

January 26, 2017
Project No: 1CT022.009

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

Attention: John Roberts, PEng, Vice President Environmental Affairs

Dear John:

RE: Doris Project 2016 Annual Geotechnical Inspection

TMAC Resources Inc. contracted SRK Consulting (Canada) Inc. to conduct a geotechnical site inspection on their Doris Project (the Project) in Nunavut. This geotechnical inspection is an annual requirement in response to Part J, Items 18 and 19 D of TMAC's Water Licence 2AM-DOH1323 issued by the Nunavut Water Board (NWB) on August 16, 2013 which was in effect at the time of the inspection.

The Project was placed in Care and Maintenance while it was still under construction in February 2012. On March 9, 2015, the Project was taken out of Care and Maintenance and construction resumed with an anticipated production start in early 2017.

The 2016 geotechnical site inspection was carried out by Principal Consultant Maritz Rykaart, PhD, PEng between July 12 and 15, 2016. The inspection included a comprehensive walkover over the entire Doris site (from the portal to the jetty), followed by a helicopter aerial reconnaissance. In addition, Maritz inspected the 10 km all-weather road to the former Windy Road, and the Secondary Road from the Doris camp to the Tailings Impoundment Area (*aka* Tail Lake Access Road) via truck, with frequent stops for physical inspections at key areas. TMAC staff did not accompany Maritz during the walkover and helicopter survey. Mr. Gordon Morrison, President and Chief Technology Officer of TMAC accompanied Maritz during the entire driving inspection, and Ms. Catherine Farrow, PhD, PGeo, CEO of TMAC accompanied Maritz during a second driving inspection of the Secondary Road. Weather conditions during the inspections were cool and overcast with periods of light rain.

In addition to the physical inspections, whilst on site, Maritz also had discussions with Mr. Kelly Schwenning, Surface Operations Manager for TMAC, to discuss the findings of the inspections, specifically addressing maintenance issues pertaining to the 20 ML Roberts Bay tank farm and recommendations pertaining to the two sumps (see later).

U.S. Offices:

Anchorage	907.677.3520
Denver	303.985.1333
Elko	775.753.4151
Fort Collins	970.407.8302
Reno	775.828.6800
Tucson	520.544.3688

Mexico Office:

Hermosillo	52.662.215.1050
Queretaro	52.442.218.1030
Zacatecas	
	52.492.927.8982

Canadian Offices:

Saskatoon	306.955.4778
Sudbury	705.682.3270
Toronto	416.601.1445
Vancouver	604.681.4196
Yellowknife	867.873.8670

Group Offices:

Africa
Asia
Australia
Europe
North America
South America

Formal annual geotechnical inspections of the Project have been carried out by SRK seven times between 2009 and 2015. The inspection reports are filed on the Nunavut Water Board (NWB) public registry. This letter presents the findings of the 2016 geotechnical inspection, which includes the 10 km all-weather road linking Doris Camp with the former Windy Exploration Camp and the former Patch Lake drill shop area (only inspected aerially). This inspection report; however, excludes the North Dam and Tailings Impoundment Area (TIA), which is reported under a separate cover.

Changes to surface infrastructure relevant to the geotechnical site inspection, since the 2015 geotechnical site inspection, include:

- Construction of the mill building. This work was underway during the inspection, with an estimated completion date of November 2016;
- Construction of Pad T, the waste rock and ore storage pad north of the mill and portal. At the time of the inspection, the pad was actively used for both waste rock and ore storage;
- Regrading and repurposing of the original waste rock pile (Pad I). The waste rock pile was regraded and levelled to be at the same grade as Pad Q and Pad J/H (original ore storage pad). At the time of the inspection, this entire regraded area, as well as Pad J/H was being used for ore storage;
- Construction up to chainage 2+900 m of the Secondary Road starting from the North Dam towards the South Dam, including about 0.1 km of the spur road leading towards Quarry #3;
- Construction of the reagent and cyanide storage facility in the vicinity of the North Dam adjacent to the Secondary Road (on the pad that housed the asphalt mixing plant during construction of the North Dam). This work was underway at the time of construction, with an estimated completion date of August 2017;
- Construction of the permanent explosive storage area at the junction between the Secondary Road and the spur road to Quarry #3. At the time of the construction, only the pad was in place, and construction was scheduled to be completed by August 2016;
- Completion of widening and lengthening of the Doris airstrip; and
- Construction of the new Doris airstrip apron at the South end of the airstrip, which would accommodate a liner for de-icing of aircraft. This work was underway at the time of construction, with an estimated completion date of September 2017.

In response to the 2015 annual geotechnical inspection, SRK recommended that TMAC adopt a Surface Infrastructure Geotechnical Monitoring Program (SIGMP) documented in the attached Standard Operating Procedure (SOP) (Attachment 1) and the accompanying Checklist (Attachment 2). This SIGMP has been specifically designed to capture all elements of the site that is typically inspected on an annual basis by a Geotechnical Engineer. By having a qualified site staff conduct these inspections on a more frequent nature, routine maintenance activities will be better addressed and early warning signs of impending problems will be more readily observed.

The intent during the 2016 annual geotechnical site inspection was SRK would audit the completed checklist and focus the inspection efforts on the areas where changes have been observed, or where unique or extraordinary observations were noted. TMAC; however, did not conduct any inspections in

accordance with the SIGMP in 2015/16, and as a result SRK proceeded with a comprehensive annual geotechnical inspection in 2016.

During the 2015 geotechnical inspection SRK identified two items of note requiring attention by TMAC:

- TMAC was requested complete at least four surveys annually of the two survey monuments on Pad B. These are to be done in May, June, August and September, which corresponds to the periods when thaw starts, and up to the time when the active layer thickness is at its greatest; and
- TMAC is to carefully monitor Pad G in the vicinity of the sinkhole that developed and was backfilled in October 2014. As a precautionary measure SRK suggested that TMAC operational staff closely investigate the root cause of any deformation that occurs on this Pad at least until 2018.

Neither of these were acted upon, although in discussion with site staff, and following the site inspection, there are no visible signs of change in either of these two areas. SRK; however, recommends that TMAC act on implementing the survey monitoring of Pad B, for the reasons stated in the 2015 geotechnical inspection report.

Notwithstanding the issues noted above, the 2016 geotechnical inspection suggests that conditions, as it pertains to geotechnical performance of surface infrastructure, are essentially unchanged from what was observed in 2015. Items of note that fall outside of routine maintenance activities, and require action by TMAC include:

- A small depression was observed along the south-east abutment of the Doris bridge (Photo 1). The depression measured about 0.5 m in diameter and 0.3 m deep, and is near the toe of the abutment. It is postulated the cause may be thaw of localized surficial ice lenses or massive ice. This location, at the interface between the rockfill abutment and the natural ground is where the risk of permafrost degradation is at its greatest due to the contrast in thermal properties between these materials. Geotechnical drill hole SRK-36 was completed within about 10 m of this location in April 2003. The drill log showed a thin layer (25 cm) of random or irregularly oriented ice formations (V_r), intermingled with sand and silt at a depth of 15 cm below ground. There was no core recovery below this layer up to a depth of 1.3 m below, and it was assumed that the upper layer of sand and silt (and associated ice) continued. Between 1.3 and 2.5 m depth the profile was frozen clay, after which the log records layers of 50-90% clear ice in lenses up to 0.7 m thick. The drill log therefore clearly confirms presence of ice, which if thawed would result in thaw settlement.

