



Barberton, January 16, 2022

The BASE Newsletter



Welcome back from the Christmas and New Year's break! Drillers returned Jan. 4, set up their rigs at sites 3 and 4A on Jan. 5, and resumed drilling Jan. 6. Because operations since early December had suffered from low rates of drilling, rapid wear-down of bits, mechanical failures, and abundant fracturing and rubble of the cores, we called a meeting. Senior management of the drilling contractor took our concerns very seriously and launched a very substantial and sustained effort to address these shortcomings.



Retraining the crew and closely supervising their actions (ongoing) showed nearly immediate effects, also helped by optimization of several drilling parameters, changing crown bit types, modifications in the core recovery workflow, and better-cushioned transport. Possibly, a higher degree of quartz cementation and a decrease in the density of hairline fractures also contributed to produce excellent cores. Drillers are now focusing on increasing the daily rate from ca. 9 m/day and rig to the planned 16 m/day.



The unweathered and slabbed, continuous cores from Site 4A consist of extremely matrix-rich sandstones which appear to have been deposited in a subtidal estuary-channel facies. Bidirectional currents were insufficient to remove the volcanic matrix. Several types of tidal bundling are clearly recognizable. Streaks of silicified gypsum concretions (?) may mark exposure surfaces.



On Jan. 12, we hosted a delegation from MTPA, the provincial-government environmental authority, including senior management. MTPA wishes to administer the Barberton-Makhonjwa World Heritage Site in which we are drilling; however, they have no geological expertise of their own. Nevertheless, the delegation was impressed by the scientific questions underlying our project, the exhibition, the work flow of core processing, and the small footprint (15*15 m) of our drill sites. We demonstrated that geological research (and display of its results) must be a core activity to create and maintain the attractivity of this recently established WHS.

A third rig will be set up at Site 2 ("White Outcrops") within days. Site 2 will become our most public location, immediately next to the paved R40 road, ca. 6 km outside Barberton. It will temporarily and partly occupy a popular picnic and partying site (sorry!).

Frohes Forschen !

Christoph Heubeck, Nic Beukes

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