

September 8, 2016

File: MV2015L2-0003

Mr. Kyle Conway
Sr. Environmental Coordinator
North American Tungsten Corporation Ltd.
c/o Alvarez & Marsal Canada Inc.
400 Burrard Street
Suite 1860, Commerce Place
Vancouver BC V6C 3A6

Email: KConway@natcl.ca

Dear Mr. Conway:

**Care and Maintenance Plan and Deferral Request for the Interim Closure and Reclamation Plan
North American Tungsten Corporation Ltd. (NATCL) – Cantung Mine**

The Mackenzie Valley Land and Water Board (MVLWB or the Board) met on September 8, 2016 and reviewed your March 31, 2016 Care and Maintenance Plan (C&M Plan) and January 29, 2016 request to defer submittal of the Interim Closure and Reclamation Plan (ICRP) in Water Licence MV2015L2-0003 (the Licence).

The Board has noted deficiencies in the C&M Plan which require the attention of North American Tungsten Corporation Ltd. (NATCL). The Board hereby directs NATCL to revise the C&M Plan to address issues with mine water management, assessment of site risks and remediation activities that may need to occur during the care and maintenance period, and incorporate the results of the Phase II assessment of stability of Tailings Ponds 3 & 4, as detailed in the attached Reasons for Decision and Review Comment Table. Once these revisions are complete, the C&M Plan shall be re-submitted to the Board for review and approval.

The Board notes that currently, NATCL is discharging mine water to the receiving environment at two locations for which Surveillance Network Program (SNP) stations are not currently active or established. In response to comments made by Board staff during the review, NATCL suggested possible changes to the SNP to address some of the concerns that were raised. NATCL is reminded that they must submit a formal request for any proposed updates to the SNP; the request should be supported by rationale. The request would be distributed to the distribution list prior to the Board making a decision. If this SNP modification request supports activities described in the C&M Plan, the SNP modification request should be submitted concurrently with the updated C&M Plan.

The Board has decided to defer their decision on the ICRP deferral request until an updated version of the C&M Plan that addresses the issues identified above has been received, reviewed, and approved by the Board.

The Board notes that during review, NATCL indicated changes have been made to the Spill Contingency Plan. The Board reminds NATCL of Part B, Item 6 of the Licence, which requires NATCL to submit revised plans to the Board for Approval at least 60 days prior to implementing any proposed updates or changes in the approved plan. The revised Spill Contingency Plan must be submitted to the Board for approval, in accordance with Part B, Item 6 of the Licence.

The Board notes that in the May 22, 2015 Letter approving the Biopile Management Plan, the Board directed NATCL to re-submit the Plan by March 31, 2016 with estimated remediation times based on information found in field trials, and an updated table 1 that includes soil remediation objectives for metals. This re-submission is still outstanding. Please re-submit the Biopile Management Plan for approval as directed.

If you have any questions or concerns, please contact Julian Morse at (867) 766-7453 or email jmorse@mvlwb.com.

Yours sincerely,

A handwritten signature in black ink, appearing to read "F. M. Adlem", with a long horizontal flourish extending to the right.

Floyd Adlem
MVLWB A/Chair

Attachment: Reasons for Decision
Review Comment Table

Copied to: Distribution List

Review Comment Table

Board:	MVLWB
Review Item:	NATCL - Updated Care and Maintenance Plan (MV2015L2-0003)
File(s):	MV2015L2-0003
Proponent:	North American Tungsten
Document(s):	MV2015L2-0003 - NATCL - 2016 Care and Maintenance Plan (4MB)
Item For Review Distributed On:	Apr 7 at 15:09 Distribution List
Reviewer Comments Due By:	May 3, 2016
Proponent Responses Due By:	May 31, 2016
Item Description:	<p>NATCL has submitted an updated Care and Maintenance Plan, which addresses management of the mine site during the current shutdown period, which commenced November 25, 2015.</p> <p>On January 29, 2016, NATCL submitted a request to the Board to defer submittal of the Interim Closure and Reclamation Plan, required by Part J, Item 1 of the Licence, until three months prior to the start of commercial operations. NATCL suggested that the updated Care and Maintenance Plan would address concerns associated with temporary shutdown of the site and ongoing care and maintenance activities. On March 31, 2016, the Board decided to defer decision on this request until the updated Care and Maintenance Plan is reviewed, to determine whether the Plan sufficiently addresses outstanding concerns associated with temporary shutdown of the mine.</p> <p>The Board is seeking comments from reviewers on the updated Care and Maintenance Plan, and whether deferral of the Interim Closure and Reclamation Plan is acceptable while the mine remains in care and maintenance.</p> <p>Please submit comments using the Online Review System by Tuesday, May 3, 2016.</p> <p>May 9, 2016 - NATCL requested an extension to the deadline for responses to reviewer comments from the original due date of May 10, 2016, to May 31, 2016. Board staff granted this request. NATCL's responses to reviewer comments are due on May 31, 2016.</p> <p>If you have any questions about this submission, or using the Online Review System, please contact Julian Morse at jmorse@mvlwb.com or 867-766-7453.</p>
Contact Information:	Jen Potten 867-766-7468 Julian Morse 867-766-7453

North American Tungsten (Proponent)

ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	General File	Comment (doc) Updated Care and Maintenance Proponent Response - Cover Letter Recommendation		Noted.

