

Staff Report

Applicant: Department of Indian Affairs and Northern Development (DIAND) – Contaminants and Remediation Division (CARD)	
Location: Former Bullmoose, Ruth, Beaulieu, Spectrum, Chipp, Storm, and Joon mines, NT	Application: MV2016L8-0004 & MV2016X0013
Date Prepared: August 4, 2017	Meeting Date: August 17, 2017
Subject: Revised Waste Management Plan Version 11	

1. Purpose/Report Summary

The purpose of this Report is to present to the Mackenzie Valley Land and Water Board (MVLWB/the Board) a revised Waste Management Plan (WMP or Plan) Version 11 (v.11) submitted by Department of Indian Affairs and Northern Development (DIAND) – Contaminants and Remediation Division (CARD), in accordance with direction provided by the Board in their January 26, 2017 Interim Approval Letter and June 7, 2017 Board Directive to fulfill Part F, item 3 of Water Licence (Licence) MV2016L8-0004. On January 26, 2017, the WMP received interim approval under Permit MV2016X0013, but was determined by the Board to be insufficient to satisfy the requirements of Licence MV2016L8-0004. The WMP has therefore been re-submitted according to the Board's direction.

2. Background

- December 5, 2016 – Issuance of Licence MV2016L8-0004 and Permit MV2016X0013;
- December 22, 2016 – WMP (v.5) received and review commenced;
- January 26, 2017 – WMP (v.5) received interim approval under Permit MV2016X0013 but denied by the Board with a Directive to revise and re-submit the Plan by February 27, 2017 under the Licence;
- February 27, 2017 – Revised WMP received (v.8);
- March 6, 2017 – Revised WMP distributed for review;
- March 20, 2017 – Reviewer comment deadline;
- March 22, 2017 – DIAND-CARD request for extension to submission of responses to reviewers' comments;
- April 4, 2017 – Updated deadline for responses to reviewers' comments, DIAND-CARD submits responses and a revised WMP (v.9);
- April 13, 2017 – Review by Board staff finds deficiencies in the revised WMP and requests resubmission based on the Board's January 26, 2017 Directive and March 20, 2017 reviewer comments;
- May 12, 2017 – DIAND-CARD submits a revised WMP (v. 10);

- June 7, 2017 – Revised WMP (v.10) rejected by the Board;
- July 10, 2017 – DIAND-CARD submits a revised WMP (v. 11);
- July 17, 2017 – WMP (v.11) distributed for review and comment;
- July 31, 2017 – Reviewer Comments due and received;
- August 3, 2017 – DIAND-CARD responses due and received; and
- **August 17, 2017 – WMP (v.11) presented to the Board for decision.**

3. Discussion

On December 22, 2016, DIAND-CARD submitted a revised WMP v.5 in accordance with conditions of Permit MV2016X0013 and Licence MV2016L8-0004. Following review of the WMP, the Board met on January 26, 2017, and determined that it could be approved based on the scope and scale of the Land Use Permit MV2016X0013, but it was determined by the Board to be insufficient to satisfy the requirements of Licence MV2016L8-0004 (attached). As such, the WMP was approved on an interim basis. The Board included a table attached to the decision letter which outlined the deficiencies of the WMP that needed to be corrected. The January 26, 2017 letter indicated that final approval of the WMP “will be provided upon written confirmation from the Board following a public review”. Version 8 of the Plan was submitted February 27, 2017 and distributed for public review. Subsequent updates were submitted April 4, 2017 (v.9) and May 12, 2017 (v.10). On June 7, 2017, the Board rejected the revised WMP (v.10) and provided more direction to DIAND-CARD on deficiencies required to be addressed before Board approval could be granted. On July 10, 2017, DIAND-CARD submitted WMP (v.11) (attached) which was distributed for public review on July 17, 2017. In response to Reviewer comments, DIAND-CARD submitted a revised and final version (v.11) of the WMP. Reviewer comments and Board staff’s analysis of WMP (v.11) are provided below.

4. Staff and Reviewer Comments

Table 1 lists the components of the WMP required by the Board’s January 26, 2017 Directive. Further direction using the Directive was provided to DIAND-CARD following the June 7, 2017 Board decision. Board staff analysis of the adequacy of the revised (v.11) Plan’s conformity with the Directive is provided in Table 1, below. This Directive reflected inadequacies identified by the Board and Reviewers during review of the Plan (v.5 and v.10).

