

## Hydrogeologic testing and sampling at the COSC-1 borehole

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The talk presents a summary of hydrogeologic testing and sampling activities to date at the COSC-1 borehole. During the drilling period in 2014, we were able to take advantage of one-day breaks in the regular drilling schedule to conduct Flowing Fluid Electric Conductivity (FFEC) logging in the borehole. This was a new approach which turned out to be very successful. Eight inflow zones were identified representing eight hydraulically active fractures or features between the depths of 300 and 2500 m. Initial estimates of their transmissivities and fracture water salinity were also obtained. Post-drilling hydrologic testing and sampling were done in September and October, 2015. They included three main activities. First, water sampling was done using the tube sampling method. Twenty five samples were collected, each with about 100 meters of tubing, so that the whole length of the borehole was covered. Secondly, FFEC logging over the depth range of 100–2000 m was conducted. About 10 fluid electric conductivity profiles over an extended time were obtained at two different pressure drawdowns (two different pumping rates) of about 50 m and 10 m. Third, water samples were collected with a downhole sampler, after pumping (which was part of FFEC logging), at 6 depth levels corresponding to the 6 inflows into the borehole as identified by FFEC logging. Chemical and microbiological analyses are currently underway on these samples.