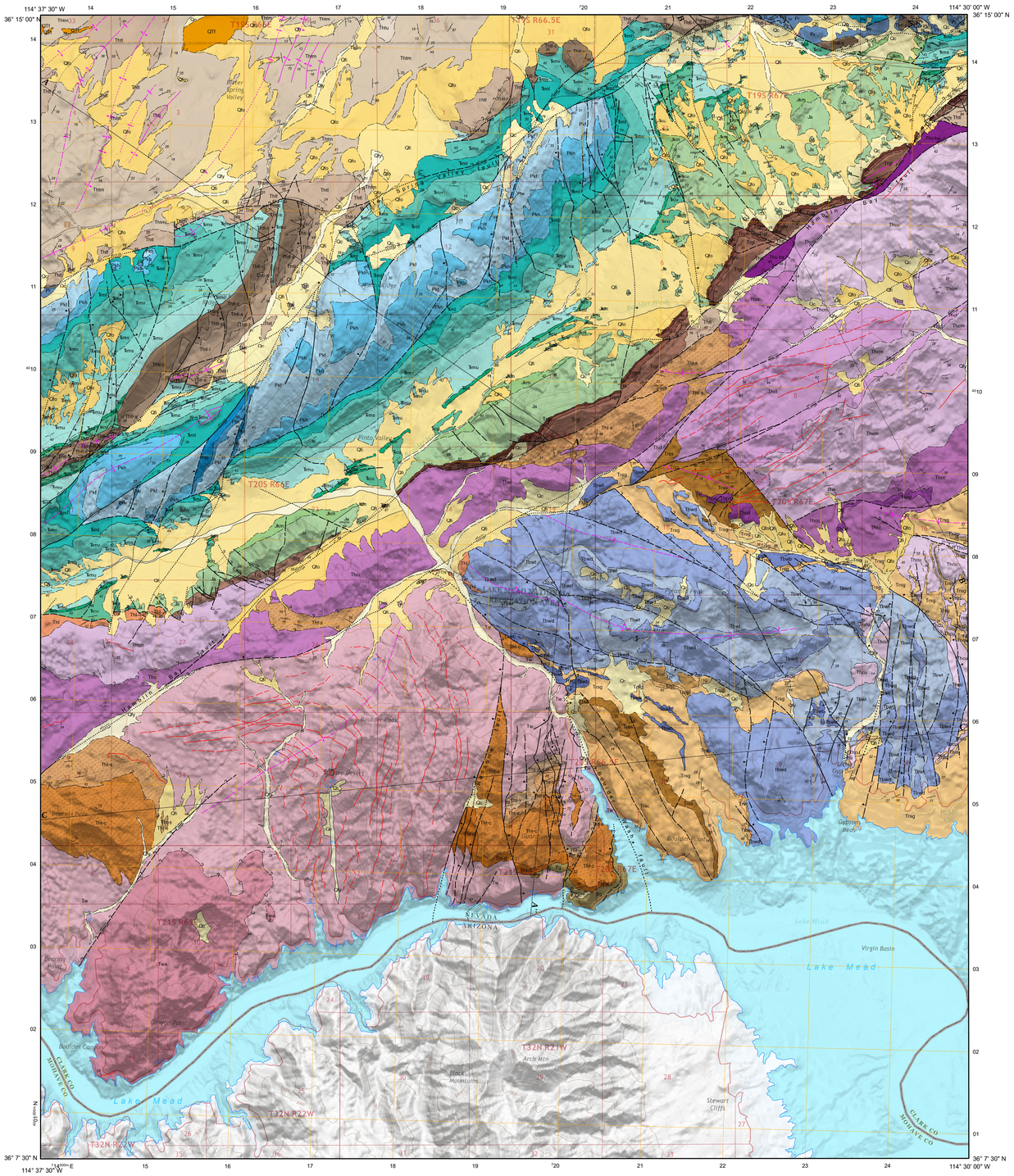
Partially funded by the USGS National Cooperative Geologic Mapping Program under STATEMAP award numbers G20AC00390 and G21AC10973.



GEOLOGIC MAP OF THE NEVADA PART OF THE BOULDER CANYON QUADRANGLE, CLARK COUNTY, NEVADA

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2023

QUATERNARY DEPOSITS

- Qc — Colluvium (Holocene)
- Qfy — Young alluvium and alluvial-fan deposits (Holocene)
- Qfi — Intermediate-aged alluvial-fan deposits (early Holocene to middle Pleistocene)
- Qfo — Older alluvial-fan deposits (middle to early Pleistocene)
- QTf — Oldest alluvial-fan deposits (early Pleistocene to Pliocene)

TERTIARY SEDIMENTARY ROCKS

- Trs — Red sandstone unit, undivided (late to middle Miocene)
  - Trsc — Conglomerate lithofacies
  - Trss — Red sandstone and conglomerate lithofacies
  - Trsg — Gypsum and mudstone lithofacies
  - Trsl — Landslide blocks and breccia

