YKDFN Intervention
NICO Mine – WL Renewal

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Overview

1) Engagement and Consultation
2) Water and Wastewater Management Plan (WWMP)
3) Aquatic Effects Management Plan (AEMP)
4) Conceptual Closure and Reclamation Plan (CCRP)

Engagement and Consultation

- Caribou
- Downstream effects
- Limited historical consultation

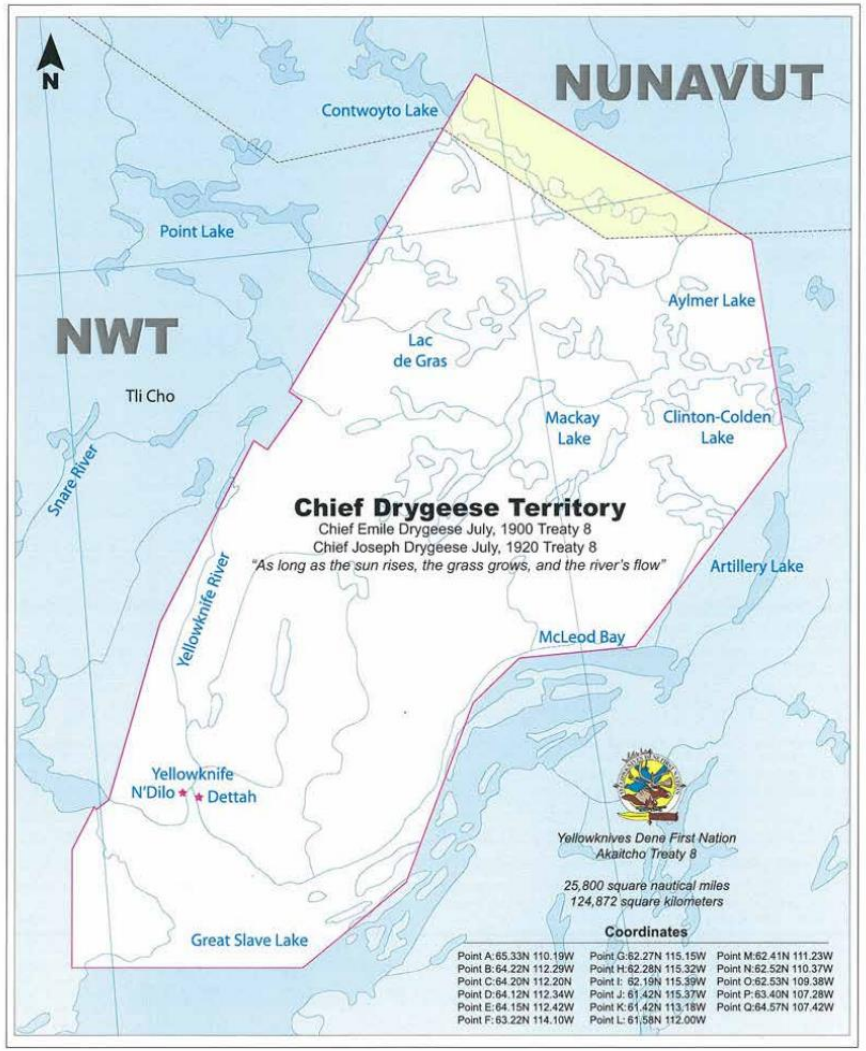

Figure 1: Chief Drygeese Territory

Caribou Migration

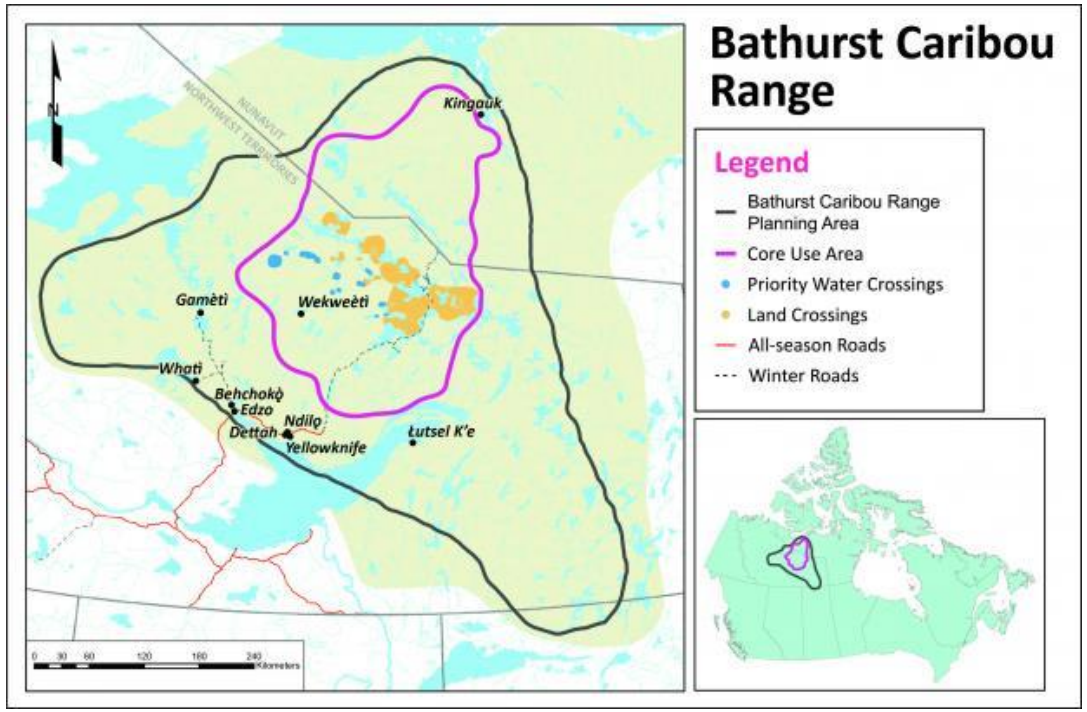

Figure 2: Bathurst Caribou Range [1]

- Caribou protection is of paramount importance to YKDFN members
- Caribou are highly mobile
- Impacts on caribou within the project footprint can propagate into Chief Drygeese Territory
- Caribou are a critical country food source for YKDFN members
- Degradation in caribou health or population viability may have consequences for the health, wellbeing, and food security of YKDFN members

[1] Bathurst Caribou Range Plan", Government of the Northwest Territories – Environment and Climate Change, accessed April 8, 2026. https://www.gov.nt.ca/ecc/en/services/barren-groundcaribou/bathurst-caribou-range-plan

Downstream Effects

- Marian River drainage (where NICO Mine is located) eventually drains to North Arm of Great Slave Lake
- Any negative downstream effects should be addressed well before they reach the North Arm, and certainly before they reach Yellowknife and the YKDFN communities of Ndilo and Dettah, it is certainly possible that negative downstream effects could reach Chief Drygeese Territory

Figure 3: Portion of Great Slave Lake near Yellowknife, Ndilo, and Dettah

Limited Historical Consultation

