Federal Authority Advice Record (FAAR)
FAAR Response must be submitted by August 22, 2025
Yellowhead Copper Project – Taseko Mines Limited (proponent)
Registry File: 89694

Please complete the following:

Department/Agency	Natural Resources Canada
Lead Contact	Shelley Ball
Full Address	580 Booth Street, Ottawa
Email	shelley.ball@nrcan-rncan.gc.ca
Telephone	613-240-1696
Alternate Contact	Kathy McPherson

1. Will your department or agency exercise a **power, perform a duty or function**, or provide **financial assistance**, related to the project to enable it to be carried out in whole or in part?

   Yes. NRCan is responsible for administering the *Explosives Act*, and for issuing permits to manufacture and store explosives. The project proponent has indicated in their Initial Project Description, that they will require both.

As relevant,

a) Specify the power, duty or function, or financial assistance, and the likelihood that it will be required to construct the project, based on the Initial Project Description, as either Required, Potential, Likely, Unlikely or Not Required

   Construction of the project has the potential to require the storage of explosives. That initial permit for storage of explosives on the mine site, would come from BC's Ministry of Energy, Mines and Natural Gas.

b) Describe any associated Indigenous or public consultation, including timelines
c) Describe any associated information requirements (e.g., alternative means assessment, habitat offsetting), and specify those that may be coordinated with the impact assessment process, if an impact assessment is required
d) Identify any associated project-specific guidance or issues of which the proponent should be aware, or information the proponent should provide.

   The Initial Project Description, Table 5-2 Preliminary List of Federal Authorizations, should include the requirement for explosives manufacturing. Currently the only Authorization or Approval they have noted is a Magazine License.

In regards to other project related information, the Proponent should be aware that, Natural Resources Canada leads the Open Science and Data Platform (OSDP), an open catalogue of thousands of federal, provincial and territorial government sources of information, including, datasets, scientific publications, and regulatory information relating to impact assessment and cumulative effects. It is recommended that the diverse information accessible through the OSDP would likely be useful to the proponent to inform the identification of issues and the analysis and impact statement. For example, a curated content collection was developed for the Thompson-Fraser Canyon Watershed Region where the proposed project is located, which includes a wide diversity of information in various topics, including species at risk, land disturbance, water quality and others. Additionally, the following specific data records may be relevant to the Yellowhead Copper Project:

British Columbia near real-time groundwater level monitoring network (NRCan)
Water quality in Canadian rivers – Water quality at monitoring sites (ECCC)
Critical Habitat for Species at Risk National Dataset – Canada (ECCC)
Fisheries and Oceans Canada Species at Risk Distribution (Range) (DFO)

NRCan would be interested in meeting with the Proponent to present the Open Science and Data Platform, including its content and utility to inform the impact assessment and can be contacted at osdp-psdo@nrcan-rncan.gc.ca.

2. **Using Table 1**, identify project- and context- specific **key issues**, based on the expertise within your mandate[1] and the information in your possession, including the Initial Project Description, any exchanges with the proponent or others related to the project and known means to address the effects of the project. For each key issue:

   a) Specify the key issue (e.g., specific species and location)
   b) Specify the project component or activity linked to the key issue
   c) Explain why it's a key issue based on:
      i. biophysical effect pathway(s) from the specific project component or activity
      ii. concern unique to the project or a priority within your mandate
      iii. the issue being material[2] to decision making under the *Impact Assessment Act*
   d) Identify how the issue could be resolved, including through means other than an impact assessment

[1] Refer to the Memoranda of Understanding with IAAC.
[2] An issue is material to decision making if its analysis is anticipated to affect the conclusions on (1) whether adverse effects within federal jurisdiction or direct and incidental adverse effects (collectively adverse federal effects) are likely not significant, or of low, medium or high significance; (2) appropriate mitigation measures for significant adverse federal effects; or (3) justification in the public interest.

e) Identify additional information the proponent could provide including to give confidence on how the issue can be addressed through other means.