Ground temperature cables (GTCs) are installed beneath each of the east and west abutments of the Doris bridge. A review of the east abutment GTC (SRK10-DCB2), which is located about 12 m from the location of the depression, confirms no change in the thermal regime beneath the abutment since its installation in 2010. The warmest temperature measured in the upper bead located about 0.6 m above ground surface within in the abutment rockfill in 2016 was -3.7°C. At original ground surface, the warmest temperature in 2016 was -4.9°C, which is well below the minimum design temperature of -2°C. Furthermore, during the winter months, complete freezeback is attained within that same upper GTC bead dropping to a temperature of -15°C.

The system appears to be behaving as designed, and the depression is not likely to be of concern; however, TMAC should monitor this and if there is any indication of the depression increasing in size, a geotechnical engineer should be consulted to further investigate the cause, and remedial measures need to be implemented.



Photo 1. (a) View of south-east abutment of Doris bridge showing location of depression (red circle). (b) Close-up of depression measuring approximately 0.5 m in diameter with subsidence of about 0.3 m

- A large number of bolts attaching the timber guard rail to the steel posts along all three the Doris-Windy all-weather road bridges appear to have worked themselves loose, with many of them completely missing their washers and nuts (Photo 2). The cause of this is not clear, but given the low traffic volume along these bridges, traffic vibration is unlikely to be the cause. Therefore, it is postulated that the cause is freeze-thaw action. Although this is not a geotechnical issue per se, an unattached guard rail is a potentially significant safety risk on site. TMAC should conduct the appropriate repairs to these structures and implement a preventative maintenance program to avoid this from happening in the future.



Photo 2. Example of one of the through bolts securing the timber guard rails to the steel bridge posts which loosened itself along the Doris Windy all-weather road

- Sump #1 and Sump #2 are working as designed, but as a result of localized permafrost degradation stemming from their construction, and subsequent associated thaw settlement, the drainage holes directing surface runoff into the sumps are elevated (Photo 3) and are no longer as effective as they should be. This is resulting in prolonged and perpetual ponding immediately adjacent to the sumps, which in turn is resulting in increased permafrost degradation. To remedy this situation, additional drainage slots should be installed at a lower elevation within the sump to facilitate improved drainage below the current ponded elevation. This appears to be a more substantial issue at Sump #1 (Photo 3) where ponded water can be seen throughout the open water season. SRK discussed this matter with Mr. Schwenning while on site, with clear guidance as to the extent to which additional drainage should be provided.



Photo 3. View of Sump #1 showing standing water around the perimeter of the sump which cannot drain due to the lack of drainage holes sufficiently low.

- The Nunavut Mines Inspector, during a routine site inspection, commented that the original waste rock pile (Pad I) and the ore stockpile constructed on top of it appeared to be steeper than the design slopes of 2H:1V. He requested TMAC have this evaluated by a qualified geotechnical engineer to ensure safe operating conditions. SRK; therefore, paid special attention to this matter during the inspection and did not note any signs of instability, or any other issues that required immediate attention. A comprehensive stability analysis was subsequently carried out, confirming these observations, and is reported on a separate letter to TMAC. This letter does contain recommendations for remedial measures that TMAC should put in place.
- The INAC Inspector noted that surface runoff from the Roberts Bay 20 ML tank farm highwall appeared to find its way behind the liner and requested TMAC confirm this would not detrimentally impact the integrity of the liner. Based on a review of the design and as-built drawings, as well as a physical inspection of the area in question, SRK can confirm that surface runoff from the highwall will in fact be able to flow underneath the liner. Mitigation of this would require extending the liner from the crest of the containment berm and tying it into the bedrock wall using rock anchors and gaskets. This was considered during the original design but not implemented because the highwall is highly fractured, and a complete seal could not be guaranteed. There are no physical signs to suggest any damage to the liner at this point in time; however, as a precautionary measure TMAC should install sumps through the liner that can be monitored for water accumulation underneath the liner. While on site, SRK provided Mr. Schwenning with a design concept for doing this, which TMAC will implement.

SRK also carefully reviewed results from GTC installed at the Pollution Control Pond (PCP) and in each of the bridge abutments. The thermal data confirms all of these structures are performing as designed and that the structures have not resulted in degradation of the permafrost in any way. There are no warming trends observable in any of these datasets. The PCP GTC data also confirms that the improved water management practices adopted by TMAC, in terms of ensuring the pond is operated normally while empty, has resulted in stabilizing temperature trends within the foundation of the pond.

Finally, SRK recommends TMAC adopt and implement the SIGMT proposed in 2015 (and reattached to this letter) with immediate effect. This will improve the effectiveness and efficiency of the annual geotechnical inspections, allow for routine maintenance activities to be prioritized by site operational staff as part of normal operations, and will ensure important geotechnical problems are highlighted, inspected and addressed throughout the year as opposed to only annually.

Sincerely,

SRK Consulting (Canada) Inc.

*This signature was scanned with the
author's approval for exclusive use in this
document; any other use is not authorized.*

Maritz Rykaart, PEng, PhD
Principal Consultant

Disclaimer—SRK Consulting (Canada) Inc. has prepared this document for TMAC Resources Inc. Any use or decisions by which a third party makes of this document are the responsibility of such third parties. In no circumstance does SRK accept any consequential liability arising from commercial decisions or actions resulting from the use of this report by a third party.

The opinions expressed in this report have been based on the information available to SRK at the time of preparation. SRK has exercised all due care in reviewing information supplied by others for use on this project. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information, except to the extent that SRK was hired to verify the data.

Attachment 1: SIGMP Standard Operating Procedure



Doris North Project

Surface Infrastructure Geotechnical Monitoring Program

Including the Doris-Windy All-Weather Road, Quarries A, B and D, and the Patch Lake Drill Shop Area

Division:	HB		
Section:	Geotechnical		
Subject:	Doris North Project Surface Infrastructure Monitoring Program (SIGMP)		
Owner:	OPS	Effective Date:	September 30, 2015
Revision:	Draft	Replaces:	n/a

1 INTRODUCTION

The Doris North Project (Project) Surface Infrastructure Geotechnical Monitoring Program (SIGMP) has been developed to facilitate seasonal geotechnical monitoring of the earthworks components of site surface infrastructure. These inspections are to be carried out by qualified and trained site staff or contractors. Monitoring of the Tailings Management System (TMS), which includes the North Dam, is conducted under a separate protocol.