- Caribou migration and downstream effects could have easily been addressed through effective Traditional Knowledge (TK) consultation with YKDFN
- To date, there is no evidence demonstrating that YKDFN has been meaningfully consulted with respect to TK by Fortune
- No information has been provided regarding potential capacity or accommodation measures for anticipated impacts to Chief Drygeese Territory and the exercise of YKDFN rights

Water and Wastewater Management Plan (WWMP)

- Key missing elements include:
  - Detailed daily and monthly water balances;
  - Groundwater monitoring design;
  - Treatment performance verification;
  - System failure evaluation; and
  - Closure performance commitments.

WWMP

Topic	Specific Comment	Recommendation
ETF design basis	The ETF process description is too general and lacks full influent/effluent design chemistry, removal targets, and residual handling details.	Provide a detailed treatment design memorandum with parameter-specific design criteria, expected removal efficiency, brine/sludge management, and upset handling.
Wastewater treatment plant (WWTP) discharge	WWTP effluent is combined with ETF effluent to Peanut Lake, but the implications for combined discharge quality are not fully analyzed.	Provide a combined discharge quality assessment, including ammonia management, diffuser assumptions, and potential mixing zone implications.
Receiving environment	The plan identifies Peanut Lake and Nico Lake as receptors but gives limited receptor-specific impact analysis.	Add a receiving environment section that links discharge and seepage pathways to aquatic habitat, lake function, and culturally important resource protection.

