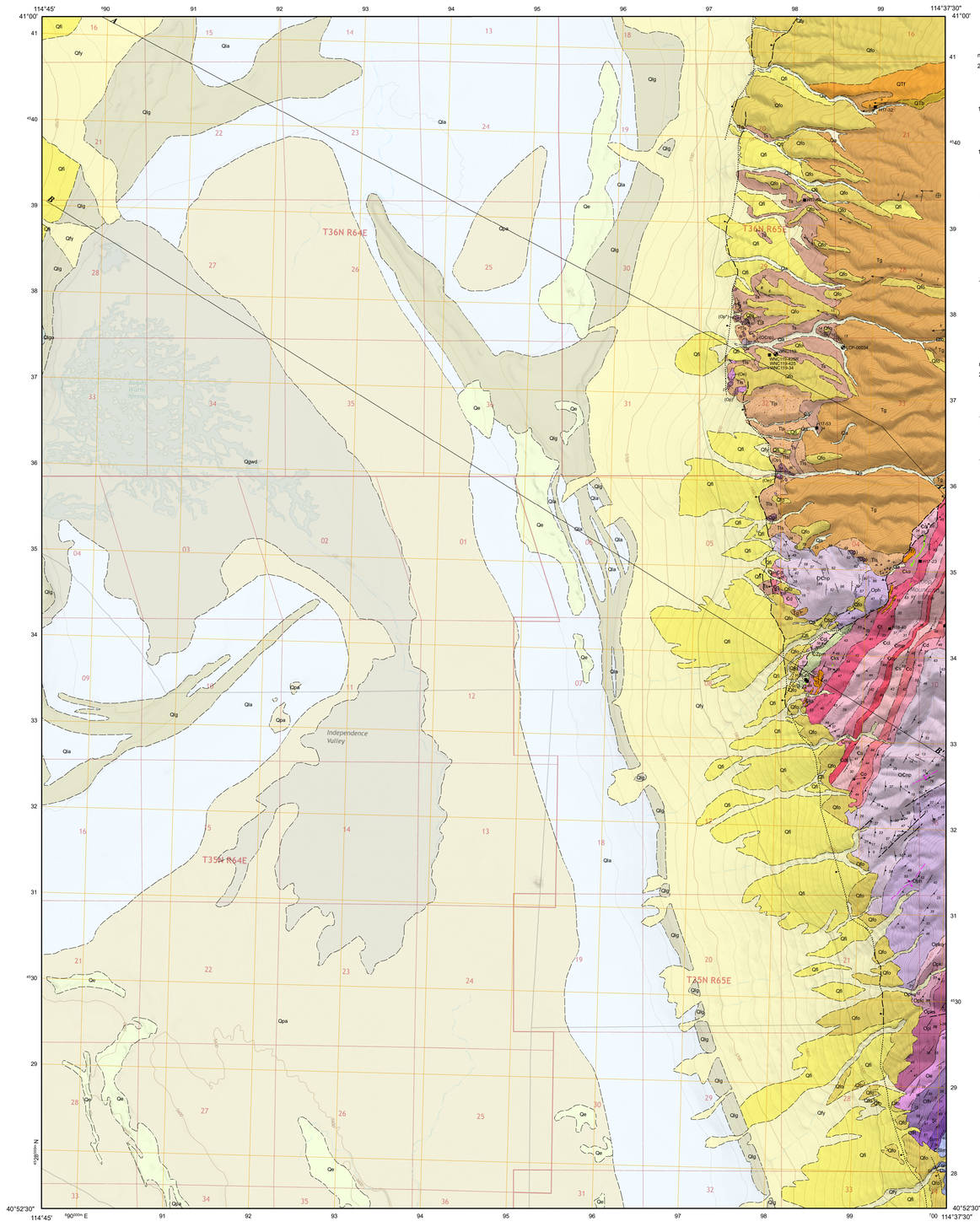
This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program under STATEMAP award number G18AC00198, 2019 and G16AC00186, 2017.



