., 1972					
28...	1025	25	17.5	1	0.07
Jan., 1973					
30	1030	88	15.0	3	0.71
Feb.					
28...	1055	78	17.0	1	0.21
Mar.					
28...	1125	11	16.5	1	0.03
May					
07...	1025	54	18.0	3	0.44
June					
20...	1105	29	18.0	2	0.16
Aug.					
03...	1420	10	21.0	1	0.03
Sept.					
28...	1100	23	19.0	1	0.06

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TOTAL ALUMINUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	HEXAVALENT CHROMIUM (CR6) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL COBALT (CO) (UG/L)	TOTAL CADMIUM (CD) (UG/L)
HAWAII, ISLAND OF KAUAI												
16019000 WAIALAE STREAM AT ALTITUDE 3,820 FT, NEAR WAIMEA (LAT 22°05'20" LONG 159°34'18")												
AUG., 1972												
15...	150	280	0	0	0	0	0	0	0	0	0	0
16031000 WAIMEA RIVER NEAR WAIMEA (LAT 21°59'02" LONG 159°39'46")												
OCT., 1971												
01...	110	340	40	0	--	0	--	<10	30	0	--	--
DEC.												
06...	90	290	30	0	2	2	<1	0	0	0	<1	--
16049000 HANAPEPE RIVER BELOW MANUAHI STREAM, NEAR ELEELE (LAT 21°57'29" LONG 159°33'13")												
OCT., 1971												
04...	50	40	8	0	--	0	--	<10	0	0	--	--
DEC.												
06...	60	60	0	0	2	1	<1	0	0	0	0	--
16052500 LAWAI STREAM NEAR KOLOA (LAT 21°54'11" LONG 159°30'21")												
DEC., 1971												
06...	100	270	100	0	2	4	<1	0	0	0	0	--
16055000 HULEIA STREAM NEAR LIHUE (LAT 21°57'20" LONG 159°25'23")												
DEC., 1971												
07...	110	390	--	0	2	40	<1	10	0	0	1	--
16060000 SOUTH FORK WAILUA RIVER NEAR LIHUE (LAT 22°02'24" LONG 159°22'58")												
DEC., 1971												
06...	40	160	10	0	2	3	<1	0	0	0	0	--
16068000 EAST BRANCH OF NORTH FORK WAILUA RIVER NEAR LIHUE (LAT 22°04'19" LONG 159°25'05")												
DEC., 1971												
06...	20	230	40	0	2	2	<1	0	0	0	1	--
16071000 NORTH FORK WAILUA RIVER NEAR KAPAA (LAT 22°03'08" LONG 159°22'22")												
DEC., 1971												
07...	1100	2900	320	10	10	5	<1	0	0	0	10	--
16093200 ANAHOLA STREAM AT ANAHOLA (LAT 22°08'42" LONG 159°18'59")												
DEC., 1971												
07...	190	370	30	0	4	3	<1	0	0	0	1	--
16103000 HANALEI RIVER NEAR HANALEI (LAT 22°11'31" LONG 159°27'57")												
DEC., 1971												
07...	90	120	0	0	2	7	<1	0	0	0	1	--
HAWAII, ISLAND OF OAHU												
16200000 NORTH FORK KAUKONAHUA STREAM ABOVE RIGHT BRANCH, NEAR WAHIAWA (LAT 21°31'09" LONG 157°56'53")												
JULY, 1972												
03...	280	200	0	0	0	0	0	0	0	0	0	0
16208000 SOUTH FORK KAUKONAHUA STREAM AT EAST PUMP RESERVOIR, NEAR WAHIAWA (LAT 21°29'32" LONG 157°59'55")												
JUNE, 1972												
02...	50	340	60	0	0	0	0	0	0	0	0	0
16211600 MAKAHA STREAM NEAR MAKAHA (LAT 21°30'16" LONG 158°10'59")												
JUNE, 1972												
06...	60	320	0	0	0	0	0	0	10	0	0	0

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TOTAL ALUMINUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	HEXAVALENT CHROMIUM (CR6) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL COBALT (CO) (UG/L)	TOTAL CADMIUM (CD) (UG/L)
HAWAII, ISLAND OF OAHU--Continued												
16211800 KAUPUNI STREAM AT ALTITUDE 374 FT, NEAR WAIANAE (LAT 21°28'20" LONG 158°09'26')												
JUNE, 1972 06...	70	40	20	0	0	0	0	0	120	0	0	0
16212800 KIPAPA STREAM NEAR WAHIAWA (LAT 21°28'13" LONG 157°57'40")												
JUNE, 1972 07...	40	20	0	0	0	0	0	0	0	0	0	0
16213000 WAIKELE STREAM AT WAIPAHU (LAT 21°23'11" LONG 158°00'49")												
JUNE, 1972 02...	130	140	140	0	1	10	0	0	40	0	1	0
16216000 WAIAWA STREAM NEAR PEARL CITY (LAT 21°23'57" LONG 157°58'51")												
JUNE, 1972 02...	110	150	200	0	0	10	0	0	0	0	0	0
16224500 KALAUAO STREAM AT MOANALUA ROAD, AT AIEA (LAT 21°23'07" LONG 157°56'22")												
JUNE, 1972 05...	170	80	20	0	0	0	0	0	130	0	0	0
16229000 KALIHI STREAM NEAR HONOLULU (LAT 21°22'00" LONG 157°50'49")												
JUNE, 1972 07...	70	220	0	0	0	0	0	0	10	0	0	0
16229300 KALIHI STREAM AT KALIHI (LAT 21°20'29" LONG 157°52'36")												
JUNE, 1972 07...	120	160	10	0	0	0	0	0	120	0	0	0
16232000 NUUANU STREAM BELOW RESERVOIR 2 WASTEWAY, NEAR HONOLULU (LAT 21°20'57" LONG 157°49'40")												
JUNE, 1972 01...	100	300	50	0	0	0	0	0	0	0	0	0
16238500 WAIHI STREAM AT HONOLULU (LAT 21°19'55" LONG 157°48'12")												
JUNE, 1972 01...	40	410	50	0	0	0	0	0	30	0	0	0
16240500 WAIAKEAKUA STREAM AT HONOLULU (LAT 21°19'53" LONG 157°48'08")												
NOV., 1971 23...	40	80	8	0	<1	0	<1	<10	0	0	<1	--
JUNE, 1972 01...	10	60	0	0	0	0	4	0	10	0	0	0
16247000 PALOLO STREAM NEAR HONOLULU (LAT 21°17'34" LONG 157°48'24")												
JUNE, 1972 01...	10	370	0	0	0	3	20	0	100	0	0	0
16247100 MANOA-PALOLO DRAINAGE CANAL AT MOILILI (LAT 21°17'24" LONG 157°49'17")												
JUNE, 1972 01...	50	160	10	0	1	3	10	0	80	0	0	0
16249000 WAIMANALO STREAM AT WAIMANALO (LAT 21°21'12" LONG 157°43'52")												
JUNE, 1972 01...	140	430	100	0	0	4	0	0	90	0	0	0
16260500 MAUNAWILI STREAM AT HIGHWAY 61, NEAR KAILUA (LAT 21°22'51" LONG 157°45'48")												
JUNE, 1972 01...	10	660	100	0	0	2	2	0	20	0	0	0

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TOTAL ALUMINUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	HEXAVALENT CHROMIUM (CR6) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL COBALT (CO) (UG/L)	TOTAL CADMIUM (CD) (UG/L)
HAWAII, ISLAND OF OAHU--Continued												
16273900 KAMOOALII STREAM AT KANEOHE (LAT 21°24'51" LONG 157°48'13")												
JUNE, 1972 01...	40	260	40	0	0	0	0	0	20	0	0	0
16275000 HAIKU STREAM NEAR HEEIA (LAT 21°24'46" LONG 157°49'33")												
JUNE, 1972 01...	20	240	30	0	0	0	0	0	10	0	0	0
16283500 KAHALUU STREAM AT KAHALUU (LAT 21°27'25" LONG 157°50'15")												
JUNE, 1972 01...	210	1000	110	0	0	3	0	0	40	0	0	0
16284500 WAIHEE STREAM AT KAHALUU (LAT 21°27'32" LONG 157°50'26")												
JUNE, 1972 01...	30	900	110	0	0	2	10	0	20	0	0	0
16294900 WAIKANE STREAM AT ALTITUDE 75 FT, AT WAIKANE (LAT 21°30'00" LONG 157°51'54")												
JUNE, 1972 05...	70	310	40	0	0	0	0	0	10	0	0	0
16296500 KAHANA STREAM AT ALTITUDE 30 FT, NEAR KAHANA (LAT 21°32'37" LONG 157°53'07")												
JUNE, 1972 05...	40	460	80	0	0	0	0	0	0	0	0	0
16303000 PUNALUU STREAM NEAR PUNALUU (LAT 21°33'33" LONG 157°54'06")												
JUNE, 1972 05...	60	110	10	0	0	0	0	0	0	0	0	0
163042D0 KALUANUI STREAM NEAR PUNALUU (LAT 21°35'22" LONG 157°54'38")												
JUNE, 1972 05...	110	20	0	0	0	0	0	0	0	0	0	0
16330000 KAMANANUI STREAM AT MAUNAWAI (LAT 21°38'20" LONG 158°03'27")												
JUNE, 1972 02...	50	50	0	0	0	1	0	0	0	0	0	0
16343000 HELEMANO STREAM AT HALEIWA (LAT 21°34'40" LONG 158°06'12")												
JUNE, 1972 02...	890	250	520	0	1	10	0	0	160	0	4	0
16345000 OPAEULA STREAM NEAR WAHIAWA (LAT 21°33'55" LONG 158°00'10")												
JUNE, 1972 02...	80	60	0	0	0	0	0	0	0	0	0	0
16350000 OPAEULA STREAM NEAR HALEIWA (LAT 21°35'09" LONG 158°06'01")												
JUNE, 1972 02...	0	200	40	0	0	0	0	0	120	0	2	0
HAWAII, ISLAND OF MOLOKAI												
16400000 HALAWA STREAM NEAR HALAWA (LAT 21°09'32" LONG 156°45'53")												
DEC., 1971 05...	140	62	0	0	0	1	<1	0	0	0	3	--
16404000 PELEKUNU STREAM NEAR PELEKUNU (LAT 21°08'11" LONG 156°52'43")												
DEC., 1971 04...	50	10	0	10	0	2	<1	0	10	0	0	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TOTAL ALUMINUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	HEXAVALENT CHROMIUM (CR6) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL COBALT (CO) (UG/L)	TOTAL CADMIUM (CD) (UG/L)
HAWAII, ISLAND OF MOLOKAI--Continued												
16405500 WAIKOLU STREAM AT ALTITUDE 900 FT, NEAR KALAUPAPA (LAT 21°08'45" LONG 156°55'18")												
DEC.. 1971												
01...	30	0	0	0	2	5	<1	0	10	0	0	--
16415000 EAST FORK KAWELA GULCH NEAR KAMALO (LAT 21°06'47" LONG 156°54'23")												
NOV.. 1971												
30...	740	520	50	0	0	1	<1	0	0	0	0	--
HAWAII, ISLAND OF MAUI												
16501000 PALIKEA STREAM BELOW DIVERSION DAM, NEAR KIPAHULU (LAT 20°41'03" LONG 156°04'10")												
JAN.. 1972												
27...	80	30	0	0	0	0	0	0	0	0	0	--
APR.												
20...	140	80	0	0	0	5	0	0	0	0	0	0
16508000 HANAWI STREAM NEAR NAHIKU (LAT 20°48'37" LONG 156°07'00")												
JAN.. 1972												
17...	60	0	10	10	0	0	<1	0	0	0	0	--
JUNE												
27...	320	220	10	0	0	0	0	0	0	0	0	0
16518000 WEST WAILUAIKI STREAM NEAR KEANAE (LAT 20°49'16" LONG 156°08'37")												
JAN.. 1972												
17...	80	50	0	0	0	0	<1	0	0	0	0	--
JUNE												
27...	730	760	40	0	0	0	0	0	0	0	0	0
16570000 NAILIILIHAELE STREAM NEAR HUELO (LAT 20°52'28" LONG 156°13'06")												
JAN.. 1972												
17...	50	0	0	0	0	0	<1	0	0	0	0	--
APR.												
10...	420	270	10	0	0	0	0	0	0	0	0	0
16588000 WAILOA DITCH AT HONOPOU, NEAR HUELO (LAT 20°53'20" LONG 156°15'19")												
JAN.. 1972												
18...	30	90	0	0	0	0	<1	0	0	0	0	--
APR.												
25...	70	70	0	0	1	0	2	0	0	0	0	0
16599500 OPANA TUNNEL AT KAILIILI (LAT 20°51'04" LONG 156°16'17")												
JAN.. 1972												
18...	70	20	0	0	0	0	<1	0	0	0	0	--
16607000 IAO STREAM AT WAILUKU (LAT 20°53'38" LONG 156°30'27")												
JAN.. 1972												
18...	30	0	0	0	0	0	<1	0	0	0	0	--
24...	2000	2100	40	0	10	10	<1	10	0	0	2	--
16620000 HONOKOHAU STREAM NEAR HONOKOHAU (LAT 20°57'48" LONG 156°35'22")												
JAN.. 1972												
20...	50	0	0	10	0	0	<1	0	0	0	<1	--
16645000 OLOWALU DITCH NEAR OLOWALU (LAT 20°49'33" LONG 156°36'50")												
JAN.. 1972												
19...	80	20	10	0	1	0	<1	0	10	0	<1	--
16646200 OLOWALU STREAM AT OLOWALU (LAT 20°49'23" LONG 156°37'15")												
JAN.. 1972												
24...	3600	4200	100	10	20	30	2	10	0	0	5	--
HAWAII, ISLAND OF HAWAII												
16700000 WAIAKEA STREAM NEAR MOUNTAIN VIEW (LAT 19°38'30" LONG 155°10'28")												
OCT.. 1971												
26...	20	30	<1	<1	2	0	<1	<10	0	0	<1	--
16704000 WAILUKU RIVER AT PIIHONUA (LAT 19°42'58" LONG 155°09'13")												
OCT.. 1971												
26...	130	130	.5	<1	1	0	<1	<10	0	0	0	--

