



Mackenzie Valley Land and Water Board
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July 19, 2018

File: MV2017L2-0007

Ms. Michelle Unger
Manager, Environmental Compliance
Teck Metals Ltd.
Bag 2000
Kimberley, BC V1A 3E1

Email: MICHELLE.UNGER@TECK.COM

Dear Ms. Unger:

**Re: Operations and Maintenance Plan – Version 3 – Approved
Teck Metals Ltd. – Pine Point, NT**

The Mackenzie Valley Land and Water Board (MVLWB or the Board) met on July 19, 2018 and reviewed your Operations and Maintenance Plan, version 3, which was submitted to fulfill Part F, condition 3 of Water Licence MV2017L2-0007 on June 1, 2018.

The Board hereby approves the Operations and Maintenance Plan, version 3 as submitted.

As indicated in Teck Metals Ltd.'s response to Government of the Northwest Territories – Environment and Natural Resources (GNWT-ENR) comment-1, Teck Metals shall evaluate the adequacy of the current treatment process and mitigation measures for decreasing pH as described in the Operations and Maintenance Plan, version 3. Should any modifications be required, an updated Operations and Maintenance Plan shall be submitted to the Board by May 1, 2019 for public review and Board consideration.

If you have any questions or concerns, please contact Kierney Leach at (867) 766-7470 or email kleach@mvlwb.com.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Mavis Cli-Michaud".

Mavis Cli-Michaud
MVLWB, Chair

Copied to: Distribution List

Attached: Review Summary Table

Review Comment Table

Board:	MVLWB
Review Item:	Teck Metals Ltd. - Operations and Maintenance Plan, Version 3 (MV2017L2-0007)
File(s):	MV2017L2-0007
Proponent:	Teck Metals Ltd.
Document(s):	The Board's April 12, 2018 Decision Letter to Teck Metals (700 KB) Operations and Maintenance Plan, Version 3 (12 MB)
Item For Review Distributed On:	June 4 at 10:37 Distribution List
Reviewer Comments Due By:	June 26, 2018
Proponent Responses Due By:	July 3, 2018
Item Description:	<p>Teck Metals Ltd. (Teck Metals) submitted its Operations and Maintenance Plan, Version 3, on June 1, 2018. The Operations and Maintenance Plan, version 2 was not approved by the Board, and in the Board's April 12, 2018 decision letter they directed Teck Metal's to re-submit the Operations and Maintenance Plan version 3 for review and approval by June 1, 2018 to address reviewer comments and to ensure Licence conformity. This Plan is required by Part F, item 3 of Licence MV2017L2-0007.</p> <p>Reviewers are invited to submit questions, comments, and recommendations on this submission using the Online Review System (ORS) by Tuesday June 26, 2018 at 5pm MST.</p> <p>All documents that have been uploaded to this review are also available on our public registry. If you have any questions or comments regarding this Plan or using the Online Review System, please contact Kierney Leach at 867-766-7470 or kleach@mvlwb.com.</p>
General Reviewer Information:	<p>In addition to the email distribution list, the following organizations received review materials by fax:</p> <ul style="list-style-type: none"> • Fort Simpson Métis Local #52 - Marie Lafferty, President: (867)695-2040; • Northwest Territory Métis Nation - Tim Heron, NWTMN IMA Coordinator: (867)872-3586.
Contact Information:	Jen Potten 867-766-7468 Kierney Leach 867-766-7470

