SRK Consulting (Canada) Inc.
2200–1066 West Hastings Street
Vancouver, BC V6E 3X2

T: +1.604.681.4196
F: +1.604.687.5532

vancouver@srk.com
www.srk.com

February 5, 2018
Project No: 1CT022.016

Vice President Environmental Affairs
TMAC Resources Inc.
Suite 1010 – 95 Wellington Street West
Toronto, Ontario, M5J 2N7

Attention: Oliver Curran, MSc, Vice President Environmental Affairs

Dear Oliver:

RE: Doris Project 2017 Annual Roberts Bay Jetty Inspection

SRK Consulting (Canada) Inc. was contracted by TMAC Resources Inc. to complete a geotechnical site inspection of the Roberts Bay jetty (jetty) at their Doris project in Nunavut. The geotechnical inspection is in response to reporting requirements around Table 3 of Schedule J in their Water License 2AM-DOH1323. Furthermore, Commitment 19 of the Project Certificate No. 003, dated September 15, 2006, required ground temperature cables to be installed into the jetty foundation to monitor submarine permafrost.

The geotechnical site inspection was carried out by Principal Consultant Maritz Rykaart, PhD, PEng between July 10 and 14, 2017. Maritz was accompanied by Jamie Ihakkaq, an Environmental Technical from TMAC during the walkover inspection of the jetty. Maritz also completed an aerial reconnaissance of the structure via helicopter.

Formal annual geotechnical inspections of the jetty have been carried out annually since 2009 and those reports are filed on the Nunavut Water Board (NWV) and the Nunavut Impact Review Board (NIRB) public registries. These inspections have all been conducted by SRK. This letter presents the findings of the 2017 geotechnical inspection.

As part of the 2015 and 2016 inspections, SRK recommended that TMAC consult with PND Engineers Canada Inc., who designed and oversaw execution of the 2013 reconstruction of the jetty, to determine whether the settlement plates they recommended was installed and monitored. SRK followed up directly with PND following the 2017 inspection and confirmed that the settlement monuments were not installed, and PND has not had any operational involvement on the jetty following completion of the 2013 repairs.

Based on SRK's discussions with site staff the jetty appears to function well and there has not been any noticeable settlement for many years and required minimal maintenance. These comments are confirmed by SRK's visual inspection of the jetty, although there was evidence of wave erosion damage at the head of the jetty where rig matting was not in place and riprap was not placed all the way to the crest of the jetty. The extent of the damage was an area approximately 2 m wide and 1 m across. That damage does not pose an immediate risk to the structure but repair would have to be completed before the jetty could be used.

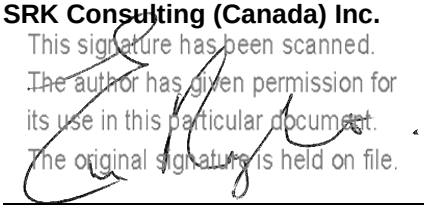
Two ground temperature cables (GTCs) (SRK-JT1-09 and SRK-JT2-09) were installed through the jetty into submarine permafrost in 2009. One (SRK-JT2-09) was damaged in 2011, and a replacement (SRK-JT2-12) was installed in 2012. This GTC was again destroyed when the jetty was reconstructed in 2013. SRK reviewed the data for GTC SRK-JT1-09 as part of the 2017 inspection, confirming that since construction of the jetty, there has been no change in the composition of the submarine permafrost.
In 2015 SRK recommended to TMAC that the active GTC continue to be monitored, but that the damaged GTC not be replaced as the available database of almost a decade of monitoring has confirmed no change. TMAC subsequently formally made a request to the NIRB and NWB on November 21, 2017 to approve this change.

Annual bathymetric surveys, to evaluate sediment transport and deposition changes due to the presence of the jetty, were carried out between 2008 and 2012, and again in 2015. This confirmed that the most significant changes occurred immediately following construction, and subsequent changes are small enough to suggest steady state conditions have been reached. The next bathymetric survey is scheduled for 2018.

This geotechnical site inspection suggests the overall jetty is in good shape. Other than the wave erosion damage noted, it has no obvious signs of distress. There is no evidence that the structure poses risk to people, equipment or the environment provided it is used in accordance with the stipulated design criteria. Following a discussion with site staff about the overall performance of the jetty over the past year, site staff confirmed, other than routine maintenance, the jetty had not required any additional work.

Sincerely,

SRK Consulting (Canada) Inc.



Maritz Rykaart, PEng, PhD
Principal Consultant