DEER CREEK WATER EXCHANGE PILOT PROGRAM SUMMARY REPORT

APPENDIX B:

- GEOLOGIC PLAN VIEW AND CROSS-SECTIONS

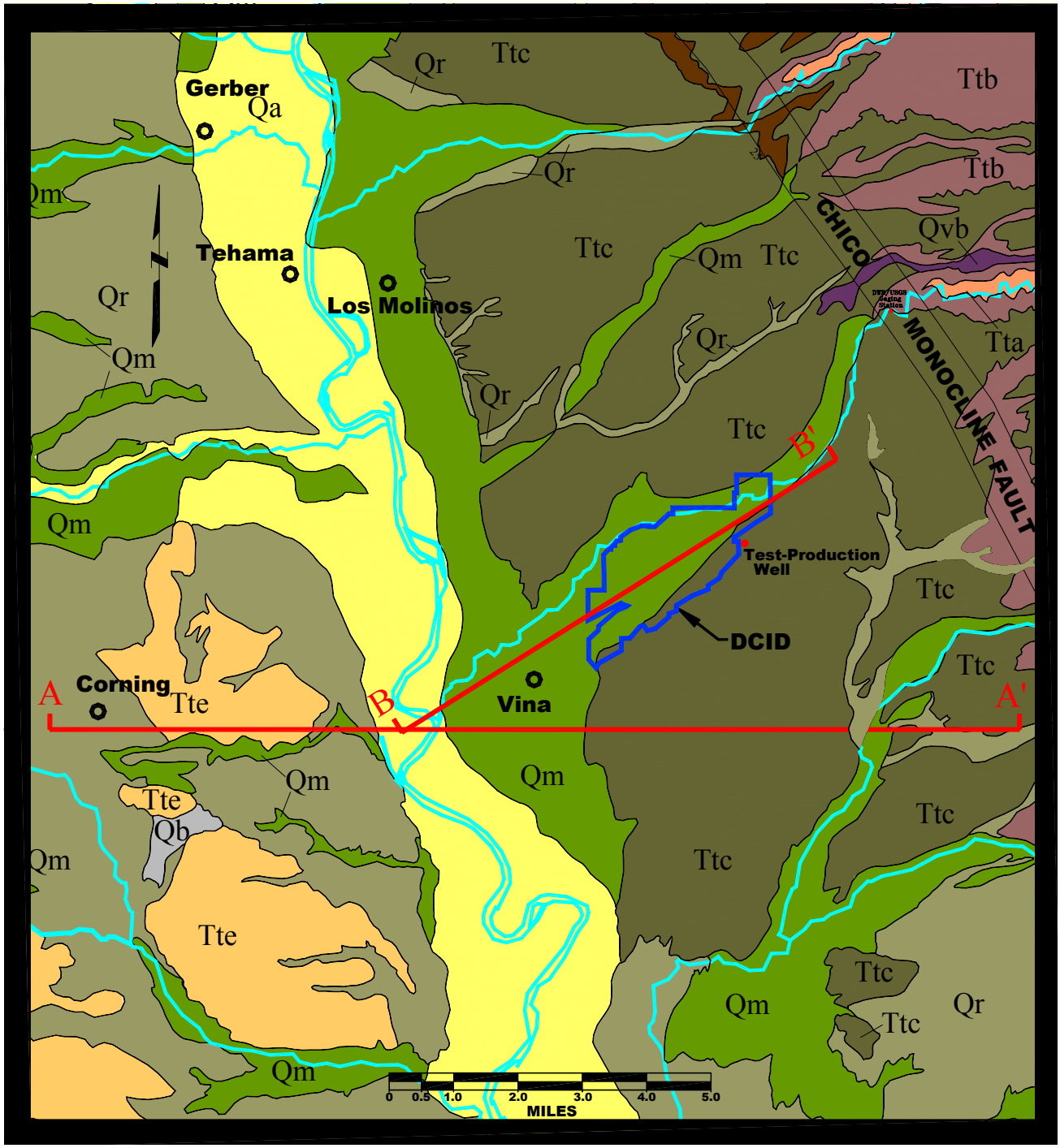


Figure 1. Regional Geologic Map of Water Bearing Units in the Project Area (modified from DWR Bull. 118-7 Draft).

DESCRIPTION OF MAP UNITS

Qa — **Alluvium** (Holocene)-Includes surficial alluvium and stream channel deposits of unweathered gravel, sand and silt, maximum thickness 80 ft. *(adapted from Helley & Harwood, 1985)*.