Comment Summary

GNWT - ENR: Central Email GNWT				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
2	General File	Comment (doc) ENR Letter with Comments and Recommendations Recommendation		Noted.
1	Topic 1: Action Level Updates	Comment Water Resources Division, ENR has reviewed Version 3 of the Teck Metals Ltd. (Teck) Operations and Maintenance Plan, and the provided updates largely address ENR's comments on Version 2 of the plan. However, ENR remains uncertain regarding available mitigations for "decreasing pH at SNP station 35-1b when it exceeds effluent quality criteria". ENR understands that reducing the lime addition rate in the event that pH reaches a level of 9.3 should prevent the pH from reaching the Water Licence limit. If a single grab sample exceeds the maximum grab limit, then discharge is ceased, and the notification procedures in Section 5.5 are initiated. If Action Levels are repeatedly not met, then water is recirculated either to the head of the serpentine channel or back to the pre-treatment pond facility. As such, it appears to ENR that the primary mitigation in the event that pH at SNP 35-1b exceeded the discharge criterion would be to recirculate water back to the pre-treatment pond until such time as the elevated pH water	July 3: Yes there are more direct methods of reducing pH in the discharge water which includes the addition of acid or the injection of CO2. This would require a major modification to the water treatment process that is currently in place, including the installation of additional equipment and process control measures. It also adds the storage of another chemical which increases the risk of spills and requires mitigation steps for safe operation. Prior to making any major modifications to the system, Teck is in the process of evaluating alternate water treatment methods that operate at a pH range consistent with the Water Licence requirement. Upon completion of these evaluations, it will be determined if the modifications discussed above (e.g., acid or CO2) need to be installed or if an alternate treatment method is safer and more effective. This evaluation will be completed during the 2018 treatment season and the necessary modifications will be included in the updated	Acceptable response. Board staff recommend that Teck Metals continue to evaluate the adequacy of the current treatment process and mitigation measures for decreasing pH as described in the Operations and Maintenance Plan, version 3, and should any modifications be required, an updated Operations and Maintenance Plan shall be submitted to the Board for public review and Board consideration.

	<p>was replaced by lower pH water from the pond. Lime addition would also be reduced during this period. ENR notes that in the event that pond water levels were elevated, such as occurred this past spring, re-circulating water back to the pond might not be possible.</p> <p>Recommendation 1) ENR recommends Teck comment on whether other more direct methods of reducing pH in the discharge water are available and whether these would be feasible for use at the treatment site.</p>	Water Treatment Manual for 2019.	
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Tyree Mullaney

