



Unearthed Excavated Shaft



Crosshole Sonic Logging Test

Firm Background

Established in San Diego in 1986, Ninyo & Moore is one of the largest engineering firms specializing in Geotechnical Engineering, Environmental Engineering and Materials Testing and Inspection Services. Engineering News Record (ENR) recognizes the firm as one of the Top 500 Design Firms in the United States.

Ninyo & Moore has fully equipped and certified in-house testing laboratories that offer full-service field and laboratory services for geotechnical design, and soil and materials testing projects.

Professional Staff

Ninyo & Moore's staff of 500 certified and registered professionals includes:

- Geotechnical engineers
- Civil engineers
- Engineering geologists
- Hydrogeologists
- Geophysicists
- Field technicians
- Special inspectors
- Environmental engineers
- Environmental scientists
- Industrial hygienists
- Asbestos consultants
- Safety professionals
- Indoor environmental consultants
- Microbial consultants
- Lead consultants
- Qualified SWPPP developers/practitioners
- Hazardous waste and regulatory compliance specialists

Locations

Ninyo & Moore has offices located in the western United States, including California, Arizona, Nevada, Colorado, Utah, and Texas.

Contact Us

800.427.0401 or
nminquiries@ninyoandmoore.com

Crosshole Sonic Logging

Crosshole Sonic Logging (CSL) provides a non-destructive method for Quality Assurance (QA) testing of drilled shaft foundations immediately following construction. The CSL method involves transmitting ultrasonic waves through concrete and other materials, including slurry, rock, grout, water-saturated media, or cemented radioactive wastes. Drilled shafts or caissons are often used to construct special types of foundations to support critical structures. Some states, such as California and New Mexico, specify CSL to QA test the drilled shaft. In the United States, the testing standard is ASTM Standard D6760 and any additional project specifications.

CSL testing is used to find defects in the concrete foundation structure. Generally, the CSL test is performed during the construction phase or immediately postconstruction to evaluate whether the shaft has defects, and to report the nature of detected defects so that project structural engineers can evaluate whether the structure will perform as intended, and whether remedial steps are needed before the foundation is approved for use.

CSL is typically used to not only evaluate integrity, but also the possible presence and extent of voids and low density or "soft" areas, in a newly constructed drilled shaft foundation. It is also used to evaluate the integrity of seal footings, diaphragm walls, and other concrete structures.

CSL advantages over gamma-gamma QA logging

- CSL locates concrete or material defects that exist between tubes.
- CSL is quicker than gamma-gamma.
- CSL is less expensive than gamma-gamma.
- CSL is safer than gamma-gamma with no need for special security or safety precautions involving radioactive sources.
- CSL is not "fooled" by zones of dense, uncured concrete like gamma-gamma.

CSL advantages over Sonic Echo (SE) and Impulse Response (IR) Tests

- CSL evaluates multiple defects within the same shaft.
- CSL evaluates the extent, nature, and location of each defect; SE and IR give you only depth of defect.
- CSL is sensitive to smaller defects and detected defect depths are more accurate than SE or IR methods.