Horse Spring Formation (middle Miocene)

- Thl — Lovell Wash Member

Thumb Member

- Thu — Upper Thumb Member
- Thm — Middle Thumb Member
- Thl — Lower Thumb Member, undivided
  - Thl-l — Limestone lithofacies
  - Thl-s — Sandstone lithofacies
  - Thl-c — Basal conglomerate
- Trg — Rainbow Gardens Formation, undivided (early Miocene to late Oligocene)
  - Trgl — Limestone member
  - Trgm — Middle member
  - Trgc — Basal conglomerate member

PALEOZOIC AND MESOZOIC SEDIMENTARY ROCKS

- Ja — Aztec Sandstone (Early Jurassic)
- Jkm — Kayenta and Moenave Formations, undivided (Early Jurassic)

Chinle Formation (Late Triassic)

- Ttcu — Upper part
- Ttcs — Shinarump Member
- Ttm — Moenkopi Formation, undivided (Early Triassic)
  - Ttmu — Upper red member
  - Ttms — Shnabkaib Member
  - Ttmv — Virgin Limestone Member
  - Ttml — Lower red bed member
- IPk — Kaibab Formation, undivided (middle to early Permian)
  - IPkh — Harrisburg Member
  - IPkf — Fossil Mountain Member
- IPt — Toroweap Formation, undivided (early Permian)
  - IPtw — Woods Ranch Member
  - IPtb — Brady Canyon Member
- Pr — Red beds (early Permian)
- IPp — Pakoon Limestone (earliest Permian)

TERTIARY VOLCANIC AND INTRUSIVE ROCKS

Hamblin-Cleopatra volcano (late to middle Miocene)

- Thc-bx — Fault breccia
- Thcu — Upper volcanic sequence
- Thcd — Hornblende-dacite lava flows
- Thcc — Volcaniclastic conglomerate
- Thcm — Middle volcanic sequence
- Thcl — Lower volcanic sequence
- Thci — Hypabyssal rocks

Volcanic rocks of Boulder Wash (middle Miocene)

- Tbwb — Basaltic lavas
- Tbwt — Dacitic tuffs and breccias
- Tbwd — Dacitic lavas and domes

Wilson Ridge pluton (middle Miocene)

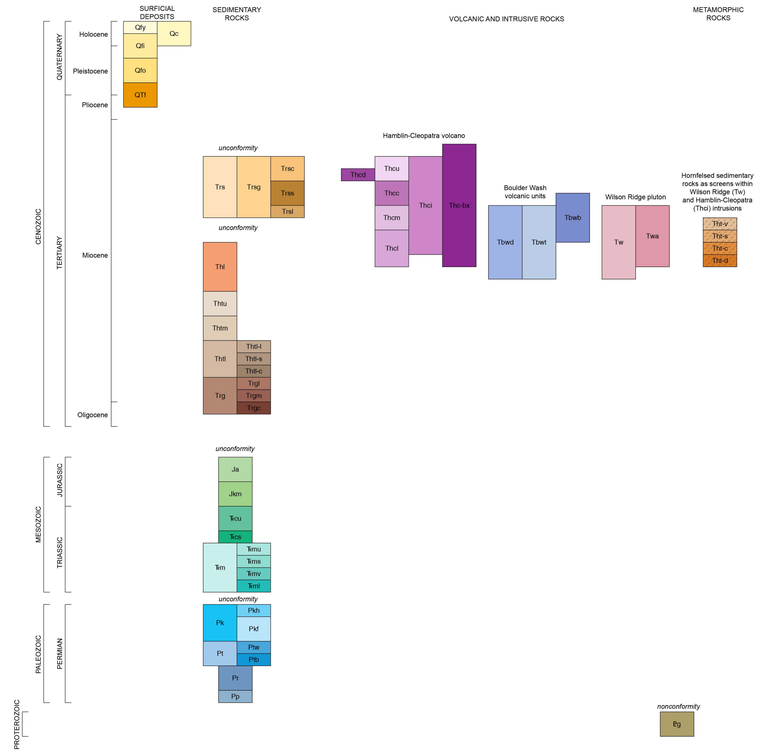
- Twa — Hydrothermally altered quartz monzonite
- Tw — Hypabyssal quartz monzonite

METAMORPHIC ROCKS

Hornfelsed sedimentary rocks as intruded screens; tentatively correlated with the Thumb Member of the Horse Spring Formation (middle Miocene)

- Thh-v — Mafic lavas
- Thh-s — Sandstone, shale, and tuff
- Thh-c — Granite- and gneiss-clast conglomerate, breccia, and megabreccia
- Thh-d — Brecciated dolomite

- Ꝑg — Orthogneiss (Proterozoic)



Contact Solid where certain and location accurate, dashed where approximately located, dotted where concealed; queried if identity or location uncertain.

