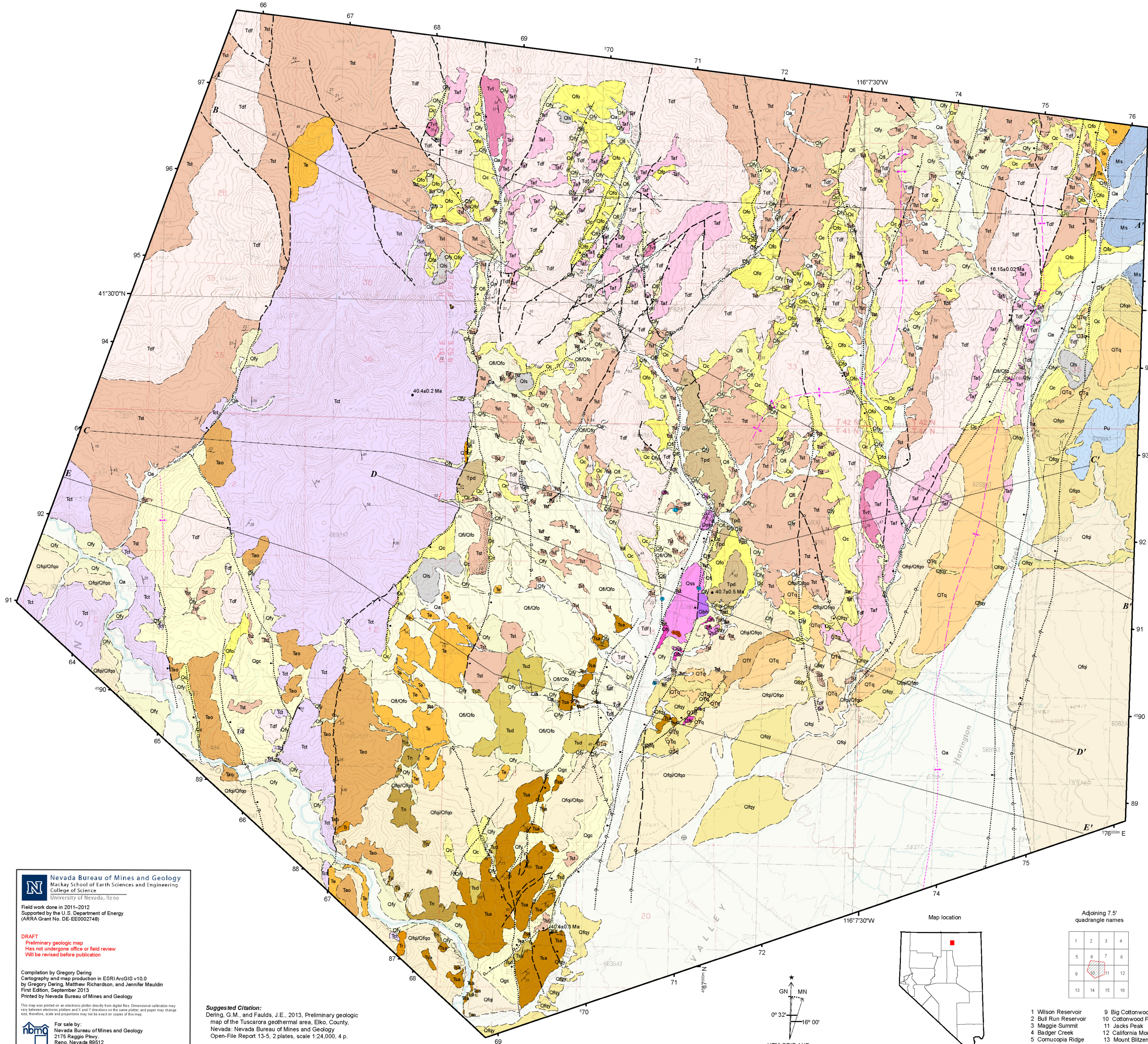


QUATERNARY DEPOSITS

Alluvium, fluvial deposits, and colluvium

- **Qa** Active channels and recently active alluvial-fan deposits (Holocene to Late Pleistocene)
- **Qfy** Young alluvial-fan deposits (Holocene to Pleistocene)
- **Qfi** Intermediate alluvial-fan deposits (Pleistocene)
- **Qfo** Old alluvial-fan deposits (Pleistocene)
- **Qfi/Qfo** Old and intermediate alluvial-fan deposits, undivided (Pleistocene)
- **Qfqy** Young alluvial-fan deposits containing > 10% quartzite clasts (Holocene to late Pleistocene)
- **Qfqi** Intermediate alluvial-fan deposits containing > 10% quartzite clasts (Pleistocene)
- **Qfqo** Old alluvial-fan deposits containing > 10% quartzite clasts (Pleistocene)
- **Qfqi/Qfqo** Old and intermediate alluvial-fan deposits containing > 10% quartzite cobbles, undivided (Pleistocene)
- **Qgc** Gravel and colluvium on low angle slopes, undivided (Holocene to Pleistocene)
- **Qls** Landslide deposits (Holocene to Pleistocene)
- **Qc** Colluvium and talus, undivided (Holocene to Pleistocene)