Dehcho First Nations: Carrie Breneman

ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	Operations	Comment On page 1, NATCL states “NATCL is hopeful that market conditions in 2016 will have improved to the point that operation can resume full operation at that time”. Recommendation Does NATCL have indication that operations may resume in 2016 or 2017? Are there any investors interested in purchasing the mine? If operations do not resume, at what point will the mine transition from care and maintenance to closure and reclamation? DFN member communities have expressed their interest in being a part of the monitoring team while the mine site is in care and maintenance. Additionally, should the mine move toward full closure and reclamation, DFN member communities would expect that community-based monitors will be included in the development of long-term monitoring plans.	May 31: DFN's comments are noted. Mine operations are not expected to resume in 2016. The Monitor, NATC and INAC are looking at investment/sale options but the level of interest and timing thereof is unknown at this time. NATCL will continue to monitor the site as per the regulatory requirements and engage stakeholders commensurate to the level of site activity.	Noted.
2	Freshet	Comment On page 1, NATCL states that one of the objectives of the plan is to “protect the services and facilities from damage particularly during winter and freshet”.	May 31: As part of the Care and Maintenance program NATCL actively ensures the winter and freshet has limited impacts on mine facilities and operations such as drainage ditches and road access. There are no additional sampling requirements during freshet, although increased monitoring for erosion and sedimentation occurs. SNP and Final Discharge Points (FDP) that were frozen or not discharging are monitored during	Satisfactory response.

		<p>Recommendation Can NATCL detail what services and facilities are particularly susceptible for damage during winter and freshet? Can NATCL detail if there are additional sampling or monitoring requirements during spring freshet?</p>	<p>freshet and the summer months while discharging.</p>	
3	Operation of WWTF	<p>Comment On page 10, NATCL states “In the spring it may be necessary to return the mine water discharge to TP5 and initiate a start-up and operation of the WWTF to manage the surface and underground water appropriately. This is being considered as a contingency plan, as spring freshet has not been an issue in the past.”</p> <p>Recommendation What will trigger the start-up and operation of the WWTF to manage surface and underground water appropriately? How long will the start-up of the WWTF take?</p>	<p>May 31: The startup of the WWTF would have been triggered by a buildup of water in TP5 approaching the 1 metre freeboard. Freshet has occurred in the lower part of the valley and no buildup of water was seen in TP5, with over 2 metres of freeboard remaining. If water quality underground exceeds EQC, mine waters would then be diverted to TP5 which would trigger the start-up of the WWTF. All WWTF infrastructure is in place and it is estimated that the WWTF operational within 2 weeks.</p>	<p>Satisfactory response. The C&M plan must be updated to note the triggers for startup of the WWTF.</p>
4	Visual assessments of the tailings ponds	<p>Comment On page 11, NATCL states “The daily inspections require visual assessments of the tailings ponds with particular attention paid to the dam crests, toes, slopes, diversion ditches and pipelines. The inspection seeks to identify any potential adverse conditions such as slumping, sinking, cracking, bulging, erosion and seepage.”</p> <p>Recommendation How are the visual inspections to identify potential adverse conditions completed in winter when the tailings ponds are snow-covered? If any potential adverse conditions are found to</p>	<p>May 31: Daily visual inspections continued during care and maintenance as part of the TSF surveillance program. Although snow cover does limit the ability to see dam crests, faces, and toes, it is still important to observe for any major events (avalanche, rain, seismic, etc.) that could potentially impact dam integrity. Instrumentation surveillance still continues at the recommended frequency. All data is submitted to Tetra Tech EBA to be reviewed by the Engineer of Record (EOR). Monitoring frequency may be adjusted based on recommendations from the EOR. If potential adverse conditions were to occur, NATCL would notify the EOR and await instruction/recommendations. The Emergency Preparedness Plan for Dam Emergencies (EPP) would also be activated in order to inform appropriate agencies and local stake holders. Monthly inspections and monitoring data are included in the monthly SNP reports which are submitted to the Water Board and distributed to local stake holders.</p>	<p>Satisfactory response.</p>

		occur, what actions will NATCL take? Confirm how communities be notified and engaged should adverse conditions develop.		
5	Settling monuments	<p>Comment On page 11, NATCL states “Settling monuments are surveyed annually.”</p> <p>Recommendation What is the purpose of surveying the settling monuments and what corrective measures/mitigations are required based on the results of the survey data?</p>	<p>May 31: The purpose of surveying the settling monuments are to measure vertical movement or settling of the dam structures. This information is reviewed annually by the EOR. If major settling was observed when compared to the previous year, the EOR would advise as to a course of mitigative action.</p>	Satisfactory Response.
6	Irrigation system	<p>Comment On page 12, NATCL states “NATCL is currently preparing a proposal for an irrigation type system for TP 3 and TP 4 to ensure that tailings can be wetted during the dry summer season and thus reduce erosion due to wind. The details of the appropriate solution will be added to the care and maintenance plan once received.”</p> <p>Recommendation DFN looks forward to reading the details of the proposed irrigation system and would like to review the plan when it becomes available. DFN cautions NATCL to ensure that any irrigation system for TP3 and TP4 does not cause erosion or downstream sedimentation of the Flat River due to water runoff from the irrigation system.</p>	<p>May 31: NATCL appreciates the input and will consider this information in the irrigation system design.</p>	Satisfactory response.
7	Propane tanks	<p>Comment On page 15, NATCL states “There are several propane tanks on site. These tanks still contain some propane and are regularly inspected to ensure containment.”</p> <p>Recommendation How frequently are these propane tanks inspected?</p>	<p>May 31: Annual inspections and maintenance is conducted by Superior Propane as they are the tank owners. Visual inspections are conducted routinely to ensure tanks have not been compromised.</p>	Satisfactory response.

