



Vancouver Geotechnical Society

A Local Section of the Canadian Geotechnical Society

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NOTICE OF UPCOMING DINNER PRESENTATION

THURSDAY, MARCH 14, 2013

SUBJECT:

How to try to reduce a 3 m³/sec leakage in a 100 meter high natural dam using the Jet-Grouting Technology

SPEAKER:



Mr. Paolo Gazzarrini, P.Eng.
Sea To Sky Geotech Inc.

Paolo Gazzarrini is a Civil Engineer, graduated at the Milan (Italy) Polytechnic with over 30 years of experience in geotechnical techniques application. His experience varies from geotechnical Contractor to engineering.

He was involved in foundation/grouting projects for major Hydroelectric Dams in: Iraq (Mosul Dam), Colombia (Guavio), Argentina (Piedra del Aguila), Tunisia (Sidi El Barrack, Sidi Aich, Oued Barbara), Cyprus (Kannaviou). His experience in foundation techniques, tunneling consolidation, diaphragm wall, jet-grouting, covers experiences also in Italy, France, Morocco, Far East and, since 1996, British Columbia.

Currently, Paolo is acting as a Specialty Geotechnical Consultant based in BC, also for overseas projects.

CONTENT:

The Zeballos Lake Hydroelectric project is an IPP "lake-tap" project on the West Coast of Vancouver Island. Since the power plant opened two years ago, the production of energy has been affected by important leakages in the natural dam that formed the lake more than 300 years ago. The water leakages didn't permit the utilization of the turbines at their maximum capacity resulting in a significant loss of revenue for the Owner.

In May 2011, the Owner decided to investigate the leakages with a geophysical survey methodology and a potential preferential path of the underground flow of water was mapped with the design of a grout line. In September 2011 the Owner decided to carry out a grouting program to try to reduce the underground flow of water that was evaluated in the order of 2 to 3 m³ per second.

A grouting design-build program was proposed and partially accepted by the Owner and in April 2012 the grouting program began. The grouting program involved drilling grout holes in a very heterogeneous landslide to a depth of 80 to 100 meters and later grouting them using the Jet Grouting technology. Jet Grouting was used not with intent to create "conventional columns" but with the idea of aggressively attacking the underground flow of water using high flow and high pressure of grout mix. With the double Jet Grouting technology it was also possible to use accelerants, to reduce the setting time of the grout mix, without risk of plugging the grout plant and grout lines.

This presentation will describe the problem, the possible solutions available, the solution adopted (atypical Jet Grouting), the logistical difficulties encountered, the instrumentation installed, the tests done on site, the results and the lessons learned in a very challenging grouting project, both from technical and logistic aspects.

DETAILS

Executive Inn, 4201 Lougheed Highway, Burnaby, BC V5C 3Y6 (Phone: 604-298-2010)

Social Hour: 5:30 to 6:30 pm (drinks available at the hotel bar)

Technical Presentation: 6:30 to 7:30 pm

Dinner: 7:45 pm (\$30 will be charged for dinner)

RSVP: Dinner reservation to ali.amini@shaw.ca by Wednesday, March 13, 2013.