Table 1: Revised Waste Management Plan (v.11) Conformity

	Revisions to the WMP as required by the Board’s January 26, 2017 Directive	Board staff analysis of the adequacy of the WMP (v.11) in addressing the requirement
1	Include a map identifying the proposed location for all waste management activities with GPS coordinates and where applicable, the location of historical waste management areas.	Adequate – The Final Revised Version (11) submitted in response to Reviewer Comments includes detailed maps and GPS coordinates of water management facilities, where known, in Appendix G.
2	Include a description of the site physical, surface and subsurface characteristics, site water management (flow and drainage patterns) and geotechnical characteristics.	Adequate – Detailed site descriptions have been included in Appendix C of the WMP.

	Revisions to the WMP as required by the Board's January 26, 2017 Directive	Board staff analysis of the adequacy of the WMP (v.11) in addressing the requirement
3	Include engineering analysis, plans, studies or operational requirements for infrastructure required to manage and contain waste including any detail on the design, structure, capacity, management, monitoring, operation or maintenance of the landfarm or the landfills including any information on cover design(s) (or where this information can be found);	Adequate – References to approved Landfill Design and Landfarm Design Plans are provided in the body of the WMP (v.11). These plans provide information on the engineering, operations, monitoring and maintenance of these facilities. References to the Construction Monitoring and Geochemical Verification Plans and Tailings and Waste Rock Cover Design Plan are also provided in the WMP. These plans are currently out for review and will, when approved, contain information required on cover designs and construction monitoring requirements, including the engineering details for the management of acid rock drainage and leachate associated with these structures. Infrastructure required for waste management at the BMR Project is described in Section 3 of the WMP.
4	Provide more information regarding the location of temporary stockpiles and the duration of storage, including any monitoring of the stockpiles.	Adequate – Information is provided in Appendix A of the WMP.
5	Clarification regarding the collection and disposal of impacted sediment, including the amount of sediment moved and the location of sediment disposal.	Adequate – Information is provided in Section 2.1.6 and Appendix A of the WMP.
6	Provide more detail on the well locations, monitoring schedule and management of impacted groundwater (including monitoring areas where contaminants have been excavated) and leachate.	Adequate – Summary of monitoring plans with references to the Construction Monitoring Plan are found in the WMP. The Construction Monitoring Plan contains the detail required.
7	Provide details of how PHC contaminated Groundwater will be delineated and treated.	Adequate – Information is provided in Section 2.1.6 and details of confirmatory sampling are included in Appendix B of the WMP.
8	Explain how sump discharge water will meet Water Licence criteria (Part F, item 21) prior to discharge and include planned location of sumps for discharge and the quantity of water to be discharged at each location.	Adequate – Drainage from mine dewatering Sumps shall have a pH between 6.0 and 9.0 and meet the EQC identified in Part F, item 21 of the Licence. Drainage volumes are being tracked using a discharge log and shall be reported in the Annual Report as identified in Schedule 1, item 1 of the Licence. Precise locations for waste management activities such as sumps will be provided when available (i.e. through Annual Reports).
9	Include a discussion on the installation of a weir and any supporting structures in the Bullmoose wetland.	Adequate – information is included in Part I of Appendix A of the WMP.
10	Include a description of the BMR Remediation Project.	Adequate – Appendix C of the WMP provides a detailed description of the BMR Remediation Project.
11	Outline environmental and social goals and objectives used for designing the WMP.	Partially adequate – WMP discusses the environmental policy of Rows Outcome Joint Venture and relevant policies of DIAND-CARD.