GEOLOGIC MAP OF THE INDEPENDENCE VALLEY NW QUADRANGLE, ELKO COUNTY, NEVADA

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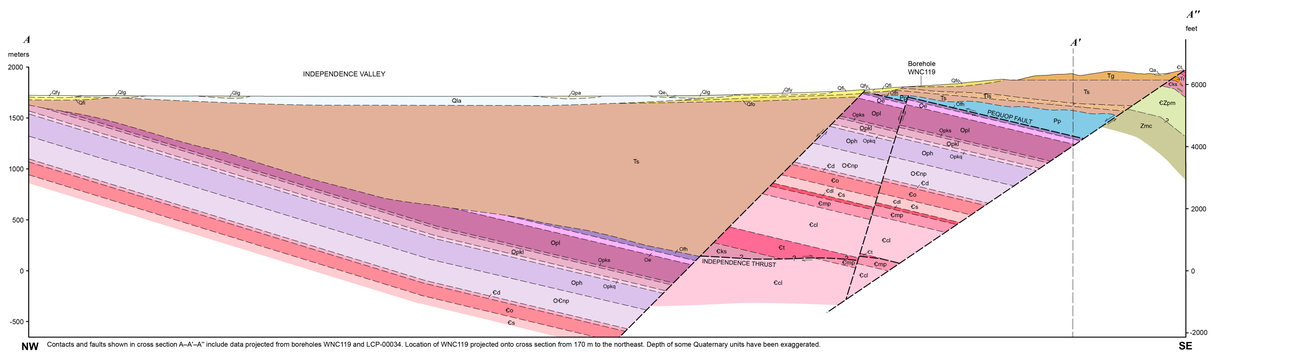
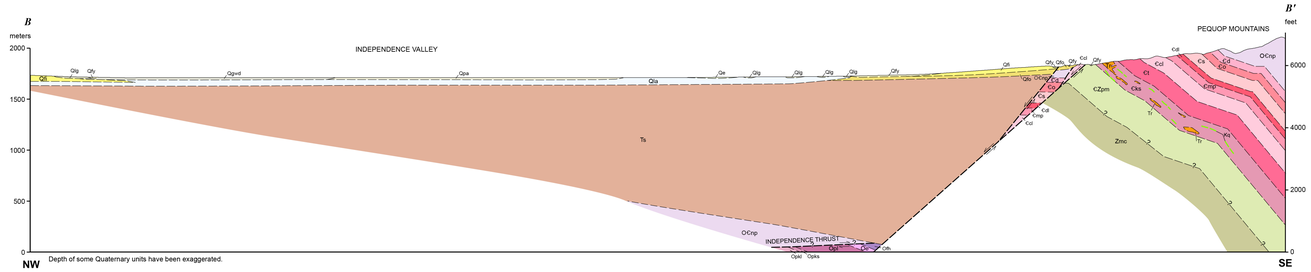
2019



Contacts and faults shown in cross section A–A′–A″ include data projected from boreholes WNC119 and LCP-00034. Location of WNC119 projected onto cross section from 170 m to the northeast. Depth of some Quaternary units have been exaggerated.



Depth of some Quaternary units have been exaggerated.

QUATERNARY DEPOSITS

- Qa — **Active alluvium (Holocene)**
- Qfy — **Young alluvial-fan deposits (Holocene)**
- Qe — **Eolian sand (Holocene)**
- Qgwd — **Groundwater discharge deposits (Holocene)**
- Qpa — **Playa and alluvial deposits (Holocene)**
- Qla — **Lacustrine and alluvial deposits (Holocene to late Pleistocene)**
- Qlg — **Lacustrine gravels (late Pleistocene)**
- Qfi — **Intermediate-aged alluvial-fan deposits (late Pleistocene)**
- Qlgo — **Older lacustrine gravels (late to middle Pleistocene?)**
- Qfo — **Older alluvial-fan deposits (middle Pleistocene?)**
- QTb — **Boulder deposit in oldest alluvial-fan deposits (middle Pleistocene? to Pliocene?)**
- QTf — **Oldest alluvial-fan deposits (middle Pleistocene? to Pliocene?)**

TERTIARY SEDIMENTARY ROCKS

- Tg — **Tertiary fanglomerate (Pliocene? to Miocene)**
- Tts — **Tertiary landslide deposit (Miocene)**
  - (Oe) — **Block of Eureka Quartzite in Tertiary landslide deposit (Miocene)**
  - (Op) — **Block of undivided Pogonip limestone in Tertiary landslide deposit (Miocene)**
  - (Opj) — **Block of undivided Pogonip jasperoid in Tertiary landslide deposit (Miocene)**
  - (OCnp) — **Block of Notch Peak Limestone in Tertiary landslide deposit (Miocene)**
- Ts — **Tertiary tuffaceous sediments (Pliocene? to Miocene)**