This SIGMP will be used in part to support the requirement of Part J, Item 18 and 19 of the Doris North Water Licence 2AM-DOH1323 dated August 16, 2013. This requirement states that *"The Licensee shall ensure that a geotechnical inspection is carried out annually between July and September by a Geotechnical Engineer."* By conducting the SIGMP, as opposed to only a single formal Annual Geotechnical Inspection (AGI), early warning of areas requiring corrective action or preventative maintenance are attained, allowing for a more focused approach during the AGI.

2 OBJECTIVE

Conduct seasonal physical inspections by qualified and trained site staff or contractors during snow-free periods of earthworks components of site surface infrastructure. The inspection will be carried out using a standardized inspection checklist to be completed by the inspector. These dated and signed checklists will be kept on site by the Site Environmental Manager, and will be subject to review and audit during the AGI.

The objective of the SIGMP is to ensure continued functionality of all earthworks components of site infrastructure that would allow for early proactive corrective action or preventative maintenance if required. In addition, the AGI can be executed with greater focus and efficiency.

3 INSPECTION PROCESS

3.1 Frequency

A SIGMP inspection will be conducted twice seasonally during the snow-free period. The first inspection will occur early spring, and the second during fall before freeze up. The AGI will be conducted midway between these two inspections. The spring inspection will allow for the identification of any issues as a result of the preceding winter and/or freshet conditions, and allow for scheduling and planning of corrective and/or preventative work for the summer. The fall inspection will identify any issues as a result of the preceding summer season, and allow for planning and scheduling of corrective action or preventative maintenance work.

3.2 Inspector Qualification and Training

The SIGMP inspections are to be carried out by qualified and trained persons. The inspector does however not have to be a qualified geotechnical engineer. Qualified implies that the person is fully familiar with the task, understands the requirements and objectives of the inspection, understands the context of the checklist items, and has overall familiarity with the project.



Doris North Project

Surface Infrastructure Geotechnical Monitoring Program

Including the Doris-Windy All-Weather Road, Quarries A, B and D, and the Patch Lake Drill Shop Area

Division:	HB		
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Subject:	Doris North Project Surface Infrastructure Monitoring Program (SIGMP)		
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The minimum training requirement will be ensuring that the person doing the inspection has conducted at least one site infrastructure element of the checklist together with a person that has received the necessary training. Initial training can be provided by the AGI inspector.

3.3 Inspection Checklist

Refer to *HB-DN-SI-GT-OPS-F Revision 20150724 Doris North Surface Infrastructure Geotechnical Monitoring Program – Inspection Checklist*. Revision 20150930, of the Inspection Checklist, was prepared using the 2014 AGI (SRK 2015) as well as observations during the 2015 AGI. The program has been designed to proceed from north to south between Roberts Bay and the terminus of the Doris-Windy All Weather Road. The SIGMP Inspection Checklist is considered to be a live document and will be reviewed and updated annually in response to the following:

- when new surface infrastructure are added or existing facilities are modified;
- when issues of concern are identified;
- when corrective action or preventive maintenance has resulted in significant change;
- when additional monitoring is warranted;
- following recommendations from the AGI; and
- following incidents or upsets affecting surface infrastructure.

3.4 Photographs

A complete photographic record is not required as part of the SIGMP. When issues deemed to be out of the ordinary are observed by the inspector, photographs should be taken and properly referenced and catalogued.

3.5 Management Response: Corrective Actions

The SIGMP Inspection Checklist includes a section to record if/when corrective action or preventative maintenance has been undertaken, or are planned. As part of the inspection, the inspector is required to consult with Operations/Facilities Management to ensure that this information is accurately recorded.

4 RECORDS

The completed signed and dated SIGMP Inspection Checklist, and any properly catalogued photographs are to be stored on site with the Site Environmental Manager and an electronic copy is to be sent to the site Engineer-of-Record, SRK Consulting (Canada) Inc. The email contacts are pluedke@srk.com and hopebaymonitoring@srk.com.



Doris North Project

Surface Infrastructure Geotechnical Monitoring Program

Including the Doris-Windy All-Weather Road, Quarries A, B and D, and the Patch Lake Drill Shop Area

Division:	HB		
Section:	<i>Geotechnical</i>		
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Owner:	OPS	Effective Date:	September 30, 2015
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5 PROGRAM APPROVAL RECORD

NAME	POSITION	DATE	REV #	NOTES

6 REFERENCES

SRK Consulting (Canada) Inc., 2015. 2014 Annual Geotechnical Inspection, Doris North Project, Hope Bay, Nunavut. Report prepared for TMAC Resources Inc., Project Number: 1CT022.001. January 2015.

Attachment 2: SIGMP Inspection Checklist



Doris North Project
Surface Infrastructure Geotechnical Monitoring Program
Inspection Checklist

Date:	
Inspected By:	
Conditions:	<small>(ie. snow on ground, clear, heavy rain, or wind)</small>

This Surface Infrastructure Geotechnical Monitoring Program (SIGMP) Inspection Checklist is to be conducted in accordance with the procedures outlined in HB-DN-SI-GT-OPS-SOP Rev. 20150930. In addition, the following attachments are required during the inspection:

- Attachment 1 – General site arrangement drawing showing each of the inspection areas listed in the Inspection Checklist.
- Attachment 2 – Ground temperature cable monitoring list.

Specific Project Inspection Items

Date: _____

1. Site Wide Ground Temperature Cables (GTC's)			
a) Are GTC's (Attachment 2) read on the prescribed frequency, and the data reviewed by a qualified person?	No	Yes	<small>Comments and photo reference if applicable</small>
b) Are any of the GTC's damaged or non-functional since the last inspection? If so provide details.	No	Yes	<small>Comments and photo reference if applicable</small>
2. Roberts Bay Jetty			
a) Were there significant storms since the last inspection, and was the Jetty inspected for damage after each of those events?	No	Yes	<small>Comments and photo reference if applicable</small>
b) Have there been modifications to the jetty since the last inspection (repairs or maintenance)? If so provide details.	No	Yes	<small>Comments and photo reference if applicable</small>
c) Is the jetty armouring (i.e. riprap) intact? If not provide details.	No	Yes	<small>Comments and photo reference if applicable</small>
d) Are there tension cracks on or near the crest of the jetty? If so provide details.	No	Yes	<small>Comments and photo reference if applicable</small>
e) Are there signs of deformation and settlement, i.e. an undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<small>Comments and photo reference if applicable</small>