	Revisions to the WMP as required by the Board's January 26, 2017 Directive	Board staff analysis of the adequacy of the WMP (v.11) in addressing the requirement
12	Include more detail on waste characteristics, sources, or potential environmental effects.	Adequate – Descriptions of waste characteristics, sources, and potential environmental effects are provided in the WMP. Appendix A discusses Legacy Waste Management as required under Part F of the Licence.
13	Include a description of the activities involved in the management (e.g handling, storage, processing, collection, separation, transportation, treatment, disposal, etc.) of waste.	Adequate – Information on waste management has been presented in Section 2 of the WMP. Where appropriate, references to more detailed management plans for specific waste management infrastructure are provided.
14	Provide rationale for the methods of waste management chosen.	Adequate – Appendix C of the WMP discusses rationale for waste management methods chosen.
15	Provide detailed descriptions of soak-away sumps including the surrounding environment or any monitoring plans.	Adequate – precise locations for waste management activities such as sumps will be provided when available (i.e. through Annual Reports).
16	Include results of the geochemical characterization of waste rock or plans for sampling to ensure the management methods are successful.	Adequate – Information on the location of waste rock is provided in Appendix G of the WMP. The Construction Monitoring and Geochemical Verification Plan confirms the findings reported in the Remedial Action Plan and includes results of the geochemical characterization of waste rock or plans for sampling to ensure the management methods are successful. This plan is appropriately referenced in the body of the WMP.
17	Provide an identification of all sources, locations and volumes of waste rock or identify locations of possible sources of seepage that may require monitoring or management.	Adequate – Information on the location of waste rock is provided in Table 11 of the Final Revision and Appendix G of the WMP. References to the Construction Monitoring and Geochemical Verification Plan are provided.
18	Provide a summary of the anticipated volumes of sewage generation, volume balance or treatment time, location of sludge disposal or discharge volumes	Adequate – Information is provided in Section 3.6 of the WMP.
19	Provide references to reports that contain additional details of Waste Management Planning for specific waste streams.	Adequate – Information is provided in Table 3 of the WMP and appropriate references are found through the body of the WMP.
20	Provide references to reports that support the waste management activities that are submitted to the Land and Water Boards to satisfy regulatory requirements (i.e. the Remedial Action Plan).	Adequate
21	Describe the methods and techniques to measure the effectiveness of waste management practices, as well as, the steps taken to review and improve the WMP or correct any management or operational problems should also be provided.	Adequate – Section 5 refers to review of the WMP.

In addition to meeting conformity with the Board directive, represented above, Board staff have also completed a conformity check on the Plan (v.11) using the Board's *Guidelines for Developing a Waste Management Plan*.

On July 17, 2017, WMP v.11 was distributed for review. By July 31, 2017, comments and recommendations were received from the following four reviewers:

- Environment and Climate Change Canada (ECCC) (no comment);
- Fisheries and Oceans Canada (DFO) (no comment);
- Government of the Northwest Territories – Environment and Natural Resources (GNWT-ENR);
and
- Board Staff.

DIAND-CARD responses were due and submitted on August 3, 2017. The Reviewer Comment Summary Table is attached. In response to Reviewer comments, DIAND-CARD submitted a revised and final version (11) of the WMP (attached). This revised v.11 provides responses to some of the inadequacies identified during the public review.

Of note, GNWT-ENR commented that: "...the recent site management issues by the contractor, demonstrates a level misunderstanding by the authors of the requirements of the Plan and the directives by the Board. The most recent plan does not provide adequate clarity on how and where these issues have been fully resolved or addressed. For example, a deficiency conformance table in a cover letter or within the introductory paragraphs of the report would provide the reviewers a clear understanding that the contractor comprehends the issue and would direct the reader to where in the document the plan has been updated to address the issue."

Board staff agree with the concern expressed by the GNWT, however, do not necessarily believe that this information must be provided in the WMP. Instead, Board staff suggest that DIAND-CARD provide a report to the Board detailing DIAND-CARD (and its contractor's) response to the May 23, 2017 Inspection and Inspector's Orders, including the measures that have been put in place to ensure the same issues are not repeated.

Several other issues identified by the GNWT-ENR and Board staff were addressed by DIAND-CARD in its responses to reviewer comments through the submission of the revised and final WMP v.11 and accompanying cover letter.

5. Security

Not applicable.

6. Conclusion

Board staff are now confident that, despite some points of clarity identified through the public review process, the revised and final WMP v.11 accurately reflects the Water Licence requirements. External documents referenced throughout the WMP have now been submitted, reviewed, and, for the most part, approved by the Board. Board staff are now convinced that the level of detail provided by DIAND-CARD is easily referenced, consistent with the original application, and meets Water Licence requirements.

7. Recommendation

Board staff recommend that the Board approve DIAND-CARD's revised BMR Waste Management Plan (Version 11).

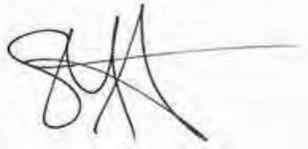
A draft decision letter is attached for the Board's consideration.

