



GeoHydros LLC

Specialized Geological Modeling

GEOLOGIC MODELING

PROJECT NAME & LOCATION	DATE STARTED	DATE COMPLETED
Yucca Mountain Project Las Vegas, NV	May, 1998	September, 1998
ACTIVITY TITLE	APPROXIMATE CONTRACT VALUE	
Geologic, 3-D Fault & Stratigraphic Modeling	NA	
CLIENT NAME & ADDRESS	TECHNICAL CONTACT	
U.S. Department of Energy	Dr. Todd Kincaid	

PROJECT DESCRIPTION

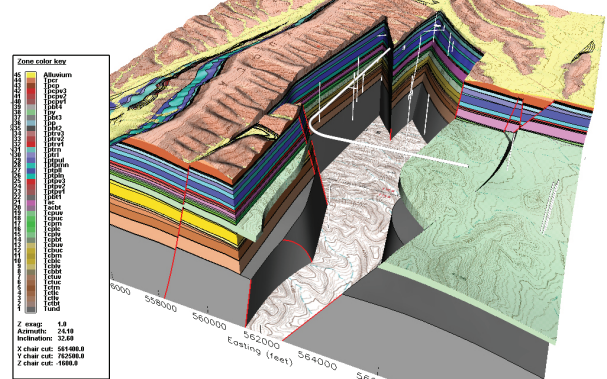
Prior to establishing GeoHydros, Dr. Kincaid was a geologic modeler with Woodward-Clyde Federal Services where he developed a 3D geologic framework model of Yucca Mountain, Nevada. Yucca Mountain is the site of a proposed high-level nuclear waste facility evaluated by the U.S. Department of Energy, Office of Civilian Radioactive Waste Management.

His model incorporated an area of 31 square kilometers (12 square miles), a volume of 47 cubic kilometers (11.4 cubic miles), and 42 stratigraphic units of variable thickness positioned across eighteen normal fault blocks. It was constructed from data provided by published geologic maps, 101 boreholes, information from tunnel data, and measured stratigraphic sections from outcrop areas.

His model was used by the Quality Assurance program to evaluate the reproducibility of geologic interpretations in the Integrated Site Model (ISM), which was designed to model existing site characterization data and provide facilities designers with a common framework for understanding site stratigraphy, rock properties, and mineralogy. The model was integrated with saturated and unsaturated zone flow and transport models, thermal studies, and Total System Performance Assessment studies. The ISM approach saved substantial time and money by effectively communicating subsurface data to the Nuclear Regulatory Commission thereby reducing the number of mandated tunnel and borehole installations.

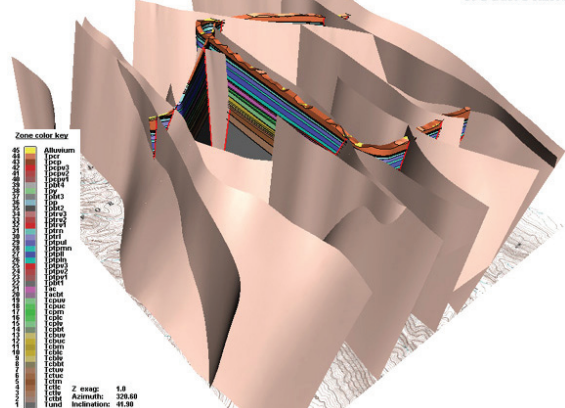
Dr. Kincaid's work for the Yucca Mountain Project with geologic modeling and the integration of solids and process modeling to improve site characterization served as the inspiration for starting GeoHydros and implementing our Dual Modeling Approach.

Key Stratigraphic Units & Fault Blocks



3D Perspective of the Alternative Geologic Framework Model of Yucca Mountain showing the faulted stratigraphy relative to a topographic map and the location of boreholes and the Exploratory Studies Facility.

Geology Along Tunnels & Fault Planes



Rotated 3D perspective view of the AGFM showing the trend and dip of faults relative to the Exploratory Studies Facility.