81. Stone, J.R., Mohan, J., and Campisano, C.J., 2016, The fossil diatom record of Paleolake Hadar. Geo. Soc. Amer. Ann. Mtg., Denver, CO 26-29 Sept., 2016.

Sediment cores were collected from long boreholes at two paleolake locations in the Northern Awash, Osi-Isi (NAO, 11.31518°N, 40.73689°E) and Woranso (NAW, 11.32535°N, 40.76491°E). These sites targeted both buried sediments and sedimentary sequences exposed in outcrops related to a Pliocene lake (Paleolake Hadar) in the lower Awash Valley of Ethiopia’s Afar Depression, as one component of the Hominin Sites and Paleolakes Drilling Project (HSPDP). Regional geological studies combined with outcrop, seismic, and core data suggest that the coring sites sampled sediments from the lacustrine depocenter of the Hadar Basin, which has been bracketed by 40Ar/39Ar dating and tephrastratigraphy to ages spanning from approximately 3.22 to 2.93 Ma. The sedimentology of the cores is dominated by fine-grained materials, with intervals of paleosol development. Fossil diatom assemblages are diffusely distributed throughout the cores, with a few highly concentrated diatomite horizons. Diatomites in the upper sections of the cores have been documented from outcrops and used for regional correlation, but have not been examined in detail previously. Here we present a preliminary reconstruction of the diatom stratigraphy, including some high-resolution (continuous 2-cm sampling) of the diatomite units. Our initial results indicate that the diatom history is dominated by mostly undescribed planktic species, mostly belonging to the genus *Aulacoseira*. Where diatomites occur in the core stratigraphy, they likely indicate that Paleolake Hadar was a fairly deep, well-mixed lake, but that this environment was not present consistently through the 300,000-year history preserved in the core. Some core sections include poorly preserved fossil diatoms adjacent to interspersed basalt units that may indicate evidence of hydrothermal alteration.