Geothermal deposits

- **Qss** Siliceous sinter (modern to late Pleistocene)
- **Qfs** Silica-cemented alluvium (Holocene to late Pleistocene)
- **Qfsq** Silica-cemented alluvium containing > 10% quartzite clasts (Pleistocene?)
- **Qbh** Silicified breccia (Holocene to Pleistocene)

QUATERNARY AND TERTIARY DEPOSITS

- **QTbf** Silicified cataclasite
- **QTq** Unconsolidated quartzite cobbles and boulders
- **QTf** Alluvial fan-early Quaternary or late Tertiary age

MIOCENE LAVAS

- **Taf** Porphyritic dacite (middle Miocene)
- **Tvt** Glassy dacite flow (middle Miocene)
- **Tdf** Porphyritic rhyolite - Jarbidge Rhyolite (middle Miocene)

OLIGOCENE (?) ROCKS - SEDIMENTS OF CHICKEN CREEK

- **Tst** Tuffaceous siltstone and sandstone of Chicken Creek (middle Eocene to middle Miocene)

EOCENE ROCKS - TUSCARORA VOLCANIC FIELD

- **Te** Andesite and dacite, undivided
- **Tpd** Porphyritic dacite
- **Tn** Porphyritic andesite
- **Tsa** Densely porphyritic andesite
- **Ts** Tuffaceous sandstone intercalations
- **Tsd** Porphyritic andesite
- **Tao** Porphyritic andesite
- **Tct** Tuff of Big Cottonwood Canyon
- **Tr** Dacite intrusions
- **Tbr** Intracaldera megabreccia and mesobreccia deposits, undivided (in cross section only)

PRE-TERTIARY ROCKS

- **Ms** Siltstone, shale, and silty limestone - Schoonover Formation
- **Pu** Paleozoic metasedimentary rocks, undivided

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

Symbology (per FGDC-STD-013-2006)

Contact Solid where certain and location accurate, long-dashed where approximate.

Normal fault Solid where certain and location accurate, long-dashed where approximate, dotted where concealed; queried if identity or existence uncertain. Showing dip of fault (tic) and trend of striae on fault surface (arrow); ball on downthrown side.

Mainly strike-slip fault Solid where certain and location accurate, long-dashed where approximate, dotted where concealed; queried if identity or existence uncertain. Arrows show relative motion.

Anticline Long-dashed where approximate, dotted where concealed.

Syncline Long-dashed where approximate, dotted where concealed.

Head or main scarp of landslide Hachures point downscarp.