8	Landfarming	<p>Comment On page 15, NATCL states “Potentially hazardous soils such as those that may contain hydrocarbons or metal contamination continues to be handled as per procedures in the Waste Management Plan and the Landfarm (biopile) Management Plan.”</p> <p>Recommendation How much hazardous soil does NATCL have left to landfarm? How much soil will be landfarmed per year?</p>	<p>May 31: An estimated volume of 600m³ of petroleum hydrocarbon contaminated soil currently exists on site. It is unknown at this time how much soil can be treated annually as this project is still in a trial phase and the efficacy of the application is unknown.</p>	<p>On May 22, 2015, the Board approved the Biopile Management Plan submitted under Water Licence MV2002L2-0019. In the approval letter, the Board directed NATCL to update and re-submit the Biopile Management Plan for approval by March 31, 2016, to include estimated remediation times based on information found in the field trials, and an updated table 1 that includes soil remediation objectives for metals. NATCL has not re-submitted the updated plan according to the Board’s records. NATCL must update and re-submit the Biopile Management Plan for approval.</p>
9	Plans for mine restart	<p>Comment On page 18, NATCL states “High level plans for mine restart are currently being developed. These are conceptual level ideas to identify potential issues and costs related to a possible start of operations. These high level plans currently include tailings reprocessing as well as restart of the underground mining operation.”</p> <p>Recommendation Why are high level plans for mine restart currently being developed? Is there an interest in investment in the mine?</p>	<p>May 31: The high level plans for mine restart were developed to give INAC an order of magnitude for costs related to mine start up. This will be an important consideration when approaching potential investors who may be interested in Cantung.</p>	<p>Satisfactory response.</p>

10	EEM	Comment N/A Recommendation DFN notes that the EEM report has been submitted to EC. DFN requests that NATCL provide a copy to DFN, LKFN and NDDB.	May 31: The EEM Study Interpretive Report is a publically accessible document and can be found on the MVLWB registry. http://www.mvlwb.ca/Boards/mv/Registry/2015/MV2015L2-0003/MV2015L2-0003%20-%20NATCL%20-%202015%20EEM%20Report%20-%20Apr21-16.pdf	Satisfactory response.
11	NPRI Report	Comment N/A Recommendation DFN notes that the NPRI report will be submitted to EC on June 1, 2016. What is the NPRI report?	May 31: The National Pollutant Release Inventory is a publically accessible inventory used to track and catalogue the release of pollutants, their disposal, and/or their transfer to recycling facilities in Canada.	Satisfactory response.
12	Community site visit	Comment N/A Recommendation DFN reiterates that need for a community site visit to the Cantung Mine as requested during February 25, 2016 meeting with NATCL, AANDC and GNWT.	May 31: Invitations for a visit to site in early July 2016 were emailed and mailed on May 12, 2016.	Satisfactory response. NATCL is encouraged to maintain contact with DFN to ensure invitations have been received.
13	Staffing	Comment Within the Care & Maintenance Plan, NATCL describes that there are 6 staff members on site at one time with specifically defined roles. Recommendation How does NATCL propose to complete the work on site if a staff member leaves their position (with the remaining 5 employees)? How does NATCL provide training for new staff members when there is only a single staff in each position at one time? For example, when a new environmental coordinator is hired, how will that person receive training for their position?	May 31: Cross training has been provided to selected personnel in order to ensure that required duties can be completed in the absence of key personnel. Standard Operating Procedures (SOPs) for routine checklists have been established and are used as reference and to train personnel. Newly hired personnel are provided with a week of cross-over training with their counter part in order to ensure that they are able to complete the requirements of their job.	Satisfactory response.
14	Plans for mine restart	Comment In the inspection report prepared by Inspector Tim Morton and dated January 27th, 2016, Mr. Morton noted that "the spill contingency and environmental emergency plan should be updated to reflect the changes that have	May 31: Updates have been made to the Spill Contingency Plan to reflect care and maintenance activities, hazardous materials on site, and available resources. The Propane Emergency Response Plan will also be updated to reflect care and maintenance activities and available resources.	NATCL has not re-submitted the Spill Contingency Plan in accordance with Part B, Item 6 of the Licence, which reads: The Licensee shall review the plans, programs,

		<p>occurred since the site has moved from an operating mine to care and maintenance."</p> <p>Recommendation Could NATCL please indicate whether the updates to both the spill contingency plan and the environmental emergency plan have been completed?</p>		<p>studies and manuals annually, or as directed by the Board, and make any necessary revisions to reflect changes in operations. All revised plans, programs, studies and manuals shall be submitted to the Board, for approval, at least 60 days, unless otherwise specified, prior to implementing any proposed updates or changes in the approved plan, program, study or manual, and shall be accompanied by a brief summary of the changes made. All revised plans, programs, studies, and manuals shall be presented in a format consistent with the Board's Standard Outline for Management Plans.</p>
15	Freshet	<p>Comment In the inspection report prepared by Inspector Tim Morton and dated January 27th, 2016, Mr. Morton recommended that "a strong site presence be established prior to freshet to ensure no risk to the environment occurs."</p> <p>Recommendation Could Mr. Morton please detail why he felt that a stronger site presence was needed for freshet? Could he please further detail if he feels that NATCL has established this site presence and if so, how?</p>	<p>May 31: NATC is unable to comment and would consider it more appropriate to have DFN pose its question to Mr. Morton directly.</p>	<p>Satisfactory response. DFN should contact the inspector directly if they wish to have this question answered.</p>
16	Variances	<p>Comment On page 4 of the Care and Maintenance Plan,</p>	<p>May 31: The Mine's Inspection branch of the WSCC continues to monitor the mine site to</p>	<p>Satisfactory response.</p>