EOCENE AND CRETACEOUS(?) INTRUSIVE ROCKS

- Tr — **Rhyolite dikes (Eocene)**
- Kg — **Granitic sills and pods (Cretaceous)**

PALEOZOIC AND NEOPROTEROZOIC SEDIMENTARY ROCKS

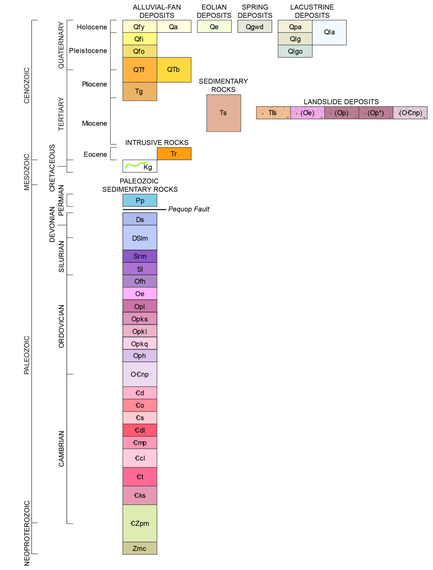
- Pp — **Pequop Formation (Permian) (In cross section only)**
- Ds — **Simonson Dolomite (Devonian)**
- DSlm — **Lone Mountain Formation (Devonian to Silurian)**
- Srm — **Roberts Mountains Formation (Silurian)**
- Sl — **Laketown Dolomite (Silurian)**
- Ofh — **Fish Haven Dolomite (Upper Ordovician)**
- Oe — **Eureka Quartzite (Middle Ordovician)**

Pogonip Group

- Opl — **Lehman Formation (Lower Ordovician)**

Kanosh Formation

- Opks — **Kanosh shale (Lower Ordovician)**
- Opkl — **Kanosh limestone (Lower Ordovician)**
- Opkq — **Kanosh quartzite (Lower Ordovician)**
- Oph — **House Limestone (Lower Ordovician)**
- OCnp — **Notch Peak Formation (Lower Ordovician to Upper Cambrian)**
- Cd — **Dunderberg Shale (Cambrian)**
- Co — **Oasis Formation (Cambrian)**
- Cs — **Shafter Formation (Cambrian)**
- Cdl — **Decoy Limestone (Cambrian)**
- Cmp — **Morgan Pass Formation (Cambrian)**
- Ccl — **Cliffside Limestone (Cambrian)**
- Ct — **Toano Limestone (Cambrian)**
- Cks — **Killian Springs Formation (Cambrian)**
- CZpm — **Prospect Mountain Quartzite (Lower Cambrian to Neoproterozoic)**
- Zmc — **McCoy Creek Group (Neoproterozoic) (In cross section only)**



Contact Solid where certain, dashed where approximately located.

Fault Dashed where approximately located, dotted where concealed; queried if identity or existence uncertain.

Normal fault Dashed where approximately located, dotted where concealed. Showing dip; ball on downthrown side. *In cross section, arrows show relative motion.*

Sill Approximately located. *In cross section inferred locations shown as dashed.*

Anticline Dashed where approximately located.

Syncline Dashed where approximately located.

Strike and dip of bedding

Inclined · Overturned · Horizontal

Strike and dip of metamorphic foliation

Inclined

Strike and dip of flow banding in intrusive rocks

Inclined

Lineation showing bearing and plunge

Paleocurrent direction from imbricated clasts

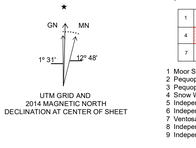
Borehole

WNC119

Samples

#19-35

A — A′ **Line of cross section**



UTM GRID AND
2014 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

Adjoining 7.5' quadrangle names

1	2	3
4	5	6
7	8	9

1 Moor Summit
2 Pequop Summit SW
3 Pequop Summit
4 Snow Water Lake NE
5 Independence Valley NW
6 Independence Valley NE
7 Ventosa
8 Independence Valley SW
9 Independence Valley SE

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

Scale 1:24,000

0 0.5 1 kilometer

0 0.5 1 mile

0 1000 2000 3000 4000 5000 feet

CONTOUR INTERVAL 20 FEET

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

Base map: U.S. Geological Survey Independence Valley NW 7.5' quadrangle (2014)

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Field work done in 2017–2019
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DRAFT
Preliminary geologic map
Has not undergone office, field review, or full editing
Will be revised before publication

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