From: Tyree Mullaney
Sent: July 19, 2018 4:11 PM
To: MICHELLE.UNGER@TECK.COM
Cc: Kierney Leach (kleach@mvlwb.com); aadnc.ntcard.aandc@canada.ca; admin@dkfn.ca; adrian.paradis@canada.ca; Alexis_Campbell@gov.nt.ca; apower@ykdene.com; arusa_shafi@gov.nt.ca; barryt@arcticsafaris.ca; bill_pain@gov.nt.ca; boydw@bathurstinlet.com; Brandon_Bradbury@gov.nt.ca; Carolc.lands@gmail.com; ceo.srfn@northwestel.net; Charlene_Coe@gov.nt.ca; cheryl.esmilla@detoncholandtran.com; cheryl_larocque@gov.nt.ca; chief.lkdfn@gmail.com; chief.srfn@northwestel.net; chief@slfn196.com; clint_ambrose@gov.nt.ca; darren_campbell@gov.nt.ca; dave.white@aurorageosciences.com; Derise_Rehm-Lepine@gov.nt.ca; ec.ea.nwt.ec@canada.ca; Environmental_health@gov.nt.ca; esangris@ykdene.com; exec@slema.ca; executivedirector@miningnorth.com; fieldworker.frmc53@northwestel.net; fisheriesprotection@dfo-mpo.gc.ca; Gary.Woo@neb-one.gc.ca; georgemackenzie@tlicho.com; ginger.gibson@thefirelightgroup.com; Glen_Mackay@gov.nt.ca; gnwt_ea@gov.nt.ca; gracemackenzie@tlicho.com; Heather_Beck@gov.nt.ca; henryzoe@tlicho.com; Hiliary_machtans@golder.com; ima@dkfn.ca; Iqbal_Arshad@gov.nt.ca; Jayda_Robillard@gov.nt.ca; jblack@ykdene.com; Jeremy_Dixon@gov.nt.ca; jessicahum@tlicho.com; jhood@fortsmith.ca; joe_heron@gov.nt.ca; johnny_lennie@gov.nt.ca; jolinehuskey@tlicho.com; Jon_Posynick@gov.nt.ca; jpellissey@wrrb.ca; Jen Potten; jzoe@tlicho.com; kate.hillman-barnes@canada.ca; katie_rozestraten@gov.nt.ca; Ken.Johnson2@stantec.com; kfnchief@katlodeeche.com; kfnenvironmental@katlodeeche.com; land@wpfn.ca; lands@denenation.com; lauraduncan@tlicho.com; laurie_mcgregor@gov.nt.ca; LeeAnn_Malley@gov.nt.ca; Lindsay_Armer@gov.nt.ca; lkdfnlands@gmail.com; mauge@yellowknife.ca; mcliffephillips@reviewboard.ca; Melanie.Murphy@wssc.nt.ca; Mike_Vassal@gov.nt.ca; murray.somers@canada.ca; Nahum_Lee@gov.nt.ca; Nathen_Richea@gov.nt.ca; Norman_McCowan@gov.nt.ca; Olivia_Lee@gov.nt.ca; patrick_clancy@gov.nt.ca; Paul_Green@gov.nt.ca; Paul_Mercredi@gov.nt.ca; Pauline_DeJong@gov.nt.ca; Permits; Peter_Fast@gov.nt.ca; preliminaryscreening@reviewboard.ca; rcc.nwtmn@northwestel.net; Rick_Walbourne@gov.nt.ca; rmakohoniuk@yellowknife.ca; Robert_Jenkins@gov.nt.ca; rrobillard@pagc.sk.ca; Sam.Kennedy@canada.ca; Scott_Stewart@gov.nt.ca; screeningofficer@eastarm.com; seanrichardson@tlicho.com; Sarah_Elsasser; shin.shiga@nsma.net; stu_niven@gov.nt.ca; Tasha_Hall@golder.com; tausia.sao@gmail.com; teresa.joudrie@canada.ca; tgiroux@pagc.sk.ca; tim.morton@canada.ca; tyannasteinwand@tlicho.com; walexander@yellowknife.ca; Wendy_Bidwell@gov.nt.ca; ww.symbion@shawbiz.ca; aadnc.ntcard.aandc@canada.ca; administration@adkfirstnation.ca; adrian.paradis@canada.ca; Alexis_Campbell@gov.nt.ca; arusa_shafi@gov.nt.ca; baptiste.metchooyeah@denetha.ca; bobhead@northwestel.net; Carl_Lafferty@gov.nt.ca; carrie.breneman@outlook.com; Charlene_Coe@gov.nt.ca; cheryl_larocque@gov.nt.ca; chief@adkfirstnation.ca; chief@dehgahgotie.ca; chief@jmrfn.com; chief@liidliikue.com; chief@sambaakefn.com; chief_nahadeh@yahoo.ca; Christopher.Aguirre@tc.gc.ca; councillorts@liardfirstnation.ca; dahti_tsetso@dehcho.org; darren_campbell@gov.nt.ca; Derise_Rehm-Lepine@gov.nt.ca; Don.Pittman@dfo-mpo.gc.ca; ec.ea.nwt.ec@canada.ca; environment@sambaakefn.com; Environmental_health@gov.nt.ca; exdir@liidliikue.com; exec@slema.ca; executivedirector@dehcho.org; fisheriesprotection@dfo-mpo.gc.ca; fpmcpres@northwestel.net; Glen_Mackay@gov.nt.ca; gnwt_ea@gov.nt.ca;

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Subject: MV2017L2-0007 - Teck Metals - Operations and Maintenance Plan V3 - Decision

Attachments: MV2017L2-0007 - Teck Metals - Operations and Maintenance Plan, v.3 - Decision Letter.pdf

Good afternoon,

Please see the attached document, if you have any questions please contact Kierney Leach at 867-766-7470 or at kleach@mvlwb.com

Regards,

Tyree Mullaney, EP
Regulatory Specialist
Mackenzie Valley Land and Water Board
7th Floor, 4922 48th St, PO Box 2130 | Yellowknife, NT | X1A 2P6
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July 19, 2018

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Organization	Contact Name	Contact Position/Title	Email/Fax
NWT Metis Nation	Tim Heron	NWTMN IMA Coordinator	(867)872-3586; rcc.nwtmn@northwestel.net ;



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Date: July 19, 2018

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Remarks:

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