

Talk Series: CSEG Technical Luncheon
Presentation date: Tuesday, Nov 7, 2023
Presenter: Anna Rogers

TITLE:

In-Situ Stress Analysis for the Eavor-Deep™ Project: an 18,000 ft-TVD closed-loop geothermal demonstration well

ABSTRACT:

Eavor Technologies Inc. is a closed-loop geothermal energy company founded in Calgary, Alberta. In late 2022, Eavor successfully completed an 18,000 ft-TVD deep, hard rock, closed-loop geothermal demonstration well in southwest USA, called Eavor-Deep™. The well targeted the crystalline basement rock of the Basin and Range Province in New Mexico. The objective of Eavor-Deep was to prove certain hard rock drilling capabilities, as well as collect data on the temperature, rock properties, in-situ stress, and pore pressure. This talk will provide both an overview of the project, and a summary of the in-situ stress analysis before and after drilling.

Eavor-Deep was drilled in a data sparse environment, yet most stress tensor parameters were predicted with a relatively high accuracy. Acquiring data while drilling Eavor-Deep ultimately reduced the uncertainty of the in-situ stress. The similarity between the pre-drill and post-drill estimates increased the confidence in the applied geomechanical analysis, and this workflow will be presented.

BIO:

Anna Rogers holds a Physics Major, Geology Minor BSc from Queen's University, and a Geophysics MSc from MIT. Anna's prior experience includes microseismic monitoring on unconventional assets with ESG Solutions, and Deepwater seismic interpretation with Shell Oil Company in New Orleans. In 2021, she returned home to Calgary and joined Eavor Technologies Inc. as the Geomechanics Specialist.