

## Reviewer Comments and Proponent Responses

**Project: MGM Energy I-78 East Mackay**  
**Board: Sahtu Land and Water Board**  
**Organization: MGM Energy**

No.	Topic	Reviewer Comment	Reviewer Recommendation	Proponent Response
GNWT-ENR - EAM (Environmental Assessment and Monitoring) - Environmental Regulatory Analyst				
1	Cover Letter	Comments	Please see attachment	No comment
2	Wildlife and Habitat - Reclamation Objectives	<p>ENR Wildlife and Fish Division has reviewed the MGM Energy I-78 East Mackay Well Abandonment and Land Use Permit and Water Licence Application. The Application is for a new Land Use Permit (LUP) and Water Licence (WL) Application. Historical LUP and WL authorizations are presented below in an attachment. Attachment 1: MGM LUP and WL GNWT ENR Comments.</p> <p>Page 6/15 in the Project Description (MGM Energy I-78 Land Use Permit and Water Licence Application Attachment, dated June 29, 2022) includes a list of Species at Risk. It is unclear if the species listed occupy the region or have potential to be affected by the project and the list identifies barren-ground and boreal caribou, among others. Presumably, these species interact with the project activities in some manner. Based on the documents provided by the proponent, only moose have been detected (indirectly via sign) within the operating areas. Page 6/10 of the Traditional Ecological Knowledge Study (dated December 2011) confirms that caribou, among other traditionally important species, occur "in the proposed (sic) area of MGM program".</p> <p>Page 11/15 of the Project Description discusses closure and reclamation plans, stating "The goal of the closure and reclamation activities will be to return the site to an equivalent of the pre-disturbance state and meet any vegetation requirements from the previous and new LUP". Recognizing that the pre-disturbance state of the landscape likely provided habitat for barren-ground and boreal caribou, ENR assumes that that at the closure and reclamation goals are to restore the habitat to a condition suitable for caribou. Currently, neither the closure and reclamation section of the Project Description, nor the Closure and Reclamation Plan (dated September 16, 2022) provide sufficient detail on how vegetation will</p>	<p>The board should consider requesting that the proponent provide a better description on closure and reclamation strategies to meet caribou habitat suitability requirements. Topics of discussion should include how site preparation/scarification will be completed, how revegetation will be conducted, what species will be planted, and what the end land use objectives are (i.e., will the reclamation target be improving security habitat for caribou as its objective?). Existing caribou habitat restoration documents that might support the proponent in restoring caribou habitat include the Framework for Boreal Caribou Range Planning and the Boreal Caribou Wek'èzhii Interim Range Plan.</p> <p>The Board should consider the potential effect of reclamation on limiting traditional use of the land (i.e., if cut lines are reclaimed, Indigenous people's ability to travel and trapping may be limited) and compare against the value that restoration of cut lines provides to caribou survivorship.</p>	<p>The site currently exceeds the re-vegetation requirements. This is a winter operation based on an ice pad, vegetation removal is expected to be minimal. As can be seen in Appendix A, the site was not providing effective Caribou habitat due to a previous natural disturbance (fire). Currently the immediate surrounding area is in a similar state of regrowth (see picture in Appendix A). MGM will leave project components in a state that will allow for vegetation succession, MGM cannot and will not prevent Indigenous rights holders from using the project components. Given the mandate for caribou recovery in the Northwest Territories belongs to the Department of Environment and Natural Resources (ENR) and it is the Crown's Duty to Consult, it would seem appropriate for ENR to engage with the Indigenous rights holders regarding the long term use of project components post closure and reclamation.</p>