Shelley Ball, Senior Impact Assessment Officer
Natural Resources Canada
Name and title of Departmental / Agency Responder

22 August, 2025
Date

Table 1: Key Issues to inform the impact assessment process

This table should outline key issues to inform the impact assessment process, including whether an impact assessment is required and, if so, the scope of the assessment and tailoring of the Tailored Impact Statement Guidelines/Application Information Requirements in a substituted assessment.

Key issues are the major concerns directly related to a project component or activity, the analysis of which is anticipated to be material to decision-making under the *Impact Assessment Act*.

Federal authorities' advice should be guided by the identification and resolution of key issues. If an impact assessment is required, it will be focused on key issues.

Comment ID	a) Key issue	b) Project component or activity	c)(i) Biophysical effect pathway(s)	c)(ii) Concern unique to the project or a priority within your mandate	c)(iii) Material to federal decision-making	d) Means for issue resolution	e) Additional information from the proponent
Identify comments by organization and comment number. *e.g.: IAAC-01*	*Specify the key issue (e.g., specific species and location).*	*Identify the project component or activity linked to the key issue.* *Be specific about the nature, scale, novelty and complexity or the component or activity.*	*Identify the specific biophysical effect pathway between the project component or activity and the affected environmental or human receptor (including Indigenous Peoples).*	*Describe why it's a key issue within the mandate of your department or agency, including in terms of priorities of the federal government and in terms of anticipated likelihood, severity or uncertainty of effects.* *Identify if the key issue is common for projects of this nature or in this sector, or whether it's unique to this project due to its complexity, size or novelty; a sensitive or rare receiving environment; and/or proximity of sensitive environmental or human*	*Describe why the key issue is material to decision-making as either:* • *an adverse effect within federal jurisdiction, or a direct or incidental adverse effect, that may be significant based on available evidence including:* ○ *federal experts' knowledge and experience with past project assessments;* ○ *presence of sensitive species, habitats or human receptors (including Indigenous Peoples);* ○ *novel or complex project activities, components or technologies;* ○ *high uncertainties in effects or in the effectiveness of mitigation measures;* ○ *unknown or unproven mitigation; or* • *a factor for the justification in the public*	*Describe how the key issue could be resolved or addressed by:* • *Any means, including powers, duties, functions, frameworks, policies or guidance that your department or agency has;* • *Any means, including powers, duties, functions, frameworks, policies or guidance from another jurisdiction, including the province;* • *Common, proven, well-understood or standard mitigation measures to mitigate the effect or effect pathway(s); or* • *Commitments made by the proponent (e.g., in the Initial Project Description).*	*Describe information the proponent can provide, or commitments the proponent can make, in their Response to the Summary of Issues that would provide confidence that the issue can be resolved by existing means.* *Consider whether information, studies, analyses or collaborative work with other authorities would be required to address the issue beyond existing means.*

				receptors (including Indigenous Peoples).	*interest anticipated to be material to decision-making such as a likely positive effect contributing to sustainability, to Canada's environmental obligations or climate change commitments or in supporting governmental priorities, such as reconciliation with Indigenous Peoples.*		
NRCan-01	Economic Conditions-Project feasibility	8.2.2 Economic Conditions		The positive economic impact of mining projects is a key issue within NRCan's mandate, as it directly supports the federal government's priorities related to economic growth, critical mineral development, regional development, and reconciliation with Indigenous Peoples.	The positive economic impact of a mining project is material to decision-making as a factor in the justification in the public interest under the *Impact Assessment Act*. It can represent a likely positive effect that contributes to sustainability, supports Canada's climate and environmental objectives—particularly through the responsible development of critical minerals—and aligns with federal priorities such as advancing regional economic development and reconciliation with Indigenous Peoples. Economic benefits, including employment, infrastructure investment, and local and Indigenous business opportunities, are often key to the long-term viability and acceptability of a project. These benefits can offset or contextualize potential adverse effects, provided they are transparently assessed and equitably distributed. As such, the economic dimension is	The proponent could provide a detailed assessment of the positive economic impacts of their project by conducting an economic impact analysis. The analysis could include a quantitative and qualitative evaluation of how the project will contribute to the local, regional, and national economy, and consider aspects such as job creation (direct, indirect, and induced employment), local business opportunities, government revenues (taxes and royalties), and infrastructure development. The analysis could also assess the long-term economic sustainability of the project, including potential economic diversification. To support the analysis, models such as StatCan's public input-output model are recommended to estimate the broader economic effects. Additionally, it would be valuable to compare findings with similar projects in other regions and provide insights into how the project aligns with market demand, global supply chains, and Canada's critical minerals strategy.	The proponent could leverage Input-Output (IO) models to assess and quantify the positive economic impacts of their initiative, such as job creation, contributions to GDP, and overall economic activity. By providing key data—such as capital and operational expenditures, industry classification, supply chain details, and expected production or service output—such analysis can generate insights into direct, indirect, and induced economic effects. IO models use this information to estimate how