Specific Project Inspection Items**Date:** _____

f) Was settlement monitoring conducted as recommended in PND (2013)? If so was the data reviewed by qualified person?	No	Yes	Comments and photo reference if applicable
g) Is operational staff aware of the jetty loading limitations (PND (2013), Section 4.0)?	No	Yes	Comments and photo reference if applicable
3. Roberts Bay 5 M L Tank Farm and Containment Berm / Fuel Module			
a) Have there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	Comments and photo reference if applicable
b) Has the liner been exposed? If so provide details.	No	Yes	Comments and photo reference if applicable
c) Are there signs of deformation and settlement within the secondary containment or fuel transfer station, i.e. an undulating surface? If so provide details.	No	Yes	Comments and photo reference if applicable
d) Is there evidence of vehicle traffic damage within the secondary containment? If so provide details.	No	Yes	Comments and photo reference if applicable
e) Is there evidence of standing water within the secondary containment? If so provide details.	No	Yes	Comments and photo reference if applicable
f) Are there areas of the rock high wall showing signs of deterioration i.e. significant rock fall? If so provide details.	No	Yes	Comments and photo reference if applicable
g) Has the high wall been inspected by a qualified rock mechanics expert since the last inspection? If so provide details.	No	Yes	Comments and photo reference if applicable
h) Was settlement monitoring conducted within the fuel transfer station and secondary containment facility section not constructed on bedrock since the last inspection? If so provide details.	No	Yes	Comments and photo reference if applicable
4. Roberts Bay 20 M L Tank Farm and Containment Berm			
a) Have there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	Comments and photo reference if applicable
b) Has the liner been exposed? If so provide details.	No	Yes	Comments and photo reference if applicable
c) Are there signs of deformation and settlement within the secondary containment, i.e. an undulating surface? If so provide details.	No	Yes	Comments and photo reference if applicable
d) Are there tension cracks on or near the crests of the secondary containment berms? If so provide details.	No	Yes	Comments and photo reference if applicable

Specific Project Inspection Items**Date:** _____

e) Is there evidence vehicle traffic damage within the secondary containment? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Is there evidence of standing water within the secondary containment? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
g) Are there areas of the rock high wall showing signs of deterioration i.e. significant rock fall? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
h) Are the catch berms sufficiently free of rock fall or other debris to continue to function as catch berms? If not provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
i) Are all the rock stabilization measures in good repair? If not provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
j) Has the high wall been inspected by a qualified rock mechanics expert since the last inspection? If so provide details?	No	Yes	<i>Comments and photo reference if applicable</i>

5. Roberts Bay Laydown Area

a) Have there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there tension cracks on or near the crests of the laydown area pads? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there signs of deformation and settlement of the laydown area pads, i.e. undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is there evidence of ponded water along the edges of the laydown area pads? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>

6. Roberts Bay Overburden Stockpile (Quarry #1) / Roberts Bay Fuel Transfer Access Road

a) Have there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there signs of deformation and differential settlement on the top of the Overburden Stockpile, i.e. sinkholes, rutting, undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there tension cracks on or near the crests of the Overburden Stockpile? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there signs of deformation and settlement along the Roberts Bay Fuel Transfer Access Road, including the turn-a-round, i.e. an undulating surface, or ravelling of slopes? If so provide	No	Yes	<i>Comments and photo reference if applicable</i>

Specific Project Inspection Items**Date:** _____

details.			
e) Are there tension cracks on or near the crests of the Roberts Bay Fuel Transfer Access Road, including the turn-a-round? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Is there evidence of ponded water along the outside edge of the Roberts Bay Fuel Transfer Access Road? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
7. Primary Road			
a) Have there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there signs of deformation and settlement along the Primary Road, i.e. an undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there tension cracks on or near the crests of the Primary Road? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there evidence of ponded water along the edges of the Primary Road? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
8. Airstrip Including North and South Aprons			
a) Has there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there signs of deformation and settlement on the North or South Apron, i.e. an undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are tension cracks or differential settlement undermining the stability of the fuel tank, generator or flight tower? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there signs of ponded water along the edges of the North or South Apron? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Are there signs of deformation and settlement along the Airstrip, i.e. an undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Are there tension cracks on or near the crests of the Airstrip? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
g) Are there evidence of ponded water along the edges of the	No	Yes	<i>Comments and photo reference if applicable</i>

Specific Project Inspection Items**Date:** _____

Airstrip, Airstrip Expansion and Aprons? If so provide details.			
9. Wash Bay			
a) Have there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there signs of deformation and settlement within the Wash Bay / Explosives Mixing Plant Pad, i.e. an undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there tension cracks on or near the crest of the Wash Bay / Explosives Mixing Plant Pad? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is there evidence of ponded water along the edges of the Wash Bay / Explosives Mixing Plant? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
10. Upper and Lower Reagent Pads / Batch Plant Pad			
a) Have there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there tension cracks on or near the crests of the laydown area pads? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there signs of deformation and settlement of the laydown area pads, i.e. undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are tension cracks or differential settlement undermining the stability of the materials, equipment and supplies stored on the Upper and Lower Laydown and Batch Plant Pads? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Are there evidence of ponded water along the edges of the laydown area pads? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
11. AN Storage Area			
a) Has there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Is the AN Storage Area in use?	No	Yes	<i>Comments and photo reference if applicable</i>
c) Is there any areas of exposed liner with in the AN Storage Area? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>

Specific Project Inspection Items**Date:** _____**12. Quarry 2 and Crusher Area**

a) Has this quarry been used since the last inspection?	No	Yes	<i>Comments and photo reference if applicable</i>
b) Is access to the quarry and crusher area restricted to authorized personnel through adequate barricades or signage?	No	Yes	<i>Comments and photo reference if applicable</i>
c) If in use, are there areas of the rock high wall showing signs of deterioration i.e. significant rock fall? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is there evidence of standing water within the quarry? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>

13. Doris Camp Treated Sewage Discharge Line/Outfall and Diffuser

a) Is the old outfall in operation and/or is there ponded water in the area? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Is the diffuser in operation and functioning properly? If not provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Is there ponding of water near the diffuser? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are discharge lines damaged or leaking? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>

14. Doris North Landfarm

a) Have there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there signs of deformation and settlement of the landfarm, i.e. undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there tension cracks on or near the crests of the landfarm containment berms? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there areas of exposed liner? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Are there any areas showing signs of erosion to the overliner material? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Have any of these facilities been used since the last inspection? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>

15. Doris (Quarry #2) Overburden Stockpile

a) Have there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
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Specific Project Inspection Items**Date:** _____

b) Are there tension cracks on or near the crests of the Overburden Stockpile? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there signs of deformation and differential settlement of the Overburden Stockpile, i.e. an undulating surface, sink holes, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there signs of deformation and settlement along the Sedimentation Control Berm, i.e. an undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Are there tension cracks on or near the crests of the Sedimentation Control Berm? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Is there evidence of ponded water along the outside edges of the Sedimentation Control Berm? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
g) Are there considerable volumes of sediment behind the Sediment Control Berm which may compromise its functionality? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
16. Doris North Camp Area Diversion Berm			
a) Have there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there signs of deformation and settlement along the Berm, i.e. an undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there tension cracks on or near the crests of the Berm? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is there evidence of ponded water along the upstream edge of the Berm? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Are there areas of exposed liner? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Are there areas showing signs of erosion to the overliner material? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
g) Are the culverts underneath the road at the outlet free of blockage? If not provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
17. 7.5 ML Doris North Camp Tank Farm and Containment Berm			
a) Have there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>