Board staff further recommend that the Board request DIAND-CARD to provide **by September 5, 2017**, a report for the record to show that the contractors working on-site have a clear understanding of the requirements of the Land Use Permit and Water Licence, including the updated Waste Management Plan (Version 11). This should include a thorough description of how all site management issues, identified by the Inspector on May 23, 2017 have been addressed and what measures the contractors have put in place to ensure the same issues are not repeated.

8. Attachments

- [Waste Management Plan \(v.11\)](#)
- [January 26, 2017 Interim Approval Letter with Attached Table and Reasons for Decision](#)
- Reviewer Comment Summary Table
- Draft Approval Letter

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'SA', with a long horizontal line extending to the right.

Shannon Allerston
Regulatory Specialist

Review Comment Table

Board:	MVLWB
Review Item:	INAC-CARD - Bullmoose-Ruth Remediation Project - Waste Management Plan, Version 11 (MV2016X0013 MV2016L8-0004)
File(s):	MV2016L8-0004 MV2016X0013
Proponent:	INAC - Contaminants and Remediation Directorate
Document(s):	Waste Management Plan Version 11 (26.3MB)
Item For Review Distributed On:	July 17 at 16:55 Distribution List
Reviewer Comments Due By:	July 31, 2017
Proponent Responses Due By:	Aug 3, 2017
Item Description:	<p>Indigenous and Northern Affairs Canada - Contaminants and Remediation Division has submitted a revised version of their Waste Management Plan (the Plan) required by Land Use Permit MV2016X0013 (the Permit) and Water Licence MV2016L8-0004. Revision of this Plan was required in accordance with the directive issued by the Mackenzie Valley Land and Water Board (the Board) in their June 7, 2017 Decision, which can be viewed at this link: http://registry.mvlwb.ca/Documents/MV2016L8-0004/MV2016X0013%20%20MV2016L8-0004%20-%20DIAND-CARD%20-%20Bullmoose%20-%20Denial%20-%20Waste%20Management%20Plan%20V10%20-%20Jun7-17.pdf</p> <p>The Plan has received interim approval under the Permit, but was determined by the Board to be insufficient to satisfy the requirements of the Licence. The Plan has therefore been re-submitted in accordance with the Board's direction.</p> <p>Reviewers are invited to submit questions, comments, and recommendations on this Plan using the Online Review System (ORS) by the review comment deadline specified below.</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 about the ORS or this review, please contact Board staff identified below.</p>
General Reviewer Information:	<p>This review item has also been distributed by fax to the following organizations:</p> <p>Fort Resolution Métis Council Trudy King (867)394-3322; Fieldworker.frmc53@northwestel.net;</p> <p>Hay River Metis Council Trevor Beck President (867)874-4472;</p>

	hrmc@northwestel.net; NWT Metis Nation Tim Heron NWTMN IMA Coordinator (867)872-3586; rcc.nwtmn@northwestel.net;
Contact Information:	Jen Potten 867-766-7468 Kierney Leach 867-766-7470

Comment Summary

INAC - Contaminants and Remediation Directorate (Proponent)				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	General File	Comment (doc) Cover Letter to Waste Management Plan, Aug 3 2017 Recommendation		Noted.
2	General File	Comment (doc) Waste Management Plan, 3 Aug 2017 Recommendation		Noted.
Environment and Climate Change Canada: Emily Nichol				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	General	Comment ECCC has reviewed in accordance with its mandate and has no comments at this time. Recommendation Not applicable.	Aug 3: INAC-CARD appreciates your review of the document.	N/A
Fisheries and Oceans Canada: Marek Janowicz				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	General Comment	Comment General Recommendation Fisheries and Oceans Canada has reviewed the document(s) in accordance with its mandate and has no comments at this time.	Aug 3: INAC-CARD appreciates your review of the document.	N/A
GNWT - ENR: Central Email GNWT				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
10	General File	Comment (doc) ENR Letter with Comments and Recommendations Recommendation		N/A
1	Topic 1: Deficiency Conformance Table	Comment The Board has rejected the previous version of the Plan and had provided a table outlining the inadequacy of revisions directed to INAC-CARD from the January 26, 2017, Directive (Table 1 of MVLWB's June 7, 2017 Reason For Decision). As stated by the Board, the numerous	Aug 3: INAC-CARD will submit a cover letter with the revised WMP that includes a conformance table	DIAND-CARD's Cover Letter is acknowledged. In addition, DIAND-CARD should submit