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
HAWAII, ISLAND OF KAUAI												
16019000 WAIALAE STREAM AT ALTITUDE 3,820 FT, NEAR WAIMEA (LAT 22°05'20" LONG 159°34'18")												
NOV., 1972												
30...	1500	3.5	--	4.3	.8	.7	3.2	.0	4	0	.0	5.5
FEB., 1973												
09...	1030	--	--	1.2	.7	.8	3.0	.2	3	0	.4	6.0
APR.												
13...	1015	20	--	2.1	.7	.9	2.9	.3	3	0	.4	7.0
JUNE												
21...	1230	5.7	--	3.6	.5	.6	3.1	.2	3	0	.0	7.0
SEP.												
18...	0830	10	--	4.3	.9	1.0	4.0	.3	--	0	--	5.7
16031000 WAIMEA RIVER NEAR WAIMEA (LAT 21°59'02" LONG 159°39'46")												
DEC., 1972												
05...	0945	4.1	--	26	7.1	11	10	1.2	81	0	2.8	12
JUNE, 1973												
14...	0815	91	--	17	3.8	4.4	5.6	.6	38	0	.0	8.0
16049000 HANAPEPE RIVER BELOW MANUAHI STREAM, NEAR ELEELE (LAT 21°57'29" LONG 159°33'13")												
DEC., 1972												
05...	1215	25	--	23	5.2	5.9	8.5	.7	51	0	1.4	11
JUNE, 1973												
14...	0945	438	--	9.5	2.8	3.2	5.7	3.0	23	0	1.0	10
16052500 LAWAI STREAM NEAR KOLOA (LAT 21°54'11" LONG 159°30'21")												
DEC., 1972												
05...	1430	1.3	--	17	6.5	7.3	21	.9	56	0	11	27
JUNE, 1973												
14...	1345	12	--	11	5.2	5.5	14	1.3	39	0	5.9	21
16055000 HULEIA STREAM NEAR LIHUE (LAT 21°57'20" LONG 159°25'23")												
DEC., 1972												
08...	1330	--	--	15	6.0	7.5	13	.9	52	0	7.5	19
JUNE, 1973												
15...	0830	14	--	17	7.9	8.2	13	1.1	66	0	5.0	19
16060000 SOUTH FORK WAILUA RIVER NEAR LIHUE (LAT 22°02'24" LONG 159°22'58")												
DEC., 1972												
07...	1515	6.6	--	15	5.7	6.3	9.8	.7	50	0	3.0	15
JUNE, 1973												
13...	1515	7.0	--	15	4.8	5.3	8.1	.5	41	0	2.0	12
16068000 EAST BRANCH OF NORTH FORK WAILUA RIVER NEAR LIHUE (LAT 22°04'19" LONG 159°25'05")												
DEC., 1972												
07...	0920	25	--	17	3.8	4.8	7.8	.6	40	0	1.4	11
JUNE, 1973												
13...	1445	25	--	15	4.0	4.7	7.3	.4	38	0	2.0	11
16071000 NORTH FORK WAILUA RIVER NEAR KAPAA (LAT 22°03'08" LONG 159°22'22")												
DEC., 1972												
07...	1130	69	--	18	4.6	5.7	8.0	.6	46	0	1.6	11
JUNE, 1973												
15...	1150	53	--	12	3.6	3.5	5.7	.4	29	0	1.0	10
16093200 ANAHOLA STREAM AT ANAHOLA (LAT 22°08'42" LONG 159°18'59")												
DEC., 1972												
08...	0900	15	--	15	4.4	6.1	14	.8	48	0	5.5	16
JUNE, 1973												
13...	1300	11	--	15	4.8	6.0	14	.5	50	0	5.9	16
16103000 HANALEI RIVER NEAR HANALEI (LAT 22°11'31" LONG 159°27'57")												
DEC., 1972												
06...	1100	67	--	21	5.1	4.9	6.3	.3	46	0	.0	7.0
JUNE, 1973												
13...	1115	95	--	17	4.8	4.6	6.2	.3	40	0	.4	7.5
16108000 WAINIHA RIVER NEAR HANALEI (LAT 22°08'20" LONG 159°33'38")												
NOV., 1972												
30...	1630	46	--	18	3.7	2.7	4.3	.2	29	0	.0	5.0
JUNE, 1973												
21...	1530	58	--	19	4.4	2.7	4.0	.2	30	0	.0	5.0

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	TOTAL ORTHO PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TUR-BID-ITY (JTU)	COLOR (PLAT-INUM-COBALT UNITS)	ALKA-LINITY AS CACO3 (MG/L)
HAWAII, ISLAND OF KAUAI--Continued												
16019000 WAIALAE STREAM AT ALTITUDE 3,820 FT, NEAR WAIMEA--Continued												
NOV., 1972 30...	.1	<.10	.00	17	--	5	2	30	6.1	0	75	3
FEB., 1973 09...	.0	.00	--	14	--	5	3	29	6.6	1	110	2
APR. 13...	.0	.10	--	16	--	5	3	29	5.7	1	120	2
JUNE 21...	.1	.00	--	17	--	4	1	27	6.0	1	70	2
SEP. 18...	.1	--	--	--	--	6	--	28	6.6	--	--	--
16031000 WAIMEA RIVER NEAR WAIMEA--Continued												
DEC., 1972 05...	.1	.10	.00	110	--	63	0	180	7.3	1	5	66
JUNE, 1973 14...	.1	.00	--	58	--	28	0	92	7.3	2	50	31
16049000 HANAPEPE RIVER BELOW MANUAHI STREAM, NEAR ELEELE--Continued												
DEC., 1972 05...	.1	.10	.00	81	--	37	0	122	7.3	0	0	42
JUNE, 1973 14...	.0	.00	--	47	--	20	1	74	6.9	7	10	19
16052500 LAWAI STREAM NEAR KOLOA--Continned												
DEC., 1972 05...	.2	.20	.00	119	--	46	0	209	7.3	1	0	46
JUNE, 1973 14...	.1	.00	--	83	--	36	4	148	7.1	45	--	32
16055000 HULEIA STREAM NEAR LIHUE--Continued												
DEC., 1972 08...	.1	.30	.00	96	--	46	3	164	7.0	1	0	43
JUNE, 1973 15...	.1	.00	--	104	--	53	0	176	7.6	1	5	54
16060000 SOUTH FORK WAILUA RIVER NEAR LIHUE--Continued												
DEC., 1972 07...	.1	.00	.00	80	--	40	0	138	7.2	0	5	41
JUNE, 1973 13...	.0	.00	--	68	--	34	0	113	7.4	0	5	34
16068000 EAST BRANCH OF NORTH FORK WAILUA RIVER NEAR LIHUE--Continued												
DEC., 1972 07...	.0	.00	.00	66	--	29	0	104	7.3	0	0	33
JUNE, 1973 13...	.0	.00	--	63	--	29	0	100	7.5	1	3	31
16071000 NORTH FORK WAILUA RIVER NEAR KAPAA--Continued												
DEC., 1972 07...	.1	.00	.00	72	--	35	0	113	7.2	0	5	38
JUNE, 1973 15...	.0	.00	--	50	--	23	0	80	7.4	1	10	24
16093200 ANAHOLA STREAM AT ANAHOLA--Continued												
DEC., 1972 08...	.1	.30	.00	87	--	36	0	147	7.0	3	5	39
JUNE, 1973 13...	.0	.20	--	88	--	37	0	147	7.3	0	3	41
16103000 HANALEI RIVER NEAR HANALEI--Continued												
DEC., 1972 06...	.0	.00	.02	67	--	33	0	101	7.0	1	0	38
JUNE, 1973 13...	.0	<.10	--	61	--	31	0	96	7.6	2	5	33
16108000 WAINIHA RIVER NEAR HANALEI--Continued												
NOV., 1972 30...	.1	.00	.00	48	--	20	0	66	6.9	0	4	24
JUNE, 1973 21...	.1	<.10	--	50	--	22	0	64	7.3	1	--	25

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
HAWAII, ISLAND OF OAHU												
16200000 NORTH FORK KAUKONAHUA STREAM ABOVE RIGHT BRANCH, NEAR WAHIAWA (LAT 21°31'09" LONG 157°56'53")												
JAN., 1973												
30...	1145	.47	--	11	1.6	1.9	6.2	.2	14	0	1.0	11
JUNE												
11...	1215	d.5	--	6.0	1.0	1.2	5.2	.2	8	0	1.4	10
16208000 SOUTH FORK KAUKONAHUA STREAM AT EAST PUMP RESERVOIR, NEAR WAHIAWA (LAT 21°29'32" LONG 157°59'55")												
JAN., 1973												
24...	1440	.78	--	4.2	2.2	2.2	6.6	.3	15	0	2.0	12
JUNE												
12...	1220	7.3	--	5.4	1.4	1.8	6.6	.3	12	0	1.6	12
16211600 MAKAHA STREAM NEAR MAKAHA (LAT 21°30'16" LONG 158°10'59")												
JAN., 1973												
26...	1100	.39	--	28	5.6	5.3	9.8	.6	50	0	1.6	13
JUNE												
07...	1330	.48	--	27	5.7	5.4	9.1	.7	48	0	2.4	13
16211800 KAUPUNI STREAM AT ALTITUDE 374 FT, NEAR WAIANAE (LAT 21°28'20" LONG 158°09'26")												
JAN., 1973												
26...	1420	.16	--	62	27	14	28	3.6	150	0	26	30
16212800 KIPAPA STREAM NEAR WAHIAWA (LAT 21°28'13" LONG 157°57'40")												
JAN., 1973												
29...	1215	.12	--	5.0	2.0	2.4	7.5	.9	15	0	2.6	14
JUNE												
08...	1030	3.1	--	4.0	1.5	1.8	6.7	.7	11	0	2.0	12
16216000 WAIAWA STREAM NEAR PEARL CITY (LAT 21°23'57" LONG 157°58'51")												
JAN., 1973												
24...	1535	4.5	--	44	72	62	245	7.1	91	0	79	575
JUNE												
13...	1000	4.9	23.0	48	52	42	164	8.2	116	0	71	355
16224500 KALAUAO STREAM AT MOANALUA ROAD, AT AIEA (LAT 21°23'07" LONG 157°56'22")												
JAN., 1973												
30...	1550	.25	--	54	24	17	76	3.4	146	0	33	101
JUNE												
05...	1530	.12	24.0	47	21	17	74	3.4	153	0	26	96
16229000 KALIHI STREAM NEAR HONOLULU (LAT 21°22'00" LONG 157°50'49")												
FEB., 1973												
06...	1510	.50	--	10	5.2	5.0	13	.8	39	0	5.9	20
JUNE												
25...	1500	--	--	13	5.3	4.5	13	.7	40	0	5.2	20
16229300 KALIHI STREAM AT KALIHI (LAT 21°20'29" LONG 157°52'36")												
FEB., 1973												
05...	1515	1.3	--	17	19	8.9	29	1.5	100	0	11	40
MAY												
23...	1510	7.7	23.0	16	12	7.2	22	1.0	68	0	8.9	31

