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Worldwide Experience
Innovative, Value Added
Practical Solutions

Earth-fill Dam-Nelson Island, BC

GES Geotech completed a Dam Safety Inspection for the property owner of an existing small dam located in Nelson Island, BC. This project was carried out between 2008 to 2012. After reviewing photographs and available geotechnical information, GES performed a site reconnaissance.



GES identified specific requirements for general dam maintenance as follows:

- Upgrading and repair of the spillway by excavation and reconstruction, increasing dam height and reservoir levels.
- Having a bottom outlet pipe with a control system for adjustments to the reservoir level.
- Preparing the as-built topographic maps for addressing the long-term performance of the dam.
- Environmental consideration to mitigate effect of crib-wall demolition and its impact on fish habitat.
- Designing a 4-5 m high dam and 2.5-3 times more reservoir capacity than the existing crib-wall dam.

Excavation of ineffective dam body and construction of a new dam was selected based on drawdown mechanism system consideration and the significant hazards due to potential dam breach and ensuing water erosion.



The client dismantled the old crib-wall and later built an earth-fill dam with clay central core. GES completed the dam and spillway design, which included 400-900 mm riprap for protection against wave action. GES also attended site to review that dam construction was in general conformance with our design.