Qb — **Basin deposits** (Holocene)-Fine-grained silt and clay derived from adjacent mountain ranges, maximum thickness up to 200 ft. *(adapted from Helley & Harwood, 1985)*.

Qm — **Modesto Formation**, undifferentiated (Pleistocene)-alluvial fan and terrace deposits consisting of unconsolidated weathered and unweathered gravel, sand, silt and clay, maximum thickness approximately 200 ft. *(adapted from Helley & Harwood , 1985)*.

Qr — **Riverbank Formation**, undifferentiated (Pleistocene)-alluvial fan and terrace deposits consisting of unconsolidated to semi-consolidated gravel, sand and silt, maximum thickness approximately 200 ft. *(adapted from Helley & Harwood, 1985)*.

Tte — **Tehama Formation** (Plio-Pleistocene)-includes Red Bluff Formation on west side. Pale green, gray and tan sandstone and siltstone with lenses of pebble and cobble conglomerate, maximum thickness 2,000 ft. *(adapted from Helley & Harwood, 1985)*.

Ttc — **Tuscan Unit C** (Plio-Pleistocene)-includes Red Bluff Formation on east side. Volcanic lahars with some interbedded volcanic conglomerate and sandstone, and reworked sediments, maximum thickness 600 ft. *(adapted from Helley & Harwood, 1985, DWR Bulletin 118-7 (in progress), 2001)*.

Ttb — **Tuscan Unit B** (Pliocene)-Layered, interbedded lahars, volcanic conglomerate, volcanic sandstone and siltstone, maximum thickness 600 ft. *(adapted from Helley and Harwood, 1985; DWR Bulletin 118-7 (in progress), 2001)*.

Tta — **Tuscan Unit A** (Pliocene)-Interbedded lahars, volcanic conglomerate, volcanic sandstone, and siltstone containing metamorphic rock fragments, maximum thickness 400 ft. *(adapted from Helley & Harwood, 1985; DWR Bulletin 118-7 (in progress), 2001)*.

Tn — **Neroly Formation** (Miocene)-marine to non-marine sediments, tuffaceous andesitic sandstone with interbeds of tuff and tuffaceous shales and occasional conglomerate lenses, max. thickness 500 ft. *(adapted from Redwine, 1972; Wagner and Saucedo, 1990)*.

Tupg — **Upper Princeton Gorge** (Late Oligocene to Early Miocene)-Non-marine sediments composed of sandstone with interbeds of mudstone and occasional conglomerate and conglomerate sandstone, maximum thickness 1,400 ft. *(adapted from Redwine, 1972)*.

Ti — **Ione Formation** (Eocene)-Marine to non-marine deltaic sediments, light colored, commonly white conglomerate, sandstone and siltstone, which is soft and easily eroded, max. thickness 650 ft. *(adapted from DWR Bulletin 118-6, 1978; Creely, 1965)*.

Tlpg — **Lower Princeton Gorge** (Eocene)-includes Capay Formation. Marine sandstone, conglomerate and interbedded silty shale, maximum thickness 2,400 ft. *(adapted from Redwine, 1972)*.

JKgvs — **Great Valley Sequence** (Late Jurassic to Upper Cretaceous)-Marine clastic sedimentary rock consisting of siltstone, shale, sandstone and conglomerate, maximum thickness 15,000 ft.

Notes:
1. Due to the interfingering relationship and uncertain contact between the Tuscan and Tehama Formations, the contacts should be considered diagramatic.

CORRELATION OF MAP UNITS

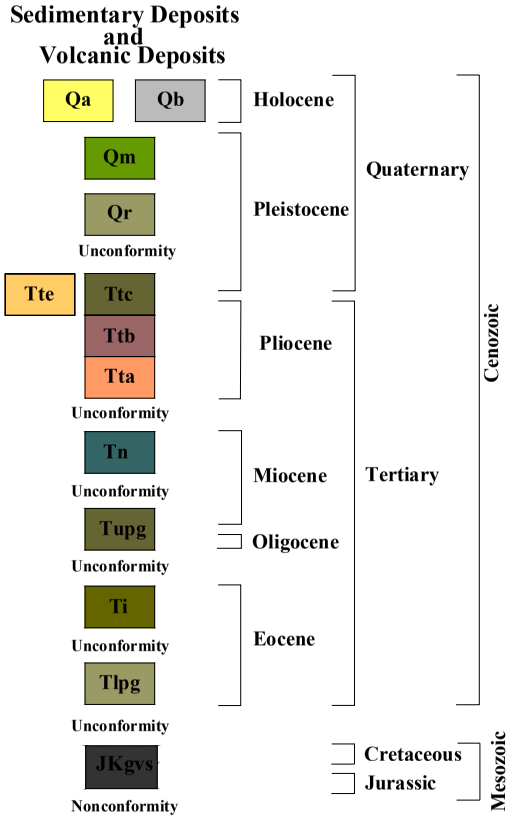


Figure 2. Description of Geologic Map Units (modified from DWR Bull. 118-7 Draft).