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	TOTAL ORTHO PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TUR-BID-ITY (JTU)	COLOR (PLAT-INUM-COBALT UNITS)	ALKA-LINITY AS CACO3 (MG/L)
HAWAII, ISLAND OF OAHU--Continued												
16200000 NORTH FORK KAUKONAHUA STREAM ABOVE RIGHT BRANCH, NEAR WAHIAWA--Continued												
JAN., 1973												
30...	.1	.00	.00	40	--	12	0	62	6.4	0	0	11
JUNE												
11...	.0	<.10	--	29	--	7	1	49	6.5	3	8	7
16208000 SOUTH FORK KAUKONAHUA STREAM AT EAST PUMP RESERVOIR, NEAR WAHIAWA--Continued												
JAN., 1973												
24...	.1	.00	.00	37	--	15	2	68	6.6	3	7	12
JUNE												
12...	.0	<.10	--	35	--	11	1	62	6.5	4	15	10
16211600 MAKAHA STREAM NEAR MAKAHA--Continued												
JAN., 1973												
26...	.1	.00	.02	89	--	36	0	127	7.5	2	5	41
JUNE												
07...	.1	.00	--	87	--	36	0	124	7.2	1	8	39
16211800 KAUPUNI STREAM AT ALTITUDE 374 FT, NEAR WAIANAE--Continued												
JAN., 1973												
26...	.1	.00	.03	265	--	130	2	384	7.7	0	0	123
16212800 KIPAPA STREAM NEAR WAHIAWA--Continued												
JAN., 1973												
29...	.1	.00	.00	42	--	15	3	77	6.6	0	0	12
JUNE												
08...	.0	.10	--	35	--	11	2	64	6.6	15	60	9
16216000 WAIAWA STREAM NEAR PEARL CITY--Continued												
JAN., 1973												
24...	.1	4.7	1.7	1150	--	440	360	2100	7.0	3	5	75
JUNE												
13...	.2	3.2	--	810	--	300	210	1470	7.5	2	--	95
16224500 KALAUAO STREAM AT MOANALUA ROAD, AT AIEA--Continued												
JAN., 1973												
30...	.0	1.5	.04	387	--	130	10	624	7.3	2	0	120
JUNE												
05...	.1	.80	--	363	--	120	0	614	8.0	1	--	125
16229000 KALIHI STREAM NEAR HONOLULU--Continued												
FEB., 1973												
06...	.0	.00	--	79	--	34	2	138	7.5	1	2	32
JUNE												
25...	.0	.00	--	82	--	32	0	136	6.9	--	--	32
16229300 KALIHI STREAM AT KALIHI--Continued												
FEB., 1973												
05...	.1	.10	.04	176	--	84	2	313	7.2	1	7	82
MAY												
23...	.1	<.00	--	132	--	60	4	233	7.4	2	3	56

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TOTAL ALUMINUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	HEXAVALENT CHROMIUM (CR6) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL COBALT (CO) (UG/L)	TOTAL CADMIUM (CD) (UG/L)
HAWAII, ISLAND OF OAHU--Continued												
16200000 NORTH FORK KAUKONAHUA STREAM ABOVE RIGHT BRANCH, NEAR WAHIAWA--Continued												
JAN.. 1973 30...	20	20	0	0	0	0	0	0	0	0	0	0
JUNE 11...	--	--	--	--	--	--	--	--	--	--	--	--
16208000 SOUTH FORK KAUKONAHUA STREAM AT EAST PUMP RESERVOIR, NEAR WAHIAWA--Continued												
JAN.. 1973 24...	0	590	60	0	0	0	0	0	0	0	0	0
JUNE 12...	--	--	--	--	--	--	--	--	--	--	--	--
16211600 MAKAHA STREAM NEAR MAKAHA--Continued												
JAN.. 1973 26...	20	420	10	0	0	0	0	0	0	0	0	0
JUNE 07...	--	--	--	--	--	--	--	--	--	--	--	--
16211800 KAUPUNI STREAM AT ALTITUDE 374 FT, NEAR WAIANAE--Continued												
JAN.. 1973 26...	50	20	10	0	0	0	0	0	180	0	0	1
16212800 KIPAPA STREAM NEAR WAHIAWA--Continued												
JAN.. 1973 29...	0	50	0	0	0	10	0	0	0	0	0	0
JUNE 08...	--	--	--	--	--	--	--	--	--	--	--	--
16216000 WAIAWA STREAM NEAR PEARL CITY--Continued												
JAN.. 1973 24...	250	300	400	0	0	40	0	0	1000	0	2	0
JUNE 13...	130	710	670	0	<25	10	<50	280	400	0	<25	0
16224500 KALAUAO STREAM AT MOANALUA ROAD, AT AIEA--Continued												
JAN.. 1973 30...	160	130	50	0	0	10	0	0	200	0	0	1
JUNE 05...	70	120	30	0	<25	10	<50	460	130	0	<25	0
16229000 KALIHI STREAM NEAR HONOLULU--Continued												
FEB.. 1973 06...	--	340	10	0	0	0	<10	0	40	0	0	0
JUNE 25...	--	--	--	--	--	--	--	--	--	--	--	--
16229300 KALIHI STREAM AT KALIHI--Continued												
FEB.. 1973 05...	50	190	50	0	0	10	<10	0	200	10	0	0
MAY 23...	180	460	30	0	<25	20	<50	330	90	0	<25	0

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
HAWAII, ISLAND OF OAHU--Continued												
16232000 NUUANU STREAM BELOW RESERVOIR 2 WASTEWAY, NEAR HONOLULU (LAT 21°20'57" LONG 157°49'40")												
FEB.. 1973 05...	1420	.76	--	11	5.6	5.6	11	.5	40	0	7.5	16
JUNE 18...	1440	2.7	--	12	5.0	5.2	11	.6	35	0	5.3	17
16238500 WAIHI STREAM AT HONOLULU (LAT 21°19'55" LONG 157°48'12")												
FEB.. 1973 05...	1025	.18	--	20	9.0	8.9	13	.8	66	0	7.4	21
JUNE 14...	1040	5.0	--	13	5.3	4.9	9.1	1.0	37	0	4.0	16
16240500 WAIAKEAKUA STREAM AT HONOLULU (LAT 21°19'53" LONG 157°48'08")												
FEB.. 1973 05...	1205	1.1	--	21	7.3	5.2	9.7	.5	52	0	3.4	12
JUNE 14...	0900	6.2	--	15	5.2	3.9	8.4	.6	36	0	4.0	12
16247000 PALOLO STREAM NEAR HONOLULU (LAT 21°17'34" LONG 157°48'24")												
FEB.. 1973 01...	1010	.48	--	18	15	12	26	.9	74	9	12	41
JUNE 14...	1325	2.0	--	15	10	4.3	18	1.3	34	6	7.9	27
16247100 MANOA-PALOLO DRAINAGE CANAL AT MOILIILI (LAT 21°17'24" LONG 157°49'17")												
FEB.. 1973 01...	1345	E2.0	--	19	13	8.0	17	1.4	79	0	8.9	22
JUNE 14...	1540	7.0	24.5	15	8.0	5.7	12	1.1	54	0	2.4	18
16249000 WAIMANALO STREAM AT WAIMANALO (LAT 21°21'12" LONG 157°43'52")												
JAN.. 1973 17...	1845	E.50	--	28	16	11	21	1.1	103	0	12	25
MAY 24...	1210	1.0	23.0	31	24	14	24	.5	148	0	7.9	28
16260500 MAUNAWILI STREAM AT HIGHWAY 61, NEAR KAILUA (LAT 21°22'51" LONG 157°45'48")												
JAN.. 1973 17...	1430	E3.0	--	28	13	8.9	19	1.0	85	0	8.3	23
MAY 24...	1330	2.0	23.0	24	13	8.2	18	1.1	73	5	6.5	22
16273900 KAMOOALII STREAM AT KANEOHE (LAT 21°24'51" LONG 157°48'13")												
JAN.. 1973 15...	1430	6.9	--	22	8.8	6.6	16	.8	64	1	5.0	19
MAY 22...	0945	7.3	23.0	21	8.9	6.5	18	.9	65	0	4.6	20
16275000 HAIKU STREAM NEAR HEEIA (LAT 21°24'46" LONG 157°49'33")												
JAN.. 1973 16...	1355	.94	--	25	10	6.5	13	1.0	70	0	3.0	17
MAY 23...	1350	1.1	--	25	11	7.1	13	1.0	76	0	3.0	17
16283500 KAHALUU STREAM AT KAHALUU (LAT 21°27'35" LONG 157°50'15")												
FEB.. 1973 02...	0815	E1.5	--	25	21	9.0	21	1.5	106	0	9.9	26
JUNE 18...	1030	1.5	--	29	24	9.3	22	1.4	114	0	8.9	30
16284500 WAIHEE STREAM AT KAHALUU (LAT 21°27'32" LONG 157°50'26")												
FEB.. 1973 02...	0750	E4.0	--	.5	10	5.4	12	.9	58	0	3.0	18
JUNE 11...	1240	4.5	--	31	10	6.2	17	12	40	0	4.0	24