		<p>it is written that, "The site, although in care and maintenance is still considered a mine site for the purposes of WSCC and the Mines Inspector Board, and therefore the manager maintains compliance where possible and applies for variances when the site numbers do not allow the operation to meet all the criteria of the Mine's Safety Act and Regulations." Recommendation Could NATCL please detail if any variances have been requested and issued or if any specific variance requests are anticipated?</p>	<p>ensure compliance with the Mine's Act and Regulations. The Mine's Inspector's most recent visit to the site was on April 10, 2016. A typical variance for the care and maintenance operation sought was the requirement for a minimum of personnel with OFA Level II training with the reduced number of people on site. Due to the fact that no high risk work is being undertaken during care and maintenance and underground operations have ceased, a variance for standard first aid and CPR requirement was requested and granted.</p>	
17	Environmental coordinators	<p>Comment We understand that one of your Environmental Coordinators recently resigned his position. Recommendation Could NATCL please detail what efforts were made to hire an Aboriginal and / or resident of Yukon or NWT to fill this vacant position? Were these efforts successful?</p>	<p>May 31: NATCL strives to ensure all its employees are of high quality; as such, the Environmental Coordinator position was advertised on Infomine, an international service provider to the mining industry. Through this process a highly qualified Environmental Coordinator was hired with extensive education and work experience.</p>	<p>N/A, this comment and response is not relevant to the Board's review of the C&M Plan.</p>
18	Avalanche abatement	<p>Comment On page 6 of the Care and Maintenance Plan, it is written that "avalanche abatement will not be required during the shutdown as access to the vent fan road and higher risk areas will be restated as risks are determined to be present." Recommendation Could NATCL please describe monitoring protocols and frequency through which risks would be determined to be present and the road access restricted?</p>	<p>May 31: Road access to high risks areas was restricted once it was noted that the various chutes on Sheet Mountain and Dolomite Mountain were filling with snow to depths exceeding 30cm. Furthermore, freezing and thawing temperatures were likely causing weakness in the snow pack which may create conditions where slides can start. These roads have not been used since January 2016. The avalanche risk has now passed, with slides having formed in all major chutes. Higher temperatures have also resulted in significant depletion of the snow pack.</p>	<p>Satisfactory response.</p>
19	Freeboard	<p>Comment The care and maintenance plan discusses</p>	<p>May 31: The event in which exceedance of freeboard is highly unlikely, but a contingency</p>	<p>Satisfactory response.</p>

		<p>some steps taken to ensure that freeboards for tailings ponds (3) (4) and (5) to not exceed 1m.</p> <p>Recommendation Could NATCL please describe the contingency plan that will be followed should these freeboards be exceeded?</p>	<p>was considered in the care and maintenance plan. Excess water in TP 3 and/or 4 could be pumped to TP 5 where the WWTF would have to be restarted to deal with the water in TP5. The ponds were monitored daily to see if such an unlikely eventuality could occur, and it was noted that water levels in the ponds did not rise significantly during freshet.</p>	
Environment and Climate Change Canada: Lisa Lowman				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	General File	<p>Comment (doc) ECCC Cover Letter</p> <p>Recommendation</p>		
2	2016 Care and Maintenance Plan, Cantung Mine NT Section 3.2 Underground Workings	<p>Comment The Proponent states that ".it is estimated that it will take approximately 6 to 8 months for the remainder of the mine to flood to the 3950 level where it will naturally drain to the environment through the conveyor gallery drift and the portal". ECCC is concerned that there is no mention of monitoring the water quality of the mine water outflow to ensure that it is in compliance with MMER before entering the receiving environment.</p> <p>Recommendation The Proponent needs to explain how they will ensure that the mine water draining to the environment through the conveyor gallery drift and portal is in compliance with the MMER.</p>	<p>May 31: Currently the water exiting the mine is from seepage from above the mine opening and not from the flooding of the mine. This water is tested as per MMER and if and when water from the flooding of the mine does exit the mine, it will be part of the MMER testing. Please note the mine water from the flooded mine has been tested periodically, is in compliance with MMER and will continue to be periodically tested in order to better understand the mine water quality. In addition, historically during the last Care and Maintenance period the mine water from the flooding of the mine met MMER criteria. Should the mine water fail to meet the MMER criteria, it would then be diverted to TP5 for storage and treatment by the WWTF.</p>	<p>Acceptable response; it is assumed that ECCC will follow up with the proponent to ensure MMER requirements continue to be met.</p>
3	2016 Care and Maintenance Plan, Cantung Mine NT Section 3.3 Mine Water Discharge	<p>Comment The Proponent states that "The water quality from underground sources is monitored weekly, and as the water quality improved with reduced suspended solids, NATCL sampled the water and showed that it met all Water License and MMER discharge criteria. The</p>	<p>May 31: NATCL did apply for permission to discharge and release the water to the environment. Operations Manager, Craig Broom of the Environmental Enforcement Directorate advised NATCL that there was no authorization requirement under MMER. NATCL will update this statement in the CM Plan to reflect the correspondence provided in Appendix H.</p>	<p>Satisfactory response.</p>

		<p>criteria that are applied to the mine water are the same as that applied to the Stinky Pond culvert discharge and the MMER. NATCL applied for permission from Environment Canada to release the water to the environment directly from the mine seepage and portal locations and the application was granted. Refer to Appendix H for the confirmation letter". ECCC has reviewed Appendix H which is an email sent to NATCL from the Operations Manager of the Environmental Enforcement Directorate, Enforcement Branch of ECCC. The email correspondance clearly states that the Proponent advised ECCC that they will be redirecting mine water seepage to the polishing pond, and it will then be discharged through an existing FDP S5-2. The email did not state anywhere that the Proponent was granted permission to release water from mine seepage and portal location to the environment directly.</p> <p>Recommendation The Proponent should clarify the statement that ECCC granted permission to release the water to the environment directly from the mine seepage and portal locations.</p>		
4	2016 Care and	Comment The Proponent states that "All mine waste	May 31: Extensive sampling and geochemical testwork have been conducted on both surface	Satisfactory response.