Specific Project Inspection Items**Date:** _____

b) Has the liner been exposed? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there signs of deformation and settlement within the secondary containment, i.e. an undulating surface? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is there evidence of vehicle traffic damage within the secondary containment? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Is there evidence of standing water within the secondary containment? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Are there areas of the rock high wall showing signs of deterioration i.e. significant rock fall? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
g) Has the high wall been inspected, by a qualified rock mechanics expert since the last inspection? If so provide details?	No	Yes	<i>Comments and photo reference if applicable</i>
h) Does the fuel tank and associated systems appear to be in good condition i.e. signs of structural damage, exposed grounding cables, evidence of fuel spills? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
18. Doris Main Generating Station / Permanent Powerhouse			
a) Have there been any modifications to the pad since the last inspection (repairs or maintenance)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there tension cracks on or near the crest of the pad? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there signs of deformation and settlement of the pad, i.e. an undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there signs of deformation and settlement of the Permanent Powerhouse and associated infrastructure? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Was settlement monitoring conducted since the last inspection? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
19. Doris North Camp Pads Including Helicopter Pad			
a) Has there been any modifications to the pads since the last inspection (repairs or maintenance)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there tension cracks on or near the crest of the pads? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>

Specific Project Inspection Items**Date:** _____

c) Are there signs of deformation and settlement of the pads, i.e. an undulating surface, sinkholes, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there signs of deformation and settlement of heated buildings (geotechnical core cutting building and warehouse building on Pad Y and underground maintenance shop on Pad E/P)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Are there areas of the rock high wall showing signs of deterioration i.e. significant rock fall on Pads D and X? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Has the high wall been inspected, by a qualified rock mechanics expert since the last inspection? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
20. Doris North Portal			
a) Are there areas of the rock high wall showing signs of deterioration i.e. significant rock fall? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Has the high wall been inspected, by a qualified rock mechanics expert since the last inspection? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are all the rock stabilization measures in good repair? If not provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
21. Doris North Waste Rock Pile – Pad I			
a) Has there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there signs of deformation and settlement of the Ore Stockpile, i.e. an undulating surface, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there signs of deformation and settlement along Pad I, i.e. an undulating surface, or ravelling of side slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there tension cracks on or near the crests of Pad I? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
22. Pollution Control Pond			
a) Has there been modifications to the Pollution Control Pond since the last inspection (maintenance or repairs)? If so provide	No	Yes	<i>Comments and photo reference if applicable</i>

Specific Project Inspection Items**Date:** _____

details.			
b) Are there tension cracks on or near the crest of the Pollution Control Pond including the Divider Berm? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Is there standing water within the Pollution Control Pond? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there signs of deformation and settlement along the interior berm, i.e. an undulating surface, or ravelling of side slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Are there tension cracks on or near the crests of the interior berm? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Are there areas of exposed liner on the sides or top of the Pollution Control Pond? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
g) Are there areas showing signs of erosion to the overliner material? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
23. Sedimentation Control Pond			
a) Has there been modifications to the Sedimentation Control Pond since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there tension cracks on or near the crest of the Sedimentation Control Pond including the Divider Berm? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Is there standing water within the Sedimentation Control Pond? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is there debris, large rocks, or overliner material within the Sedimentation Control Pond? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Is the exposed liner securely anchored along the crest of the Sedimentation Control Pond? If not provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Has the Sedimentation Control Pond's exposed liner been torn or punctured? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
24. Sumps #1 and #2			
a) Has there been modifications to Sump #1 or Sump #2 since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>

Specific Project Inspection Items**Date:** _____

b) Are Sumps #1 and #2 free of standing water? If not provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are the perimeters of the sumps inspected during freshet and immediately following significant or prolonged rainfall events?	No	Yes	<i>Comments and photo reference if applicable</i>
d) Has ponded water been pumped from the sumps since the last inspection? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
25. Float Plane Dock Access Road and Doris Freshwater Intake			
a) Has there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there signs of deformation and settlement along the Float Plane Dock Access Road and Pipe Bench, i.e. an undulating surface, or ravelling of side slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there tension cracks on or near the crests of the Float Plane Dock Access Road and Pipe Bench? If provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there evidence of ponded water along the downstream edge of the Float Plane Dock Access Road Pipe Bench? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Are there signs of erosion along the fresh water intake pipeline up to the pump house? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
26. Secondary Road			
a) Has there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there signs of deformation and settlement along the Secondary Road, i.e. an undulating surface, or ravelling of side slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there tension cracks on or near the crests of the Secondary Road? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there signs of ponded water along the downstream edge of the Secondary Road? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Are there any indication of new slope movement in the area where historic movement was identified? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
27. Doris Primary Vent Raise			

Specific Project Inspection Items**Date:** _____

a) Has there been modifications to the pad since the last inspection (repairs or maintenance)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there tension cracks on or near the crest of the pad? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there signs of deformation and settlement of the pad, i.e. an undulating surface, sinkholes, or ravelling of slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there evidence of ponded water along the downstream edge of the Primary Vent Raise Pad? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Are there areas of the rock high wall showing signs of deterioration i.e. significant rock fall? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Has a catch berm and appropriate signage been installed along the high wall? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
g) Has the liner, within the Fuel Transfer Station, been exposed? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
h) Is there evidence of vehicle traffic damage within the Fuel Transfer Station secondary containment? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
i) Is there standing water within the Fuel Transfer Station secondary containment? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>

28. Doris Creek Bridge

a) Has there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Is there damage to the super or sub structure of the Bridge? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Is there damage to the abutments? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is Doris Creek impacting and under cutting the toes of the abutments? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>

29. Tail Lake Access Road

a) Has there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there signs of deformation and settlement along Tail Lake Access Road including the turn-a-round, i.e. an undulating	No	Yes	<i>Comments and photo reference if applicable</i>

Specific Project Inspection Items**Date:** _____

surface, or ravelling of side slopes? If so provide details.			
c) Are there tension cracks on or near the crests of Tail Lake Access Road, including the turn-a-round? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there evidence of ponded water along the edges of the Tail Lake Access Road? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
30. Doris-Windy All-Weather Road			
a) Has there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Are there signs of deformation and settlement along the Doris-Windy All-Weather Road, i.e. an undulating surface, or ravelling of side slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Are there tension cracks on or near the crests of the Doris-Windy All-Weather Road? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Are there evidence of ponded water along the edges of the Doris-Windy All-Weather Road? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Has there been change in the depression at the junction of the Primary Road, Float Plane Dock Access Road, and the Doris-Windy All-Weather Access Road? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
31. Doris-Windy All-Weather Road Stream Crossing #1			
a) Has there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Has the shape of the Arched Culvert changed since the last inspection (i.e. the direction and magnitude of the deflection)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Is there damage to the Arched Culvert? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Has buckling of the I-Beam along the south side of the Arched Culvert Pile Foundation changed since the last inspection? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Has the condition of the piles changed since the last inspection? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Is the stream impacting and under cutting the Arched Culvert pile foundation? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>

