



GENERAL GUIDELINES

Exploratory Geotechnical Testing Within a Dike or Dike Right of Way

To ensure dike safety, it is important that exploratory testing (i.e. bore holes, CPT holes, test pits, etc.) does not impact present and future stability and/or operation of the dike.

The Inspector of Dikes office prefers that all exploratory testing work be conducted away from the dike and/or the dike right of way. However, if alternative locations are not feasible, the Inspector of Dikes office requires the following items to be submitted in conjunction with a *Dike Maintenance Act* (DMA) application for exploratory testing within a dike or with potential to impact a dike:

- An explanation discussing why exploratory testing must be conducted within the dike and/or dike right of way.
- Drawing(s), in plan view, depicting locations of test holes, all property lines and right of way boundaries, and the dike alignment. Stationing on the drawing(s) shall be consistent with the as-built drawings for the dike¹.
- Details of the drilling program including the type of rig, drilling methodology, quantity and types of testing (i.e. stratigraphic, geotechnical, hydrologic, monitoring wells, etc.), diameter and depth of boreholes/test pits, work schedule, and length of time boreholes/test pits shall be left open prior to closure.
- Methodology for closing test holes (i.e. bore holes, CPT holes, monitoring wells, etc.). The Inspector of Dikes office requires removal of any casing and backfilling each hole continuously from depth to surface with grout.
- Methodology and compaction equipment utilized to backfill test pits. The compaction of structural backfill shall be compacted to a minimum 95% standard Proctor density per ASTM D 698². Backfill materials shall be placed in layered-lifts not exceeding 300 mm of uncompacted soil to ensure the density is achieved throughout the complete fill depth. Backfill materials shall be consistent with the materials originally placed in the zone or area of dike

Refer to downloadable As-built drawings on our website:

ftp://ftp.env.gov.bc.ca/pub/outgoing/WSD/Website_As_built_FRFCP/FRFCP_web_table.htm

ftp://ftp.env.gov.bc.ca/pub/outgoing/WSD/Website_As_built_NonFRFCP/Non_FRFCP_web_table.htm

² American Society for Testing and Materials (ASTM) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort

Ministry of Environment

Water Stewardship Division
Regional Operations
Lower Mainland Region

Mailing/Location Address:
10470 152 Street
SURREY BC V3R 0Y3

Telephone: ... (604) 582-5200
Facsimile: ... (604) 930-7119
Website: www.gov.bc.ca/env

Revised April 9, 2009

excavated. Dikes consist of many zones (i.e. pervious toe trenches, core, water side erosion protection, etc.) and backfilling operations must ensure that these zones are reestablished.

- Approval for exploratory testing from the Diking Authority.

Upon completion of the exploratory testing program, the Inspector of Dikes office requires the following:

- A letter signed by a professional engineer certifying that exploratory boreholes and test pits were properly closed under the supervision of experienced geotechnical personnel and that the integrity of the dike has not been impaired by the work. If monitoring wells were installed, then the engineer shall provide a schedule for their removal and a description as to how the monitoring wells will be closed.
- Final sealed drawings depicting locations, elevations, and depths of the exploratory testing in relation to the dike alignment, including crest and toe. Drawings shall also depict property and right of way boundaries.

Please refer to http://www.env.gov.bc.ca/wsd/public_safety/flood/structural.html for an up to date copy of the Dike Maintenance Act, general information on the *Dike Maintenance Act* approval process, and a *Dike Maintenance Act* approval application form.