

16. PROJECT GEOTECHNICAL RISKS

16.1 Geotechnical Information

There were some shallow historical upland geotechnical borings made available for use in this analysis. Assumptions regarding the structural capabilities of the soils and their ability to serve as infill behind the cellular cofferdams were made based on these borings. Additional geotechnical borings are required to fully understand and calibrate the structural properties of the upland soils. In addition, in water rock cores are required to ensure the quality of rock and its suitability to serve as a bearing surface for the proposed cellular cofferdams.

16.2 Predicted Soil Settlement Time Under Surcharge Program

The methodology to prepare the placed soils in the infill area requires installation of wick drains and a soil surcharge program. Data regarding the time settlement characteristics of the soils proposed for the infill was not available. A conservative prediction for the time to reach 90% of primary consolidation under a soil surcharging program was made in the construction schedule.

This risk is inherent at the preliminary or conceptual phase of projects requiring a soil surcharge remediation program. The time to settlement can be refined using a more widespread soil sampling program during detailed design.

16.3 Placement of Embankment Soils in Tidal Zone

The embankments must be placed first so as to retain the remaining fill to be placed in the infill area. The placement of these initial soils can be difficult in areas with large tidal ranges. As the tide moves in and out, it can carry newly placed sediment away from the intended area, requiring larger amounts of sediments than initially calculated to be placed. This can be mitigated using certain placement techniques and stepping the embankment up slowly from the mudline.