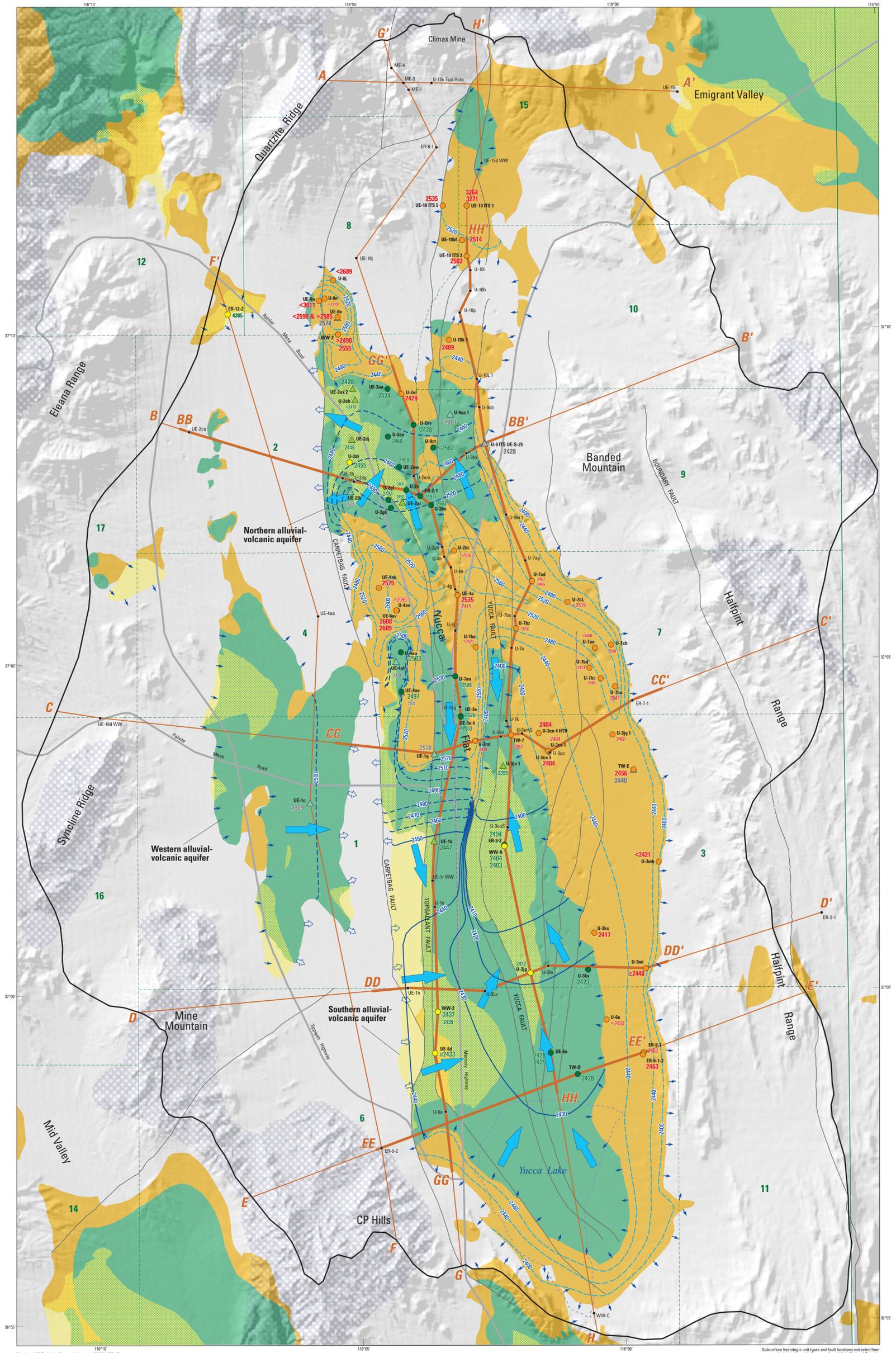


- Local alluvial aquifer—Defined by saturated extent of local permeable alluvial deposits. This aquifer is shown even where locally overlain by volcanic confining unit.
- Local volcanic aquifer—Defined by saturated extent of local permeable volcanic rock. This aquifer is shown even where locally overlain by volcanic confining unit.
- Volcanic confining unit—Defined by saturated extent of low permeability volcanic rock. The volcanic confining unit is shown only in areas where no volcanic aquifer is present.
- Area of potential groundwater recharge—Modified from Fenelon and others (2010).
- Line of hydrogeologic section—Sections for thin and thick lines shown on plates 1 and 2, respectively.
- Study area boundary
- Boundary of Nevada National Security Site—Dashed line indicates boundary of internal operational area. Number identifies operational area.

- EXPLANATION**
- Major geologic structures important to groundwater flow—Location on map is below land surface at depth of saturation.
 - Normal fault
 - Potentiometric contour—Shows altitude of potentiometric surface in alluvial-volcanic aquifer, in feet. Contour interval is 10-foot, except for northern part of Yucca Flat where interval is 20-foot, and western part of Yucca Flat where a sole 2,800-foot contour is shown. Dashes indicate contour is uncertain. Datum is National Geodetic Vertical Datum of 1929.
 - Potentiometric surface in volcanic confining unit. Contour interval is 40-foot, except for extreme northern part of Yucca Flat where a sole 2,520-foot contour is shown. Contours are uncertain.
 - Groundwater flow—Arrow indicates general flow direction in the alluvial-volcanic aquifer.
 - Lateral boundary flow—Arrow indicates inferred direction of groundwater flow between alluvial-volcanic and regional carbonate aquifers at aquifer boundary. The presence and direction of lateral boundary flow are uncertain.
 - Lateral boundary leakage—Arrow indicates inferred direction of groundwater leakage across boundary of alluvial-volcanic aquifer or volcanic confining unit.

