MANAGEMENT OF LABORATORY TESTING PROGRAMS FOR GEOMECHANICAL & ACOUSTIC PROPERTIES

Weatherford Advanced Geotechnology are experts in the design and management of laboratory testing programs for geomechanical and acoustic property testing. We would be pleased to work with you and one of our related Weatherford Laboratories such as Hycal Energy Research Laboratories (Calgary), Omni Laboratories (Houston), or ResLab (Norway) to meet your testing needs. We can also design custom testing programs with other research and commercial laboratories in Canada and abroad.

We have specialized expertise in the following types of tests:

Rock strength
- Unconfined compressive strength
- Triaxial compressive strength
- Direct shear tests
- Thick-walled cylinder strength

Strength index tests
- Point load
- Schmidt rebound hammer
- Brinell hardness
- Equotip or Leeb hardness

Rock fracture toughness

Shale swelling behavior
- Oedometer cell
- Triaxial cell

Static deformation properties
- Young's modulus
- Poisson's ratio
- Bulk, pore and rock compressibilities

Ultrasonic velocities
- Compressional and shear velocities at effective stress conditions
- Point load circumferential velocities
- Dynamic elastic properties

Natural fractures and faults
- Fracture conductivity
- Deformability/stiffness
- Shear strength
- Velocity anisotropy

Capillary threshold pressure

Permeability
- Stress path dependent permeability under triaxial loading conditions
- Pulse permeability (<10μD)
- Mud pressure transmission tests

Osmotic pressure tests
- Drilling fluid and shale activity on cuttings or core

Thermal properties
- Thermal expansion coefficient
- Thermal conductivity

Creep testing (evaporites)

Permafrost and gas hydrates
- Mechanical properties
- Acoustic properties
- Residual stress

Paleomagnetic core orientation

XRD mineralogy

Thin section petrology

Grain size analysis

Bulk density

Pore water geochemistry

Heavy metal analyses

Digital core photography

Non-standard & customized tests

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