		<p>issues identified in the Plan, and the recent site management issues by the contractor, demonstrates a level misunderstanding by the authors of the requirements of the Plan and the directives by the Board. The most recent plan does not provide adequate clarity on how and where these issues have been fully resolved or addressed. For example, a deficiency conformance table in a cover letter or within the introductory paragraphs of the report would provide the reviewers a clear understanding that the contractor comprehends the issue and would direct the reader to where in the document the plan has been updated to address the issue.</p> <p>Recommendation 1) It is recommended that INAC-CARD should submit either a revised plan, or an addendum, with a conformance table identifying how and where in the report recommendations from Table 1 of MVLWB's June 7, 2017 Reason for Decision have been addressed.</p>	<p>identifying where the deficiencies that were noted in the MVLWB's June 7 2017 Reasons for Decision have been met by the Plan.</p>	<p>a report to show that the contractors working on-site have a clear understanding of the requirements of the Land Use Permit and Water Licence, including the updated Waste Management Plan. This should include a thorough description of how all site management issues, identified by the Inspector on May 23, 2017 have been addressed and what measures the contractors have put in place to ensure the same issues are not repeated.</p>
2	<p>Topic 2: Acronyms and Definitions</p>	<p>Comment In the earlier Plan review (Version 10) ENR had noted confusion in the plans from various uses of the terms "Inspector" and "Departmental Representative". For clarity and consistency, these terms should be defined in the Acronyms and Definitions table.</p>	<p>Aug 3: The Acronyms and Definitions Table will be updated.</p>	<p>Noted. Adequate response.</p>

		Recommendation 1) INAC-CARD should update the Acronyms and Definitions Table section to include the terms "Inspector" and "Departmental Representative".		
3	Topic 3: Process Water and Contact Water Treatment	<p>Comment Section 2.1.5 of the Plan states that all process water and contact water "will be treated using the Water Treatment System for Contaminated Contact Water as needed". However, it appears the Water Treatment System is only capable of oil/water separation. There are no details in this section of the Plan on how contact water, such as portal water with high metal concentrations, will be treated or handled. ENR understands some of this contact water may not be treated as described in Section 3.3 of the Plan, but it is not clear to the reader the purpose of using the Water Treatment Plant and Water Treatment System for the treating wastewater. The capabilities of the treatment system should be clarified, and reference to the treatment of wastewater that cannot be treated by the treatment system should be removed.</p> <p>Recommendation 1) It is recommended INAC-CARD update the plan with the specifications and capabilities of the Water Treatment Plant and Water Treatment System in order to allow the assessment of applicability of the systems for treating the wastewater.</p>	<p>Aug 3: Section 2.1.5 of the Plan states "The Water Treatment System for Contaminated Contact Water is capable of oil/water separation". This is not to say that the system is only capable of oil/water separation, but that hydrocarbon-contaminated water may be treated by the mobile system along with domestic wastewater and sewage. This section will be revised for clarity. Section 2.1.5 states that "...portal and trench water, which does not require treatment ... will be deposited directly into soakaway sumps" and provides a reference to Section 3.3 of the plan wherein the operational considerations for soakaway sumps are described. The selected remedial option for portal water is natural monitored</p>	<p>DIAND-CARD should ideally provide more information, as requested by GNWT with the specifications and capabilities of the Water Treatment Plant and Water Treatment System in order to allow the assessment of applicability of the systems for treating the wastewater. That said, as long as any discharge waters meet the criteria required by the Licence and reflected in the WMP, there should be no issues with the discharge of impacted or contact water.</p> <p>Part F, item 23 requires: If any of the EQCs as listed in Part F, items</p>

