

## Subsurface Modeling West of Edmonton with Focus on Geothermal Reservoirs

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### Summary

This poster will focus on showing the modeling of the subsurface at Tomahawk Ranch, Parkland County, a region immediately west of the City of Edmonton and looking into the geothermal potential of the Cretaceous strata. The data was collected off of raster and LAS density porosity wireline log data, and temperature collected and corrected from bottom-hole temperature (BHT) data as well as DST data, for formations which did not have BHT data a gradient was calculated and fitted to the formation depth. This data was collected using oil and gas industry well data from geoSCOUT and modeled using Petrel. In Petrel models were made to map porosity and temperature within manually selected “pay zones” which were based off of raster density porosity logs and geoSCOUT software. The formations of interest in the Cretaceous were chosen based on density porosity well logs and literature research of common fluid-bearing units in Cretaceous strata in the study area. A comparison is to be made between this research and research published in Banks & Harris 2018 in the region surrounding Hinton, AB, and their conclusions surrounding geothermal energy potential of Cretaceous strata. This research was conducted under the supervision of Dr. Jonathan Banks at the University of Alberta.