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	TOTAL ORTHO PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TUR-BID-ITY (JTU)	COLOR (PLAT-INUM-COBALT UNITS)	ALKA-LINITY AS CACO3 (MG/L)
HAWAII, ISLAND OF OAHU--Continued												
16232000 NUUANU STREAM BELOW RESERVOIR 2 WASTEWAY, NEAR HONOLULU--Continued												
FEB.. 1973												
05...	.1	.00	.00	77	--	37	4	135	7.1	1	0	33
JUNE												
18...	.1	.00	--	73	--	34	5	128	7.4	2	5	29
16238500 WAIHI STREAM AT HONOLULU--Continued												
FEB.. 1973												
05...	.0	.00	--	113	--	59	5	176	7.9	3	2	54
JUNE												
14...	.1	.00	--	72	--	33	3	118	7.0	5	20	30
16240500 WAIAKEAKUA STREAM AT HONOLULU--Continued												
FEB.. 1973												
05...	.0	<.10	.00	85	--	40	0	130	7.1	1	0	43
JUNE												
14...	.0	.00	--	67	--	29	0	110	6.9	4	8	30
16247000 PALOLO STREAM NEAR HONOLULU--Continued												
FEB.. 1973												
01...	.1	.20	.02	171	--	87	11	301	8.8	1	20	76
JUNE												
14...	.1	.00	--	106	--	43	5	187	9.1	1	30	38
16247100 MANOA-PALOLO DRAINAGE CANAL AT MOILILI--Continued												
FEB.. 1973												
01...	.1	.10	.02	129	--	65	1	219	7.5	1	6	65
JUNE												
14...	.1	.20	--	90	--	43	0	155	7.0	2	10	44
16249000 WAIMANALO STREAM AT WAIMANALO--Continued												
JAN.. 1973												
17...	.1	.40	.14	167	--	85	1	275	7.2	1	4	84
MAY												
24...	.1	<.10	--	202	--	120	0	335	7.9	0	6	121
16260500 MAUNAWILI STREAM AT HIGHWAY 61, NEAR KAILUA--Continued												
JAN.. 1973												
17...	.1	.70	.47	146	--	69	0	229	71.0	1	15	70
MAY												
24...	.1	<.10	--	134	--	66	0	214	8.6	1	3	68
16273900 KAMOOALII STREAM AT KANEOHE--Continued												
JAN.. 1973												
15...	.1	<.10	.00	111	--	49	0	183	8.5	3	0	54
MAY												
22...	.1	<.10	--	112	--	49	0	175	7.6	2	5	53
16275000 HAIKU STREAM NEAR HEEIA--Continued												
JAN.. 1973												
16...	.1	.00	.00	110	--	52	0	170	7.1	2	5	57
MAY												
23...	.0	.10	--	115	--	57	0	178	7.3	1	2	62
16283500 KAHALUU STREAM AT KAHALUU--Continued												
FEB.. 1973												
02...	.1	1.2	.01	171	--	90	3	288	7.1	1	7	87
JUNE												
18...	.1	.60	--	184	--	98	5	299	7.7	1	5	94
16284500 WAIHEE STREAM AT KAHALUU--Continued												
FEB.. 1973												
02...	.1	<.10	.01	78	--	47	0	156	6.9	4	0	48
JUNE												
11...	.1	9.0	--	164	--	51	18	254	6.9	9	--	33

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TOTAL ALUMINUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	HEXAVALENT CHROMIUM (CR6) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL COBALT (CO) (UG/L)	TOTAL CADMIUM (CD) (UG/L)
HAWAII, ISLAND OF OAHU--Continued												
16232000 NUUANU STREAM BELOW RESERVOIR 2 WASTEWAY, NEAR HONOLULU--Continued												
FEB.. 1973 05...	0	290	90	0	0	0	<10	0	0	0	0	0
JUNE 18...	--	--	--	--	--	--	--	--	--	--	--	--
16238500 WAIHI STREAM AT HONOLULU--Continued												
FEB.. 1973 05...	--	450	70	0	0	0	0	0	100	0	0	0
JUNE 14...	--	--	--	--	--	--	--	--	--	--	--	--
16240500 WAIAKEAKUA STREAM AT HONOLULU--Continued												
FEB.. 1973 05...	20	120	0	0	0	0	<10	0	0	0	0	0
JUNE 14...	--	--	--	--	--	--	--	--	--	--	--	--
16247000 PALOLO STREAM NEAR HONOLULU--Continued												
FEB.. 1973 01...	80	20	0	0	0	10	<10	0	200	0	0	0
JUNE 14...	--	--	--	--	--	--	--	--	--	--	--	--
16247100 MANOA-PALOLO DRAINAGE CANAL AT MOILILI--Continued												
FEB.. 1973 01...	30	170	10	0	0	0	<10	0	120	0	0	0
JUNE 14...	140	390	20	0	<25	20	<50	330	70	0	<25	0
16249000 WAIMANALO STREAM AT WAIMANALO--Continued												
JAN.. 1973 17...	50	260	30	0	2	0	<10	0	150	0	0	0
MAY 24...	80	250	20	0	<25	10	<50	190	120	0	<25	0
16260500 MAUNAWILI STREAM AT HIGHWAY 61, NEAR KAILUA--Continued												
JAN.. 1973 17...	0	490	80	0	2	0	<10	0	100	0	0	0
MAY 24...	100	620	60	0	<25	10	<50	260	70	0	<25	0
16273900 KAMOOALII STREAM AT KANEOHE--Continued												
JAN.. 1973 15...	80	230	50	0	4	0	<10	0	70	0	1	0
MAY 22...	140	480	30	0	<25	20	<50	380	70	0	<25	0
16275000 HAIKU STREAM NEAR HEEIA--Continued												
JAN.. 1973 16...	120	380	50	0	2	0	<10	0	100	0	1	0
MAY 23...	--	--	--	--	--	--	--	--	--	--	--	--
16283500 KAHALUU STREAM AT KAHALUU--Continued												
FEB.. 1973 02...	40	200	40	0	0	0	<10	0	180	10	0	0
JUNE 18...	--	--	--	--	--	--	--	--	--	--	--	--
16284500 WAIHEE STREAM AT KAHALUU--Continned												
FEB.. 1973 02...	60	950	100	0	0	0	<10	0	0	0	0	0
JUNE 11...	--	--	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
HAWAII, ISLAND OF OAHU--Continued												
16294900 WAIKANE STREAM AT ALTITUDE 75 FT, AT WAIKANE (LAT 21°30'00" LONG 157°51'54")												
FEB., 1973												
02...	1300	1.7	--	.5	8.4	6.2	15	.8	62	0	3.4	20
JUNE												
11...	1100	2.1	--	27	7.9	6.3	15	.7	62	0	3.4	19
16296500 KAHANA STREAM AT ALTITUDE 30 FT, NEAR KAHANA (LAT 21°32'37", LONG 157°53'07")												
JAN., 1973												
31...	1430	13	--	23	6.8	4.8	11	.6	49	0	2.0	15
JUNE												
13...	1250	14	--	23	6.8	4.6	11	.5	49	0	2.0	14
16303000 PUNALUU STREAM NEAR PUNALUU (LAT 21°33'33" LONG 157°54'06")												
JAN., 1973												
18...	1330	9.4	--	27	5.8	4.7	9.4	.6	44	0	2.4	14
16304200 KALUANUI STREAM NEAR PUNALUU (LAT 21°35'22" LONG 157°54'38")												
JAN., 1973												
31...	1220	.70	--	4.7	1.6	1.8	7.2	.4	8	0	2.4	14
JUNE												
12...	1100	2.2	--	3.7	1.2	1.8	7.8	.4	5	0	2.0	16
16330000 KAMANANUI STREAM AT MAUNANAI (LAT 21°38'20" LONG 158°03'27")												
JAN., 1973												
24...	1115	.30	--	7.5	3.0	3.4	9.1	.7	26	0	3.0	15
JUNE												
06...	1535	2.6	--	6.6	2.7	3.0	9.8	.8	17	0	2.6	19
16343000 HELEMANO STREAM AT HALEIWA (LAT 21°34'40" LONG 158°06'12")												
JAN., 1973												
29...	0810	1.0	--	46	20	14	62	3.0	115	0	19	87
JUNE												
13...	1500	.02	--	44	18	15	75	3.4	126	0	21	103
16345000 OPAEULA STREAM NEAR WAHIAWA (LAT 21°33'55" LONG 158°00'10")												
JAN., 1973												
24...	1500	1.0	--	1.5	.9	1.3	6.0	.3	4	0	2.6	12
JUNE												
12...	1545	3.8	--	2.1	1.0	1.3	6.6	.4	5	0	1.4	14
16350000 OPAEULA STREAM NEAR HALEIWA (LAT 21°35'09" LONG 158°06'01")												
JAN., 1973												
24...	1225	E.20	--	17	13	13	56	1.7	92	0	27	76
JUNE												
12...	1430	.15	--	19	12	13	78	1.6	98	0	28	98
HAWAII, ISLAND OF MOLOKAI												
16400000 HALAWA STREAM NEAR HALAWA (LAT 21°09'32" LONG 156°45'53")												
MAR., 1973												
09...	1345	10	--	4.0	1.0	1.1	6.6	.5	5	0	1.6	12
JUNE												
09...	0945	6.8	--	6.6	1.2	1.2	7.0	.4	8	0	2.0	11
16404000 PELEKUNU STREAM NEAR PELEKUNU (LAT 21°08'11" LONG 156°52'43")												
APR., 1973												
26...	0900	12	--	43	9.6	3.1	8.9	.7	39	0	10	12
JUNE												
06...	1330	20	--	20	9.2	2.9	7.7	.6	38	0	8.3	9.0
16405500 WAIKOLU STREAM AT ALTITUDE 900 FT, NEAR KALAUPAPA (LAT 21°08'45" LONG 156°55'18")												
MAR., 1973												
12...	1620	.90	--	29	4.6	2.7	8.0	1.5	34	0	1.0	11
JUNE												
08...	1330	4.2	--	11	2.2	1.7	6.2	.7	14	0	.0	10

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	TOTAL ORTHO PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TUR-BID-ITY (JTU)	COLOR (PLAT-INUM-COBALT UNITS)	ALKA-LINITY AS CACO3 (MG/L)
HAWAII, ISLAND OF OAHU--Continued												
16294900 WAIKANE STREAM AT ALTITUDE 75 FT, AT WAIKANE--Continued												
FEB., 1973 02...	.1	.00	.00	85	--	47	0	172	7.1	0	5	51
JUNE 11...	.1	<.10	--	110	--	46	0	167	7.3	1	5	51
16296500 KAHANA STREAM AT ALTITUDE 30 FT, NEAR KAHANA--Continued												
JAN., 1973 31...	.0	.00	.00	87	--	37	0	132	7.2	1	0	40
JUNE 13...	.0	.00	--	86	--	36	0	130	7.0	1	5	40
16303000 PUNALUU STREAM NEAR PUNALUU--Continued												
JAN., 1973 18...	.1	.00	.00	86	--	34	0	118	7.0	0	4	36
16304200 KALUANUI STREAM NEAR PUNALUU--Continued												
JAN., 1973 31...	.1	.00	.00	36	--	11	5	69	6.5	0	5	7
JUNE 12...	.0	.00	--	35	--	10	6	65	7.2	1	8	4
16330000 KAMANANUI STREAM AT MAUNAWAI--Continued												
JAN., 1973 24...	.1	.00	.00	55	--	21	0	97	7.5	3	10	21
JUNE 06...	.0	.00	--	53	--	19	5	95	6.8	1	10	14
16343000 HELEMANO STREAM AT HALEIWA--Continued												
JAN., 1973 29...	.1	1.6	.03	315	--	110	13	514	7.3	1	0	94
JUNE 13...	.1	1.3	--	347	--	110	3	597	8.3	1	--	103
16345000 OPAEULA STREAM NEAR WAHIAWA--Coutinued												
JAN., 1973 24...	.1	.00	.00	27	--	8	4	52	6.2	1	30	3
JUNE 12...	.0	<.10	--	29	--	8	4	57	7.1	2	40	4
16350000 OPAEULA STREAM NEAR HALEIWA--Continued												
JAN., 1973 24...	.1	.10	.00	250	--	86	11	444	7.1	1	7	75
JUNE 12...	.1	2.2	--	308	--	83	3	552	7.6	0	3	80
HAWAII, ISLAND OF MOLOKAI--Continued												
16400000 HALAWA STREAM NEAR HALAWA--Continued												
MAR., 1973 09...	.0	.00	--	29	--	7	3	53	6.5	2	30	4
JUNE 09...	.0	.00	--	33	--	8	1	56	7.0	1	15	7
16404000 PELEKUNU STREAM NEAR PELEKUNU--Continued												
APR., 1973 26...	.1	.00	--	107	--	37	5	124	7.5	1	5	32
JUNE 06...	.1	.00	--	77	--	35	4	113	7.4	1	8	31
16405500 WAIKOLU STREAM AT ALTITUDE 900 FT, NEAR KALAUPAPA--Continued												
MAR., 1973 12...	.1	.00	--	75	--	23	0	92	7.1	0	2	28
JUNE 08...	.1	<.10	--	39	--	12	1	59	6.9	1	70	11

