

**Knight Piésold Ltd.**  
CONSULTING ENGINEERS

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YOUR REFERENCE 5/1182  
OUR REFERENCE  
NUMBER May 26, 1995

Dear George;

Re: Mt. Polley Tailings Storage Facility  
Design Report

Enclosed are two copies of the Final Design Report (Ref. 1625/1) for the Mt. Polley Tailings Storage Facility, two copies of the Site Inspection Manual (Ref No 1625/2) and resumes of the Knight Piesold Site Supervisors (Mr. Ken Embree & Mr. Barney McCabe) who are scheduled for this project.

Knight Piésold have reviewed the comments of the geotechnical review presented in your letter of May 10, 1994, and have incorporated your suggestions in to the final report. The following comments provide additional clarification of the main concerns outlined in your letter.

- *Embankment Foundations:* Drillhole logs obtained from the 1990 geotechnical site investigation have been added to the design report as Appendix B2. These provide information on the foundation conditions within the tailings facility. Two additional shelby samples were recently collected by Mr K. Embree (May 16, 1995) during the soil investigation survey. These samples were obtained from the glaciolacustrine sediments and have confirmed that the foundation materials consist of dense, overconsolidated materials. In fact, it was extremely difficult to insert the shelby tubes in the field and it was also not possible to extract undisturbed samples from the tubes in the laboratory.

Additional holes which will be drilled within the embankment foundation soils during installation of instrumentation will provide additional information. Samples will also be taken for additional laboratory testing on



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these sediments, as described in Section 5.3 of the report. It is unlikely that any significant pore pressure development will occur in these materials during construction of the embankment.

- *Pore Pressure Development in Embankment Fill:* The possibility for development of excess pore pressures in the embankment fill has been considered in the design of the embankment and the instrumentation systems. Our site representatives will monitor this aspect closely during construction. However, based on past experience with similar materials, it is our opinion that there will not be any significant pore pressure development in the embankment fill and the stability of the embankment during construction will not be compromised.
- *Embankment Settlement After Modified Centerline Expansion:* On-going expansion of the tailings embankment onto the tailings beaches will result in only minor settlement of the staged raises and will not compromise the stability of the structure. Additional analyses have been conducted and a detailed discussion included in the report.
- *Embankment Drainage Systems:* We have included modifications to the Stage Ib embankment drainage system and have incorporated a closer drain spacing and drainage blanket as shown on the revised Drawings. The efficiency of the drainage systems will be evaluated on an on-going basis and additional outlet pipeworks, drainage pipeworks, filter blankets, etc will be incorporated as required in future expansions.
- *Quality Assurance/Quality Control:* A detailed description of the QA/QC program is included in the Site Inspection Manual. Resumes of the Knight Piesold personnel who have been dedicated to the field program are included with this letter. Knight Piesold are also in the process of finalizing the Technical Specifications for the Tailings Impoundment contract, which will also form part of the overall QA/QC program.
- *Topsoil Stockpile:* We have also relocated the topsoil stockpile as per your request in a telephone conversation subsequent to the issue of your initial



comments in the letter of May 10. The revised location is shown on the updated Drawings and is below the surface water diversion ditches as you requested.

Additional analyses examining upstream stability, location of the phreatic surface and variability of material strength properties for both the embankment fill and foundation soils have been examined.

- Instrumentation details for the facility are given in Section 10.2 of the design report. Additional information on piezometers and the survey monitoring system have been provided for on-going expansion of the facility.
- Diversion ditches have been designed for the 1 in 50 year flow as described in Section 8.3.2 of the Design Report.
- An updated Construction Schedule has also been included.

It is understood that MEMPR will provide their own review consultant for site inspection and evaluation. Knight Piésold will keep MEMPR informed of all schedule developments and will provide assistance and Site Inspection records as appropriate.

Yours very truly,  
**KNIGHT PIESOLD LTD.**



K.J. Brouwer, P.Eng.  
Director

GRG/smp

cc: Mr Bill Ruffo (IMC) letter + 2 copies of each report.