Specific Project Inspection Items**Date:** _____

32. Doris-Windy All-Weather Road Stream Crossing #2			
a) Has there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Is there damage to the super or sub structure of the Bridge over Stream Crossing #2? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Is there damage to the bridge abutments for Stream Crossing #2? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is there evidence of ponded water along the toes of the bridge abutments over Stream Crossing #2? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
33. Doris-Windy All-Weather Road Stream Crossing #3			
a) Has there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Is there damage to the super or sub structure of the Bridge over Stream Crossing #3? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Is there damage to the bridge abutments for Stream Crossing #3? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is there evidence of ponded water along the toes of the bridge abutments over Stream Crossing #3? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
34. Doris-Windy All-Weather Road Stream Crossing #4			
a) Has there been modifications to the facility since the last inspection (maintenance or repairs)? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Is there damage to the super or sub structure of the Bridge over Stream Crossing #4? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
c) Is there damage to the bridge abutments for Stream Crossing #4? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is there evidence of ponded water along the toes of the bridge abutments over Stream Crossing #4? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
35. Quarry A			
a) Has this quarry been used since the last inspection?	No	Yes	<i>Comments and photo reference if applicable</i>
b) Is access to the quarry restricted to authorized personnel through adequate barricades or signage?	No	Yes	<i>Comments and photo reference if applicable</i>

Specific Project Inspection Items**Date:** _____

c) If in use, are there areas of the rock high wall showing signs of deterioration i.e. significant rock fall? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is there evidence of standing water within the quarry? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
36. Quarry B			
a) Has this quarry been used since the last inspection?	No	Yes	<i>Comments and photo reference if applicable</i>
b) Is access to the quarry restricted to authorized personnel through adequate barricades or signage?	No	Yes	<i>Comments and photo reference if applicable</i>
c) If in use, are there areas of the rock high wall showing signs of deterioration i.e. significant rock fall? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is there evidence of standing water within the quarry? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
37. Quarry D (including Core Laydown Area)			
a) Has this quarry been used since the last inspection?	No	Yes	<i>Comments and photo reference if applicable</i>
b) Is access to the quarry restricted to authorized personnel through adequate barricades or signage?	No	Yes	<i>Comments and photo reference if applicable</i>
c) If in use, are there areas of the rock high wall showing signs of deterioration i.e. significant rock fall? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
d) Is there evidence of standing water within the quarry? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
e) Are there signs of deformation and differential settlement on the top of the Quarry D Drill Core Laydown Area, i.e. sinkholes, rutting, undulating surface, or ravelling of side slopes? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
f) Are there tension cracks on or near the crests of the Quarry D Drill Core Laydown Area? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
g) Are there signs of ponded water along the outside edge of the Quarry D Drill Core Laydown Area? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
h) Are there signs of deformation and differential settlement on the top of the Quarry D Overburden Stockpile, i.e. sinkholes, rutting, undulating surface, or ravelling of side slopes? If so provide details	No	Yes	<i>Comments and photo reference if applicable</i>

Specific Project Inspection Items**Date:** _____

i) Are there tension cracks on or near the crests of the Quarry D Overburden Stockpile? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
38. Patch Lake Drill Shop Area			
a) Has the condition of ponded water along the edges of the covered original Patch Lake Fuel Tank Farm / Patch Lake Drill Cuttings Sump changed since the previous inspection? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>
b) Has there been any vegetation die back or the development of erosion gullies formed by the surface water runoff from the original Patch Lake Fuel Tank Farm / Patch Lake Drill Cuttings Sump since the previous inspection? If so provide details.	No	Yes	<i>Comments and photo reference if applicable</i>

Other Areas or Issues Identified (Add Sheets As Required):

Comments and photo reference if applicable

Comments and photo reference if applicable

Comments and photo reference if applicable

Comments and photo reference if applicable

Comments and photo reference if applicable

Comments and photo reference if applicable

Comments and photo reference if applicable

References:
SRK Consulting (Canada) Inc. 2013. Hope Bay Project – Drill Site Remediation. Technical Memorandum prepared for Hope Bay Mining Limited, Report No. 1CH008.069.410.February.

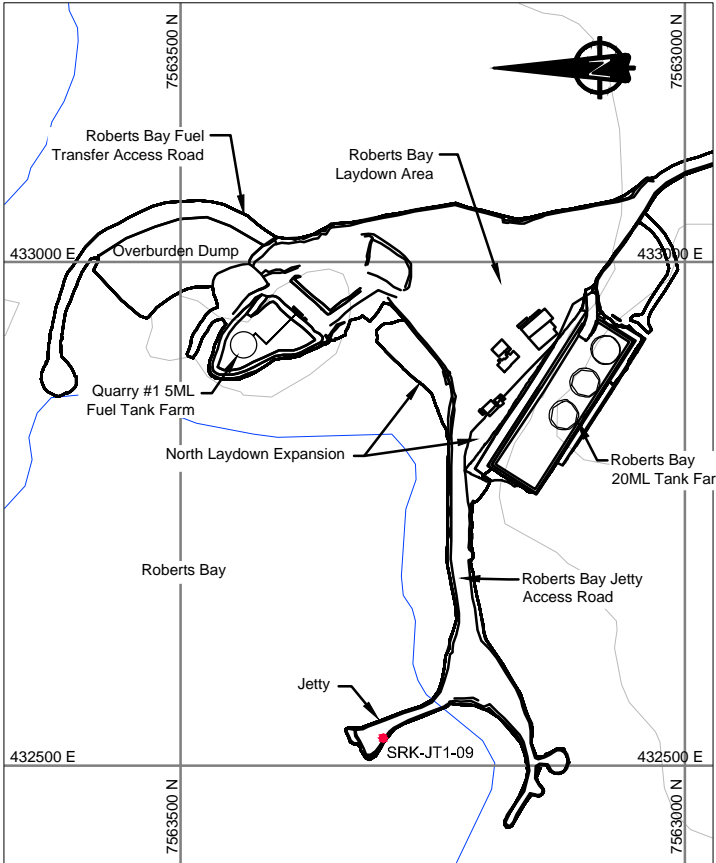
Management Response: Proposed Corrective Actions and Dates (Add Sheets As Required)

Component ID (ie: 1a)	Description of Repair (describe what was done, who did it, who oversaw it and any other relevant information)	Date (completed or proposed completion)

