

Predicted Geology of the Pahute Mesa-Oasis Valley Phase II Drilling Initiative

Underground Test Area and Borehole Program
Environmental Restoration
National Security Technologies, LLC (NSTec)

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ABSTRACT

Pahute Mesa–Oasis Valley (PM-OV) Phase II drilling will occur within an area that encompasses approximately 117 square kilometers (45 square miles) near the center of the Phase I PM-OV hydrostratigraphic framework model area. The majority of the investigation area lies within dissected volcanic terrain between Pahute Mesa on the north and Timber Mountain on the south. This area consists of a complex distribution of volcanic tuff and lava of generally rhyolitic composition erupted from nearby calderas and related vents. Several large buried volcanic structural features control the distribution of volcanic units in the investigation area. The Area 20 caldera, including its structural margin and associated caldera collapse collar, underlies the northeastern portion of the investigation area. The southern half of the investigation area lies within the northwestern portion of the Timber Mountain caldera complex, including portions of the caldera moat and resurgent dome. Another significant structural feature in the area is the west-northwest-trending Northern Timber Mountain moat structural zone, which bisects the northern portion of the investigation area and forms a structural bench. The locations of the proposed wells of the UGTA Phase II drilling initiative can be grouped into four generalized volcanic structural domains based on the stratigraphic distribution and structural position of the volcanic rocks in the upper 1,000 meters (3,300 feet) of the crust, a depth that represents the approximate planned total depths of the proposed wells.