					integral to a balanced determination of whether a project is in the public interest.		spending circulates through the economy, affecting employment levels, labour income, and tax revenues at local, regional, and national levels. This analysis helps stakeholders and decision-makers understand the broader economic benefits of the project.
NRCan-02	Terrain Hazards	Terrain and Soils	Terrain modifications during construction, operations, and mine closure could possibly trigger terrain hazards and could potentially impact the project and the valued components.	Section 10 of the Initial Project Description (pg. 106, Version 2, June 23, 2025) lists the effects of the environment on the Project. Bullet 4 indicates that Natural Hazards, such as earthquakes, could pose a potential risk to the project, however, this list does not include terrain hazards. Terrain hazards, which are common in mountainous terrain of British Columbia, could pose a risk to the valued components of the project, such	Terrain hazards could have a potential adverse effect on project valued components (e.g., species, habitats, public safety).	NRCan recommends that bullet 4 of Section 10, Initial Project Description (pg. 106, Version 2, June 23, 2025) be updated to: 'Natural hazards such as seismic events (e.g., earthquakes), and terrain hazards.' The purpose is to identify that terrain hazards be considered in the Proponents assessment of effects of the environment on the project.	NRCan suggests that information on terrain hazards be provided as the project moves forward.

				as project linear infrastructure.			
NRCan-03	Seismicity	Seismic hazards	Seismic hazards, design and mitigation measures	Section 9.2 of the IPD (June 23, 2025) "Effects of the Environment on the Project" (pg. 65): "Natural hazards such as a seismic event could potentially impact site infrastructure, geotechnical stability, and personnel safety. A seismic hazard assessment was conducted for the Project indicating that the Project is at low risk of a damaging seismic event. The Project will include appropriate design for earthquake events based on criteria provided by regulations and guidelines.	Seismic hazards could have a potential adverse effect on project valued components (e.g., TSF) and public safety.	Regarding the seismic hazard assessment referred in the IPD (June 23, 2025) especially important for the TSF facility: NRCan recommends sharing the updated seismic hazard assessment and confirming that the latest codes and regulations are being followed (e.g., the updated seismic hazard model included in the 2025 National Building Code of Canada is expected to be released in late 2025). The 2020 seismic hazard calculator is available at: https://www.earthquakescanada.nrcan.gc.ca/hazard-alea/interpolat/nbc2020-cnb2020-en.php 1. NRCan recommends that the proponent confirm that site-specific data will be collected at the site for use in potential seismic amplification (site response) and geotechnical evaluations. Furthermore NRCan recommends that the proponent confirm that there are no known active faults at/near the Project site. NRCan notes that the Wells Grey – Clearwater volcanic zone is located ~100 km to the NNW. Although volcanic eruptions are rare, there are hazards associated with such events that are worthy of some discussion. Note that lahars have been known to travel 100+ km from some volcanic centres, as a few examples: https://appliedvolc.biomedcentral.com/articles/10.1186/s13617-014-0016-4 https://www.usgs.gov/volcanoes/mount-rainier/science/significant-lahars-mount-rainier NRCan notes that an earthquake early warning system is now operational and provided at no cost in British Columbia – see: https://www.earthquakescanada.nrcan.gc.ca/eew-asp/system-en.php This may be of interest to the proponents for emergency response procedures– and would provide warning times for large, distant earthquakes.	NRCan requests that the information on seismic hazards be provided as the project moves forward.
NRCan-04	Groundwater	Open pit, Tailings Storage Facility (TSF)	Dewatering the open pit or seepage from the tailings storage facility may alter downstream	Assessing the potential adverse effects of pit dewatering, and tailings storage facilities on	Any change to fish and fish habitat are within the legislative authority of the Federal government within the Fisheries Act.	NRCan recommends that Table 9.1 in Section 9 of the Initial Project Description report (June 23, 2025), include potential project interactions between "Surface/Ground Water Quantity and Quality" and "Mining, Open Pit" for CL/PC (closure/post-closure) project phases. Similarly, NRCan recommends that the table recognize potential interactions between "Surface/Ground Water Quantity and Quality" and "Tailings Storage Facility	NRCan recommends that the proponent provide updated groundwater modelling that assesses the