		<p>be restored to meet caribou habitat suitability requirements.</p> <p>Linear corridors have been attributed to reduction in caribou survivorship by increasing the rate at which wolves travel the landscape. The project description proposes restoration of existing linear corridors (cut lines). Page 6/10 of the Traditional Ecological Knowledge Study (dated December 2011) states that old cut lines and trails may be used for travel and trapping.</p>		
3	Wildlife and Habitat - Reclamation Plan	<p>The Project Description states that at "the greatest risk to closure... is invasive vegetation species at the wellsite", yet neither the Project Description nor the Closure and Reclamation Plan, dated September 16, 2022, discuss plans to revegetate the land aside from not seeding the site. On Page 11/15 of the Project Description, MGM states that they do "not anticipate the need for seeding, which further reduces the risk of invasive vegetation species". Based on this statement, ENR assumes that no revegetation efforts are proposed, and MGM presumes to allow the site to revegetate naturally.</p>	<p>ENR recommends that, given that the goal of the Closure and Reclamation Plan is to restore the site to pre-disturbance conditions (which includes restoring habitat to meet caribou requirements), MGM should include a planting prescription that identifies the number of seedlings, species, and site prescription for planting in the areas where reclamation is proposed. Some measure of effectiveness monitoring which includes quantifiable survivorship targets should also be included. ENR disagrees that allowing the site to revegetate naturally will be an effective measure against invasive plants, as invasive plants naturally out-compete native vegetation on disturbed sites.</p>	<p>See Appendix A for current site conditions and Table 2. The wellsite is well vegetated and no invasive plants or weeds observed. Planting is not proposed as vegetation cover is meeting or trending towards meeting the previous LUP requirements. Native trees, shrubs and forbs are established.</p>
4	General	<p>As part of the review of MGM Energy's (MGM) Closure and Reclamation Plan and Reclamation Security Estimate for the East Mackay I-78 well abandonment and reclamation program (the Project), WL S22L1-002 and LUP S22A-002, ENR retained ARKTIS Solutions Inc. (ARKTIS) to conduct a technical review of the proposed documents and complete a RECLAIM V.7 model estimate based on these documents. ENR has extracted and summarized the comments and recommendations from the memorandum from ARKTIS Solutions and has provided them below. ENR has also attached the memorandum and RECLAIM estimate which provides additional background for the Board and Parliament's information.</p>	<p>ENR recommends that the Board and MGM refer to the attached ARKTIS memorandum for additional background and context supporting ENR's comments and recommendations herein.</p>	<p>See the MGM cover letter, attachment and comments below.</p>
5	RECLAIM Estimate	<p>The security estimate has been developed by ARKTIS utilizing the RECLAIM v7 model- Oil and Gas (O&amp;G) version and in general accordance with Indian and Northern Affairs Canada (2002) "Mine Site Reclamation Policy for the Northwest Territories". Despite the policy being developed for mining reclamation, select principles of this policy with regards to reclamation security are directly applicable to oil and gas reclamation. The estimate is based on the premise that adequate security is to be provided to cover the cost of reclamation, including shutdown, closure and post-closure for all project components, and that a third party, independent contractor</p>	<p>ENR recommends that the total reclamation security is \$4,962,917 with a recommended land and water liability portion of \$2,192,322 and \$2,770,565, respectively. Please see the RECLAIM estimate and associated ARKTIS memorandum included with this submittal for further details and cost assumptions associated with ENR's estimate.</p> <p>ENR recommends that the Board require payment of the recommended security be submitted to GNWT immediately upon of the Board's decision.</p>	<p>MGM disagrees with the ENR estimate. Major differences are outlined in the attached updated project description.</p>

r would complete the reclamation activities.

The security amount was calculated from the sum of capital costs and indirect costs associated with the activities described in the following primary documentation:

MGM Energy, Sep 2022, Closure and Reclamation Plan, East Mackay, Northwest Territories.

MGM Energy, Jun 2022, Project Description Report - I-78 Land Use Permit and Water Licence Application Attachment.

MGM Energy, Oct 2022, MGM Energy Environmental Protection Plan October 2022: I-78 Well Abandonment Program.

MGM Energy RECLAIM Security Estimate, Sep 2022, provided with the water licence and land use permit application to the Mackenzie Valley Land and Water Board (MVLWB).

Kalo Stantec, Dec 2020, 2020 Environmental Site Monitoring Report: East Mackay I-78 Wellsite Area and Staging Area.

MVLWB, Jun 2022, MGM Energy Land Use Permit Application Form to the MVLWB.

MVLWB, Jun 2022, MGM Energy Water Licence Application Form to the MVLWB.

Key cost estimate assumptions and limitations include:

This cost estimate is associated with the East Mackay I-78 area project as described by the Closure and Reclamation Plan, including the Wellsite Area and Staging Area.