WWMP

Topic	Specific Comment	Recommendation
Pit lake uncertainty	Pit overflow may discharge directly to Peanut Lake if water is considered clean enough; CWTS No. 4 is only conditional.	Require a conservative pit lake chemistry prediction, explicit discharge criteria, and a committed contingency design for CWTS No. 4 before closure approval.
Monitoring detail	Monitoring is described generally, but many parameter lists, frequencies, and predicted benchmarks are missing.	Submit a detailed monitoring program table covering all locations, parameters, rationale, methods, seasonal timing, QA/QC, and action thresholds.
Action levels	Action levels are mainly reactive and do not appear strongly tied to predictive indicators or failure mechanisms.	Revise the trigger framework to include predictive thresholds for rising water levels, declining storage, treatment instability, seepage trends, and wetland performance drift.

WWMP

Topic	Specific Comment	Recommendation
Indigenous community protection	The WWMP gives little attention to Indigenous land use, confidence in water and traditional foods, or community involvement in monitoring programs.	Add a receptor and community protection section, including Indigenous concerns, transparent reporting commitments, and community involvement in monitoring to facilitate notification for key exceedances or treatment failures.
Long-term liability	If CWTS performance is inadequate, active treatment may need to continue, but long-term obligations are not clearly defined.	Provide a long-term treatment contingency plan, financial assurance implications, performance milestones, and criteria for determining when perpetual care is or is not required.

Aquatic Effects Management Plan (AEMP)

- The plan would benefit from refinement in several key areas:
  - Integration of data across components;
  - Inclusion of hydrology and air quality monitoring;
  - Site-specific water quality objectives (SSWQOs);
  - Plankton monitoring as a special study;
  - Fish tissue chemistry sampling; and
  - Effluent plume characterization.

AEMP

Monitoring Component	Associated Concerns	Recommendations
Water Quality	Lack of integration with other components. SSWQOs for aluminum and phosphorus missing. Limited focus on Marian River downstream effects. Insufficient baseline data for key parameters prior to operational changes. Potential gaps in monitoring frequency and spatial coverage. Unclear communication of thresholds for action and adaptive management.	Develop a methodology for integrating water quality data with other components. Expedite development of SSWQOs for aluminum and phosphorus. Expand monitoring in the Marian River to capture downstream effects. Baseline data should be sourced from Territorial and Federal hydrometric datasets while monitoring should be undertaken across more sites at regular contracted intervals. Threshold limits for action triggering adaptive management strategies must be clear and concise.

Conceptual Closure and Reclamation Plan (CCRP)

- Substantial additional work is required to:
  - Quantify closure objectives;
  - Reduce uncertainty;
  - Strengthen water and geochemical risk management; and
  - Ensure that closure outcomes are protective of Indigenous rights and future generations.

CCRP

Topic	Specific Comment	Recommendation
Overall closure standard	The plan aims for “walk-away” closure and no long-term care, but major uncertainties remain for pit water, CDF cover, and CWTS performance.	Reframe the closure case conservatively. Require the proponent to demonstrate, not assume, that no long term active care is achievable, with evidence-based triggers for when that claim can be made.
Regulatory adequacy	The NWT guidelines require measurable, achievable closure objectives and criteria. Some CCRP criteria remain broad and qualitative.	Convert each component’s objectives into quantitative, time-bound performance criteria with clear monitoring endpoints, decision thresholds, and corrective action triggers.
Financial liability	NWT guidance requires financial security sufficient for third-party reclamation, care, closure, and monitoring.	Update the closure cost estimate using a conservative third-party basis that includes long-duration post-closure monitoring, contingencies for passive treatment failure, and possible long-term water treatment.

