NEW ZEALAND GEOLOGICAL SURVEY

HYDROLOGY OF UPOLU

GEOLOGICAL MAP NO. 2 H. N.Z.G.S. BULLETIN NO. 63

1:100,000

172° 10' | 172° 00' W | 171° 50' | 171° 40' | 171° 30'

13° 40' | 13° 50' | 14° 00' S

SAVAI'I

APOLIMA

Present Supply:
Inland spring

Recommended Supply:
Existing Spring

MULIFANUA & SATAPUALA

Present Supply:
(W) Satapuala & Falelatai pipelines, good except at Samatau by day; good to poor coastal springs & wells
(D) The above & Fasito'otai pipelines, good; good to bad coastal springs & wells, salty at high tide

Recommended Supply:
Two drillholes at Satapuala (19) Ⓑ & Mulifanua (20) Ⓒ like that at Afia, to be connected to extensions of existing pipelines.

APIA PIPELINE

Present Supply:
Villages in central parts of pipe, good; those at distant parts of pipe, weak; others, good to fair coastal springs & wells

Recommended Supply:
Additional water to pipe from hydro-electric schemes (32) Ⓓ and from shallow well (17) at Vaiblua Ⓑ and deeper well inland from Sale'imoa (18) Ⓒ

FALEFA

Present Supply:
Coastal springs and streams

Recommended Supply:
Pipe water from streams, especially from Falefā Stream in upper reaches or falls (30) Ⓓ

MANONO

Present Supply:
Coastal spring, salty at high tide

Recommended Supply:
Roof catchment, then possibly a central well (33) Ⓒ

WESTERN UPLANDS

Present Supply:
Carried by bicycle from coast

Recommended Supply:
Well on cross-island road (21) Ⓒ, followed by deep drillhole on crest near Fagaloa rocks (22) Ⓓ; to be followed, if successful, by others to east. Temporary roof catchment.

FAGALOA

Present Supply:
Surface streams & springs

Recommended Supply:
Pipe water from the many streams (31) Ⓓ

CENTRAL UPLANDS

Present Supply:
Nil except few streams

Recommended Supply:
No recommendations at this stage

ALEIPATA

Present Supply:
(W) Good to poor coastal springs, distant from some villages Good pipe to Satitoa & Malaelā
(D) As above; coastal springs (except Vailoa) only fair to bad, salty at high tide

Recommended Supply:
Pipe water from Mulivai River (27) Ⓑ

WATER RESERVE

Reserve to protect water supply to Aleipata and Salani coastal-fringe schemes

LEFAGA

Present Supply:
Safa'atoa pipeline, rivers or coastal springs, (all good except for a few springs that are salty at high tide). Inland area served by water carriers on bicycles working from coast

Recommended Supply:
Well close to Fagaloa Volcanics (15) Ⓑ and at eastern end (16) Ⓑ

SOUTH CENTRAL UPOLU

Present Supply:
Good springs and wells, except around O le Pupū and Vaie'e Peninsula, where salty or distant

Recommended Supply:
Extend Salani or Lefaga schemes; or have intakes from Mulivai & Mataloa rivers (29); with supplementary wells ½ to 2 miles inland if required Ⓒ

SALANI

Present Supply:
(W) Good to poor rivers & springs
(D) Good springs at Sapo'e, Vaigalu and Si'upapa; elsewhere poor & salty at high tide

Recommended Supply:
Uplands from ram pumps, and from Afulilo Falls; coastal area piped from just above Sapo'aga Falls in Fagataloa River (28) Ⓑ

EXPLANATORY NOTES

(1) "Present Supply" for each area is based on observations at the end of the 1956 dry season. In many cases these observations have been subdivided into:—

Washing Water	(W)
Drinking Water	(D)

with more stringent standards (e.g. regarding salinity and pollution) in the latter category

(2) "*Recommended supply*" is based upon the sources:—

Proposed Wells	● 19
Intake Pipes, etc.	✕ 32

at the approximate positions shown. The numbers refer to those used in the scheme described in the text of the bulletin

(3) *Urgency is shown by the letters A to D in the following order*

Most urgent	Ⓐ
	Ⓑ
	Ⓒ
Least urgent	Ⓓ

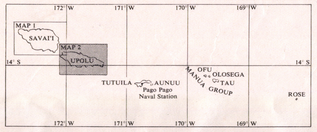
Drawn by V. J. Stobbs and H. R. S. Stewart-Killick.

C. T. Webb, Chief Draughtsman

GENERAL REFERENCE

Geological boundary
Faults (inferred only)
Dip and Strike
Escarpments, cliffs
Centre of Eruption (commonly small crater)
Inland Springs
Coral reefs
Limits of prominent lava flow within volcanic formation
Prominent swamps
Roads (vehicular)
Roads (non vehicular)
Tracks
Flowing Streams
Stream channels
Village — Lataitai
Village (abandoned) — Avele
Spot height in feet above Sea Level — 480'
Petrological samples (locality and number) — PT519
Phosphate samples — P616

INDEX TO ADJOINING SHEET



SCALE

1 : 100,000

0 1 2 3 4 5 MILES

R. W. Willett
Director

Compiled from data obtained from the Lands & Survey Department Apia Western Samoa Additional Surveys and Geology by D. Kear, and B. L. Wood, New Zealand Geological Survey, and S. Poutoa, Public Works Department, Apia Some geological boundaries from soil survey of A. C. S. Wright, New Zealand Soil Bureau, 1956

Published by the Department of Scientific and Industrial Research 1958
R. E. Owen, Government Printer, Wellington, New Zealand

GEOLOGICAL LEGEND

SEDIMENTARY ROCKS AND MARINE TUFF

HOLOCENE	Alluvium Swamp talus etc. (including some Tafagamanu sand)	R
	Tafagamanu Sand (coastal strip of coral sand about 5 ft. above sea level)	T
	Nu'utele Sand (coral sand 15 ft. above sea level)	N
MIDDLE AND LATE PLEISTOCENE	Lalomauga Alluvium (terrace gravels in Falefa Valley)	LA
	Talus from Fagaloa Volcanics	Ft
	Vini Tuff (palagonite tuff of eastern islands and Apolima Island)	V
EARLY PLEISTOCENE OR PLIOCENE		

VOLCANIC FORMATIONS

		CONES
Aopo Volcanics (historical)	A	a
Puapua Volcanics (reef-covering)	P	p
Lefaga Volcanics (narrow reefs offshore)	L	l
Mulifanua Volcanics (wide reefs offshore)	M	m
Salani Volcanics (wide reefs, deep soils, canyons)	S	s
Fagaloa Volcanics (steep eroded relief, deep soils, drowned coasts, narrow reefs)	F	

● None on this sheet

Text in
(890)
gP
no. 63

Western Samoa. Water. 1:100,000. 1958.
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