Maintenance Plan, Cantung Mine NT Section 4.1 Mine Waste Rock Dumps and Ore Piles	<p>rock dumps are physically stable with no work planned during the short term closure. With no production from underground, the weekly sampling for ARD potential of waste rock will be suspended for the duration of the C&M period as previous sampling of the waste rock showed no potential for ARD". ECCC is unclear how the Proponent will detect any incidence of acid rock drainage (ARD) should it occur during care and maintenance especially given that there is currently no timeline as to when the mine will restart commercial operations.</p> <p>Recommendation Monitoring via sampling should continue for seepage and drainage from the mine waste rock dump to ensure that ARD is detected should ARD occur during the care and maintenance period.</p>	<p>and underground waste rock and waste rock storage areas. Results have determined that waste rock for the most part is classified as non-PAG. Smaller portions of PAG materials have been identified in the underground waste rock piles. Monitoring at SNP and MMER stations will continue in order to ensure ARDML is detected during the care and maintenance period.</p>	
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Fisheries and Oceans Canada: Julie Marentette

ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	General	<p>Comment Fisheries and Oceans Canada - Fisheries Protection Program has reviewed the Plan and has no comments. Recommendation None.</p>	May 31: No comment required.	N/A

GNWT - ENR: Central Email GNWT

ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
8	General File	<p>Comment (doc) ENR Letter with Comments and Recommendations Recommendation</p>		
1	Topic 1: Onsite Personnel	<p>Comment The Care and Maintenance Plan (the Plan) notes that two 6-person</p>	May 31: Clarification on site personnel (Section 1.5) The operator referred to in the list and the Site Service Supervisor described below are the	Noted.

		<p>crews would be working on a rotating 3-week schedule. There appears to be some inconsistencies in the document between the 6 positions listed and the number of position descriptions provided in Section 1.5. For example, a description is provided for a 'sites services provider' but that position does not appear to be listed.</p> <p>Recommendation 1) ENR requests that NATCL clarify the number of people that are required on-site during the care and maintenance period and provide position descriptions for all personnel.</p>	<p>same position. This will be corrected in the care and maintenance plan.</p>	
2	Topic 2: Old Lagoon	<p>Comment Under the Plan, mine water has been diverted away from TP5 and is now being channeled to the old lagoon. Section 3.3 notes that the water flowing to the lagoon is not currently being released to the surface which may be due to low flow and exfiltration through the lagoon's earthen banks. ENR is concerned that exfiltration through the lagoon's banks may result in bank stability issues through time. ENR suggests that the lagoon seepage rates and its bank be monitored by the site crew to ensure this is not an issue.</p> <p>Recommendation 1) ENR recommends that NATCL conduct inspections of the lagoon banks to ensure they remain stable during the care and maintenance period.</p>	<p>May 31: NATCL staff conduct visual inspections of the lagoon daily to monitor for discharge from the final discharge point. NATCL will continue to inspect to ensure lagoon banks remain stable during care and maintenance.</p>	<p>Satisfactory response.</p>
3	Topic 3: TP5 Contingency	<p>Comment Section 3.3 notes that in the spring it may be necessary to return the mine water discharge to TP5 and</p>	<p>May 31: A staff gauge is present in TP5 in order to measure the water level relative to the allowable freeboard. Diversion ditches surrounding TP5 prevent any infiltration of melt</p>	<p>NATCL did not answer ENR's question. NATCL needs to explain</p>

		<p>initiate a start-up and operation of the WWTF to manage surface water and water from the underground workings appropriately. NATCL notes that this is only being considered as a contingency plan, as spring freshet has not been an issue in the past. It is unclear how water will be monitored and assessed in order to determine if water treatment will be required. NATCL should specify the triggers it will use to determine if the contingency plan should be activated (e.g. available storage in TP5, high mine water inflows U/G, etc). Consideration should be given for the time required to commission the WWTF after being winterized</p> <p>Recommendation 1) ENR recommends that NATCL outline what triggers would result in implementation of the contingency plan (start-up of the WWTF). This should include what monitoring and assessment methods will be used.</p>	<p>water during freshet. The TP5 contingency was not necessary this year despite there being a relatively rapid freshet this spring. With high temperatures and precipitation the water level at no time approached the freeboard level.</p>	<p>what would trigger them to “return the mine water discharge to TP5 and initiate start-up and operation of the WWTF to manage the surface and underground waters appropriately.”</p>
4	Topic 4: Irrigation System	<p>Comment Section 4.2.2 mentions that NATCL is currently preparing a proposal for an irrigation system that will be installed for TP3 and TP4 to ensure the tailings can be wetted during the dry summer season and thus reduce erosion due to wind. Timelines related to the submission of this proposal are unclear. ENR assumes that the Flat River will be utilized as the water source.</p> <p>Recommendation 1) ENR requests that NATCL provide an anticipated submission date for the irrigation</p>	<p>May 31: NATCL is working to develop a plan by mid-June. The source of water would likely be from TP5 and mine seepage as the water will be contained within TP3 and 4.</p>	<p>Satisfactory response.</p>

		proposal along with any available details on the water source to be used and associated volumes.		
5	Topic 5: Road Monitoring	<p>Comment Section 5.7 relates to road monitoring; however, it is unclear if this includes monitoring of culverts, bridges and other water management structures that would be included under the Site-Wide Erosion and Sediment Control and Water Management Plan.</p> <p>Recommendation 1) ENR requests that NATCL clarify whether culverts, bridges and other water management structures are included under the proposed road and site monitoring (e.g. to ensure there are no blockages and site water continues to be managed as outlined in previously approved plans).</p>	<p>May 31: NATCL actively monitors culverts, bridges and other structures. Necessary repairs will be applied throughout the care and maintenance period. Details will be provided in next iteration of the care and maintenance plan.</p>	<p>Satisfactory response. NATCL is required to adhere to the Site-Wide Erosion and Sediment Control Plan, and Water Management Plan.</p>
6	Topic 6: Interim Closure and Reclamation Plan	<p>Comment On January 29, 2016, NATCL submitted a request to the Board to defer the submission of the Interim Closure and Reclamation Plan, currently required by Part J, Item 1 of the Licence, until three months prior to the start of commercial operations. NATCL suggested that the updated Care and Maintenance Plan would address concerns associated with temporary shutdown of the site and ongoing care and maintenance activities. Currently, the Board is seeking comments from reviewers on whether deferral of the Interim Closure and Reclamation Plan is acceptable while the mine remains in care and maintenance. At this time, the anticipated length of the</p>	<p>May 31: NATCL is performing further work on the stability of the tailings ponds on site this summer. This program includes geotechnical drilling and evaluation/interpretation by SRK. NATCL appreciates ENR's concerns and will continue to evaluate site risks and the required actions accordingly during the Care and Maintenance period.</p>	<p>It is noted that NATCL is performing stability tests on TP3 and 4, and anticipates submitting results to the Board in the fall. This will help inform management of these particular tailings ponds, but does not fully address concerns raised by ENR. NATCL must provide an assessment of stabilization and remediation work that will or may be necessary if the mine remains in care and maintenance for an extended period of time, or sufficient rationale as to why they shouldn't have</p>

