

# PROJECT MANAGEMENT

# Project Management

*International*

## Cone Penetration Testing (CPT) for the Tailings Dam Facility - Ghana

Client: Knight Piésold  
Location: Tarkwa, Ghana  
Period: April 2010

### Cone Penetration Testing (CPT) for the Tailings Dam Facility, Goldfields Tarkwa Mines, Ghana

The Client, Knight Piésold commissioned Project Management International (PMI) to execute a CPT campaign to determine the soil profile, identify the soils present and to evaluate the engineering parameters of the soils in order to facilitate a site investigation for the raising of a tailings dam facility for Goldfields Tarkwa Mines.

The principal objective of the CPT investigation is to facilitate the acquisition of pertinent geotechnical information. This is to supplement information previously obtained on the proposed project for the characterization of the near surface soils relating to the soil profile, geotechnical engineering characteristics and the generation of



pertinent geotechnical parameters for the design of the proposed raising of the tailings dam, as detailed in the scope of works.

#### The Works

PMI mobilized shortly after contract award and completed the CPT campaign in 4 days.

A20 tonne Capacity Stand Alone CPT equipment was used with a 220 tonne capacity Hydraulic Ram set. The CPT equipment has been installed on a skid which is filled with sand to reach the required counter weight to carry out the tests.

A total of 8 CPT were executed directly on the Tailings Dam to a maximum depth of 20m. After the desired depth

has been reached or refusal, the piezocone equipped with a friction sleeve of the same diameter as the cone and a surface area of  $1.5 \times 10^4$  takes continuous measurements of:

- Resistance to penetration of the cone tip ( $q_c$ )
- The frictional resistance ( $f_s$ )
- The pore water pressure ( $u_c$ ), on a surface sleeve set immediately behind the cone end assembly

These measurements were then used to interpret and derive the values for the design.

After the successful completion of the works, the CPT equipment and personnel demobilized.

A full report was prepared and used as basis for the Consultant.