

# Geomechanics Lab

Measuring rock properties under a wide range of simulated service conditions

The Geomechanics Laboratory allows its users to measure rock properties under a wide range of simulated service conditions up to very high pressures and complex load paths. The laboratories' capabilities make it useful for research and development in underground construction, mining, oil and gas production/reservoir management, hydrocarbon and compressed air storage and much more.



The Geomechanics Laboratory emphasizes the following activities:

- Characterization of natural fracture systems
- Identification and modeling of rock deformation and failure processes
- Laboratory determinations of thermo-mechanical and transport properties of competent rock and natural fractures, including studies of coupled effects
- Extrapolation of laboratory measurements to field conditions

- In situ stress measurements and evaluation of in situ boundary conditions
- Laboratory and bench-scale validation studies

These capabilities make this laboratory useful for any of the following applications:

- Underground construction
- Mining
- Oil and gas production/reservoir management
- Hydrocarbon and compressed air storage
- Hazardous waste disposal
- Fluid flow and contaminant transport
- Laboratory and bench-scale evaluation of geo-technical design procedures



Elton Wright examines a prototype drill bit used for an experiment in Sandia's Hard-Rock Drilling Facility

**For more information  
please contact:**

Moo Lee

E-mail: [mylee@sandia.gov](mailto:mylee@sandia.gov)

Phone: (505) 844-2366

Website: [energy.sandia.gov](http://energy.sandia.gov)

Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.