CCRP

Topic	Specific Comment	Recommendation
Open pit water quality	The plan admits pit water may not meet discharge requirements and proposes in-pit treatment or CWTS No. 4 as contingencies.	This requires a detailed pit lake water quality model update, uncertainty analysis, treatment decision tree, and contingency design basis before approval of the final closure plan.
Open pit mine water treatment plan	The plan indicates that overflow water may still require treatment even after active flooding, which suggests that flooding alone may not resolve post closure water quality concerns. This introduces uncertainty regarding whether the proposed closure endpoint can be achieved within the projected timeframe.	Clearly define the treatment decision framework prior to overflow, including trigger values, responsible decision points, preferred treatment hierarchy, and contingency timelines for implementation.
Wildlife protection plan	The boulder barrier is intended to discourage access by both people and wildlife, but the plan acknowledges that some wildlife may still use the flooded pit and may be exposed to poor surface water quality. This indicates that access control alone may not fully address ecological risk.	Supplement the barrier design with a wildlife risk management plan that includes species-specific deterrence measures, monitoring of bird and wildlife use, incident reporting, and adaptive mitigation if pit water attracts or affects wildlife.

CCRP

Topic	Specific Comment	Recommendation
Underground mine water monitoring	The plan proposes that the underground workings will be allowed to flood naturally after dewatering ceases, but it does not explain how the quality of flooded mine water will be confirmed or how the flooding process will be tracked over time.	Add a post-flooding monitoring program that includes water level recovery, mine water chemistry, and assessment of any interaction with the open pit or surrounding groundwater system.
Passive treatment reliance	The closure concept depends heavily on CWTS performance and eventual natural improvement of water quality.	Final plan should require pilot-scale and field-scale evidence, performance criteria, winter-operability assessment, and failure-response planning for passive systems. Passive treatment should not be treated as self-proving.
Groundwater protection	Although the Plan shows the location of the monitoring wells, however, it doesn't provide any indication on depth placement, strategy for type and screen length. Based on Figure 16, there is a lack of upgradient monitoring wells that is necessary for baseline characterization.	At least six (6) more upgradient monitoring wells should be installed and logged at drilling time.

CCRP

Topic	Specific Comment	Recommendation
Groundwater protection	Flow and transport in the vadose zone are ignored in the closure plan. That information should be derived either by field or laboratory methods. Comprehensive vertical hydraulic conductivities testing should be included to determine rate of water movement enroute to the groundwater table.	Assess the groundwater recharge rate and the retardation factor of dissolved contaminants relative to the site-specific characteristics. Combined, these parameters have the long-term potential impact on the localized groundwater quality.
Groundwater protection	Decreasing the frequency or discontinuing the groundwater quality program should not be optional because of the intrinsic environmental risk and associated uncertainties.	This should proceed only after substantial monitoring data have been collected and scientifically evaluated. An adaptive management approach can then be considered and implemented accordingly.
Geochemical risk	Tailings and mine rock show metal-leaching potential, and seepage is expected to require removal of metals such as arsenic.	Expand the geochemical prediction program in line with MEND best practice, with conservative assumptions, longer-term field confirmation, and explicit linkage to closure design and financial security.

CCRP

Topic	Specific Comment	Recommendation
Aquatic life	The plan provides a useful ecological baseline for aquatic life, wildlife, avifauna, and lower trophic communities, but most of the supporting field information is dated, with several studies completed between 1998 and 2012. This creates uncertainty as to whether current habitat conditions, species use, and ecological sensitivities remain accurately represented for closure planning.	Update the baseline with more recent aquatic and wildlife surveys, lower trophic communities, and any ecological changes that may have changed since last field assessment.
Water management structures	The plan expects eventual breaching of ponds and abandonment of treatment systems.	Require breach design criteria, downstream impact assessment, sediment management plan, and confirmation that post-breach water quality and hydraulic stability will remain protective.

CCRP

Topic	Specific Comment	Recommendation
Traditional Knowledge integration	The plan references engagement and design changes influenced by Tłı̨chǫ concerns, but not a strong co-developed closure framework.	Develop closure objectives, indicators, and monitoring with the affected First Nations, including community-defined land use, wildlife, food security, and cultural continuity outcomes.
Traditional foods and exposure pathways	Concerns about contaminated water, fish, wild foods, and medicinal plants are acknowledged, but closure criteria for these receptors are weak.	Add a post-closure human and ecological exposure framework, including fish tissue, wildlife use, berry and medicinal plant sampling where appropriate, and culturally relevant receptor criteria.
Wildlife protection	The plan recognizes possible wildlife exposure to contaminated pit water and proposes a boulder barrier.	Add species-specific monitoring and adaptive management for birds, caribou, moose, carnivores, and scavengers, including pit-water attraction risk and wildlife access patterns over time.
Social closure planning	The plan acknowledged that social transition plans have not yet been developed. The transition measures proposed are generally constructive, but many are framed at a high level and lack implementation detail, timelines, roles, accountability, and measurable outcomes. This limits confidence in their practical effectiveness.	Convert the proposed measures into a structured closure transition program with defined responsibilities, timelines, performance indicators, and reporting requirements for communication, training, job transition, and community support initiatives, consistent with ICMM integrated closure practice.