Strike and dip of bedding
41 Inclined

Strike and dip of compaction foliation in tuff
47 Inclined

Strike and dip of flow parting or flow foliation in volcanic rocks
33 Inclined

Geochronology sample locality
40.7 ± 0.5 Ma

Geothermal well
Injection well — Production well — Monitoring well

Hot spring — **Strike and dip of silica vein** (41) — **Silicified bedrock**

A — A'
Line of cross section

Scale 1:24,000

0 — 0.5 — 1 kilometer

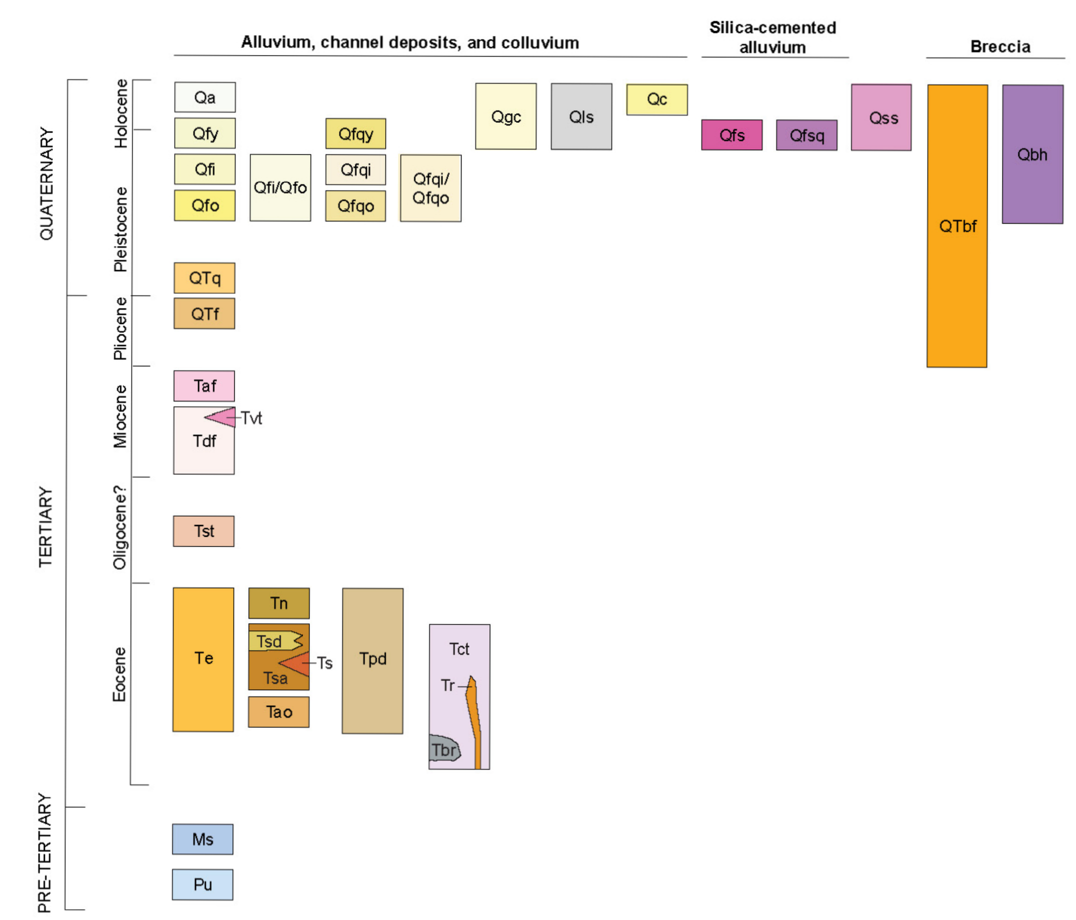
0 — 0.5 — 1 mile

0 — 1000 — 2000 — 3000 — 4000 — 5000 feet

CONTOUR INTERVAL 40 FEET

Projection: Universal Transverse Mercator, Zone 11,
North American Datum 1927 (m)

Base map: U.S. Geological Survey Deep Creek 7.5' quadrangle (1996)
Base map: U.S. Geological Survey Chicken Creek Summit 7.5' quadrangle (1996)
Base map: U.S. Geological Survey Cottonwood Peak 7.5' quadrangle (1996)
Base map: U.S. Geological Survey Jacks Peak 7.5' quadrangle (1996)



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

Field work done in 2011–2012
Supported by the U.S. Department of Energy
(ARRA Grant No. DE-EE0002748)

DRAFT
Preliminary geologic map
Has not undergone office or field review
Will be revised before publication

Compilation by Gregory Dering
Cartography and map production in ESRI ArcGIS v10.0
by Gregory Dering, Matthew Richardson, and Jennifer Mauldin
First Edition, September 2013
Printed by Nevada Bureau of Mines and Geology

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Suggested Citation:
Dering, G.M., and Faulds, J.E., 2013, Preliminary geologic map of the Tuscarora geothermal area, Elko, County, Nevada: Nevada Bureau of Mines and Geology Open-File Report 13-5, 2 plates, scale 1:24,000, 4 p.

GN MN
0º 32'
16º 00'

UTM GRID AND
1987 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

Map location

Adjoining 7.5' quadrangle names

1 Wilson Reservoir
2 Bull Run Reservoir
3 Maggie Summit
4 Badger Creek
5 Cornucopia Ridge
6 Deep Creek
7 Chicken Creek Summit
8 McAfee Peak
9 Big Cottonwood Canyon
10 Cottonwood Peak
11 Jacks Peak
12 California Mountain
13 Mount Blitzen
14 Tuscarora
15 Water Pipe Canyon
16 Mahala Creek West

PRELIMINARY GEOLOGIC MAP OF THE TUSCARORA GEOTHERMAL AREA, ELKO COUNTY, NEVADA

Plate 1 of 2

Gregory M. Dering and James E. Faulds
Nevada Bureau of Mines and Geology

2013