			fish and fish habitat	groundwater, surface water, fish and fish habitat are common issues in mining projects.	Pit dewatering lowers groundwater levels, induces groundwater flow into the pit from the surrounding area and can reduce groundwater discharge to adjacent surface waters. Reductions in groundwater discharge to streams reduces stream discharge and baseflow and can affect physical and chemical measurements in streams (e.g., stream temperature). The tailings storage facility (TSF) will increase groundwater levels within the facility. The TSF may alter existing groundwater flow and quality, seepage and possibly downstream surface water quantity and quality. Predicting groundwater flow and seepage patterns from the TSF can ensure design features to optimize seepage capture and reduce impacts to surface waters. These project components have the potential to influence operations, closure and post-closure phases.	(TSF) and Tailings Management" for CL/PC project phases. Similar changes may be warranted for "Fish and Fish Habitat" since Table 9.2 indicates "Changes in water flows and quality" relate to "Fish and Fish Habitat". NRCan recommends that prediction of changes to groundwater and surface water as a result of pit dewatering, and tailings storage facilities for each project phase be assessed. NRCan recommends that the potential adverse effects of groundwater and surface water changes on fish and fish habitat be assessed. NRCan recommends that the proponent present a follow-up program to verify the accuracy of the predictions and assessment of impacts and determine the effectiveness of any mitigation measures.	potential impacts of pit dewatering and the tailings storage facility on groundwater levels, groundwater flow, stream discharge and stream baseflow, and that the consequent potential impacts on fish and fish habitat be assessed. NRCan recommends that the proponent provide a follow-up program, in which monitoring groundwater levels between the pit, TSF and the streams as well as monitoring flow and quality in the adjacent streams would provide information to verify model predictions, determine the effectiveness of any mitigation measures, and assess potential adverse effects on fish and fish habitat for each project phase.
NRCan-05	When disturbed through mining activities, large amounts of geologic material may release	This key issue is linked to standard project components, including the open pit, pit walls, waste rock piles, tailings	ML/ARD could mobilize metals and acidity from mine wastes into mine contact water, which can be	ML/ARD from mine waste is a key issue as it is the primary source of contaminants to receiving waters. It is NRCan's	For robust federal decision-making, conservative waste rock and tailings source terms must be validated to capture potential risk for ML/ARD, as This information is the basis for ECCC and DFO to assess potential	The issue could be addressed through the commitment of the proponent to develop defensible and conservative source terms (Release rates of metal and acidity from tailings, waste rock, pit wall, overburden, etc...) based on comprehensive geochemical characterization studies that follow MEND guidance documents, as well as proven and well-understood mitigation measures to mitigate the effect pathway(s) through surface water runoff and/or seepage.	NRCan recommends that the proponent follow MEND guidance documents to ensure comprehensive