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TOTAL ALUMINUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	HEXAVALENT CHROMIUM (CR6) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL COBALT (CO) (UG/L)	TOTAL CADMIUM (CD) (UG/L)
HAWAII, ISLAND OF OAHU--Continued												
16294900 WAIKANE STREAM AT ALTITUDE 75 FT, AT WAIKANE--Continued												
FEB.. 1973												
02...	0	260	50	0	0	0	<10	0	0	0	0	0
JUNE												
11...	--	--	--	--	--	--	--	--	--	--	--	--
16296500 KAHANA STREAM AT ALTITUDE 30 FT,NEAR KAHANA--Continued												
JAN.. 1973												
31...	0	450	70	0	0	0	0	0	0	0	0	0
JUNE												
13...	--	--	--	--	--	--	--	--	--	--	--	--
16303000 PUNALUU STREAM NEAR PUNALUU--Continued												
JAN.. 1973												
18...	0	80	0	0	0	0	0	0	0	0	0	0
16304200 KALUANUI STREAM NEAR PUNALUU--Continued												
JAN.. 1973												
31...	50	30	10	0	0	0	<10	0	0	0	0	0
JUNE												
12...	--	--	--	--	--	--	--	--	--	--	--	--
16330000 KAMANANUI STREAM AT MAUNAWAI--Continued												
JAN.. 1973												
24...	40	120	10	0	0	0	0	0	0	0	0	0
JUNE												
06...	--	--	--	--	--	--	--	--	--	--	--	--
16343000 HELEMANO STREAM AT HALEIWA--Continued												
JAN.. 1973												
29...	80	240	180	0	0	0	0	0	150	0	0	0
JUNE												
13...	--	--	--	--	--	--	--	--	--	--	--	--
16345000 OPAEULA STREAM NEAR WAHIAWA--Continued												
JAN.. 1973												
24...	140	70	0	0	0	0	0	0	0	0	0	0
JUNE												
12...	--	--	--	--	--	--	--	--	--	--	--	--
16350000 OPAEULA STREAM NEAR HALEIWA--Continued												
JAN.. 1973												
24...	10	760	450	0	0	0	0	0	190	0	2	0
JUNE												
12...	--	--	--	--	--	--	--	--	--	--	--	--
HAWAII, ISLAND OF MOLOKAI--Continned												
16400000 HALAWA STREAM NEAR HALAWA--Continued												
MAR.. 1973												
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUNE												
09...	--	--	--	--	--	--	--	--	--	--	--	--
16404000 PELEKUNU STREAM NEAR PELEKUNU--Continued												
APR.. 1973												
26...	--	--	--	--	--	--	--	--	--	--	--	--
JUNE												
06...	--	--	--	--	--	--	--	--	--	--	--	--
16405500 WAIKOLU STREAM AT ALTITUDE 900 FT, NEAR KALAUPAPA--Continued												
MAR.. 1973												
12...	--	--	--	--	--	--	--	--	--	--	--	--
JUNE												
08...	--	--	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
HAWAII, ISLAND OF MAUI												
16501000 PALIKEA STREAM BELOW DIVERSION DAM, NEAR KIPAHULU (LAT 20°41'03" LONG 156°04'10")												
NOV., 1972 21...	1200	1.1	--	4.3	1.2	.7	3.5	.0	8	0	.0	5.5
JUNE, 1973 12...	1100	1.0	--	2.7	1.1	.8	3.2	.2	7	0	.0	5.0
16508000 HANAWI STREAM NEAR NAHIKU (LAT 20°48'37" LONG 156°07'00")												
NOV., 1972 20...	1515	5.8	--	7.2	1.4	.7	4.5	.3	11	0	.0	6.5
MAR., 1973 19...	1100	78	--	2.2	.6	.5	3.2	.4	4	0	.0	6.5
16518000 WEST WAILUAIKI STREAM NEAR KEANAE (LAT 20°49'16" LONG 156°08'37")												
NOV., 1972 20...	1115	9.4	--	7.2	1.3	.9	3.9	.1	10	0	.0	5.5
MAR., 1973 19...	1000	117	--	2.0	.6	.6	2.9	.4	3	0	.0	6.0
16570000 NAILIILIHAELE STREAM NEAR HUELO (LAT 20°52'28" LONG 156°13'06")												
OCT., 1972 31...	1000	6.9	--	8.7	1.6	1.0	4.5	.1	13	0	.0	5.0
FEB., 1973 09...	0930	210	--	1.8	.9	.7	3.8	.4	4	0	.0	7.0
16588000 WAILOA DITCH AT HONOPOU, NEAR HUELO (LAT 20°53'20" LONG 156°15'19")												
OCT., 1972 31...	1230	82	--	8.2	1.8	1.1	4.7	.3	13	0	.0	7.0
FEB., 1973 09...	1130	312	--	2.5	1.0	1.1	5.4	1.1	6	0	1.6	10
16599500 OPANA TUNNEL AT KAILIILI (LAT 20°51'04" LONG 156°16'17")												
NOV., 1972 01...	1445	.42	--	12	2.9	1.9	4.8	.4	23	0	.0	6.0
FEB., 1973 09...	1330	11	--	1.2	.8	.6	2.3	.2	3	0	.0	4.0
16607000 IAO STREAM AT WAILUKU (LAT 20°53'38" LONG 156°30'27")												
NOV., 1972 01...	0900	11	--	19	7.6	3.1	5.8	.2	38	0	7.5	5.0
MAY , 1973 18...	0915	500	--	12	4.1	1.9	4.3	.5	22	0	2.4	7.0
16620000 HONOKOHAU STREAM NEAR HONOKOHAU (LAT 20°57'48" LONG 156°35'22")												
NOV., 1972 28...	1100	12	--	23	4.0	2.1	4.7	.3	28	0	.0	6.0
APR., 1973 10...	1245	225	--	4.4	1.2	.7	2.7	.5	8	0	.0	5.5
10...	1315	475	--	2.7	.9	.5	2.3	.4	4	0	.0	4.5
16646200 OLOWALU STREAM AT OLOWALU (LAT 20°49'23" LONG 156°37'15")												
NOV., 1972 01...	1045	6.1	--	39	19	8.6	14	.9	83	0	24	17
JUNE, 1973 11...	0930	4.3	--	37	18	8.4	13	1.0	80	1	23	15

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	TOTAL ORTHO PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TUR-BID-ITY (JTU)	COLOR (PLAT-INUM-COBALT UNITS)	ALKA-LINITY AS CACO3 (MG/L)
HAWAII, ISLAND OF MAUI--Continued												
16501000 PALIKEA STREAM BELOW DIVERSION DAM, NEAR KIPAHULU--Continued												
NOV., 1972												
21...	.1	<.10	.00	19	--	6	0	33	6.3	0	6	7
JUNE, 1973												
12...	.0	.00	--	16	--	6	0	30	6.7	0	10	6
16508000 HANAWI STREAM NEAR NAHIKU--Continued												
NOV., 1972												
20...	.1	.00	.00	26	--	6	0	40	6.4	1	4	9
MAR., 1973												
19...	.0	.00	.00	15	--	4	0	28	6.2	0	7	3
16518000 WEST WAILUAIKI STREAM NEAR KEANAE--Continued												
NOV., 1972												
20...	.1	.00	.00	24	--	7	0	38	6.6	0	5	8
MAR., 1973												
19...	.0	.00	--	14	--	4	2	27	6.2	2	15	2
16570000 NAILILIHAELE STREAM NEAR HUELO--Continued												
OCT., 1972												
31...	.1	.00	.00	27	--	8	0	43	6.7	1	4	11
FEB., 1973												
09...	.0	.00	--	17	--	5	2	34	6.2	5	50	3
16588000 WAILOA DITCH AT HONOPOU, NEAR HUELO--Continued												
OCT., 1972												
31...	.1	<.10	.00	30	--	9	0	46	7.0	1	5	11
FEB., 1973												
09...	.0	.00	--	26	--	7	2	49	6.2	30	70	5
16599500 OPANA TUNNEL AT KAILIILI--Continued												
NOV., 1972												
01...	.1	<.10	.00	39	--	15	0	57	6.8	0	4	19
FEB., 1973												
09...	.0	.40	--	12	--	4	2	24	6.1	2	35	2
16607000 IAO STREAM AT WAILUKU--Continued												
NOV., 1972												
01...	.1	.00	.00	67	--	32	1	98	7.4	0	4	31
MAY , 1973												
18...	.0	<.10	--	43	--	18	0	61	7.2	2	8	18
16620000 HONOKOHAU STREAM NEAR HONOKOHAU--Continued												
NOV., 1972												
28...	.1	.00	.01	54	--	19	0	64	7.1	0	4	23
APR., 1973												
10...	.0	.00	--	19	--	6	0	28	6.7	4	20	7
10...	.0	.00	--	13	--	4	1	23	6.2	7	30	3
16646200 OLOWALU STREAM AT OLOWALU--Continued												
NOV., 1972												
01...	.1	.00	.02	163	--	83	15	239	7.9	0	4	68
JUNE, 1973												
11...	.0	.00	--	156	--	80	12	229	8.5	0	4	67

DATE	TOTAL ALUMINUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	HEXAVALENT CHROMIUM (CR6) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	TOTAL COBALT (CO) (UG/L)	TOTAL CADMIUM (CD) (UG/L)
HAWAII, ISLAND OF MAUI--Continued												
16501000 PALIKEA STREAM BELOW DIVERSION DAM, NEAR KIPAHULU--Continued												
NOV., 1972 21...	60	40	0	0	2	0	<10	0	0	0	0	0
JUNE, 1973 12...	--	--	--	--	--	--	--	--	--	--	--	--
16508000 HANAWI STREAM NEAR NAHIKU--Continued												
NOV., 1972 20...	20	50	0	0	3	0	<10	0	0	0	0	0
MAR., 1973 19...	--	--	--	--	--	--	--	--	--	--	--	--
16518000 WEST WAILUAIKI STREAM NEAR KEANAE--Continued												
NOV., 1972 20...	40	60	0	0	3	0	0	0	0	0	0	0
MAR., 1973 19...	--	--	--	--	--	--	--	--	--	--	--	--
16570000 NAILIILIHAELE STREAM NEAR HUELO--Continued												
OCT., 1972 31...	60	40	0	0	<2	0	<10	0	0	0	0	0
FEB., 1973 09...	--	450	10	0	10	0	0	0	0	0	0	0
16588000 WAILOA DITCH AT HONOPOU, NEAR HUELO--Continued												
OCT., 1972 31...	70	80	0	0	3	10	<10	30	0	0	0	0
FEB., 1973 09...	--	970	20	0	5	0	0	0	0	0	0	0
16599500 OPANA TUNNEL AT KAILIILI--Continued												
NOV., 1972 01...	0	50	0	0	4	0	0	0	0	0	0	0
FEB., 1973 09...	--	280	0	0	2	0	<10	0	0	0	0	0
16607000 IAO STREAM AT WAILUKU--Continued												
NOV., 1972 01...	0	0	0	0	<2	0	<10	0	0	0	0	0
MAY , 1973 18...	--	--	--	--	--	--	--	--	--	--	--	--
16620000 HONOKOHAU STREAM NEAR HONOKOHAU--Continued												
NOV., 1972 28...	0	0	0	0	<2	0	<10	0	0	0	0	0
APR., 1973 10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
16646200 OLOWALU STREAM AT OLOWALU--Continued												
NOV., 1972 01...	50	10	0	0	0	0	0	0	40	0	0	0
JUNE, 1973 11...	--	--	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
HAWAII, ISLAND OF HAWAII												
16700000 WAIAKEA STREAM NEAR MOUNTAIN VIEW (LAT 19°38'30" LONG 155°10'28")												
NOV., 1972												
21...	0845	40	--	17	2.6	.8	3.3	.7	18	0	.0	2.5
JUNE, 1973												
12...	0915	7.8	--	17	2.8	.9	3.7	.7	19	0	.0	2.0
16704000 WAILUKU RIVER AT PIIHONUA (LAT 19°42'58" LONG 155°09'13")												
NOV., 1972												
21...	1010	390	--	12	1.9	.8	2.5	.4	13	0	.0	2.5
JUNE, 1973												
12...	1105	35	--	13	3.9	2.4	3.0	.3	26	0	.0	4.5
16717800 POHAKUPUKA STREAM NEAR PAPAALOA (LAT 19°57'20" LONG 155°11'20")												
JUNE, 1973												
11...	1425	3.2	--	25	10	5.1	6.6	.4	62	0	2.0	6.0
NOV., 1972												
21...	1425	11	--	17	5.2	2.9	5.0	.5	34	0	1.4	6.0
JUNE, 1973												
11...	1425	3.2	--	25	10	5.1	6.6	.4	62	0	2.0	6.0
16756000 KOHAKOHAU STREAM NEAR KAMUELA (LAT 20°03'02" LONG 155°40'58")												
DEC., 1972												
14...	1405	.52	--	5.6	.8	1.0	3.9	.3	6	0	.0	5.0
JUNE, 1973												
15...	1110	1.9	--	4.2	.8	1.2	3.7	2.0	7	0	.0	6.5
16758000 WAIKOLOA STREAM AT MARINE DAM, NEAR KAMUELA (LAT 20°02'48" LONG 155°39'58")												
DEC., 1972												
14...	1250	2.4	--	11	1.4	2.3	4.5	.4	19	0	.0	4.5
JUNE, 1973												
15...	1000	6.0	--	8.6	1.5	2.2	4.4	.2	16	0	.0	6.0
16759200 RIGHT BRANCH WAIAHA STREAM NEAR HOLUALOA (LAT 19°39'41" LONG 155°54'55")												
DEC., 1972												
18...	1210	E.01	--	3.4	3.1	2.1	3.1	.7	8	0	10	5.5
JUNE, 1973												
26...	1200	.01	--	4.7	4.0	2.1	2.6	.0	11	0	6.9	5.5
16764000 HILEA GULCH TRIBUTARY NEAR HONUAPO (LAT 19°10'27" LONG 155°35'58")												
NOV., 1972												
27...	1110	.11	--	13	3.5	2.2	3.2	.5	13	0	7.9	5.0
JUNE, 1973												
18...	1145	3.2	--	8.0	2.5	1.8	2.7	.3	6	0	9.9	4.5