Fault Solid where certain and location accurate, dashed where approximately located, dotted where concealed; queried if identity or existence uncertain.

Normal fault Solid where certain and location accurate, dashed where approximately located, dotted where concealed; queried if identity or existence uncertain. Showing dip; ball on downthrown side. *In cross section arrows show relative motion.*

Oblique-slip fault Solid where certain and location accurate, dashed where approximately located, dotted where concealed; queried if identity or existence uncertain. Arrows show relative motion, ball on downthrown side. *In cross sections, A—away from observer, T—toward observer.*

Strike-slip fault Solid where certain and location accurate, dashed where approximately located, dotted where concealed; queried if identity or existence uncertain. Arrows show relative motion.

Anticline Solid where certain and location accurate, dashed where approximately located, dotted where concealed.

Syncline Solid where certain and location accurate, dashed where approximately located, dotted where concealed; queried where location or identity uncertain

Lake Mead shoreline Approximately located from 2017 NAIP imagery.

Dike Solid where certain and location accurate, dashed where approximately located. Showing dip.

Strike and dip of bedding

- Inclined
- Inclined, approximately located
- Overturned
- Inclined, in cross-bedding
- Vertical

Strike and dip of metamorphic foliation

- Inclined

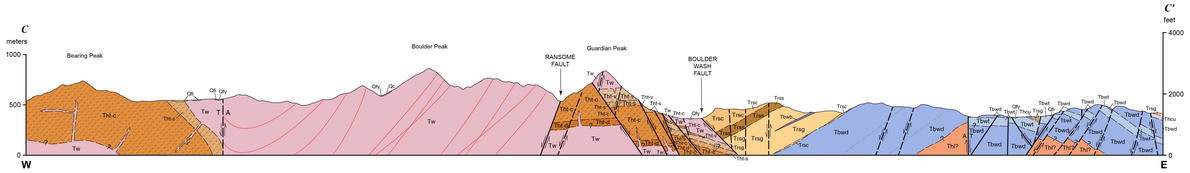
Strike and dip of igneous flow foliation

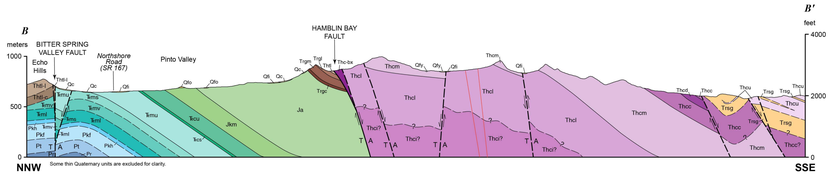
- Inclined

Strike and dip of unmapped intrusive contact, mainly marks trend of unmapped dikes

- Inclined

A — A′′′
Line of cross section





Some thin Quaternary units are excluded for clarity.

See accompanying text for full unit descriptions and references for this map.

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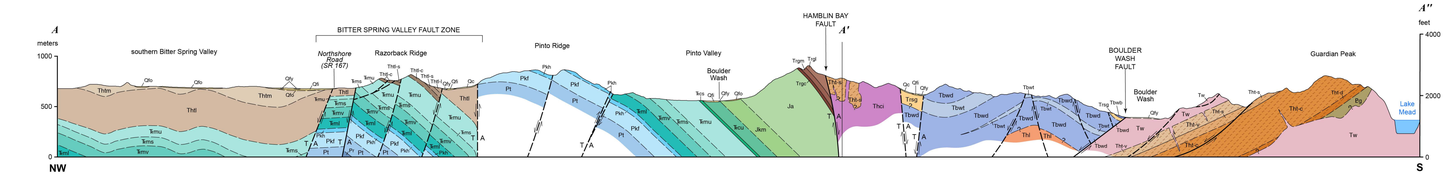

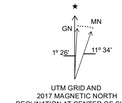

UTM GRID AND 2017 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

Adjoining 7.5′ quadrangle names

1	2	3
4	5	6
7	8	9

1 Muddy Peak
2 Bitter Spring
3 Echo Bay
4 Callville Bay
5 Boulder Canyon
6 Middle Point
7 Hoover Dam
8 Petroglyph Wash
9 Bonelli Bay

Scale 1:24,000

0 — 0.5 — 1 kilometer
0 — 0.5 — 1 mile
0 — 1000 — 2000 — 3000 — 4000 — 5000 feet

CONTOUR INTERVAL 80 FEET

Projection: Universal Transverse Mercator, Zone 11, North American Datum 1983 (m)

Base map: U.S. Geological Survey Boulder Canyon 7.5′ quadrangle (2018)

Nevada Bureau of Mines and Geology
Mackay School of Earth Sciences and Engineering
College of Science
University of Nevada, Reno

Field work done in 2021–2023
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OPEN-FILE REPORT
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