A review of any securities currently held for the Project site was not completed. No review of securities held under previous authorizations was completed to reconcile common securities or to evaluate if the past security estimates remain valid or reflect the Closure and Reclamation Plan.

This cost estimate is an end of project life security estimate for the East Mackay project; thus, no phasing of liabilities over time was considered at this time.

ENR directs the Board and MGM to the attached ARKTIS memorandum for further details on the costing assumptions, and to the attached RECLAIM estimate for the complete costing information. Typically, the RECLAIM security calculates the portion of security t

		<p>that is applicable to land and water liabilities based on capital costs. However, given all remaining reclamation activities will occur as part of post-closure monitoring and maintenance, the RECLAIM model only provides a value for total security. The total reclamation security is \$4,962,917 with a recommended land and water portion of \$2,192,322 and \$2,770,595, respectively. ENR notes that the greatest difference in ENR's and MGM's security is in the mobilization and demobilization (mob/demob) estimates. ENR encourages MGM to review the attached ARKRIS memo and review how mob/demob costs were calculated, as it appears MGM has miscalculated how much equipment is required for this task.</p>		
6	Waste Management Plan	<p>Although the overview on the Online Review System (ORS) mentions a Waste Management Plan (WMP) as part of the application package, ENR notes that the documents available on the ORS do not include a WMP. A WMP does not seem to be available under this licence number on the Public Registry either.</p>	<p>ENR recommends that a WMP be provided for review as soon as possible.</p>	<p>The Waste Management Plan is embedded in the project EPP</p>
7	Engagement Plan - Table 4	<p>Table 4 of the Engagement Plan lists Patrick Clancy as a contact for GNWT-ENR. ENR notes that Patrick Clancy is no longer with the department and can be removed from the contact list.</p>	<p>ENR recommends that Patrick Clancy be removed from the contact list in Table 4 of the Engagement Plan. No replacement is needed as the current email address provided for GNWT-ENR-EAM is sufficient.</p>	<p>Noted, Patrick Clancy will be removed in the next version of the project Engagement Plan.</p>
8	Environmental Protection Plan - Turnkey Management	<p>In the "Disposal" column of Table 3 of the Environmental Protection Plan (EPP) it is often indicated that turnkey management will be provided by the contractor. ENR notes that the EPP should be updated to provide additional information on turnkey management once those details are received from the contractor.</p>	<p>ENR recommends MGM update the EPP to provide additional information on waste disposal once details on turnkey management are received from the contractor.</p>	<p>Information can be provided closer to project execution.</p>
9	Spill Response Plan - Missing Items	<p>The Guidelines for Spill Contingency Planning (INAC, 2007) outline information that should be included in a spill contingency plan. ENR notes that several items in the guideline are missing from MGM's Spill Response Plan (SRP), including the following:</p> <ul style="list-style-type: none"> <li>Type and amount of hazardous materials normally stored on-site, including capacity of storage containers</li> <li>List of on-site resources</li> <li>Existing preventative measures</li> <li>Response organization</li> </ul>	<p>ENR recommends that MGM update the SRP to align with the Guidelines for Spill Contingency Planning (INAC, 2007). This should include, but is not necessarily limited to, the above items.</p>	<p>Materials are not normally stored on site, materials will only be stored during construction and abandonment operations (one winter season). Preventative measures for when activity occurs are in section 4.0. Section 7.0 has been updated to describe equipment resources. Appendix C provides details on incident reporting for the organization.</p>
10	Spill Response Plan - Spill Control Points	<p>Page 91 of the Spill Response Plan (SRP) PDF describes the concept of spill control points. ENR notes that there is no discussion of the use of control points for this specific project.</p>	<p>ENR recommends that MGM clarify whether the intention is to use spill control points for the Project, and if it is that locations be specified in the SRP.</p>	<p>Given the limited scope of the project control points are not intended for use on this project.</p>
11	Environmental Site Monitoring Report - Update	<p>The 2020 Environmental Site Monitoring Report provided a number of recommendations for work to be completed in 2021. ENR ac</p>	<p>ENR recommends that MGM provide an update on if/when recommendations from the 2020 Envir</p>	<p>The 2022 Report is included with this submission.</p>