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	TOTAL ORTHO PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TUR-BID-ITY (JTU)	COLOR (PLAT-INUM-COBALT UNITS)	ALKA-LINITY AS CACO3 (MG/L)
HAWAII, ISLAND OF HAWAII--Continued												
16700000 WAIAKEA STREAM NEAR MOUNTAIN VIEW--Continued												
NOV., 1972 21...	.1	<.10	.00	36	--	10	0	39	6.6	1	4	15
JUNE, 1973 12...	.0	.20	--	37	--	11	0	41	7.5	0	3	16
16704000 WAILUKU RIVER AT PIIHONUA--Continued												
NOV., 1972 21...	.1	.00	.00	27	--	8	0	31	6.7	1	4	11
JUNE, 1973 12...	.0	.10	--	40	--	20	0	55	7.5	0	4	21
16717800 POHAKUPUKA STREAM NEAR PAPAALOA--Continued												
JUNE, 1973 11...	.0	.00	--	86	--	46	0	126	7.7	1	6	51
NOV., 1972 21...	.1	.10	.00	55	--	25	0	78	7.2	2	7	28
JUNE, 1973 11...	.0	.00	--	86	--	46	0	126	7.7	1	6	51
16756000 KOHAKOHAU STREAM NEAR KAMUELA--Continued												
DEC., 1972 14...	.1	.00	.00	20	--	6	1	33	6.2	1	65	5
JUNE, 1973 15...	.1	<.10	--	22	--	7	1	35	6.7	1	65	6
16758000 WAIKOLOA STREAM AT MARINE DAM, NEAR KAMUELA--Continued												
DEC., 1972 14...	.1	<.10	.00	34	--	13	0	48	6.7	2	50	16
JUNE, 1973 15...	.0	<.10	--	31	--	13	0	47	7.1	2	60	13
16759200 RIGHT BRANCH WAIAHA STREAM NEAR HOLUALOA--Continued												
DEC., 1972 18...	.2	.00	.00	32	--	16	10	57	6.3	3	15	7
JUNE, 1973 26...	.1	.00	--	31	--	19	10	54	6.8	1	--	9
16764000 HILEA GULCH TRIBUTARY NEAR HONUAPO--Continued												
NOV., 1972 27...	.1	.00	.00	42	--	18	7	61	6.4	0	4	11
JUNE, 1973 18...	.1	<.10	--	33	--	14	9	47	6.8	1	8	5

SUSPENDED-SEDIMENT DISCHARGE FOR SELECTED DAYS,
WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (T/DAY)
HAWAII, ISLAND OF OAHU			
16228200 MOANALUA STREAM NEAR AIEA (LAT 21°22'37" LONG 157°52'58")			
JULY, 1973			
09...	36	50	14
10...	35	19	3.7
16229300 KALIHI STREAM AT KALIHI (LAT 21°20'29" LONG 157°52'36")			
NOV., 1972			
06...	14	50	3.1
07...	20	36	3.0
DEC.			
18...	22	99	7.1
APR., 1973			
10...	44	114	15
JULY			
02...	24	59	2.5

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS
WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
HAWAII, ISLAND OF OAHU					
16273900 KAMOOALII STREAM AT KANEOHE (LAT 21°24'51" LONG 157°48'13")					
OCT.					
06...	1545	7.3	27.0	2	0.04
NOV.					
11...	1415	8.2	--	10	0.22
12...	1700	7.9	--	10	0.21
DEC.					
26...	1610	7.3	--	9	0.18
27...	1610	7.0	--	8	0.15
MAR.					
27...	1630	7.0	--	7	0.13
APR.					
06...	1830	6.4	--	7	0.12
07...	1800	6.4	--	7	0.12
MAY					
13...	1500	7.0	--	6	0.11
JULY					
12...	1230	7.9	--	5	0.11
18...	1700	6.7	--	4	0.07
AUG.					
21...	1230	6.0	--	2	0.03
22...	1610	6.2	--	2	0.03
SEP.					
09...	1830	6.0	--	3	0.05
10...	1740	6.0	--	3	0.05

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)
HAWAII, ISLAND OF OAHU												
16226000 NORTH HALAWA STREAM NEAR AIEA (LAT 21°23'46" LONG 157°53'37")												
JUNE, 1973 25...	1245	--	20	5.7	4.2	12	.8	35	0	3.4	21	.0
16244000 PUKELE STREAM NEAR HONOLULU (LAT 21°18'36" LONG 157°47'27")												
JUNE, 1973 14...	1455	.56	23	11	9.2	19	1.1	72	0	6.9	25	.1
16270500 KAMOOALII STREAM BELOW KUOU STREAM NEAR KANEOHE (LAT 21°23'42" LONG 157°48'26")												
JAN., 1973 15...	1530	4.5	22	7.8	6.9	16	.8	64	0	4.6	18	.1
16302000 PUNALUU DITCH NEAR PUNALUU (LAT 21°33'41" LONG 157°54'10")												
MAY , 1973 29...	1315	3.5	27	5.4	4.6	9.1	.8	43	0	2.4	13	.0
16325000 KAMANANUI STREAM AT PUPUKEA MILITARY ROAD NEAR MAUNAWAI (LAT 21°37'25" LONG 158°01'04")												
JUNE, 1973 27...	1030	--	7.1	1.8	2.1	9.8	.7	12	0	3.0	16	.0

DATE	DISSOLVED NITRATE (N) (MG/L)	TOTAL ORTHO PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TURBIDITY (JTU)	COLOR (PLATINUM-COBALT UNITS)	ALKALINITY AS CACO3 (MG/L)
16226000 NORTH HALAWA STREAM NEAR AIEA--Continued											
JUNE, 1973 25...	.01	--	84	--	32	3	125	6.8	--	--	29
16244000 PUKELE STREAM NEAR HONOLULU--Continued											
JUNE, 1973 14...	2.5	--	142	--	65	6	230	7.6	1	3	59
16270500 KAMOOALII STREAM BELOW KUOU STREAM NEAR KANEOHE--Continued											
JAN., 1973 15...	.51	.00	110	--	48	0	179	6.9	1	5	52
16302000 PUNALUU DITCH NEAR PUNALUU--Continued											
MAY , 1973 29...	.00	--	83	--	32	0	117	7.1	1	5	35
16325000 KAMANANUI STREAM AT PUPUKEA MILITARY ROAD NEAR MAUNAWAI--Continued											
JUNE, 1973 27...	.00	--	47	--	13	3	81	6.8	--	--	9

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS
WATER YEAR OCTOBER 1972 TO SEPTEMBER 1973

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
HAWAII, ISLAND OF OAHU				
16227900 MOANALUA STREAM TRIBUTARY NEAR AIEA (LAT 21°23'07" LONG 157°51'42")				
APR., 1973				
20...	1145	0.04	84	0.01
20...	1220	0.03	74	0.01
20...	1300	0.04	214	0.02
20...	1315	0.06	223	0.04
20...	1330	0.08	87	0.02
20...	1400	0.07	51	0.01
20...	1500	0.08	38	0.01
16229000 KALIHI STREAM NEAR HONOLULU (LAT 21°22'00" LONG 157°50'49")				
FEB., 1973				
20...	1235	0.30	2	0
20...	1515	11	232	6.9
20...	1850	37	41	4.1
20...	1945	27	24	1.7
21...	0815	4.4	2	0.02
MAY				
27...	2000	40	274	30
16325000 KAMANANUI STREAM AT PUPUKEA MILITARY ROAD NEAR MAUNAWAI (LAT 21°37'25" LONG 158°01'04")				
JUNE, 1973				
27...	1100	1.3	2	0.01
16345000 OPAEULA STREAM NEAR WAHIAWA (LAT 21°33'55" LONG 158°00'10")				
MAR., 1973				
22...	0950	104	16	4.5
23...	1130	64	15	2.6