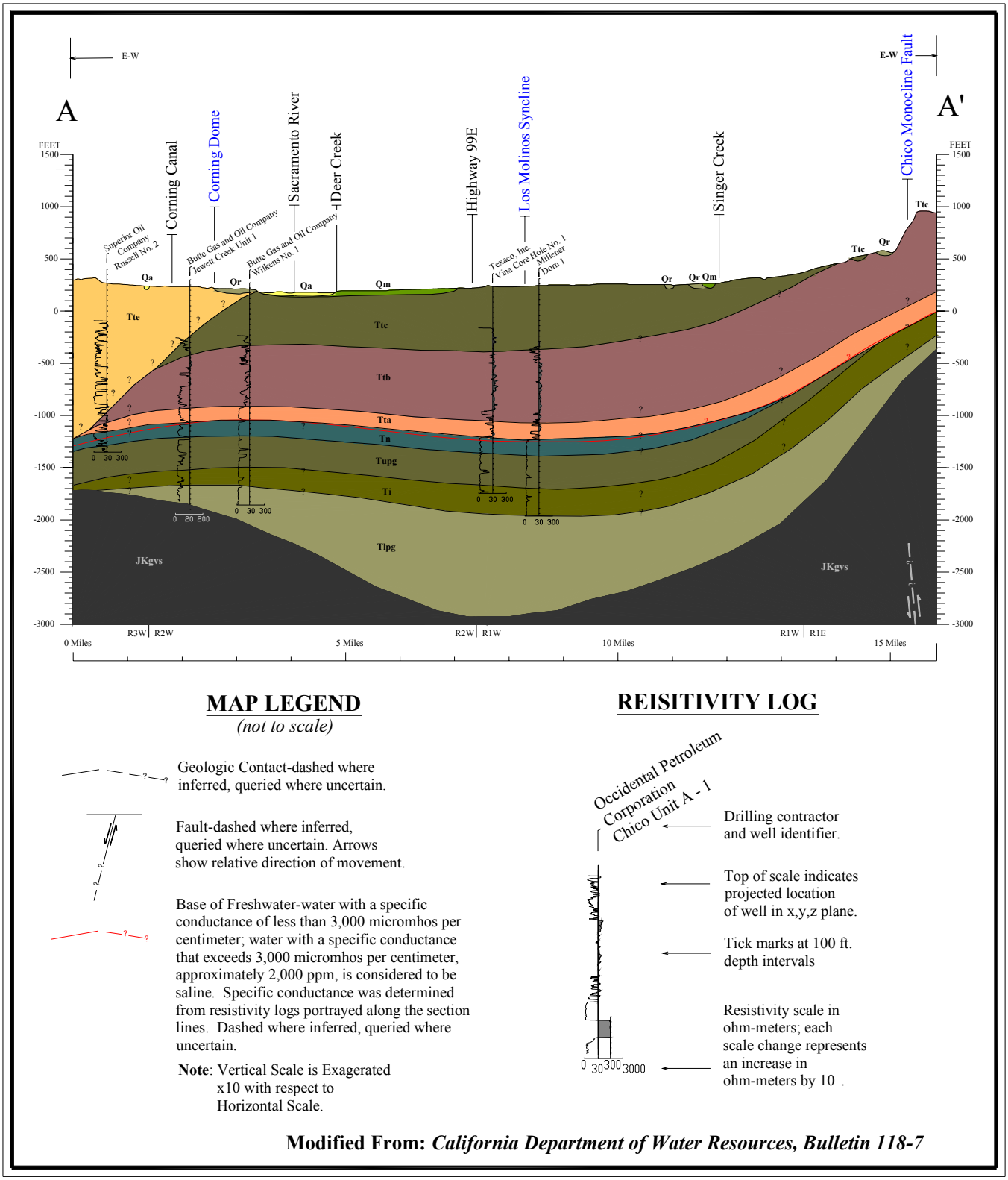
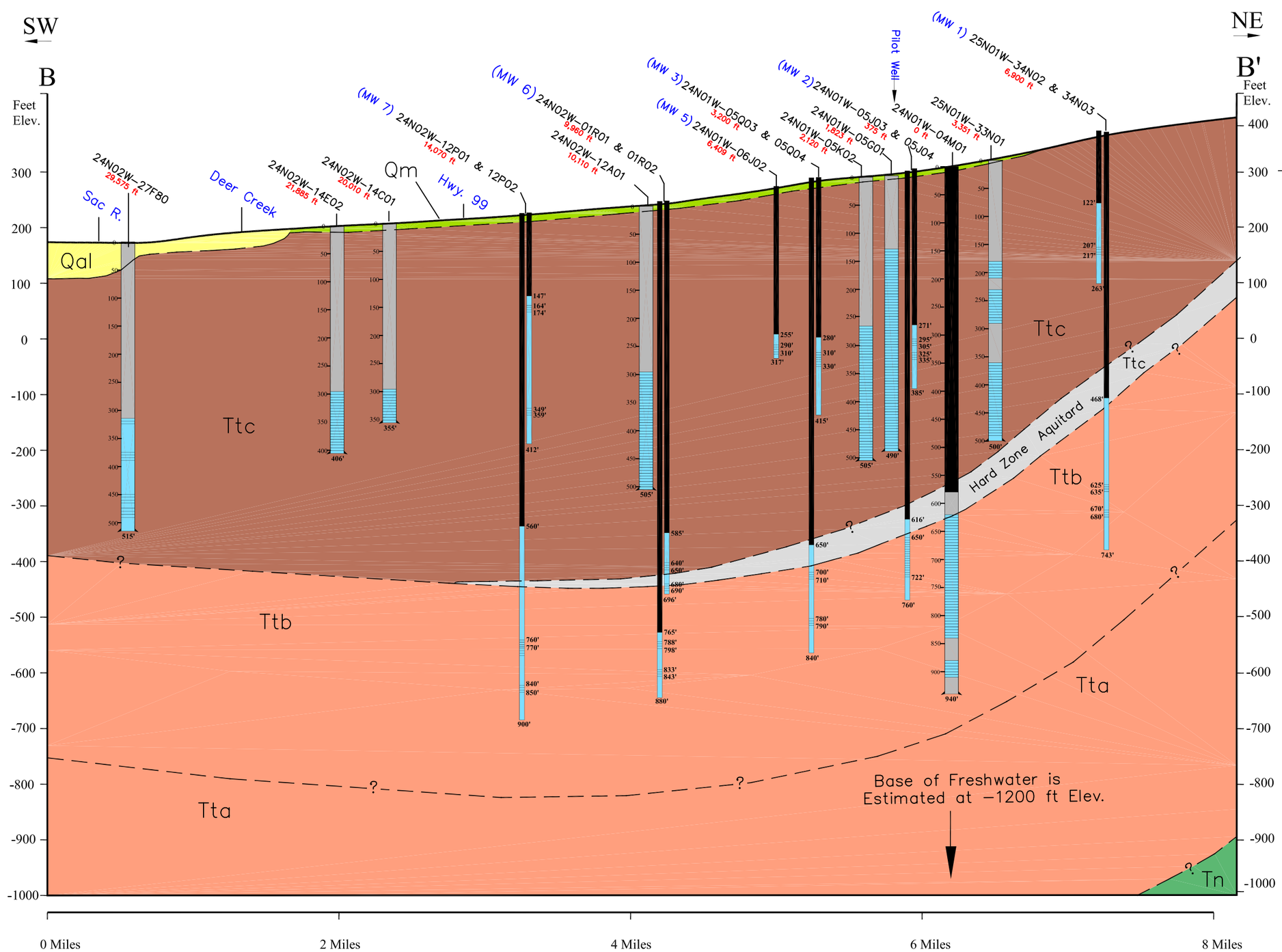


Figure 3. Geologic Cross-Section A-A' Located South of the Deer Creek Project Area.

Figure 4

Geologic Cross-Section B-B' Located Through the Deer Creek Project Area



Geologic Map Legend

Geologic Contact-dashed where inferred, queried where uncertain.

Note: Vertical Scale is Exagerated x10 with respect to Horizontal Scale.

Production Well Legend

State Well Number → 25N01W-33N01

Distance from Pilot Well → 3,351 ft

Depth Below Groundsurface

Blank Casing Interval

Perforated Casing Interval

Total Depth of Well

Monitoring Well Legend

State Well Number → (MW 1) 25N01W-34N02

Distance from Pilot Well → 6,737 ft

Well Seal Interval

Gravel Packed Interval

Well Screen Interval

Total Depth of Well