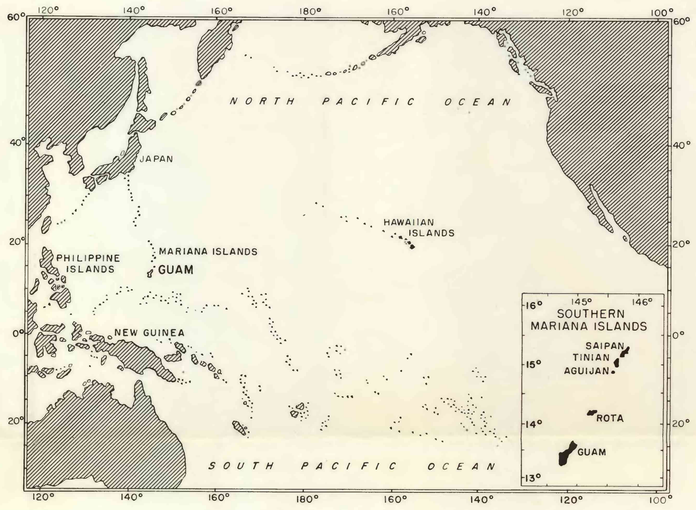

LOCATION MAP OF GUAM

WATER-RESOURCES MAP OF GUAM

SCALE 1:50 000

1 ½ 0 1 2 3 4 5 MILES

1 .5 0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 20 METERS WITH SUPPLEMENTARY CONTOURS AT 10 METER INTERVALS

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1965

EXPLANATION

1

Area underlain by limestone containing ground water that stands 5 to 7 feet above sea level. Limestone has high permeability and yields water readily to drilled wells and tunnels. Locally, especially near boundary with area 7, relatively impermeable volcanic rock and noncalcareous sediments underlying the limestone may be present above sea level. Most of the water has a chloride content less than 100 ppm, but heavy pumping of wells may cause intrusion of sea water and an increase in salinity

2

Area underlain by limestone containing ground water that stands 3 to 7 feet above sea level. Limestone has high permeability and will yield water readily to drilled wells and tunnels. Most of the water has a chloride content less than 250 ppm, but heavy pumping of wells probably will cause sea-water intrusion and an increase in salinity

3d 3a / 3c 3b

Area underlain by limestone containing ground water

In subarea 3a the limestone has high permeability, and the water table stands 1 to 5 feet above sea level. Chloride content of the water ranges from 30 ppm in interior parts of the subarea to more than 1,000 ppm in coastal parts. Heavy pumping of most wells will cause sea-water intrusion and an increase in the salinity of the water. Janum Spring (96), which is at sea level on the eastern shore, has a discharge ranging from 1 to 3 mgd and a chloride content of about 30 ppm

In subarea 3b the water table stands 1 to 5 feet above sea level, and when undisturbed by pumping, the water contains 30 to 400 ppm of chloride. Sea-water intrusion and large increases in salinity occur when wells are pumped at rates greater than 50 to 100 gpm

In subarea 3c the limestone has lower permeability than the rock in other parts of area 3, and the height of the water table ranges from about 1 foot above sea level in coastal parts to about 20 feet in interior parts. The water generally contains less than about 40 ppm of chloride, but the salinity may rise in heavily pumped wells. Agana Spring (2) yields water having a chloride content of 30 to 40 ppm and has an average flow greater than 1 mgd

In subarea 3d the water table stands 1 to 4 feet above sea level, and when undisturbed by pumping, the water has a chloride content ranging from 30 to more than 1,000 ppm. The limestone yields water readily to wells and tunnels, but pumping causes intrusion of sea water, and most wells yield water having more than 500 ppm of chloride

4a / 4b

Area consisting of limestone caps on hills of volcanic rock. The limestone contains thin bodies of high-level ground water that are perched on relatively impermeable volcanic rocks. The water discharges at springs at the edges of the limestone caps. Flow of the springs varies greatly with seasonal rainfall

5a 5b / 5c

Area in coastal parts of southern Guam underlain by limestone, alluvium, and beach deposits containing ground water. Most of the water is brackish. Locally, deposits of alluvium may contain water having less than 500 ppm of chloride, but the yields are low. The limestone and beach deposits have generally high permeability

6a / 6b

Area underlain by volcanic rock and noncalcareous sediments, which contain large amounts of ground water but have very low permeability, and by limestone, which contains only meager amounts of ground water.

The water-bearing materials of subarea 6a are largely volcanic rock and associated sediments. Height of the water table ranges from a few feet above sea level in coastal lowlands to several hundred feet in interior highlands. Wells have low yield and high drawdown. Average specific capacity of wells is about 1 gpm per foot of drawdown. Numerous small springs and seeps occur in valleys

Subarea 6b is underlain by limestone that rests on a steeply dipping surface eroded in volcanic rock and noncalcareous sediments. Meager amounts of ground water may occur locally perched on the volcanic rock, but most of the limestone is dry

7

Area underlain by permeable limestone that lies above sea level on relatively impermeable volcanic rock and noncalcareous sediments. The limestone contains little or no ground water. Wells drilled into volcanic rock would have very low yields

72 Drilled well

131 Drilled well, plugged or abandoned

79 Basal tunnel

93 Dug well

134 Dug well, filled or abandoned

32 Spring

350 Stream-gaging station

Numbered stations are cited in text

Base by Army Map Service

Hydrology by Porter E. Ward, 1962

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1965—W65149