SOME UNIT DESCRIPTIONS FOR NBMG OPEN-FILE MAP 03-27

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Qsi Sinter Opaline sinter, sinter-cemented sand, and rare root casts.

Qes Eolian sheet sands and ramps Medium- and fine-grained, well sorted, quartz-rich, wind-deposited sand. Covers most other map units and forms indistinct, northeast-trending linear dunes in the vicinity of Desert Peak. Holocene?

Qp Pans Fine-grained silts and clays deposited in low areas (microplayas) behind beach bars of Qbg. Holocene?

Qafy Younger alluvial fan deposits locally includes modern sidestream deposits.

Qtu Tufa Deposits of calcium carbonate as low mounds, probably in near-shore areas of Pleistocene Lake Lahontan.

Qsl Lacustrine? sand and silt Predominantly fine reddish-brown sand with minor silt. Exposed in low areas of Hot Springs Flat as hummocky, shrub capped mounds; ~0.5 m high and formed by wind deflation (yardangs?). Areas between mounds are alkali encrusted. Sehoo Formation?

Qbg Beach gravels Coarse gravels formed on beaches, primarily as Lake Lahontan rose to or receded from the last highstand. Surfaces commonly consist of desert pavement, armored by pebbles of resistant Tertiary rock units, predominantly basalt and limestone. Locally overlain by thin, discontinuous material of Qes or Qafy, which is not mapped separately. Distinction of the contact between Qbg and Qafi near the highstand of pluvial Lake Lahontan (ca. 13 ka C^{14}) is locally difficult. The best preserved highstand is at ~1330 m; however, a less persistent highstand beach is observed locally at ~1335 m.

Qafi Intermediate-age alluvial fan deposits Coarse alluvial deposits that are commonly dissected by modern and Qafy drainages. Includes dissected pediment gravels that are found above the highstand of pluvial Lake Lahontan and were graded to it. Clasts are predominantly basalt or silicified sedimentary rock.

Tls Limestone White and very light gray coquina and stromatolite limestone.

Ts Lacustrine sedimentary rocks White to light-gray, tuffaceous lacustrine siltstone and diatomite, with less volcanic sandstone and conglomerate. Locally contains pyroclastic(?) and epiclastic units of basalt-clast sandstone and conglomerate as well as rare thin beds of white lapilli tuff and silver ash.

Tws White siltstone with lesser diatomite White to light-grey, massive to finely laminated, tuffaceous siltstone and impure diatomite. Locally contains thin, discontinuous

beds of volcanic sandstone and reworked basaltic tephra. Locally silicified to porcellanite near basalt intrusions.

Tbf **Basalt flows** Flows and associated flow breccia consisting of very dark-gray to black vesicular to massive olivine basalt.

Tbs **Basalt scoria** Basaltic scoria-cone deposits.

Tbi **Basalt dikes, sills, and larger intrusive masses** Commonly sparsely porphyritic (plagioclase and olivine; ≤1mm) to nearly aphyric, glassy, microvesicular to massive, dark-gray to black basalt.

Tbb **Basalt breccia** Yellowish to brownish-gray basalt breccia; includes hydroclastic breccia and peperite(?). Probably mainly intrusive. Breccia fragments commonly surrounded by palagonite selvages consisting of smectite and zeolite (clinotilolite?).

Mzsv **Metasedimentary and metavolcanic rocks** Dark- and light-gray, olive, and locally reddish metamorphic rocks having protoliths of siltstone, volcaniclastic and feldspathic sandstone, lapilli tuff, and less basalt, quart arenite, and conglomerate. Includes a few lenses of a distinctive plagioclase porphyry-pebble conglomerate. Metamorphosed to greenschist grade (albite, sericite, chlorite, chloritoid?), and locally tourmalinized. Probably correlative with volcanic and volcaniclastic rocks of the Humboldt mafic complex (Johnson and Barton, 2000).

Jd **Hornblende monzodiorite** Greenish gray medium-grained subhedral granular phaneritic rock that originally consisted of plagioclase (50%), hornblende (~40%), alkali feldspar (7–10%, quartz (~1%) and iron oxide minerals (1–2%). Hornblende is altered to actinolite, epidote, and calcite; plagioclase is sericitized, and iron oxide minerals are altered to pyrite(?). Hiner (1979) reported somewhat higher amounts of plagioclase (60–70% and quartz (5–10%).

References:

Hiner, J.E., 1979, Geology of the Desert Peak geothermal anomaly, Churchill County, Nevada [M.S. thesis]: University of Nevada, Reno, 1:24,000.

Johnson, D.A., and Barton, M./D., 2000, Time-space development of an extensional brine-dominated, igneous-driven hydrothermal system: Humboldt Mafic Complex, western Nevada, *in* Dilles, J.H., Barton, M.D., Johnson, D.A., Proffett, J.M., and Einaudi, eds., Contrasting styles of intrusion-associated hydrothermal systems: Society of Economic Geologists Guidebook Series, v. 32, pt. 1, p. 127–143.