	deleterious substances through geochemical processes such as metal leaching and acid rock drainage (ML/ARD). This key issue relates to the disturbance - Open pits walls and storage of ore, mine waste (waste rock, tailings, overburden), and engineered structures using construction materials (quarry rock, waste rock, overburden).	storage facility (TSF), ore stockpiles, overburden stockpiles, engineered structures and embankments, road cuts, quarries and other borrow sources.	released to surface through direct discharge of contained and/or treated waters, and into groundwater through seepage from mine waste storage facilities. These releases can degrade groundwater and receiving water quality, fish, and fish habitat. These effects may also disrupt public uses as well as Indigenous traditional uses of land and water, where clean water and healthy ecosystems are central to cultural practices, community well-being, and long-term sustainability.	expertise and mandate to support sustainable mine development by reviewing ML/ARD risk through geochemical characterization studies and determine if mitigation measures are suitable. ML/ARD is complex, requiring proactive and appropriate management of mine waste to minimize impacts to the environment. In this case, volcanogenic massive sulphide (VMS) deposits contain high levels of sulfide minerals, which can pose a significant risk of ML/ARD if not properly managed during mining and reclamation. This geological setting increases the likelihood and complexity of ML/ARD issues, making a robust	adverse effects to water quality, fish, and fish habitat under the *Fisheries Act.* Based on federal expert knowledge and learnings from Mount Polley and other TSF breaches, although the proposed mitigation measures are not novel or complex, subaqueous disposal of reactive mine wastes in the TSF requires rigorous oversight. For a VMS deposit, a high volume of potentially acid generating rock is anticipated, and any lack of transparency or uncertainty in estimating the timing and magnitude of deleterious substance release undermines confidence in water quality modelling, the design of containment facilities, and the adequacy of mitigation measures.	Source terms predict how mining activities might affect water quality and fish habitat through the release of deleterious substances or acidic drainage, which in turn informs planning of how to manage waste and reduce risks to the environment. To adequately mitigate the risks, any existing and arising gaps in the mine material characterization program must be addressed early. Regular updating of the program with additional testing is necessary to ensure the water quality predictions are as accurate as possible and that waste is managed in a way that protects the environment and fish habitat. NRCan recommends that a geochemical mine waste characterization program be used to verify the accuracy of source terms (i.e. release rates) by comparing predicted and observed concentrations and/or additional release rates measurement on excavated rock and tailings put in cells or/and field barrel tests NRCan recommends that an environmental monitoring program also be used to compare predicted vs measured metal concentrations and acidity in effluent, groundwater, and the receiving environment against predictions. These predictions can be applied in the site's environmental risk model and should be treated as compliance or threshold values that trigger adaptive management of effluent, tailings, or waste rock.	source term development and validation and that the Harper Creek Project EA Application Appendix 6-A report (Table D-1) is updated to clearly demonstrate spatial and chemical sample representativeness for all materials to be disturbed and produced by mining or utilized for construction. NRCan recommends that all sample locations be shown on cross sections or block model images, complete with geological units and mine infrastructure, as well as expected excavation tonnage for each geological unit. NRCan recommends that all kinetic test data be updated where applicable, and that samples utilized for the development of source terms be identified and their