	Page
Aasu, Tutuila, Aasu Stream at	202
Aasu Stream at Aasu, Tutuila	202
Accuracy of data	13-14
Acre-foot, definition of	3
Adeiddo River, Babelthuap, Palau Islands	174
Afao, Tutuila, Atauloma Stream at	203
Afeibung Stream, Tol, Truk Islands	214
Afono, Tutuila, Pago Stream at	200
Afuelo Stream at Matuu, Tutuila	205
Agat, Guam, Almagosa River near	169
Almagosa Stream near	168
Fena Dam spillway near	171
Finile Creek at	162
Imong River near	167
Maulap River near	170
Agfayan River near Inarajan, Guam	211
Ahuimanu Stream near Kahaluu	209
Aiea, Oahu, Kalauao Stream at Moanalua Road, at	77
North Halawa Stream near	78
Ajayan River near Inarajan, Guam	211
Alakahi Stream near Kamuela, Hawaii	144
Almagosa River near Agat, Guam	169
Almagosa Springs near Agat, Guam	168
Almokan River, Babelthuap, Palau Islands	212
Alega, Tutuila, Alega Stream at	206
Alega Stream at Alega, Tutuila	206
Anahola, Kauai, Anahola Stream at	64
Anahola ditch above Kaneha Reservoir, near Kealia, Kauai	61
Anahola ditch wasteway near Kealia, Kauai	60
Anahola Stream, at Anahola, Kauai	64,238,242-243
near Kealia, Kauai	62
Aringel Stream, Yap, Yap Islands	179
Asalonso River near Talofofo, Guam	211
Asonan Springs, Saipan	210
Astaban River at Umatac, Guam	211
Atauloma Stream at Afao, Tutuila	203
Auasi, Tutuila, Leafu Stream near	207
Bed material, definition of	3
Bileiy Spring, Gagil-Tomil, Yap Islands	184
Bileiy Stream, Gagil-Tomil, Yap Islands	214
Bubulao River near Talofofo, Guam	212
Burong Stream, Yap, Yap Islands	183
Cetti River, above tributary, near Umatac, Guam	210
near Umatac, Guam	210
Cfs-day, definition of	3
Chun Stream, Dublon Island, Truk Islands	189
Coliform organisms, definition of	3
Collection and computation of data	9-13
Collection and examination of data	16-17
Contents, definition of	3
Control, definition of	3
Cooperation	2-3
Cubic foot per second, definition of	4
Dalolab Stream, Yap, Yap Islands	180
Definition of terms	3-8
Denni Spring, Saipan	158
Discharge, definition of	4
Downstream order and station numbers	9
Drainage area, definition of	4
East Achugau Spring, Saipan	209
Echapachik Stream, Tol, Truk Islands	188
Eleele, Kauai, Hanapepe River below Manuahi Stream near	47
Faata Springs at Agat, Guam	210
Fagasa, Tutuila, Leele Stream at mouth, at	201
Fara Swamp outlets, Yap, Yap Islands	213
Fena Dam spillway near Agat, Guam	171
Fensol River near Inarajan, Guam	211
Finile Creek at Agat, Guam	162
Fintasa River near Inarajan, Guam	211
Fonte River at dam, near Nimitz Hill, Guam	210
Fuafua Stream near Malaeloa, Tutuila	215
Gaden River, Babelthuap, Palau Islands	177
Gage height, definition of	4
Gaging station, definition of	4
Galngun Swamp outlet, Yap, Yap Islands	213
Geligal Marsh outlet, Babelthuap, Palau Islands	212
Geus River, above Siligin Spring tributary, near Merizo, Guam	211
below Siligin Spring tributary, near Merizo, Guam	211
near Merizo, Guam	164
Gihmel River, Babelthuap, Palau Islands	176
Guam, island of, crest-stage partial-record station on	216
gaging-station records on	162-173
low-flow partial-record stations on	210-212
map of	30
Hahalawe Gulch near Kipahulu, Maui	209
Haiku ditch at Honopou Gulch, near Kailua, Maui	129
Haiku Stream near Heeia, Oahu	92,240,247-249
Halaulani Stream at altitude 400 ft, near Kilauea, Kauai	65
Halawa, Molokai, Halawa Stream near	105
Papio Gulch at	114
Halawa Stream near Halawa, Molokai	105,240,250-252
Haleiwa, Oahu, Helemano Stream at	103
Hanalei, Kauai, Hanalei River near	67
Wainiha River near	68
Hanalei River near Hanalei, Kauai	67,238,242-243
Hanalei tunnel outlet near Lihue, Kauai	66
Hanapepe River below Manuahi Stream, near Eleele, Kauai	47,238,242-243
Hanawi Stream near Nahiku, Maui	116,241,253-255
Hardness, definition of	4
Hasngot Stream, Saipan	209
Hauani Gulch near Kamuela, Hawaii	151
Hawaii, island of, discharge measurements at miscellaneous sites on	217
gaging-station records on	134-157
map of	27
water-quality records on	236-237,241,256-257
Heeia, Oahu, Haiku Stream near	92
North Fork Waihee Stream near	94
South Fork Waihee Stream near	93
Helemano Stream at Haleiwa, Oahu	103,240,250-252
Hilea Gulch tributary near Honuapo, Hawaii	154,256-257
Hilea Gulch tributary No. 2 near Honuapo, Hawaii	155
Holualoa, Hawaii, Right Branch Waiaha Stream near	152
Honaunau, Hawaii, Kiilae Stream near	153
Honokaa, Hawaii, Honokaa diversion at	147
Lower Hamakua ditch below Honokaa diversion at	148
Honokaa diversion at Honokaa, Hawaii	147
Honokohau, Maui, Honokohau Stream near	131
Honokohau Stream near Honokohau, Maui	131,241,253-255
Honolii Stream near Papaikou, Hawaii	138,236-237
Honolulu, Oahu, Kalihi Stream near	82
Moanalua Stream near	81
Nuuanu Stream below reservoir 2 wasteway, near	84
Palolo Stream near	88
Pukele Stream near	87
Waiakeakua Stream at	86
Waihi Stream at	85
Honopou Stream near Huelo, Maui	125
Honuapo, Hawaii, Hilea Gulch tributary near	154
Hilea Gulch tributary No. 2 near	155
Huelo, Maui, Honopou Stream near	125
Koolau ditch at Haipuaena, near	122
Lowrie ditch at Honopou Gulch, near	128
Manuel Luis ditch at Puohokamoa Gulch, near	123
Nailiilihaele Stream near	124
New Hamakua ditch at Honopou, near	127

	Page
Huelo, Maui, Spreckels ditch at Haipuaena weir, near	121
Wailoa ditch at Honopou, near	126
Huleia Stream near Lihue, Kauai	238,242-243
Humuula, Hawaii, Wailuku River near	135
Hydrologic bench-mark station, definition of	8-9
Iao Stream at Wailuku, Maui	241,253-255
Illustrations	23-39
Imong River near Agat, Guam	167
Inarajan, Guam, Inarajan River near	165
Tinaga River near	166
Inarajan River near Inarajan, Guam	165
Innem River, Guam	215
Instantaneous discharge, definition of	4
Introduction	1-2
Janum Spring near Yigo, Guam	212
Kahaluu Stream, at Kahaluu, Oahu	240,247-249
near Kahaluu, Oahu	208
Kahana, Oahu, Kahana Stream at altitude 30 ft, near	97
Kahana Stream, at altitude 30 ft, near Kahana, Oahu	97,240,250-252
Kahanaiki Stream at Highway 61, near Kailua, Oahu	208
Kahoma Stream at Lahaina, Maui	132
Kailiili, Maui, Opana tunnel at	130
Kailua, Maui, Haiku ditch at Honopou Gulch, near	129
Kailua, Oahu, Makawao Stream near	89
Kalauao Stream at Moanalua Road, at Aiea, Oahu	77,239,244-246
Kalaupapa, Molokai, Waikolu Stream at altitude 900 ft, near	111
Waikolu Stream below pipeline crossing, near	112
Kalihi, Oahu, Kalihi Stream at	83
Kalihi Stream, at Kalihi, Oahu	83,239,244-246,258
near Honolulu, Oahu	82,239,244-246,260
Kaluanui Stream near Punaluu, Oahu	100,240,250-252
Kamananui Stream, at Maunawai, Oahu	101,240,250-252
at Pupukea Military Road, near Maunawai, Oahu	101,259,260
Kamooalii Stream, at Kaneohe, Oahu	91,240,247-249,258
below Kuou Stream, near Kaneohe, Oahu	90,233-235,259
Kamuela, Hawaii, Alakahi Stream near	144
Hauani Gulch near	151
Kawaiki Stream near	141
Kawainui Stream near	140
Kohakohau Stream near	149
Upper Hamakua ditch above Alakahi Stream, near	143
Upper Hamakua ditch below Kawaiki Stream, near	142
Waikoloa Stream at Marine dam, near	150
Kaneohe, Oahu, Kamooalii Stream at	91
Kamooalii Stream below Kuou Stream, near	90
Moanalua Stream near	79
Moanalua Stream tributary near	80
Kapaa, Kauai, Kapaa Stream at Kapahi ditch intake, near	59
Left Branch Opaekaa Stream near	56
North Fork Wailua River near	55
Wailua ditch near	54
Kapaa Stream at Kapahi ditch intake, near Kapaa, Kauai	59
Kapahi ditch near Kealia, Kauai	58
Kapuhi Stream at altitude 1,000 ft, near Pelekunu, Molokai	209
Kauai, island of, gaging-station records on	43-68
low-flow partial-record stations on	208
map of	23
water-quality records on	238,242-243
Kauaikinana Stream near Waimea, Kauai	208
Kaukonahua Stream, North Fork, above Right Branch, near Wahiawa, Oahu	69,238,244-246
Right Branch of North Fork, near Wahiawa, Oahu	208
South Fork, at East Pump Reservoir, near Wahiawa, Oahu	70,238,244-246
Kaumana, Hawaii, Wailuku River near	136
Kaunakakai, Molokai, Kaunakakai Gulch at	113
Kaunakakai Gulch at Kaunakakai, Molokai	113
Kaupuni Stream at altitude 374 ft, near Waianae, Oahu	239,244-246
Kawaiki Stream near Kamuela, Hawaii	141
Kawaikoi Stream near Waimea, Kauai	43
Kawailena Stream near Pelekunu, Molokai	209
Kawainui Stream, at altitude 1,000 ft, near Pelekunu, Molokai	209
near Kamuela, Hawaii	140
near Pelekunu, Molokai	106
Kawaipoko Stream near Pelekunu, Molokai	209
Kawela Gulch, East Fork, near Kamalo, Molokai	241
Keaahala Stream at Kamehameha Highway at Kaneohe, Oahu	208
Kealia, Kauai, Anahola ditch above Kaneha Reservoir, near	61
Anahola ditch wasteway near	60
Anahola Stream near	62
Kapahi ditch near	58
Lower Anahola ditch near	63
Makaleha ditch near	57
Keanae, Maui, Koolau ditch near	119
West Wailuaiki Stream near	118
Kiilae Stream near Honaunau, Hawaii	153
Kilauea, Kauai, Halaulani Stream at altitude 400 ft, near	65
Kipahulu, Maui, Palikea Stream below diversion dam, near	115
Kipapa Stream near Wahiawa, Oahu	74,221-222,239,244-246
Kirictilang River, Ponape	214
Kohakohau Stream near Kamuela, Hawaii	149,256-257
Kokee ditch near Waimea, Kauai	44
Koolau ditch, at Haipuaena, near Huelo, Maui	122
at Nahiku weir, near Nahiku, Maui	117
near Keanae, Maui	119
Kukuihaele, Hawaii, Lower Hamakua ditch below main weir, near	146
Lower Hamakua ditch wasteway near	145
Kula diversion from Haipuaena Stream near Olinda, Maui	120
Kumukumeyel River, Babelthuap, Palau Islands	212
Kusaie, island of, gaging-station records on	196-199
low-flow partial-record stations on	215
map of	38
Laelae River at Umatac, Guam	211
Lahaina, Maui, Kahoma Stream at	132
La Sa Fua River near Umatac, Guam	210
Lataw River, Ponape	215
Lawai Stream near Koloa, Kauai	238,242-243
Leafu Stream, near Auasi, Tutuila	207
near Leone, Tutuila	215
Leele Stream at mouth, at Fagasa, Tutuila	201
Lehnmasi River, Ponape	215
Lihue, Kauai, East Branch of North Fork Wailua River near	53
Hanalei tunnel outlet near	66
North Fork Wailua River at altitude 650 ft, near	52
North Wailua ditch below Waikoko Stream, near	50
North Wailua ditch near	49
South Fork Wailua River near	48
Stable storm ditch near	51
Lower Anahola ditch near Kealia, Kauai	63
Lower Hamakua ditch, below Honokaa diversion, at Honokaa, Hawaii	148
below main weir, near Kukuihaele, Hawaii	146
Lower Hamakua ditch wasteway near Kukuihaele, Hawaii	145
Lowrie ditch at Honopou Gulch, near Huelo, Maui	128
Lui River, Ponape	192
at mouth, Ponape	193
Lui River tributary No. 2, Ponape	214
Lui River tributary, Ponape	214
Lupug Spring, Rota	161
Lupwor River, Ponape	195
Madog River near Umatac, Guam	210

