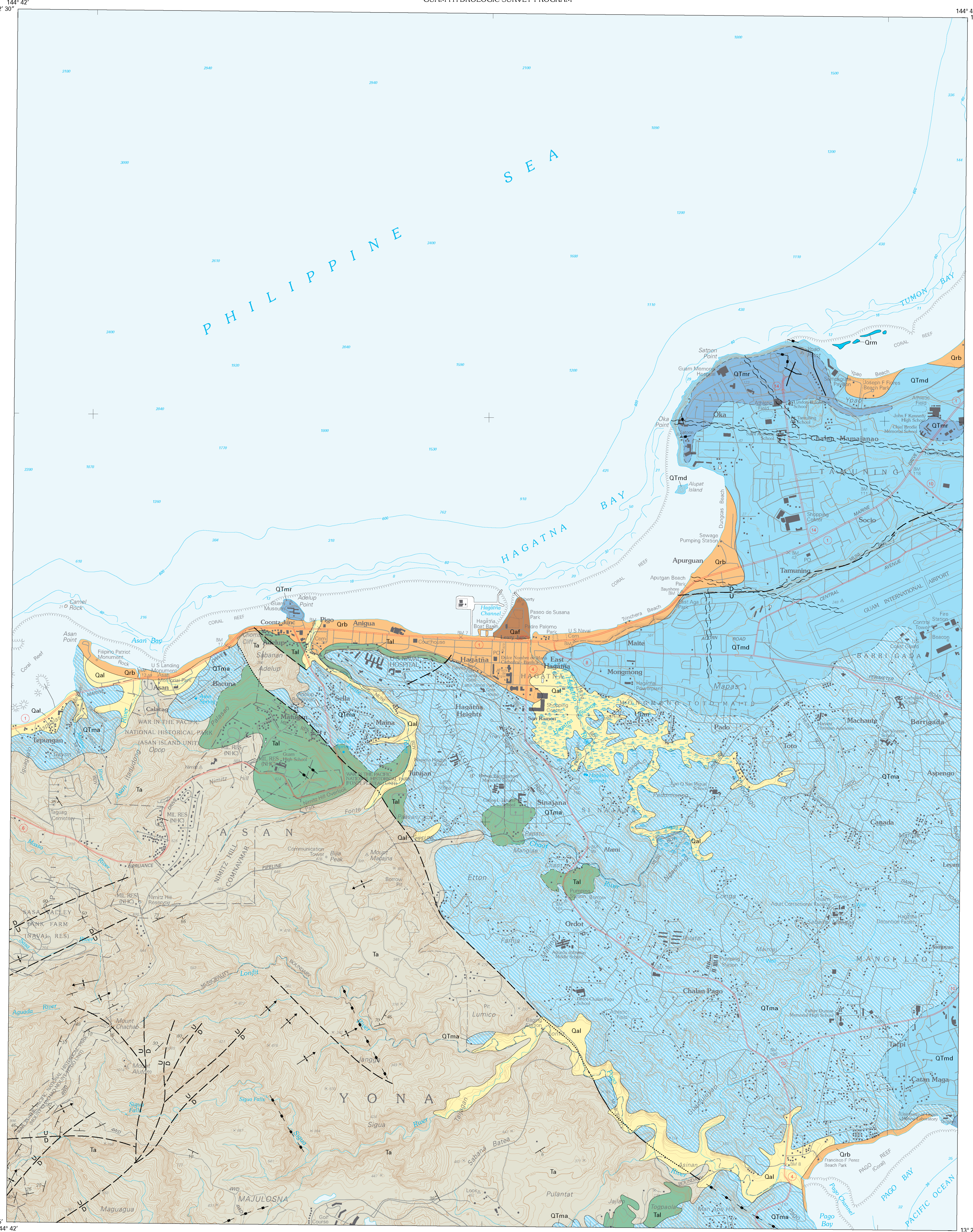


DESCRIPTION OF MAP UNITS

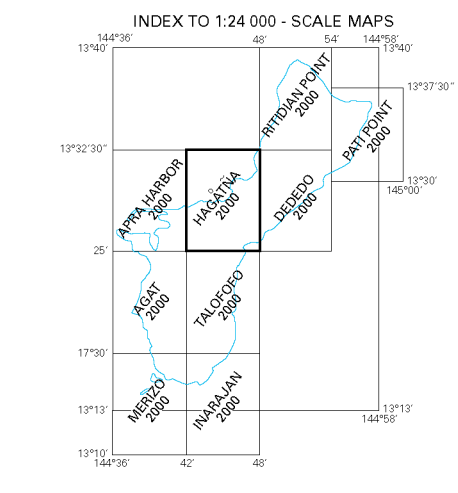
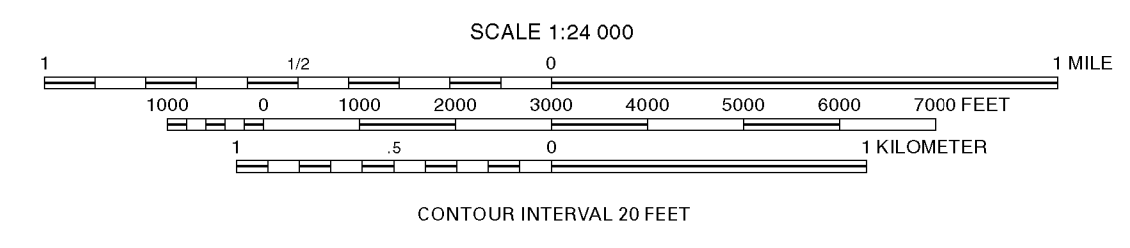
- Qaf** Artificial fill—shown only where extensive
 - Reefs**—reef platforms of living coral, coralline algae, and reef sediment, raised terraced ramps and pools, and algal encrusted intertidal bedrock outcrops, including basaltic outcrops along the southwest coast and limestone outcrops on the platform margin from Ritidian Point south to Urano Point
 - Orb** Beach deposits (Quaternary)—beach sand and gravel, beach rock in the intertidal zone, and small isolated patches of recently emerged detrital limestone. Sand generally is less than 15 feet above sea level, seldom as much as 30 feet above
 - Qrm** Merizo limestone (Quaternary)—emergent Holocene (2,500-4,800 years old) coralline reef limestones, 2-12 feet thick, capping modern reef flats and platforms. Occurs as intertidal and low-supratidal outcrops. Extensive supratidal outcrops at Tarague (algal-rich), Ylig Point (coral-rich), and Aga Point (identical rich). Almost no meteoric diagenetic alteration evidenced in outcrops. Many outcrops, too small to map, occur along SW coast between Merizo and Aga
 - Qal** Alluvium (Quaternary)—alluvial clay deposits, mostly 30-100 feet thick, muck and clay in marshy estuarine deposits on the west coast, scattered sand and gravel bars within deposits near SE river mouths, and clay fill in large sinks in limestone areas
- UNCONFORMITY—
- Mariana Limestone (Pliocene and Pleistocene)**
 The maximum aggregate thickness of the Mariana limestone formation is estimated to be between 550 and 600 feet (Ritidian Point Quadrangle)
 - QTmr** Reef facies (Pliocene and Pleistocene)—massive, generally compact, porous, and cavernous white limestone of reef origin, especially along cliff faces, made up mostly of corals in position of growth in matrix of encrusting calcareous algae
 - QTmd** Detrital facies (Pliocene and Pleistocene)—friable to well-cemented coarse- to fine-grained generally porous and cavernous white detrital limestone, mostly of lagoonal origin
 - QTma** Hagåtña argillaceous member (Pliocene and Pleistocene)—coarse- to fine-grained pale-yellow, tan, or brown fossiliferous detrital limestone containing 2 to 5 percent disseminated clay and as much as 20 percent clay in pockets and cavities; includes undifferentiated lenses of other Mariana limestone facies. Formation typically unconformable upon underlying rocks
