



Arizona Geological Society Newsletter June 2024



Geologists on AGS Spring field trip to Big Sandy Valley

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Big Sandy Valley Field Trip 2024

On April 27-28, 2024, the Arizona Geological Survey led an exceptional field trip to the Big Sandy Valley, Mohave County. Brian Gootee, Carson Richardson, Lisa Thompson, Brad Johnson, and Phil Pearthree led a group of 25 to wonderful exposures of the Tule Wash formation, including its tilted basin-fill beds of various sedimentary origins and its marvelous, and somewhat enigmatic, monolithic avalanche breccias and an oddly fractured subaqueous basalt. The Big Sandy formation,

Tim Marsh (Bell Copper) and Carson Richardson discussed Laramide porphyry copper related magmatism and alteration in the area. A highlight of these discussions was a stop at a road cut with a calcite-quartz filled, neotocite bearing, fault through the Tule Wash conglomerate (Figure 2). Tim's explanation of how this fault appeared to tap a deep, saline-rich aquifer, and bring over-pressured, copper saturated fluids to the surface was fascinating; that it confirmed in his mind the validity of his exploration hypothesis and led to the discovery of a porphyry copper deposit under several thousand feet of cover was impressive indeed!



Figure 1. Big Sandy Formation where lithium-rich clay beds outcrop. Photo by Joe Corones.

which overlies the Tule by angular unconformity, was also visited at several locations, including hoodoo forming cliffs having lithium-rich clay beds at their base (Figure 1).

The Society thanks the Arizona Geological Survey and Tim Marsh for this trip. We look forward to their next contribution and encourage all members to consider hosting a field trip in the near future!

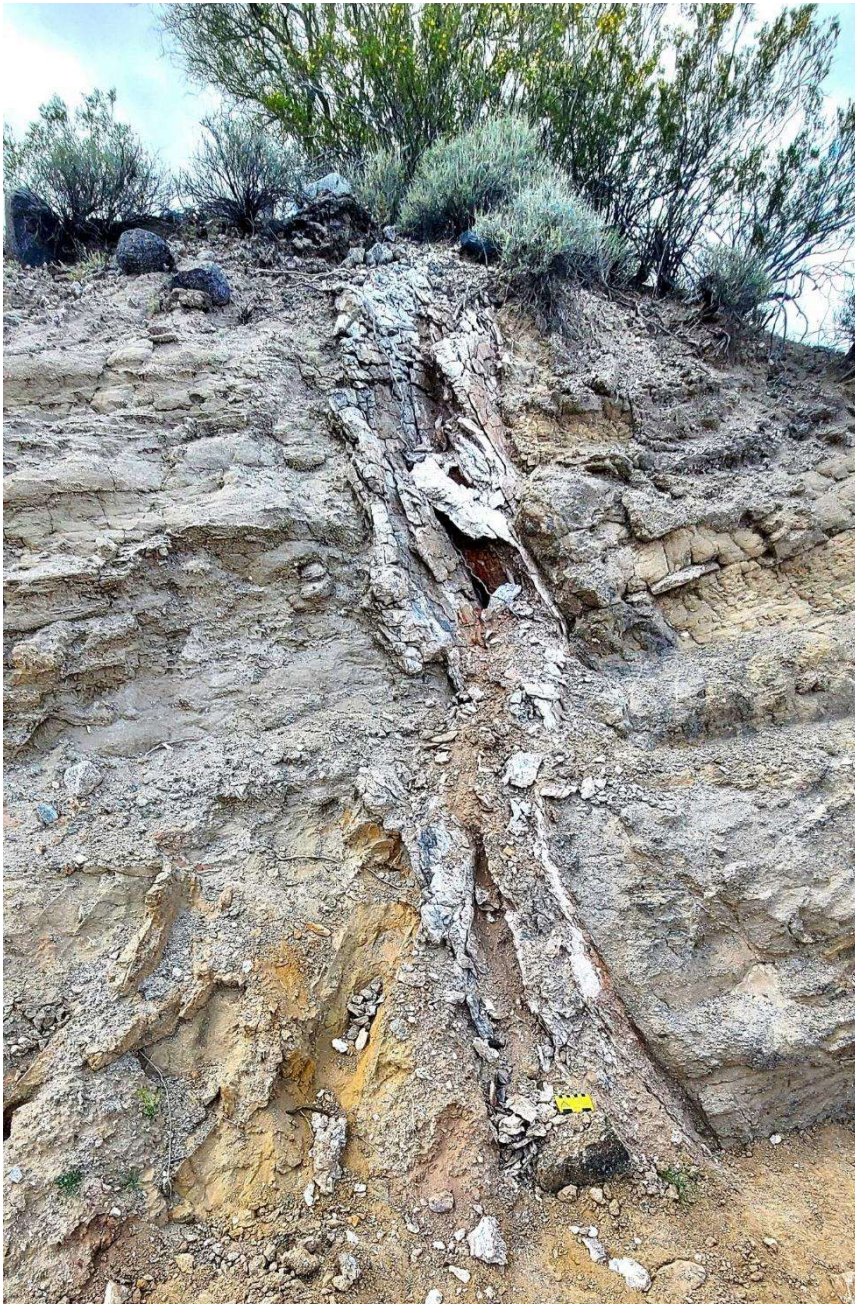


Figure 1. Normal fault through the Tule Wash formation with quartz-calcite and neotocite. Photo courtesy of Dan Aiken. (34.893^o, -113.616^o)