- Hydraulic head and measurement location**—Shows borehole name and head used to develop contours of the potentiometric surface in the alluvial-volcanic aquifer and volcanic confining unit. Number is hydraulic head, in feet, at symbol location. Hydraulic head representing (1) the alluvial-volcanic aquifer, (2) the volcanic confining unit, and (3) a composite of volcanic and carbonate aquifers are shown in green, orange, and gray fonts, respectively. Heads in italics are anomalous and are not contoured.
- Well open to alluvial aquifer
 - Well open to volcanic aquifer
 - Well open to volcanic confining unit
 - Well open to alluvial aquifer and volcanic aquifer
 - Well open to alluvial aquifer and carbonate aquifer
 - Well open to volcanic confining unit and regional carbonate aquifer
- | | | | | |
|--|--|--|----------------|---|
| | | | TW-E | Borehole name |
| | | | 2447 2456 2528 | Hydraulic head represents predevelopment conditions |
| | | | 2447 2456 2528 | Hydraulic head probably represents predevelopment conditions, but interpretation is uncertain |
| | | | 2447 2456 2528 | Hydraulic head may or may not represent predevelopment conditions; interpretation is highly uncertain |
- U-4a** • Borehole on section with name—Small circle and name identify borehole on section not used for contouring of alluvial-volcanic aquifer



Base from U.S. Geological Survey digital data 1:100,000 1978-89
Hydrology from U.S. Geological Survey 2-arc-second National Elevation Dataset
Universal Transverse Mercator Projection, Zone 11, North American Datum of 1983

Subsurface hydrologic unit types and head locations extracted from
Hydrogeologic Framework models in National Security
Technologies (2007a) and Becher Nevada (2008)

Predevelopment Hydraulic Heads, Potentiometric Contours, and Flow Directions for the
Alluvial-Volcanic Aquifer System in Yucca Flat, Nevada National Security Site
By
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