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CN Rail – PDA Testing-Timber Piles, Anzac, Alberta

On August 15th 2008, GES Geotech completed PDA Testing and a Geotechnical Analysis report to assess the measured pile capacities and the foundation of the CN Rail Bridge at the south of Fort McMurray in Alberta, estimating in 16" (40.7mm) for timber piles diameter.

GES found significantly higher ultimate load bearing capacities than expected with agreement between the CMAC Method and CAPWAP Analyses on 16.8m piles (both vertical and battered).

Therefore, GES performed back analysis of the pile testing data, including porewater pressure affect estimations and estimate a minimum pile length of 13.5m to safely achieve 360kN bearing capacity with a 3 day delay between initial and final driving to allow for pore pressure release. This means the project can move ahead with a significantly shorter piles and therefore, lower costs for CN.

BGC Engineering completed a geotechnical investigation of the site and surface conditions and Rustin Construction Limited carried out the piling construction.

On October 17th 2008, GES Geotech was requested by CN to increase their scope of work to include an assessment of the inferred pile load capacities for the existing piles at bent 1-28 and 30-50, driven in 1968.

Pile testing was accomplished with an extension piece to accommodate the pile driving onto the existing cedar piles, which contributed to inconclusive results for 2 out of the 3 PDA tested piles.

Based on the PDA tests, GES inferred ultimate axial pile capacity of 230kN for battered piles and 195kN for vertical piles at the location.

RC Thurber & Associates Ltd completed an original geotechnical investigation of the site, Ruskin Construction Limited was the pilling contractor on site.

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