			<p>attenuation. Portal water will be monitored during construction monitoring and long-term monitoring until remedial objectives are achieved. Contaminated water from trenches and mine openings will be discharged directly to soakaway sumps. Contaminated water that contains PHCs will be treated on site, tested after treatment against discharge criteria, either retreated or stored while disposal options are considered and then transported for disposal/discharged to soakaway sumps (if criteria are met). All wastewater discharged to sumps will be tested prior to discharge to confirm effluent criteria as set out in Part F, Item 21 of the License has been met. Section 3.3 will be revised for clarity.</p>	<p>17, 19, and 21 are exceeded, the Licensee shall cease all Discharge from or to that specific SNP station, shall notify the Board and an Inspector, and shall take the necessary corrective action to mitigate the exceedance, as outlined in the Construction and Post-Construction Monitoring Plans referred to in Part F, items 7 and 8, to the satisfaction of an Inspector immediately.</p>
4	None	<p>Comment None Recommendation 2) INAC-CARD should clarify how non-PHC contact water and wastewater will be treated to meet EQC and protect the environment.</p>	<p>Aug 3: See above.</p>	<p>As above.</p>

5	Topic 4: Sump Waters	<p>Comment Section 3.3 of the Plan states that sump waters (including grey and black water, contact water and process water) will be "discharge to the environment upon approval from the Departmental Representative". While this section of the Plan states that treated wastewater may only be discharged once it meets discharge criteria, it does not clearly state that any wastewater should not be discharged to the environment unless it meets EQC. The vagueness of this section could allow for the release of non-treated wastewater without regulatory approval, which is prohibited in the Water Licence; furthermore, this section should describe in detail the discharge requirements of the Water Licence, specifically EQC's for discharges of wastewater (Part F - Conditions 21, 22 and 23).</p> <p>Recommendation 1) It is recommended INAC-CARD update the plan to clearly state that no wastewater may be discharged to the environment unless it meets EQCs contained in the Water Licence (Part F - Condition 21).</p>	<p>Aug 3: EQC's for Discharge listed under Part F, Items 21-23 of the License will be met prior to the discharge of any wastewater into soakaway sumps. Treatment options include onsite treatment in the Wastewater Treatment Plant/System and storage in tanks until transported off-site or otherwise treated. Section 3.3 states, "Treated wastewater that upon testing does not meet discharge criteria will be stored until such time as it can be re-treated and discharged (once discharge criteria are met), or additional treatment options will be explored and implemented if required." Section will be revised to be clear that the EQC in the License are in fact the discharge criteria referred to in the quoted text.</p>	Adequate response.
6	None	<p>Comment None</p> <p>Recommendation 2) Section 3.3 of the Plan should be updated to include a list, or a reference, of the discharge criteria set in the Water Licence.</p>	<p>Aug 3: See above.</p>	Adequate response.

7	Topic 5: 2.1.3 Hazardous Waste	<p>Comment INAC CARD has been registered as a generator of hazardous waste in the Northwest Territories (NWT) as "NTG051" according to the Guideline for the General Management of Hazardous Waste in the NWT . The Guideline for the General Management of Hazardous Waste in the NWT defines hazardous waste and outlines the roles and responsibilities of generators, carriers, and receivers of hazardous waste in the NWT. ENR, Environment Division (ED) registers generators, carriers, receivers, and tracks the disposal of hazardous waste generated in the NWT to authorized receiving facilities on hazardous waste movement documents (manifest). The application indicates hazardous waste will be managed in accordance with the Transportation of Dangerous Goods Act (TDGA). The TDGA does outline transport safety requirements; however the cradle to grave tracking system (within Canada) is administered by the provinces and territories throughout Canada and utilizes the hazardous waste movement document. The Waste Management Plan also indicates that a certificate of disposal will be forwarded to authorities having jurisdiction.</p> <p>Recommendation 1) It is recommended that INAC CARD specify in the Hazardous Waste Management Plan that the ultimate disposal of hazardous waste generated on-site, and transported off-site will be documented on hazardous waste movement documents from INAC CARD (NTG051) to suitably authorized receiving facilities according to the Guideline for the General Management of Hazardous Waste in the NWT.</p>	<p>Aug 3: INAC-CARD is committed to safe storage, packaging, and transport of hazardous waste materials located on-site, and will conform with all relevant guidance and legislation to ensure cradle-to-grave management. This includes guidance and legislation at both federal and territorial levels, including providing appropriate documentation to any Authorities-Having-Jurisdiction. Section 2.1.3 will be revised to reflect this commitment.</p>	Adequate response.
8	None	<p>Comment None</p> <p>Recommendation 2) It is recommended that INAC CARD specify in the Hazardous Waste Management Plan that a copy of each hazardous waste movement document will be forwarded to the Environment Division of the Department of Environment and Natural Resources.</p>	<p>Aug 3: See above.</p>	Adequate response.
9	Topic 6: Hazardous Waste Guidelines	<p>Comment The Waste Management Plan also identifies asbestos and lead paint waste as waste types that will need to be managed. The waste management plan does not reference the Guideline for the Management of Waste Asbestos or the Guideline for the Management of</p>	<p>Aug 3: See above.</p>	Adequate response.

