

## CONSTRUCTION DRILLING SERVICES

# PROJECT NEWS



### WAC Bennett Dam Project

**Location:** British Columbia, Canada  
**Service:** Dam and Levee  
Sonic Drilling  
**Boring Length:** Up to 435 feet (132.59 m)  
**Completion:** August 1996



### The Problem

The WAC Bennett Dam, located near Hudson's Hope in North Eastern British Columbia, west of the Alaskan Highway, is one of the world's largest earth-fill dams. It is 600 ft (182.88 m) high, 1/2 mile (0.80 km) thick at its base and 1-1/4 miles (2.01 km) long.

It produces a major share of the electricity used in British Columbia and sells large volumes of power to the West Coast of the United States. The dam holds back the 684 square mile, 438,000 acre Williston Reservoir, the largest reservoir in North America, which stores over 75 billion cubic yards (57 billion cubic meters) of water.

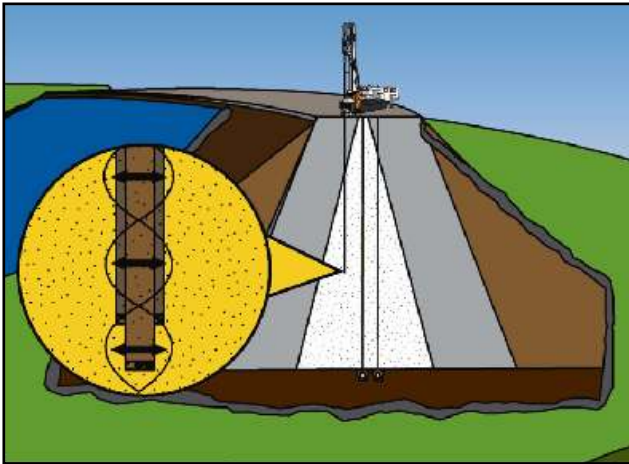
When a sinkhole was discovered on the crest of the dam on June 14, 1996, and then a second one discovered in August, concern ran at an extremely high level for the safety of inhabitants below the dam all the way to the Peace River in Alberta. Experts stated that if the dam failed, the entire river valley downstream would be wiped out. It was critical to determine the cause of the sinkholes and remedy the situation quickly.



*Top Left: Sonic rig setup at WAC Bennett Dam.  
Above: WAC Bennett Dam in British Columbia.*



Several methods of drilling to sample the dam's core and determine the cause of the sinkhole were tried. None were successful at drilling and sampling deeply enough or recovering an adequate sample. Engineers and hydrologists decided a rig that could drill to depths of 400 to 600 feet (121.92 to 182.88 meters) while collecting a continuous, highly representative core sample, without using water, air or any other drilling additives was required.



### The Solution

The only rig in the world known to fit these requirements was a sonic rig. On June 18, Boart Longyear was called. We responded with a rig two days later and a second rig was added in July. Rigs were operated 24 hours a day seven days per week. Vertical and angle holes were drilled and continuously core sampled into the dam to depths of 435 feet (132.59 m).

All core sample drilling was completed without using any air, water or additives. Continuous highly representative, moderately disturbed samples were recovered in all formations and at all depths. Specially designed trap or catcher type bits were utilized to insure complete core recovery.

The sonic drilling program was 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 sinkhole and to allow for a grouting remediation plan to be formed.



*Sonic drill rig setup at the WAC Bennett Dam.*

*For more information on this and other projects, please contact your Boart Longyear representative today!*

### **Looking for a better drilling solution?**

Boart Longyear offers a unique and complete range of drilling services - probe, auger, sonic, diamond coring, large diameter rotary and reverse circulation - for the environmental, water resource, dewatering, geotechnical, civil construction and mining industries.

**Drilling is our business!**

ISO 14001 CERTIFIED



### **Boart Longyear Drilling Services**

Tel: (800) 422-6552 Fax: (320) 632-2915

Email: [info@boartlongyear.com](mailto:info@boartlongyear.com) Website: [www.boartlongyear.com](http://www.boartlongyear.com)

© 2004 Boart Longyear Company