	on Recommendations	knowledge that COVID may have disrupted work planned for 2021, however ENR notes that there is no update on whether these recommendations have been completed, either in 2021 or in 2022 if work was delayed.	Environmental Site Monitoring Report were completed.	
12	Closure and Reclamation Plan - Maps and As Built Survey	Section 1.1 of the Closure and Reclamation Plan (CRP) states that maps and an as built survey are included in Appendix A of the document. ENR notes that Appendix A of the CRP only includes site photos.	ENR recommends that MGM either include maps and an as built survey in Appendix A of the CRP or update the reference in Section 1.1 of the CRP to correctly indicate where these items can be found.	CRP now includes a project survey and project map.
13	Closure and Reclamation Plan - Guidelines	Section 2.4 of the CRP states that soil will meet the NWT Environmental Guideline for Contaminated Site Remediation and if there is standing water observed it will meet the Canadian Council of Ministers of the Environment guidelines. ENR notes that both of these guidelines have several different sets of criteria and it is not clear which specific criteria MGM is intending to meet for each guideline.	ENR recommends that MGM update the CRP to clarify which specific sets of criteria within the NWT Environmental Guideline for Contaminated Site Remediation and Canadian Council of Ministers of the Environment guidelines are to be met for soil and water quality respectively.	The 2003 GNWT Environmental Guideline for Contaminated Site Remediation, where soil criteria are available will be used. Canadian Council of the Ministers of the Environment (CCME) may be used should the GNWT guidelines not have standards for some potential contaminants of concern. In addition, the Alberta Subsoil petroleum hydrocarbon guidelines for remote forested sites in the green area may be used if applicable.
14	Draft Water Licence - Yearly Water Withdrawal Limit	The text in Part D, Condition 1 of the Draft WL indicates that MGM may withdraw water up to 46,250 m <sup>3</sup> /year. However, the table in Part D, Condition 1 indicates that the maximum quantity is 50,000 m <sup>3</sup> /year; this value is also given elsewhere in the application package. ENR notes that it is not clear which maximum yearly water withdrawal limit is being licenced.	ENR recommends that consistency is ensured between the text and the table of Part D, Condition 1 of the WL with respect to the maximum yearly water withdrawal limit.	MGM would be fine with the smaller value.
15	Draft Water Licence - Daily Water Withdrawal Limit	ENR notes that the Draft water licence only includes a yearly water withdrawal limit, and not a daily limit. In the Waters Regulations, licence triggers based on water use are given as daily limits, with 100 m <sup>3</sup> /day being the trigger for a Type B licence and 300 m <sup>3</sup> /day being the trigger for a Type A licence. The Draft water licence allows water withdrawal up to 50,000 m <sup>3</sup> /year (or 46,250 m <sup>3</sup> /year depending on the response to the previous comment). Since project activities, and thus water use, will be completed in the winter and not spread over the whole year, a limit of 50,000 m <sup>3</sup> /year practically becomes 50,000 m <sup>3</sup> /winter. This could result in water use in excess of 300 m <sup>3</sup> /day, which would trigger a Type A licence. In order to ensure compliance with the Waters Regulations, a condition should be added to the water licence to limit water use to 299 m <sup>3</sup> /day.	ENR recommends that a condition be added to the water licence to limit water use to 299 m <sup>3</sup> /day.	MGM is fine with 299m <sup>3</sup> /day
16	Draft Water Licence - Part I, Condition 2	Part I, Condition 2 of the Draft water licence includes a note asking whether the condition should be left in the licence or removed. The condition requires a revised Interim CRP based on the requirements of Schedule 3, Condition 1. In comparing the requirements of Schedule 3, Condition 1 with the CRP submitted as part of the application package, ENR notes t	ENR recommends that Part I, Condition 2 of the Draft water licence be retained, with the above-noted edit.	No comment