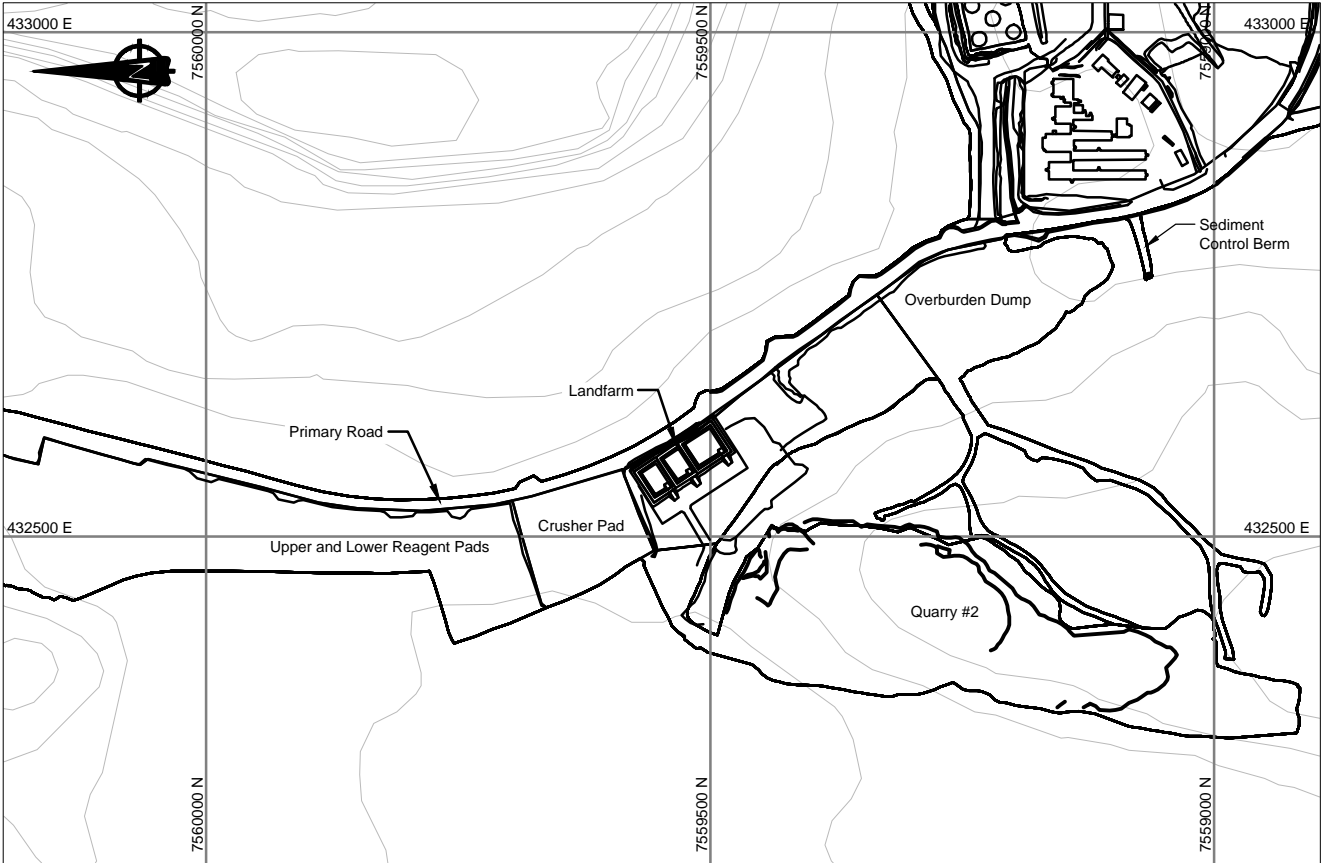
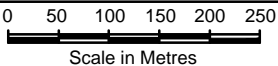
Photos (Add Sheets As Required):

Component ID: Photo Reference: Description:	Component ID: Photo Reference Description:
Component ID: Photo Reference: Description:	Component ID: Photo Reference Description:

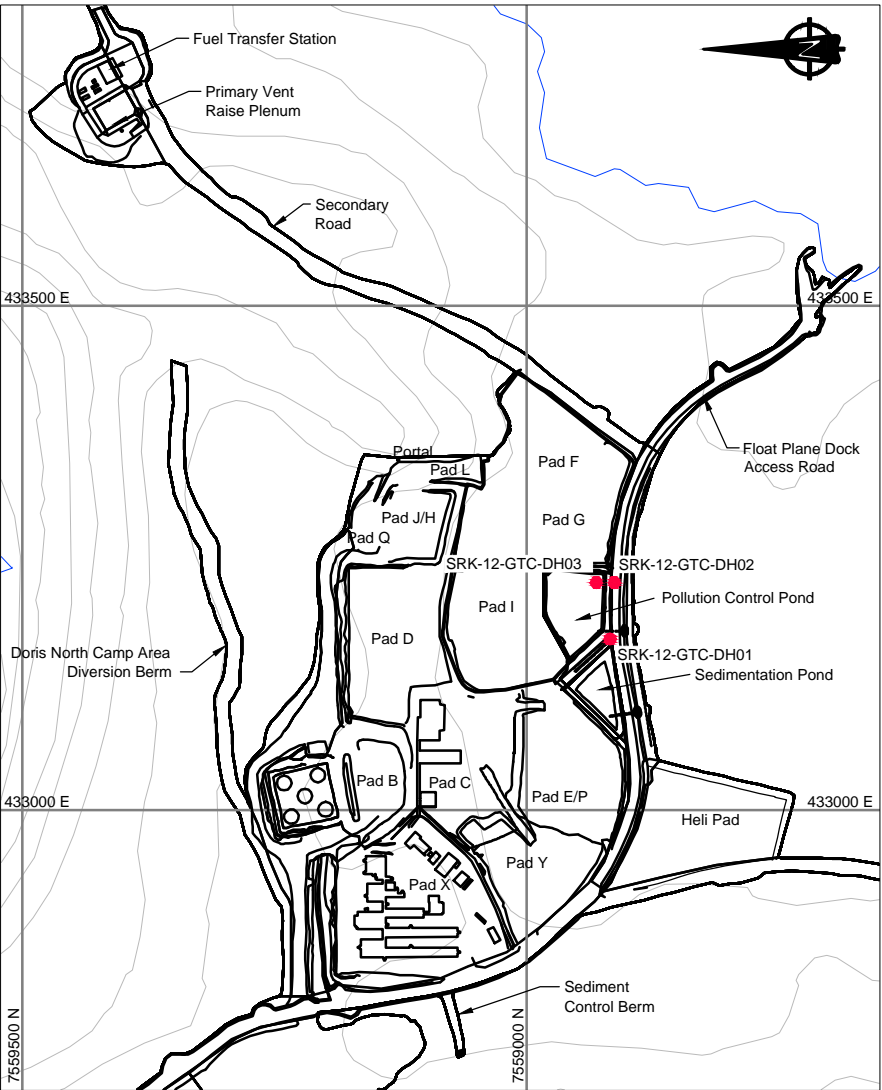
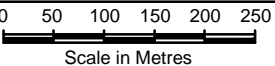
Attachment 1: Figure



