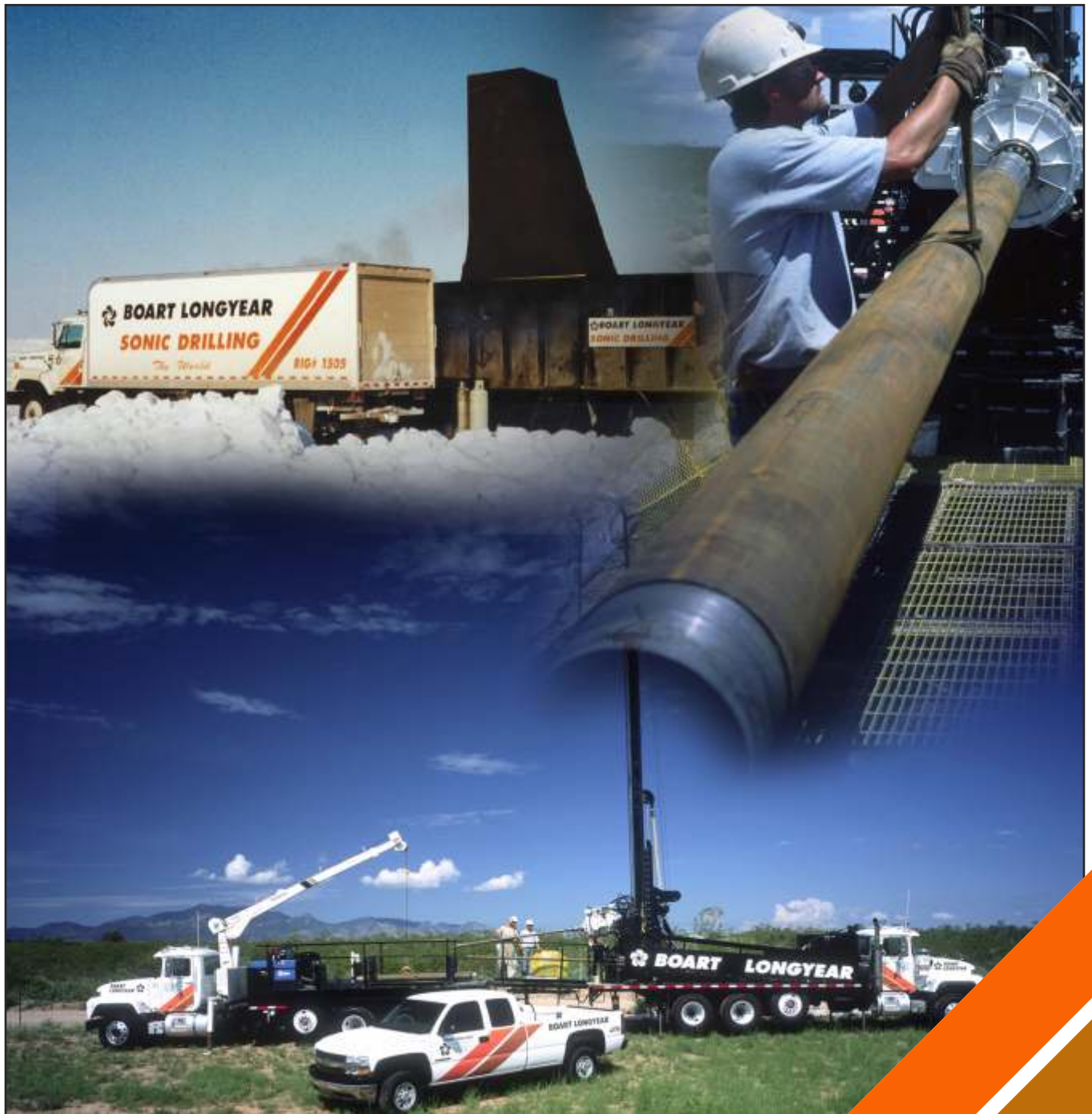


SONIC Drilling

Dedicated to helping your company succeed in a competitive environment with quality and service.



Consider **SONIC Drilling** for your projects...

- Safe
- Fast
- Reliable
- Cost Effective
- 70-80% Less Waste
- Depths to 300 m (1000 ft)
- Diameters to 300 mm (12 in)
- Superior Results

Sonic drilling provides highly representative, continuous core samples of any overburden formation, even the most-difficult-to-drill terrain with boulders, generally without the use of water, air or mud.

Our sonic drilling experience in mining environments is extensive and includes drilling in tailings ponds, earth dams and heap leach pads. We also drill routinely for soil and groundwater investigations in the most challenging climatic and logistical conditions. We can combine sonic drilling with core, rotary, and reverse circulation, offering a complete, unrivaled service. *Call us today!*



Sonic "geotechnical core drilling investigation of a large earthen dam"

Continuous core sampling through boulders and compacted fill — 6" diameter core; 8" cased hole; 432 ft.

When other methods of drilling failed to produce results as to the cause of two sinkholes at the WAC Bennett Dam, located in northeastern British Columbia, they called Boart Longyear.

Concerns ran high for the safety of the inhabitants below the dam with experts stating that if the dam failed, the entire river valley downstream would be wiped out. Engineers and hydrogeologists advised that other methods using water, air, or other drilling additives could cause additional problems by increasing hydraulic pressure inside the core of the dam.

Boart Longyear was on site within two days with a sonic rig (a second rig was added later). The rigs operated 24 hours a day seven days per week drilling vertical and angle holes to depths of 435 ft. Continuous highly representative, core samples were recovered in all formations without the use of air, water or additives. Specially designed traps or catcher type bits were utilized to insure complete core recovery. The sonic drilling program was considered to be extremely successful. It provided the necessary samples and information to help the experts (from as far away as Sweden) determine the cause and extent of the sinkholes and allowed for a grouting remediation plan to be formed.

Sonic rigs for Mine Tailings Investigation

Two Boart Longyear sonic rigs successfully completed 30 monitoring wells and borings to depths ranging from 100 - 210 ft, through old tailing ponds at Summitville Mine near Del Norte, Colorado, which is listed as one of North America's most polluted sites according to the U.S.E.P.A.

The borings were completed using "dry" sonic drilling; no water, air or drilling additives were used.

Six inch diameter continuous core samples were collected, averaging high 90% core recovery. The boreholes were cased with temporary 8-3/4" diameter sonic casing to allow installation of the 4" monitoring wells. The project was completed two weeks ahead of schedule and under budget. Each monitoring well averaged 10 to 15 hours to complete.

The sonic drilling system works extremely well in mixed formations, whether man-made or natural, consisting of silts, clays, sand, gravel, cobbles and boulders.

Dry sonic drilling limited the amount of drilling waste, eliminating any chance of diluting existing contaminants, and greatly reduced well development/purging time.



Boart Longyear - Environmental Drilling Division

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Boart Longyear is constantly striving to improve its products and services and must, therefore, reserve the right to change designs, materials, specifications and price without prior notice.

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