care and maintenance period is unclear. Ultimately, the site will either be sold and transferred to a new owner who will be responsible for the site, or the Federal Government will proceed to undertaking closure and reclamation. With respect to the deferral of the ICRP, ENR is comfortable with NATCL's request, recognizing that should the site not be re-opened and/or reclaimed by a new owner, Canada will be responsible to fund the development of a final Closure and Reclamation Plan for the site, and ultimately fund the implementation of that approved plan. However, the deferral of the ICRP should not necessarily equate to an undefined deferral of reclamation/stabilization activities associated with mine components having identified areas of concern (e.g. TP4; historic Flat River tailings). As onsite care and maintenance activities at the Cantung mine may occur for an extended period of time into the future, NATCL should still be required to undertake any necessary stabilization and/or reclamation work during this period.

Recommendation 1) ENR requests NATCL provide an assessment of any stabilization/reclamation activities that may be

to provide this information.

		necessary at the Cantung mine should care and maintenance occur for an extended period of time (e.g. 3 years, 5 years, 10 years).		
7	None	Comment None Recommendation 2) This assessment should also include the identification of any components of the current ICRP that may need to be addressed (i.e. closure research, closure options for specific components, etc.).	May 31: These items will be addressed in due course. NATCL appreciates ENR's concerns and will continue to evaluate site risks and the required actions accordingly during the care and maintenance period.	NATCL has not addressed ENR's concern. NATCL must assess the current ICRP for components that will or may need to be addressed during care and maintenance.

GNWT - Lands: Kyle Christiansen

ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	No concerns	Comment Inspectors have no concerns Recommendation No concerns	May 31: No comment required.	N/A

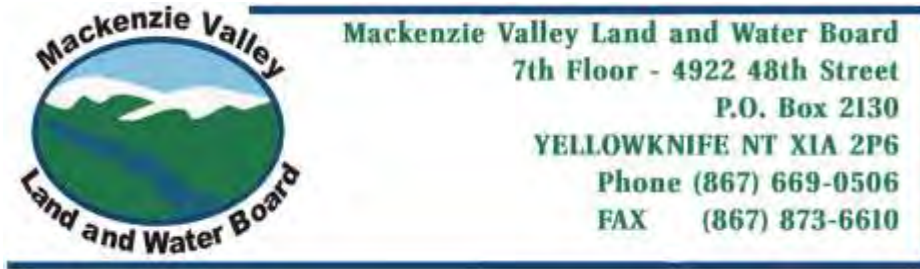
INAC - South Mackenzie District Office (Inspectors): Tim Morton

ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	Updated Plan	Comment The Inspector is satisfied with the updated plan. Please ensure that fuel consolidation is continued to limit the risk of hydrocarbon spills to the environment. Recommendation The Inspector is satisfied with the plan.	May 31: No comment required.	N/A

MVLWB: Lindsey Cymbalsty

ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	SNP and Discharge Quality Reporting	Comment Although recent SNP reports conform to the requirements of the Licence, underground mine-water discharge quality is not included in these reports. Recommendation If no existing SNP stations correlate to the mine water discharge points, please	May 31: NATCL recommends that SNP S4-13 (mine portal) be reinstated as "active" under the SNP program during care and maintenance with previous sampling frequency and parameters applied. Please note that SNP S4-13 has been monitored weekly under MMER and results will be included in the monthly SNP reports. SNP station S4-42 can be sampled from a new location which is representative of mine water discharge from the conveyor gallery. NATCL has	Ultimately, this may be a reasonable course of action. NATCL has not formally applied to make this change; as such, it has not been reviewed and commented on by stakeholders. NATCL

		recommend additional SNP stations for these points, so that discharge water quality is regularly reported to the Board during the care and maintenance period.	recently commenced sampling water below the mine discharge points to better understand the water quality as the mine floods. This data will allow NATCL to apply an adaptive management strategy prior to its discharge should it not meet the applied EQC.	must submit a request to the Board to change the SNP to reflect current discharges of mine water into the receiving environment.
2	Discharge Quality Criteria	<p>Comment It is unclear why Licence EQC for SNP 4-28-2 are being proposed for the minewater discharges, since these are groundwater EQC, and the minewater is being discharged to surface water. The minewater seepage results from November, 2015 meet these EQC, but also meet the EQC for SNP 4-43 (effluent from the wastewater treatment plant); however, the Board does not have any further data related to the mine water quality, which makes it difficult to assess the proposed application of 4-28-2 criteria.</p> <p>Recommendation Please provide additional water quality data for the mine water discharges, and rationale for the proposed water quality criteria.</p>	<p>May 31: Water quality results for SNP S4-13 (mine portal) will be provided to the board and included in the monthly SNP reports. Additionally, water quality results for SNP S4-42 will be provided in the monthly SNP report should the above recommendation be accepted. The source of the mine discharge is groundwater; as such, NATCL feels that the groundwater EQC are appropriate. The WWTF treats water affected by the mill process. While the mine is temporarily closed, mine-water is not affected by the mill process. It is diverted to the settling lagoon and is sampled when discharged through MMER FDP S5-2.</p>	Although the source of the mine discharge is groundwater, it is being collected and discharged directly to the Flat River. This is in contrast to the wastewater that infiltrates from groundwater through soil to the receiving environment. EQC for groundwater going to the environment through infiltration are not equivalent to EQC for waste being discharged to surface waters. The more appropriate EQC would be those that are already in the WL for SNP station S4-43. Based on the SNP monitoring data provided by NATCL, the water from SNP S4-13 would meet the existing EQC for S4-43.