		hat not all requirements are currently fulfilled and therefore Part I, Condition 2 should be retained. However, one edit should be made. The current condition requires submission of the revised plan "Within 90 days prior to the commencement of winter abandonment Project activities". ENR notes that submission should be required "A minimum of 90 days prior to the commencement of winter abandonment activities for the Project".		
17	Draft Water Licence - Wellsite Reclamation Monitoring and Maintenance Plan Requirements	Part I, Condition 4 of the Draft water licence requires that a Wellsite Reclamation Monitoring and Maintenance Plan be submitted in accordance with the requirements of Schedule 3, Condition 2. ENR notes that there is no second condition in Schedule 3.	ENR recommends that a second condition be added to Schedule 3 of the water licence to outline the requirements of the Wellsite Reclamation Monitoring and Maintenance Plan.	MGM believes this condition can be captured under the monitoring outcomes of the project Closure and Reclamation Plan and the annual reporting related to the Water Licence.
18	References:	Indian and Northern Affairs Canada (INAC). 2007. Guidelines for Spill Contingency Planning.  Waters Regulations R-019-2014	N/A	
19	MGM LUP and WL GNWT ENR Attachment table	Attachment 1: Wildlife and Habitat Reclamation Objectives.	See attached	
20	Waters Attachment	Reclaim estimate final	See attached	
21	Excel Spreadsheet	Oil and Gas Reclaim MGM	See attached	See other MGM responses and attachments.

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GNWT-Lands - Katherine Ades				
1	Security Estimate	The Department of Lands has reviewed and supports the reclamation security estimate completed by the Department of ENR for MGM's well abandonment land use permit and water licence applications.	Lands recommends the Board issue the land use permit and water licence with the security amounts specified by ENR, noting that ENR has encouraged MGM to review how mobilization and demobilization costs were estimated. Lands further recommends that the Board require that the security be submitted to GNWT immediately after the Board's decision (i.e. upon issuance of the permit and licence).	See MGM cover letter, attachment and cover below. MGM requests the SLWB provide a timely and efficient process for security to be reviewed and reduced as MGM advances the project to closure. MGM would note that the abandonment and minor reclamation is scheduled for the winter of 2023-2024

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GNWT-Lands - Sahtu Region - Miss Meagan Betts				
1	Land Use Permit Application Form- "Section 4. LOCATION OF ACTIVITIES" pg 2	The Applicant indicated "Commissioner's/Territorial Lands" as the land type, however, the area of interest occurs on Sahtu (private) Land as well.	Correct land type to reflect appropriate Land Tenure	MGM Energy believes this issue can be corrected in the actual Licence and Permit.
2	Overview/Item Description vs MGM Energy-Application-Project Description Report	Clarification is required for volume of propane anticipated for this work. In the Overview/Item Description section on the Online Review System it states there will be 600 L, however, pg 10 of the Project Description Report indicates there will be 6000 L of propane required	Clarify propane volume	8200 litres although this is just a contingency as MGM generally uses electric camps.
3	Timelines of the Land Use Application Form vs Closure and	On pg 5 under Section 16 "PROPOSED PROJECT SCHEDULE AND TERM" of the Land Use Application Form MGM indicates that "Reclamation, remediation, and monitoring	Ensure project timeline is consistent between documents.	Time frame in the CRP has been updated. LUP and WL have not been issued so the term will be different than applied for.