Page

Makaha, Oahu, Makaha Stream near..... 73
Makaha Stream near Makaha, Oahu.....73,238,244-246
Makaleha ditch near Kealia, Kauai..... 57
Makawao Stream near Kailua, Oahu 89
Makaweli River near Waimea, Kauai..... 46
Malem River, Kusaie..... 198
Manengon River near Yona, Guam..... 212
Manoa-Palolo Drainage Canal at Moiliili..239,247-249
Manuel Luis ditch at Puohokamoa Gulch, near Huelo, Maui..... 123
Masso River at dam, near Piti, Guam..... 210
Matuu, Tutuila, Afuelo Stream at..... 205
Maui, island of, gaging-station records on...115-133
low-flow partial-record stations on..... 209
map of..... 26
water-quality records on.....241,253-255
Maulap River near Agat, Guam..... 170
Maunawai, Oahu, Kamananui Stream at..... 102
Kamananui Stream at Pupukea Military Road, near..... 101
Maunawili Stream at Highway 61, near Kailua, Oahu.....239,247-249
Mean concentration, definition of..... 7
Mean discharge, definition of..... 4
Meitik River, Ponape..... 214
Merizo, Guam, Geus River near..... 164
Micrograms per liter, definition of..... 4-5
Milligrams per liter, definition of..... 5
Moanalua Stream, near Aiea, Oahu..... 258
near Honolulu, Oahu..... 81
near Kaneohe, Oahu.....79,230-232
Moanalua Stream tributary, near Aiea, Oahu... 260
near Kaneohe, Oahu..... 80
Mokihana Stream near Waimea, Kauai..... 208
Molokai, island of, discharge measurements at miscellaneous sites on..... 217
gaging-station records on.....105-114
low-flow partial-record stations on..... 209
map of..... 25
water-quality records on.....240-241,250-252
Molokai tunnel, at east portal, Molokai..... 109
at west portal, Molokai..... 110
Mountain View, Hawaii, Waiakea Stream near... 134
Mukong Stream, Gagil-Tomil, Yap..... 214
Mutunte River, Kusaie..... 196

Nachiponong Stream, Moen, Truk Islands..... 187
Nahiku, Maui, Hanawi Stream near..... 116
Koolau ditch at Nahiku weir, near..... 117
Nailiilihaele Stream near Huelo, Maui.....124,241,253-255
Namo River at Santa Rita, Guam..... 216
Nanepil River, Ponape..... 191
New Hamakua ditch at Honopou, near Huelo, Maui..... 127
Ngardok River, South Fork, Babelthuap, Palau Islands..... 178
Ngatpang River, Babelthuap, Palau Islands.... 212
Ninole Gulch near Punaluu, Hawaii..... 156
North Halawa Stream near Aiea, Oahu..... 78,259
North Wailua ditch, below Waikoko Stream, near Lihue, Kauai..... 50
near Lihue, Kauai..... 49
Nuuanu Stream below reservoir 2 wasteway, near Honolulu, Oahu.....84,239,247-249
Nuuuli, Tutuila, Papa Stream at..... 204

Oahu, island of, gaging-station records on... 69-104
low-flow partial-record stations on.....208-209
map of..... 24
water-quality records on.....221-235,238-240,244-252,258-260
Okat River, Kusaie..... 197
Olinda, Maui, Kula diversion from Haipuaena Stream near..... 120
Olowalu ditch near Olowalu..... 241
Olowalu, Maui, Olowalu Stream at..... 133
Olowalu Stream at Olowalu, Maui.....133,241,253-255
Opaekaa Stream, Left Branch, near Kapaa, Kauai..... 56
Opaeula Stream, near Haleiwa, Oahu.....240,250-252
near Wahiawa, Oahu.....104,240,250-252,260
Opana tunnel at Kailiili, Maui.....130,241,253-255
Ordot, Guam, Pago River near..... 173
Other data available..... 15

Page

Paauau Gulch at Pahala, Hawaii..... 157
Pago River near Ordot, Guam..... 173
Pago Stream at Afono, Tutuila..... 200
Pahala, Hawaii, Paauau Gulch at..... 157
Palau Islands, gaging-station records on.....174-178
low-flow partial-record stations on.....212-213
map of..... 31-32
Palikea Stream below diversion dam, near Kipahulu, Maui.....115,241,253-255
Palolo Stream near Honolulu, Oahu.... 88,239,247-249
Papa Stream at Nuuuli, Tutuila..... 204
Papaaloa, Hawaii, Pohakupuka Stream near..... 139
Papaikou, Hawaii, Honolii Stream near..... 138
Papio Gulch at Halawa, Molokai..... 114
Partial-record station, definition of..... 5
Particle size, definition of..... 5
Particle-size classification, definition of.. 5-7
Pasamano River near Inarajan, Guam..... 211
Pearl City, Oahu, Waiawa Stream near..... 76
Pearl Harbor Springs, at Kalauao, near Aiea, Oahu..... 208
at Waiawa, near Pearl City, Oahu..... 208
Pelekunu, Molokai, Kawainui Stream near..... 106
Pelekunu Stream near..... 107
Pilipililau Stream near..... 108
Pelekunu Stream near Pelekunu, Molokai.....107,240,250-252
Pemgoy Stream, Yap, Yap Islands..... 181
Piga Spring near Umatac, Guam..... 210
Piihonua, Hawaii, Wailuku River at..... 137
Pilenkiel River, Ponape..... 214
Pilipililau Stream near Pelekunu, Molokai.... 108
Poamoho Stream near Wahiawa, Oahu..... 72
Poamoho tunnel near Wahiawa, Oahu..... 71
Pohakupuka Stream near Papaaloa, Hawaii..139,256-257
Ponape, island of, gaging-station records on.191-195
low-flow partial-record stations on.....214-215
map of..... 37
Publications.....14-15,19
Pukele Stream near Honolulu, Oahu..... 87,259
Punaluu, Hawaii, Ninole Gulch near..... 156
Punaluu, Oahu, Kaluanui Stream near..... 100
Punaluu ditch near..... 98
Punaluu Stream near..... 99
Punaluu ditch near Punaluu, Oahu..... 98,259
Punaluu Stream near Punaluu, Oahu.....99,240,250-252

Ripu Stream, Yap, Yap Islands..... 213
Rota, island of, gaging-station record on.... 161
low-flow partial-record station on..... 210
map of..... 29

Saipan, island of, gaging-station records on.158-160
low-flow partial-record stations on..... 209
map of..... 28
Sediment..... 18
definition of..... 7
Selected references..... 19-21
Senpen River, Ponape..... 215
Siligin Spring near Merizo, Guam..... 211
Sodium adsorption ratio, definition of..... 7-8
Solute, definition of..... 8
Solutes..... 17
Special networks and programs..... 8-9
Specific conductance, definition of..... 8
Spreckels ditch at Haipuaena weir, near Huelo, Maui..... 121
Stable storm ditch near Lihue, Kauai..... 51
Stage-discharge relation, definition of..... 8
Suspended-sediment concentration, definition of..... 7
Suspended sediment, definition of..... 7
Suspended-sediment discharge, definition of.. 7

Tabagaten River, Babelthuap, Palau Islands... 175
Talagu Stream, Yap, Yap Islands..... 182
Taleyfac River near Agat, Guam..... 209
Talofofo Stream, Saipan..... 209
Middle Fork, Saipan..... 160
South Fork, Saipan..... 159
Tamaney Stream, Yap, Yap Islands..... 213
Tawannu River, Ponape..... 194
Tawenjokola River at mouth, Ponape..... 214
Temperature..... 18
Thalomar Stream, Yap, Yap Islands..... 214

Page

Tinaga River near Inarajan, Guam..... 166
Tofol River, Kusaie..... 199
Toguan River near Umatac, Guam..... 211
Tons per acre-foot, definition of..... 8
Tons per day, definition of..... 8
Total sediment discharge, definition of..... 7
Total sediment load, definition of..... 7
Truk Islands, gaging-station records on.....185-190
  low-flow partial-record stations on..... 214
  map of..... 34-36
Tumunu Stream, Dublon Island, Truk Islands... 190
Tutuila, island of, gaging-station records on.....200-207
  low-flow partial-record stations on..... 215
  map of..... 39

Ugum River, above Bubulao River, near Talofofo, Guam..... 212
  near Talofofo, Guam..... 212
Umatac, Guam, Umatac River at..... 163
Umatac River at Umatac, Guam..... 163
Unnamed north coast stream, Malakal, Palau Islands..... 213
Unnamed south coast stream, Arakabesan, Palau Islands..... 213
Unnamed west coast stream, Arakabesan, Palau Islands..... 213
Unnamed west coast stream, Malakal, Palau Islands..... 213
Upper Hamakua ditch, above Alakahi Stream, near Kamuela, Hawaii..... 143
  below Kawaiki Stream, near Kamuela, Hawaii. 142

Wahiawa, Oahu, Kipapa Stream near..... 74
  North Fork Kaukonahua Stream above Right Branch, near..... 69
  Opaeula Stream near..... 104
  Poamoho Stream near..... 72
  Poamoho tunnel near..... 71
  South Fork Kaukonahua Stream at East Pump Reservoir, near..... 70
Waiaha Stream, Right Branch, near Holualoa, Hawaii.....152,256-257
Waiakea Stream near Mountain View, Hawaii.....134,241,256-257
Waiakeakua Stream at Honolulu, Oahu...86,239,247-249
Waiakoali Stream near Waimea, Kauai..... 208
Waialae Stream at altitude 3,820 ft, near Waimea, Kauai.....45,238,242-243
Waiawa Stream near Pearl City, Oahu...76,239,244-246
Waihee Stream, at Kahaluu, Oahu.....240,247-249
Waihee Stream, near Heeia, Oahu..... 95
  North Fork, near Heeia, Oahu..... 94
  South Fork, near Heeia, Oahu..... 93
Waihi Stream at Honolulu, Oahu.....85,239,247-249
Waikane, Oahu, Waikane Stream at altitude 75 ft, at..... 96
Waikane Stream at altitude 75 ft, at Waikane, Oahu.....96,240,250-252
Waikele Stream at Waipahu, Oahu.....75,223-229,239
Waikoloa Stream, at Marine Dam, near Kamuela, Hawaii.....150,256-257
Waikolu Stream, at altitude 900 ft, near Kalaupapa, Molokai.....111,241,250-252
  below pipeline crossing, near Kalaupapa, Molokai..... 112
Wailoa ditch at Honopou, near Huelo, Maui.....126,241,253-255
Wailua ditch near Kapaa, Kauai..... 54
Wailua River, East Branch of North Fork, near Lihue, Kauai.....53,238,242-243
  North Fork, at altitude 650 ft, near Lihue, Kauai..... 52
  North Fork, near Kapaa, Kauai.....55,238,242-243
  South Fork, near Lihue, Kauai.....48,238,242-243
Wailuku River, at Piihonua, Hawaii...137,141,256-257
  near Humuula, Hawaii..... 135
  near Kaumana, Hawaii..... 136
Waimanalo Stream at Waimanalo, Oahu.....239,247-249
Waimea, Kauai, Kawaikoi Stream near..... 43
  Kokee ditch near..... 44
  Makaweli River near..... 46
  Waialae Stream at altitude 3,820 ft, near..... 45
Waimea River near Waimea, Kauai.....238,242-243
Wainiha River near Hanalei, Kauai.....68,242-243
Waipahu, Oahu, Waikele Stream at..... 75
West Wailuaiki Stream near Keanae, Maui.....118,241,253-255
Wichen River, at altitude 18 m, Moen, Truk Islands..... 186
  at altitude 55 m, Moen, Truk Islands..... 185
WRD, definition of..... 8
WSP, definition of..... 8

Yap Islands, gaging-station records on.....179-184
  low-flow partial-record stations on.....213-214
  map of..... 33
Yekula River, Kusaie..... 215
Yledigao River near Inarajan, Guam..... 211
Ylig River near Yona, Guam..... 172
Yona, Guam, Ylig River near..... 172