				geochemical characterization program critical to establish reliable source terms and inform effective waste and water management.			statistical representation of anticipated ML/ARD potential demonstrated through box and whisker or similar diagrams.
NRCan-06	When deposited and managed within the Tailings Storage Facility (TSF), tailings may release deleterious substances through metal leaching and acid rock drainage (ML/ARD). These releases could degrade groundwater and surface water quality, with potential effects on fish, fish habitat, public access and uses, as well as Indigenous traditional land and water uses dependent on healthy aquatic systems.	Tailings management in the TSF	ML/ARD could mobilize metals and acidity into groundwater and surface water, degrading water quality, fish, and fish habitat. These effects may also disrupt Indigenous traditional uses of land and water, where clean water and healthy ecosystems are central to cultural practices, community well-being, and long-term sustainability.	The Initial Project Description (IPD) indicates that tailings from processing Main Zone ore will be stored in a surface facility, with final design details to follow in later studies. Tailings storage will form a substantial component of the project footprint and has the potential to affect long-term water quality. The IPD does not provide any data to support the characterization of the tailings, and the assumption that any tailings material is not potentially acid generating remains unverified. Geochemical testing will	The characterization and management of tailings has direct implications for long-term water quality and the integrity of the tailing's storage facility. If tailings material is assumed to be non-acid generating without sufficient testing and controls, there is a risk that acidity or metals could leach over time. Such outcomes may compromise environmental protection measures, results in long term institutional management of contamination and result in adverse effects on water resources, aquatic ecosystems, and fish habitat. Based on federal expert knowledge and learnings from Mount Polley and other TSF breaches, although the proposed mitigation measures are not novel or complex, subaqueous disposal of reactive mine wastes in the TSF requires rigorous oversight.	The proponent has committed to providing a new study on tailings source terms (Table E-1). In addition, NRCan recommends that the proponent also provide a detailed tailings management plan, supported by static and kinetic testing as outlined in MEND 1.20.1. Together, these reports would supply the data needed to evaluate drainage risks and outline mitigation measures such as seepage collection, covers, and adaptive deposition. This would reduce uncertainty and demonstrate that risks to water quality and structural integrity can be effectively managed using proven and sustainable practices.	NRCan recommends that the proponent provide a tailings characterisation and management plan supported by a conceptual model that summarizes the geochemical characterization of the tailings and outlines how risks of ML/ARD will be addressed. The plan should establish clear criteria and a decision framework for tailings placement, water management, and closure strategies. NRCan recommends that this framework demonstrate how water quality protection and long-term stability will be achieved through proven and sustainable practices, thereby

				provide the data required for these risks to be evaluated and for appropriate management measures to be developed in line with sustainable mining practices.			reducing risks to the environment and ensuring that the facility is designed, operated, and closed in a manner consistent with best practice.
NRCan-07	Use of PAG and/or metal-leaching construction materials in site infrastructure	Mine rock, overburden, borrow pits, quarry rock, and other materials used for construction of impoundments, roads, and water management structures, as well as quarry faces and road cuts.	The use of potentially acid generating (PAG) and/or metal-leaching (ML) material in construction works could release deleterious substances, degrading groundwater and surface water quality, with potential adverse effects to water quality, fish, fish habitat, public usage and Indigenous traditional uses of water and aquatic resources.	Construction materials are often less rigorously characterized than waste rock or tailings, yet their placement directly into facility embankments, roads, or other structures creates a potential release pathway. In a VMS setting, high sulfide content increases this risk.	The selection and placement of construction materials has direct implications for water quality and the long-term integrity of engineered structures. If potentially acid-generating (PAG) or metal-leaching (ML) material is used without sufficient controls, it may compromise mitigation measures, undermine engineered structure stability, and weaken environmental protection, leading to effects to water resources, aquatic ecosystems, and fish habitat.	NRCan recommends that the proponent develop a comprehensive ML/ARD characterisation and management plan that establishes clear criteria and procedures for identifying and segregating non-acid generating and non-metal leaching material suitable for construction prior to its use. NRCan recommends that the use of non-PAG mine rock consider the potential for the release of metals independent of the generation of ARD. NRCan recommends that materials with the potential to generate acid or leach metals only be used in construction if no other materials are available from nearby quarries and as such should be encapsulated or placed in engineered zones with complete contact water collection and treatment.	NRCan recommends that the proponent provide an ML/ARD characterisation and management plan with a conceptual model that summarizes the characterization of potential construction material that is geochemically suitable (non-PAG and not ML). NRCan recommends that the plan describe the criteria and decision framework for determining when PAG and/or ML material could be used in infrastructure while ensuring adequate water management. NRCan recommends that the proponent identify suitable proxies for