		Lead and Lead Paint along with other hazardous waste guidelines. Recommendation 1) It is recommended the Waste Management Plan reference the Guideline for the Management of Waste Asbestos or the Guideline for the Management of Lead and Lead Paint along with other applicable hazardous waste guidelines. All of ENR's hazardous waste guidelines can be found at the following website: http://www.enr.gov.nt.ca/en/services/guidelines .		
MVLWB: Shannon Allerston				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
2	GPS coordinates	Comment Maps have been included in Appendix G of the WMP (v.11) showing locations of waste management activities. GPS coordinates of the waste management sites remain outstanding. Recommendation Detailed geographic information for known or established waste management activities and historic waste management areas, as identified on maps in Appendix G should be provided in accordance with Licence requirements, the Board's Guidelines, and previous recommendation of GNWT-ENR.	Aug 3: A list of coordinates for major waste management activities has been added to Appendix G. INAC-CARD believes that the site plans and maps provided in the appendices are sufficiently detailed in providing geographic locations for all waste management activities and legacy waste areas.	Adequate response.



July 31, 2017

Jen Potten
Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor – 4910 50th Avenue
P.O. Box 2130
Yellowknife, NT
X1A 2P6

Dear Ms. Potten,

**Re: INAC CARD
Water Licence Application – MV2016L8-0004
Bullmoose Ruth Remediation Project
Waste Management Plan Version 11
Request for Comments**

The Department of Environment and Natural Resources (ENR), Government of the Northwest Territories has reviewed the plan at reference based on its mandated responsibilities under the *Environmental Protection Act*, the *Forest Management Act*, the *Forest Protection Act*, the *Species at Risk (NWT) Act*, the *Waters Act* and the *Wildlife Act* and provides the following comments and recommendations for the consideration of the Board.

Topic 1: Deficiency Conformance Table

Comment(s):

The Board has rejected the previous version of the Plan and had provided a table outlining the inadequacy of revisions directed to INAC-CARD from the January 26, 2017, Directive ([Table 1 of MVLWB's June 7, 2017 Reason For Decision](#)). As stated by the Board, the numerous issues identified in the Plan, and the recent site management issues by the contractor, demonstrates a level misunderstanding by the authors of the requirements of the Plan and the directives by the Board.

The most recent plan does not provide adequate clarity on how and where these issues have been fully resolved or addressed. For example, a deficiency conformance

table in a cover letter or within the introductory paragraphs of the report would provide the reviewers a clear understanding that the contractor comprehends the issue and would direct the reader to where in the document the plan has been updated to address the issue.

Recommendation(s):

- 1) It is recommended that INAC-CARD should submit either a revised plan, or an addendum, with a conformance table identifying how and where in the report recommendations from Table 1 of MVLWB's June 7, 2017 Reason for Decision have been addressed.

Topic 2: Acronyms and Definitions

Comment(s):

In the earlier Plan review (Version 10) ENR had noted confusion in the plans from various uses of the terms "Inspector" and "Departmental Representative". For clarity and consistency, these terms should be defined in the Acronyms and Definitions table.

Recommendation(s):

- 1) INAC-CARD should update the Acronyms and Definitions Table section to include the terms "Inspector" and "Departmental Representative".

Topic 3: Process Water and Contact Water Treatment

Comment(s):

Section 2.1.5 of the Plan states that all process water and contact water "will be treated using the Water Treatment System for Contaminated Contact Water as needed". However, it appears the Water Treatment System is only capable of oil/water separation.

There are no details in this section of the Plan on how contact water, such as portal water with high metal concentrations, will be treated or handled. ENR understands some of this contact water may not be treated as described in Section 3.3 of the Plan, but it is not clear to the reader the purpose of using the Water Treatment Plant and Water Treatment System for the treating wastewater. The capabilities of the treatment system should be clarified, and reference to the treatment of wastewater that cannot be treated by the treatment system should be removed.