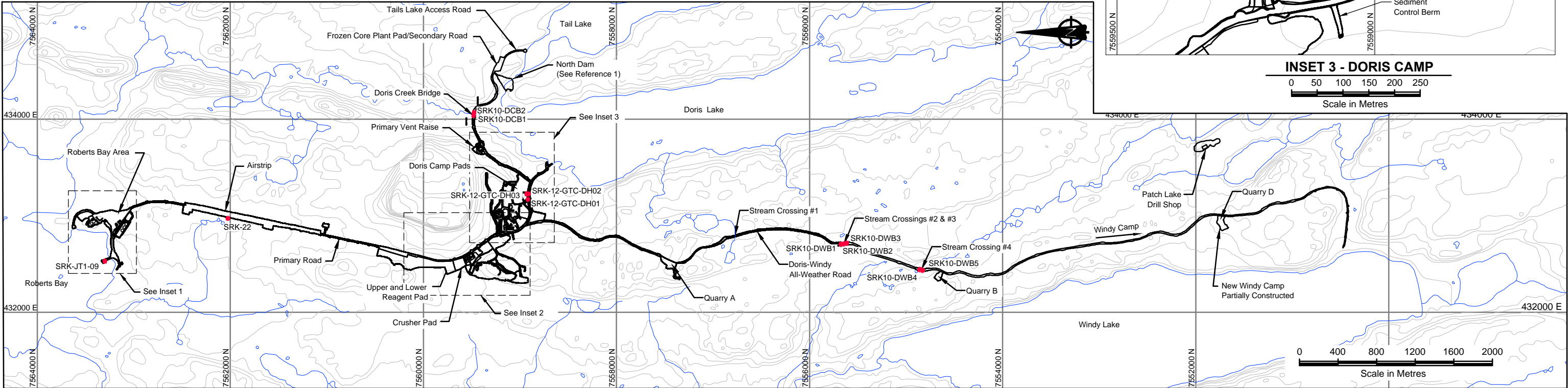
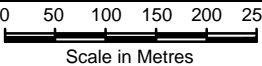
INSET 1 - ROBERTS BAY AREA



INSET 2 - REAGENT PADS



INSET 3 - DORIS CAMP



LEGEND

- Asbuilt Crests / Toes
- Active Ground Temperature Cable

REFERENCE

- SRK Consulting (Canada) Inc., 2013. Hope Bay Project, North Dam Monitoring: Standard Operating Procedure - Revision 1. Prepared for TMAC Resources Inc., Project No.: 1CT022.000, September 2013.

NOTE

- Coordinate system is UTM Zone 8, NAD83.



SRK JOB NO.: 1CT022.002

FILE NAME: 1CT022.002-Geotech Program.dwg



HOPE BAY PROJECT

Doris North Project

Surface Infrastructure
Geotechnical Monitoring Program

DATE:
July 2015

APPROVED:
LW

FIGURE:
1

Attachment 2: GTC Field Data Sheet



Field Data Sheet for Active Hope Bay Project Thermistor Strings - DORIS/WINDY AREA

PLEASE FILL IN ALL THE BLANK SPACES - DATA REQUIRED ONCE A MONTH

Drill Hole Number	Thermistor String Serial Number	Location	Thermistor Reader	TH2016 Thermistor Reader Settings	Date of Reading	Name of Person taking Reading	CHANNEL (Degrees Celcius) - Include negative sign if relevant													Comments (Describe any damage here)
							1	2	3	4	5	6	7	8	9	10	11	12	13	
SRK-22	690003	Airstrip	Omega 866C	-																
SRK10-DCB2 (Doris Bridge East)	TS3107	Doris Creek Bridge Abutment East	TH2016	3K																
SRK10-DCB1 (Doris Bridge West)	TS3106	Doris Creek Bridge Abutment West	TH2016	3K																
SRK-JT1-09	TS2667	Roberts Bay Jetty	TH2016	2252																
SRK-10-DWB1	TS3021	Windy AWR C #2	TH2016	3K																
SRK-10-DWB2	TS3025	Windy AWR C #2/3	TH2016	3K																
SRK-10-DWB3	TS3020	Windy AWR C #3	TH2016	3K																
SRK-10-DWB4	TS3024	Windy AWR C #4	TH2016	3K																Not reading on Ch. 6
SRK-10-DWB5	TS3023	Windy AWR C #4	TH2016	3K																
SRK-12-GTC-DH01	TS3260	Doris PCP	TH2016	2252																
SRK-12-GTC-DH02	TS3261	Doris PCP	TH2016	2252																
SRK-12-GTC-DH03	TS3262	Doris PCP	TH2016	2252																Possibly not reading on Ch. 5

Submit Data electronically to SRK

Procedure for taking thermistor readings:

- (1) Obtain all thermistor readout devices and extension cables before going into field. These are stored in the orange thermistor pelican case in ESR lab.
- (2) Travel to thermistor reader locations. Coordinates are saved in ESR GPS (purple flagging tape). Refer to map provided.
- (3) Open thermistor housing box installed at each drill hole (a screwdriver may be required to pry the box open in winter).
- (4) Ensure that Drill Hole Numbers and Thermistor String Serial Numbers labelled on the housing box match the field form.
- (5) For OMEGA 866C: connect colour-coded wires to connector blocks in thermistor housing box. For TH2016: connect 10-pin cable to TH2016 reader box. Extension cable may be required (identified in table above).
- (6a) For OMEGA 866C: Switch dial gauge in thermistor housing box to Channel 1 and record temperature reading on field form, i.e. -10°C.
Continue to switch the dial gauge until you have collected data from all the Channels (note that the strings have different numbers of active channels).
- (6b) For TH2016: Confirm resistance setting in TH2016 readout box is correct. Connect thermistor cable to TH2016 reader box. Turn on TH2016 reader box. Temperature readings will be collected automatically.
Record temperature readings on field form.
- (7) Inactive Channel should return a reading of -999°C. Record these readings on the field form for that channel.
- (8) Unplug the OMEGA 866C colour-coded wires from the thermistor box or disconnect the thermistor cable from the TH2016 reader and close the thermistor housing box. Travel to next thermistor location and repeat.

How to Change Resistance Setting in TH2016 Readout Box:

- 1) Turn on TH2016 box
- 2) Press up or down arrows until it says "Monitor", press (<J)
- 3) Select "2) Custom Setup", and press (<J)
- 4) The device will say "# of thermistor: 16", press (<J)
- 5) The device will say "Thermistor Type", scroll through the list to either 2252 or 3K (depending on the value in the thermistor reader settings column), press (<J) to select
This will be the default resistance until you change it again