

MONTHLY DIKE PERFORMANCE REPORT

Dike: D-CP5	
Date: March 2019	Temps: Min = -35.3°C Max = -5.5°C Mean = -23.4°C
Season: Ice	Signature:

MONITORING/INSPECTION SUMMARY

	Daily	Weekly	Monthly
Ground Temperature Readings			✓
Survey Monuments			✓
Water/Ice Elevations			✓
Visual Inspection			

GROUND TEMPERATURES

- The average temperature across all horizontal beads within the key trench is **-8.93°C** (April 2, 2019). Temperatures have decreased since March 3 by **-1.11°C** at an average rate of change of -0.04°C/day. Compared to last year (March 20, 2018), average key trench temperatures continue to be cooler (**-1.73°C**).
- Vertical GTC's show frozen temperatures throughout the dike at all cable locations, although a warming trend is observed to be starting within the upper 2.5 m of upstream dike material. Cooling temperatures are observed throughout the remainder of the dike structure and underlying ground.

SURVEY MONUMENTS

- The only remaining survey monument (M2) at D-CP5 showed 8 mm of vertical upwards movement in the month of March, a similar upwards trend as was observed at D-CP1. While this upward movement is unlikely considering the frozen condition of the dike, survey data has been included with this report for completeness.

WATER/ICE ELEVATIONS

- The elevation of upstream ice taken April 5, 2019 is **65.66 m**, which is 0.52 m above the maximum operating level before freshet. *(Note that the February monthly summary reported ice elevations being 0.79 m above the maximum which was an error.)* Although above the maximum operating levels before freshet, the current ice elevation is 0.28 m lower than this time in 2018. The increase in ice elevation compared to last month is expected to be partially due to discharge from the SWTP into the CP5 basin.

VISUAL INSPECTIONS

- No visual inspections were undertaken in March. It was observed however, that a temporary 4" line from underground to the newly constructed SP2 has been placed around the southern abutment of the dike.

RECOMMENDATIONS

- Confidence in the survey monument data collected to date is low. It is strongly recommended that a new survey of the dike surface be undertaken during the summer of 2019 using the control point that was used during dike construction. Continued efforts to obtain meaningful monthly survey data will be made, and alternative methods of monitoring displacement will also be investigated.