Reasons for Decision

Issued pursuant to section 72.25 of the *Mackenzie Valley Resource Management Act*

Type A Water Licence	
Reference/File Number	MV2015L2-0003
Applicant	North American Tungsten Corporation Ltd.
Project	Cantung Mine – Care and Maintenance

Decision from Mackenzie Valley Land and Water Board Meeting of

September 8, 2016

Background

On September 9, 2015, North American Tungsten Corporation Ltd. (NATCL) submitted notification to the Mackenzie Valley Land and Water Board (the Board) that the Cantung mine was being temporarily shut down and put into care and maintenance. Since then the mine has remained in care and maintenance. On January 29, 2016, NATCL submitted a request to the Board to defer a number of submission dates for plans and reports required by the Licence, including the Interim Closure and Reclamation Plan (ICRP), due to the status of the mine. On March 31, the Board issued a decision on the January 29, 2016 deferral request; in their decision, the Board noted that due to the fact that the most recent version of the Care and Maintenance Plan (C&M Plan) had not yet been reviewed, the Board would wait to issue a decision on the ICRP deferral until review of the C&M Plan was complete.¹ Specific dates related to review of the C&M Plan are as follows:

- September 9, 2015 – Notice received of temporary shutdown of Cantung mine, and transition to care & maintenance;
- January 28, 2016 – Water Licence MV2015L2-0003 (renewal of MV2002L2-0019) issued to North American Tungsten Corporation Ltd. (NATCL);
- January 29, 2016 – Request to defer submission dates for plans required under MV2015L2-0003 (the Licence) received;
- March 31, 2016 – Care & Maintenance Plan Version 4 (C&M Plan) received, and Board decision on submission date deferral issued;
- April 7, 2016 – C&M Plan distributed for review;
- May 3, 2016 – Reviewer comments on C&M Plan received;
- May 9, 2016 – NATCL request to extend response deadline from May 10, 2016 to May 31, 2016 received and granted;

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¹ March 31, 2016 Reasons for Decision, available on the Board's public registry for Water Licence MV2015L2-0003

- May 31, 2016 – NATCL response to reviewer comments on C&M Plan received; and
- September 8, 2016 – C&M Plan and ICRP deferral request presented to Board for decision.

The Board's decisions on the C&M Plan, and the January 29, 2016 Deferral Request for the ICRP are discussed in detail below.

Decision

After reviewing the submissions of NATCL, the written comments received by the Board and the Staff report prepared for the Board, the Board, having due regard to the facts and circumstances, the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA, has decided to defer their decision on the ICRP deferral request until an updated version of the C&M Plan, which addresses issues identified during review, is submitted. The Board's determinations regarding the C&M Plan and January 29, 2016 Deferral Request are discussed below.

Interim Closure and Reclamation Plan Deferral

In their January 29, 2016 Request to defer submittal of the ICRP, NATCL correctly noted that the ICRP is intended to address temporary closure of the mine site, and stated that the C&M Plan would be submitted to address temporary closure². NATCL specifically noted that the C&M Plan would contain details related to "stabilization and remediation activities planned for Tailings Ponds ("TP") 3 and 4"³, and triggers and timelines for conducting stabilization and remediation activities. This commitment was in keeping with the Board's requirements for the ICRP, set out in pages 32 and 33 of the Board's December 29, 2015 Reasons For Decision for issuance of Water Licence MV2015L2-0003.⁴ The Board has determined that in its current form, the C&M Plan does not provide sufficient information to allow the Board to defer the requirement for submittal of an ICRP. Specific deficiencies in the C&M Plan are discussed below.

Care and Maintenance Plan

Mine Water Discharge

It was identified through review of the C&M Plan that mine water is currently discharging into the Flat River from two locations on the site, neither of which is currently associated with an active surveillance network program (SNP) station. Water is discharging from the mine portal into Sardine Creek, which discharges into the Flat River. This location currently has an inactive SNP station 4-13, where NATCL has been sampling weekly for compliance with Environment and Climate Change Canada's (ECCC) Metal Mining Effluent Regulations (MMER). Mine water from the conveyor gallery is currently discharging to the old polishing pond. There is no SNP station located at this site, but the site is monitored for MMER compliance at station S5-2.

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² Page 4 of January 29, 2016 Letter to Board requesting deferral of submission dates in the Licence, available on the Board's public registry for Water Licence MV2015L2-0003

³ See footnote 2

⁴ Available on the Board's public registry for Water Licence MV2015L2-0003

In Section 3.3 of the C&M Plan, it is stated that “[i]n the spring it may be necessary to return the mine water discharge to TP5 and initiate a start-up and operation of the Wastewater Treatment Facility (WWTF) to manage the surface and underground waters appropriately”, however, the trigger that would cause this to happen is not discussed in the plan. The Government of the Northwest Territories - Environment and Natural Resources (GNWT, ENR) noted this during review, and asked NATCL to outline what triggers would result in start-up of the (WWTF).⁵ NATCL responded that “[a] staff gauge is present in TP5 in order to measure the water level relative to the allowable freeboard”⁶. This implies that water levels rising in TP5 would trigger start-up of the WWTF, but doesn’t explain how this relates to mine water which is currently discharging from the above-mentioned points.