- UNCONFORMITY—
- Tal** Allian limestone (Miocene and Pliocene)—Massive coarse- to fine-grained recrystallized limestone generally pale pink, buff, or white but locally red, yellow, or brown. Characterized by dominance of stielike *Porites* and *Acropora* and by long calcite tubes formed by burrowing worms or gastropods. Locally argillaceous above base. Maximum estimated thickness of the Allian limestone is 150 feet
 - Ta** Añatom formation (Eocene and Oligocene)—bedded breccias, conglomerates, sandstones, turbidites, sandy limestones, and micritic to bioclastic limestones. Clasts in the breccias and conglomerates generally are two-pyroxene andesites, although rare olivine phric basalts and hornblende andesite clasts also are present. Estimated thickness of the Añatom formation ranges from 1850 to 2000 feet

EXPLANATION OF MAP SYMBOLS

- Contact—Dashed where approximately located, gradational, or inferred
- Fault (showing dip)—Solid where definitely located, dashed where approximately located, dotted where concealed. Queries indicate uncertainty as to existence of fault. Arrows show relative movement. U, upthrown side; D, downthrown side
- Brecciated zone—Crushed and brecciated zone in limestone. Zone may grade into joint and fault zones along its strike, and into massive, structureless rock perpendicular to its strike
- Thrust fault—Dashed where inferred
- Anticline—Showing crestline and bearing and plunge of axis
- Syncline—Showing position of trough and bearing and plunge of axis
- Strike and dip of beds
- Inclined
- Sides of vertical joints—A line of joint symbols indicates a prominent joint or structural lineament, along which unbrecciated limestone is cut by a dominant set of joints in which solution has produced deep fissures bounding elongate, pinnacled ridges or along which volcanic rocks are cut by recognizable structural lines that show as a series of knobs and ridges crossing topographic trends or as line features. In places, drainage patterns and valley-wall alignments are determined by these lines. Minor movement at the zone may have occurred, but significant stratigraphic displacement is not shown



Base from U.S. Geological Survey, 1:24,000 GIS quadrangle



GEOLOGIC MAP OF HAGÁTÑA QUADRANGLE, GUAM

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 Field interpretations assisted by
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