

## MONTHLY DIKE PERFORMANCE REPORT

Dike: D-CP1	
Date: February 2019	Temps: Min = -41.0°C Max = -16.8°C Mean = -32.4°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 **-6.82°C** (March 3, 2019). The overall average temperature has continued to decrease over the past month (since February 6) by **-1.08°C** at an average rate of change of -0.04°C/day. This cooling is observed in all beads throughout the key trench.
- Comparisons to this time last year are available for two cables only: the average temperature in HGTC2 (1+254 to 1+304) is cooler (-0.57°C) compared to 2018, while the average temperature in HGTC4 (1+432 to 1+482) is slightly warmer (+0.04°C). No other comparisons to this time last year are available.
- Vertical GTC's show that the dike continues to be frozen to depth at all cable locations, with temperatures continuing to cool throughout the month. Warming continues on the downstream only at depths approximately 4 m below the maximum key trench depth.

### SURVEY MONUMENTS

- Multiple attempts at re-calibrating the survey monument data were made throughout the month of February after re-establishing a monument on the control pile (damaged January 2019). The attached readings show movement within the margin of error ( $\pm 2$  mm) for all monuments for readings obtained March 6 when compared with the "new baseline" readings for February 7. However, it should be noted that the "new baseline" readings taken February 7 showed anomalous upward movement in M3 (82 mm) and M4 (19 mm) and that these readings have been removed from the analysis.

### WATER/ICE ELEVATIONS

- The elevation of upstream ice in the former H6 basin surveyed March 5, 2019 is **64.96 m**, which is 0.86 m above the maximum operating level before freshet as per the OMS.

### VISUAL INSPECTIONS

- No visual inspections were undertaken in February.

### OTHER/RECOMMENDATIONS

- Discharge from Exploration Camp into the former H6 basin was stopped February 8, 2019. In addition, hot water discharge from the SWTP has been temporarily diverted into CP5 as of February 20, 2019.

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- 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 (positioned on a bedrock outcrop near the north abutment). Continued efforts to obtain meaningful monthly survey data should be made, although alternative methods of monitoring displacement should also be investigated.
- The final issue of the Annual Geotechnical Inspection (Golder, 2019) was released. Key items from the September 2018 inspection regarding D-CP1 include:
  - “No significant geotechnical concerns identified”;
  - A recommendation to address daily visual inspections and seasonality requirements of visual inspections in the upcoming annual OMS review;
  - A recommendation to fill/re-contour cracking observed in the thermal cover of the dike.