In response to questioning from Board staff during review, NATCL suggested that SNP station 4-13 could be reinstated under the Licence with previous sampling frequency and parameters applied. They further noted that weekly sampling will continue under MMER, and results will be included in monthly SNP reports.⁷ For monitoring of the water emanating from the conveyor gallery, NATCL proposed sampling SNP station 4-42 “from a new location which is representative of mine water discharge from the conveyor gallery”.⁸ Board technical staff reviewed the data provided by NATCL for these proposed stations, and note that the samples collected would not exceed Effluent Quality Criteria (EQC) established for SNP station 4-43, which is the final discharge and compliance point for the Licence when the WWTF is operating. However, these EQC were established specifically for this station and discharge point, and are not necessarily transferable. The fact that neither of these stations are exceeding EQC for SNP station 4-43 does provide a reasonable level of assurance that there is no immediate risk to the receiving environment, however, the Board notes that NATCL has not formally applied to the Board to make these changes to the SNP, so they have not been reviewed and commented on by stakeholders. The Board notes that any changes to the SNP require a formal request from NATCL, supported by appropriate data and rationale for the Board’s consideration, and evidence showing that these discharges do not pose a risk to the receiving environment. NATCL should also include proposed triggers for when mine water would need to be diverted to TP5 and treated, and discuss these triggers and the process for implementing them in the C&M Plan.

Stabilization of Tailings Ponds 3 and 4, and Closure Assessment

The C&M Plan discusses ongoing research into the stability of Tailings Ponds (TP) 3 and 4, noting that “[a] potential for liquefaction was identified in soils near and below the toe of TP4...which could possibly extend to TP3”.⁹ The C&M Plan notes that SRK Consulting was hired to do an assessment of current data to determine the risk associated with this potentially liquefiable soil, which resulted in the recommendation to do a Phase II assessment to better assess the physical properties of the soil in question. Depending on the results of the Phase II assessment, work may or may not be required to stabilize the ponds. The Board notes that the Phase II assessment was scheduled to take place in June & July, 2016, and results are expected in early fall. Incorporating these results into the C&M Plan will provide much more certainty about the most immediate risk that’s currently been identified at the site.

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⁵ GNWT-ENR Comment ID 3 in the Review Comment Table for the C&M Plan, available on the Board’s public registry for Water Licence MV2015L2-0003

⁶ See footnote 5

⁷ Proponent Response to MVLWB: Lindsey Cymbalisky comment ID 1, in the Review Comment Table for the C&M Plan, available on the Board’s public registry for Water Licence MV2015L2-0003

⁸ See footnote 7

⁹ March 31, 2016 Care & Maintenance Plan, available on the Board’s public registry for Water Licence MV2015L2-0003

During review of the C&M Plan, GNWT-ENR commented that they are amenable to deferral of the ICRP, “[h]owever, the deferral of the ICRP should not necessarily equate to an undefined deferral of reclamation/stabilization activities”¹⁰. GNWT-ENR requested that “NATCL provide an assessment of any stabilization/reclamation activities that may be necessary at the Cantung mine should care and maintenance occur for an extended period of time”. They further stated that the “assessment should also include the identification of any components of the current ICRP that may need to be addressed”.¹¹ NATCL’s response to GNWT-ENR’s comments was to reiterate that work is occurring on stabilization of the tailings ponds, but regarding an overall assessment of stabilization and reclamation activities that may need to occur, responded that “[t]hese items will be addressed in due course...NATCL appreciates ENR’s concerns and will continue to evaluate site risks and the required actions during the care and maintenance period”.¹²

The Board recognizes that the future of the Cantung mine is uncertain, and management of the site needs to take into account the fact that the mine could be purchased and mining activities could recommence, but also that the mine may be completely closed and remediated. For these reasons, it is understandable that NATCL is unable to say with certainty what stabilization and reclamation activities will occur during the care and maintenance period. The Board does, however, concur with GNWT-ENR’s concerns, and notes that the lack of an approved ICRP creates further uncertainty for stakeholders. In lieu of submittal of a complete ICRP, the Board is of the opinion that the C&M Plan should at least include an assessment of risks on site, and remediation activities that may need to occur to mitigate these risks. As requested by GNWT-ENR, the assessment should also identify components of the current ICRP that may need to be addressed during the care and maintenance period, considering the fact that the mine may be in care and maintenance for an extended period of time. This will give the Board and stakeholders the opportunity to review and assess NATCL’s management of the site, and highlight potential concerns, if any, as opposed to simply accepting NATCL’s assertion that risks are being managed accordingly.

Conclusion

The Board has decided to direct NATCL to revise the C&M Plan to address the above noted issues with mine water management, assessment of site risks and remediation activities that may need to occur during the care and maintenance period, and incorporate the results of the Phase II assessment of stability of TP 3 and 4. If stabilization activities for the tailings ponds is recommended, the C&M plan should discuss how and when stabilization will take place.

The Board has decided to defer their decision on the ICRP deferral request until an updated version of the C&M Plan that addresses the issues identified above has been received, reviewed, and approved by the Board.

SIGNATURE

Mackenzie Valley Land and Water Board



Floyd Adlem, A/Chair

September 8, 2016

Date

¹⁰ GNWT-ENR Comment ID 6, in the Review Comment Table for the C&M Plan, available on the Board’s public registry for Water Licence MV2015L2-0003

¹¹ GNWT-ENR Comment ID 6 and 7, in the Review Comment Table for the C&M Plan, available on the Board’s public registry for Water Licence MV2015L2-0003

¹² NATCL response to GNWT-ENR Comment ID 6 and 7, in the Review Comment Table for the C&M Plan, available on the Board’s public registry for Water Licence MV2015L2-0003