							identifying ML/ARD potential for testing of materials during development and operations to support rapid decision making, including the abundance and distribution of sulfides, iron carbonates, and all potential metals of concern.
NRCan-08	No defined plan for segregating mine rock with ML/ARD potential including rock that has the potential to leach metals independently of ARD generation.	Waste rock piles, ore stockpiles, TSF, overburden stockpiles, construction materials, open pits, water and mine waste management facilities	ML/ARD could mobilize metals and acidity into groundwater and surface water, degrading water quality, fish, and fish habitat. These effects may also disrupt public usages as well as Indigenous traditional uses of land and water, where clean water and healthy ecosystems are central to cultural practices, community well-being, and long-term sustainability.	The absence of an ML/ARD Characterisation and Management Plan and Conceptual Geochemical Model leaves uncertainty in how mine waste will be characterized, segregated, and mitigated during mine development and operations. Given the project's scale, the large waste volumes, and the sensitivity of downstream waters relied on by the public and Indigenous communities, this gap raises risks to water quality and site stability. Without	If mine components are not properly characterized and managed, water quality could deteriorate over the long term and aquatic habitat could be lost, including downstream effects on public and Indigenous uses. To address this, the project requires an ML/ARD characterization and management plan together with a geochemical conceptual site model. These provide the framework needed to predict drainage chemistry, assess risks, and evaluate the effectiveness of mitigation. Without this framework, it is uncertain that mitigation will be effective, making the issue material to federal decision-making under the *Fisheries Act* with respect to water resources, aquatic ecosystems, fish habitat, and long-term site stability.	NRCan recommends that the proponent provide a comprehensive ML/ARD characterisation and management plan that clearly describes how potentially acid-generating and leachable materials will be identified and managed, and also how non-acid generating (NAG) rock will be verified and monitored. NAG rock can leach sulfate and metals such as copper, selenium, and zinc, as identified in Appendix 6A of the Harper Creek EA Application. To address this, NRCan recommends that the plan establish explicit methods for distinguishing NAG rock with low leaching potential from materials that may still release contaminants. This includes defining test protocols, verification criteria, and thresholds that support segregation decisions, as well as adaptive monitoring to confirm performance over time. By integrating this approach into the conceptual geochemical model and updating it with ongoing characterization data, the proponent can demonstrate that all classes of mine rock are appropriately managed to protect water quality and long-term site stability.	To provide confidence that the issue can be resolved by existing means, NRCan recommends that the proponent describe commitments for ongoing updates to the characterization and management plan based on new data, collaborative engagement with provincial regulators, and consistency with established guidance such as MEND 1.20.1. NRCan recommends that additional field studies, such as test piles or pilot-scale evaluations, be considered to validate predictive

				clear measures, the likelihood and severity of adverse effects remain uncertain, increasing the potential for long-term environmental liabilities and unsustainable practices.			models and demonstrate the long-term effectiveness of proposed mitigation measures.
NRCan-09	Potential ML/ARD from pit wall exposures	Exposed pit walls in closure and post-closure	Sulfide-bearing wall rock exposed to air and water can generate acid and/or release metals over time, contributing contaminated drainage to pit lakes, groundwater, and surface water systems, which could require long-term treatment.	In a VMS setting, pit wall exposures are expected to contain variable sulfide mineralization, increasing risks of ML/ARD. Unlike waste rock or tailings, exposed pit walls cannot be easily removed, isolated, or covered, and their large surface area makes prediction and management more challenging.	If pit wall drainage is acidic or metal-rich, it can persist for decades post-closure, contributing to long-term contaminant loading and degrading pit lake water quality. This has direct implications for water quality, fish, and fish habitat, leading to uncertainty in federal decision-making under the *Fisheries Act* with respect to water resources, aquatic ecosystems, and fish habitat.	This issue could be mitigated by detailed geochemical characterization of pit wall material, including kinetic testing, to ensure long-term drainage quality predictions are representative of the material expected to be exposed at the end of mine life. Mitigation strategies (e.g., controlled flooding, engineered covers, collection/treatment systems, etc...) could then be developed based on these predictions.	NRCan recommends that the proponent undertake detailed geochemical characterization of pit wall material, including kinetic testing, to ensure long-term drainage quality predictions are representative of the material expected to be exposed at the end of mine life. NRCan recommends that mitigation strategies (e.g., controlled flooding, engineered covers, collection/treatment systems, etc...) be developed based on these predictions. NRCan recommends that the proponent describe how pit wall drainage will be monitored, how predictions will be

							validated, and suggest trigger values that would lead to implementing adaptive measures should monitoring indicates higher-than-expected contaminant release.