	Reclamation Plan vs Project Description Report.	oring activities are expected to occur during the entire term of the Land Use Permit", that being, October 15, 2022- October 15, 2027. The timeline outlined in "Table 3: Proposed Sequence of Events" on page 8 of the Closure and Reclamation Plan outlines a different timeline. The previously noted timelines don't match the timelines outlined in the "Project Activities" section of page 8 of the Project Description Report.		
4	Land Use Application Form- "Section 17. POTENTIAL ENVIRONMENTAL IMPACTS OF THE PROJECT AND PROPOSED MITIGATIONS"	Mitigations outlined in this section for soil compaction and compaction of vegetation are not relevant to work occurring in non-frozen conditions. In addition to implementing "proper crossing techniques" what other efforts will be taken to address erosion?	Enhance mitigations section to account for how potential environmental impacts will be reduced while conducting work in summer and/or fall months. More thought required for mitigating destabilization/erosion.	The only work planned for summer months is helicopter based, no crossings are contemplated during summer/fall months.
5	Environmental Protection Plan "APPENDIX 2: TASK SPECIFIC MITIGATION" pg 18 Erosion Prevention	MGM states "Site stability at temporary campsites will be assessed within one year after construction". Site stability and erosion control should be occurring regularly and must be assessed prior to 1 year after construction.	Improve erosion prevention section to reflect regular monitoring and implementation of mitigation for erosion and sediment control as well as site stability.	The only work planned for summer months is helicopter based, no crossings are contemplated during summer/fall months.
6	Closure and Reclamation Plan	This plan is vague and does not address how the slumping around the wellhead will be addressed. On page 6, MGM states "... minor reclamation treatments will be conducted via helicopter" and names several practices such as scarification and recontouring. It is not clear how reclamation treatments such as recontouring can be completed via helicopter.	Elaborate on plan to correct soil slumping around wellhead as well as how additional reclamation treatments will occur.	MGM Energy has had success on other sites in the Sahtu using slingable equipment, if required it would be deployed. The wellhead excavation will be left with a slightly mounded topography to allow for some slumping to occur.
7	Spill Response Plan	Department of Lands was not included in Appendix C on the Lead Agency list and did not indicate if a spill would be reported to the Department of Lands if one was to occur.	Update Appendix C to include the Department of Lands with correct contact info	Department of Lands no longer exists, an updated plan will be submitted closer to project activities
8	Spill Response Plan	Section "4.0 Potential Spill Scenarios" is too specific to winter work. In the absence of ice/snow berms what actions will be taken to ensure any spills during summer/fall work will be controlled and/or mitigated? Due to the volume of fuel on site it would be helpful to know where the spill response gear will be located as well as what type of spill response material will be on site in the event of an accidental release.	Enhance potential spill scenarios to reflect the potential for spills during summer months. Ensure that the amount of spill response material on site will be adequate to respond to large releases/that the material on site has enough sorbent capacity to capture the fuel on site in the event of an emergency.	Summer or fall work will be limited to monitoring via helicopter access. Some spill response equipment will be carried with field crews however no fuel or oils will be brought on monitoring visits.
9	Sediment and Erosion Prevention	There's no Sediment and Erosion Control Contingency Plan and one is required to show due diligence with this work	Develop and circulate a Sediment and Erosion Control Contingency Plan	There are no sediment and erosion issues with the site except for the settling issues at the wellhead. Erosion and Sedimentation will be monitored for as part of the closure of the project. Having a specific plan for an issue that can be addressed as part of Permit and Licence conditions along with the project Closure and Reclamation plan is inefficient and administratively burdensome.
10	Permafrost Protection	There was no mention of permafrost mitigation in the application	Develop and circulate a Permafrost Protection Contingency Plan	Having a specific plan for an issue that can be addressed as part

			as mentioned the draft permitte d conditions.	of Permit and Licence conditions along with the project Closue an d Reclamation plan is inefficient and administratively burdensom e.
11	Environmen tal Protectio n Plan "2.0 HAZARD RE VIEW"	On pg 4 under Section 2.1.1 MG M states they'll follow "...along g ood environmental and industry practices" but do not indicate the practices they're referring to.	Elaborate on the "good environm ental and industrial practices" tha t will be followed.	<a href="https://www.alberta.ca/land-recla mation-and-remediation-guidelin es.aspx">https://www.alberta.ca/land-recla mation-and-remediation-guidelin es.aspx</a>
12	Overview/It em Descript ion vs MGM Energy-Lan d Use Permi t Applicatio n vs MGM E nergy Appli cation-Proje ct Descripti on Report v s MGM Ener gy-Applicati on-Incompl ete Respons e	Clarification is required for how many personnel will be required per each phase of the work. There's conflicting information betwe en documents on how many per sonnel will be camps	Clarify the amount of personnel r equired for each phase as well a s how many people will be in ca mps during those periods.	Phases of the project may overla p as part of the access and well s ite construction maybe required f or maintenance. MGM does not a nticipate over 20 people in camp at one time.
13	Genral Com ment	Project timelines are not clear, h owever, it's likely restoration wor k will be required during the sum mer months. Additional efforts ar e required to outline what types of activities (and associated equi ptment) will be required during n on-frozen conditions and what m itigations will take place to offset any potential impacts.	Update plans to reflect summer activities.	MGM Energy disagrees with the r eviewers statement that "it's like ly restoration work will be requir ed during the summer months." The most likely outcome is monit oring during summer months. Th is is a minimum disturbance wint er access location.