Recommendation(s):

- 1) It is recommended INAC-CARD update the plan with the specifications and capabilities of the Water Treatment Plant and Water Treatment System in order to allow the assessment of applicability of the systems for treating the wastewater.
- 2) INAC-CARD should clarify how non-PHC contact water and wastewater will be treated to meet EQC and protect the environment.

Topic 4: Sump Waters

Comment(s):

Section 3.3 of the Plan states that sump waters (including grey and black water, contact water and process water) will be “discharge to the environment upon approval from the Departmental Representative”. While this section of the Plan states that *treated wastewater* may only be discharged once it meets discharge criteria, it does not clearly state that any *wastewater* should not be discharged to the environment unless it meets EQC.

The vagueness of this section could allow for the release of non-treated wastewater without regulatory approval, which is prohibited in the Water Licence; furthermore, this section should describe in detail the discharge requirements of the Water Licence, specifically EQC’s for discharges of wastewater (Part F - Conditions 21, 22 and 23).

Recommendation(s):

- 1) It is recommended INAC-CARD update the plan to clearly state that no wastewater may be discharged to the environment unless it meets EQCs contained in the Water Licence (Part F - Condition 21).
- 2) Section 3.3 of the Plan should be updated to include a list, or a reference, of the discharge criteria set in the Water Licence.

Topic 5: 2.1.3 Hazardous Waste

Comment(s)

INAC CARD has been registered as a generator of hazardous waste in the Northwest Territories (NWT) as “NTG051” according to the [Guideline for the General Management of Hazardous Waste in the NWT](#)ⁱ.

The Guideline for the General Management of Hazardous Waste in the NWT defines hazardous waste and outlines the roles and responsibilities of generators, carriers, and receivers of hazardous waste in the NWT.

ENR, Environment Division (ED) registers generators, carriers, receivers, and tracks the disposal of hazardous waste generated in the NWT to authorized receiving facilities on hazardous waste movement documents (manifest).

The application indicates hazardous waste will be managed in accordance with the Transportation of Dangerous Goods Act (TDGA). The TDGA does outline transport safety requirements; however the cradle to grave tracking system (within Canada) is administered by the provinces and territories throughout Canada and utilizes the hazardous waste movement document.

The Waste Management Plan also indicates that a certificate of disposal will be forwarded to authorities having jurisdiction.

Recommendation(s)

- 1) It is recommended that INAC CARD specify in the Hazardous Waste Management Plan that the ultimate disposal of hazardous waste generated on-site, and transported off-site will be documented on hazardous waste movement documents from INAC CARD (NTG051) to suitably authorized receiving facilities according to the Guideline for the General Management of Hazardous Waste in the NWT.

- 2) It is recommended that INAC CARD specify in the Hazardous Waste Management Plan that a copy of each hazardous waste movement document will be forwarded to the Environment Division of the Department of Environment and Natural Resources.

Topic 6: Hazardous Waste Guidelines

Comment(s):

The Waste Management Plan also identifies asbestos and lead paint waste as waste types that will need to be managed. The waste management plan does not reference the [Guideline for the Management of Waste Asbestos](#) or the [Guideline for the Management of Lead and Lead Paint](#) along with other [hazardous waste guidelines](#).

Recommendation(s)

- 1) It is recommended the Waste Management Plan reference the Guideline for the Management of Waste Asbestos or the Guideline for the Management of Lead and Lead Paint along with other applicable hazardous waste guidelines. All of ENR's hazardous waste guidelines can be found at the following website:

<http://www.enr.gov.nt.ca/en/services/guidelines>.

Comments and recommendations were provided by ENR technical experts in the Water Resources Division and the North Slave Region, and were coordinated and collated by the Environmental Assessment and Monitoring Section, Conservation, Assessment and Monitoring Division (CAM).

Should you have any questions or concerns, please do not hesitate to contact Patrick Clancy, Environmental Regulatory Analyst at (867) 767-9233 Ext: 53096 or email patrick.clancy@gov.nt.ca.

Sincerely,



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¹ Government of the Northwest Territories, 1998. Guideline for the General Management of Hazardous Waste in the NWT. Available online at:

http://www.enr.gov.nt.ca/live/pages/wpPages/Waste_Management_Program_publications.aspx