CCRP

Topic	Specific Comment	Recommendation
Progressive reclamation	The guidelines emphasize progressive reclamation to reduce exposure duration, improve learning, and reduce liability.	Strengthen the progressive reclamation program with specific schedules, measurable targets, and public reporting on lessons learned that materially refine final closure design.
Progressive reclamation	Monitoring requirements are identified, but they remain general and do not clearly specify performance thresholds, inspection frequency, or corrective action triggers for each progressive reclamation component.	Develop a component-specific monitoring matrix that sets out parameters, frequency, success criteria, and required responses where performance is not achieved.
Progressive reclamation	The plan provides a framework for progressive reclamation, but it remains more descriptive than performance-based and does not yet fully show how progressive reclamation will materially reduce long-term closure risk across the site.	Provide a concise risk-reduction summary showing how each progressive reclamation activity contributes to final closure objectives, liability reduction, and improved long-term feasibility.
Uncertainty management	The plan lists uncertainties but does not provide a sufficiently rigorous uncertainty-reduction roadmap.	Add a closure research plan with tasks, timelines, responsibilities, design questions, success metrics, and commitments to revise the CCRP, ICRP, and security as evidence improves.

CCRP

Topic	Specific Comment	Recommendation
Enforceability	Many commitments are framed as future studies or future refinement.	Convert major future studies into board-enforceable licence conditions with deadlines, approval requirements, and linkage to closure security updates.
Closure activities	The section provides a comprehensive inventory of closure actions by project component, but most actions are presented as task lists rather than being tied to measurable closure objectives or success criteria. This makes it difficult to determine how closure adequacy and completion will be verified for each component.	Link each component-specific closure action to clear performance criteria, monitoring indicators, and completion benchmarks for physical stability, chemical stability, ecological recovery, and maintenance requirements.
Temporary closure activities	The temporary closure measures for the open pit focus mainly on access control and monitoring, but potential wildlife attraction to pit water and wildlife exposure pathways are not addressed in sufficient detail.	Include a temporary-closure wildlife management plan for the open pit, including deterrents, inspection frequency, incident reporting, and adaptive measures if wildlife use or mortality is observed.

CCRP

Topic	Specific Comment	Recommendation
Temporary closure monitoring and reporting	The plan demonstrates a strong commitment to continued oversight during temporary closure, but it remains more procedural than performance based.	Add a concise temporary-closure monitoring framework that links key risks, monitoring requirements, action thresholds, responsible personnel, and contingency responses.
Temporary closure contingency program	The plan notes that external consultants may be engaged if required, but it does not identify the trigger conditions or process for mobilizing specialist support.	Establish clear triggers and procedures for engaging external geotechnical, water quality, environmental, and engineering specialists during temporary closure.
Permanent closure and reclamation	The four-stage closure framework is conceptually clear, but it does not define measurable decision points for moving from one closure stage to the next. This creates implementation risk and makes it difficult to verify closure readiness.	Establish a detailed transition criteria for each stage, including water quality thresholds, pit filling milestones, infrastructure decommissioning benchmarks, and monitoring performance requirements.

CCRP

Topic	Specific Comment	Recommendation
Post-closure monitoring	The post-closure monitoring framework is comprehensive, but several monitoring endpoints are described qualitatively using terms such as “stabilized” or “suitable for direct discharge,” which may create ambiguity for closure decision-making.	Define quantitative trigger values and closure performance thresholds for water quality, toxicity, physical stability, revegetation success, and wildlife protection.
Post-closure monitoring	The conditions for reducing or discontinuing monitoring appear to rely heavily on professional judgment, with limited evidence of fixed decision rules.	Develop a clear adaptive monitoring framework that specifies when monitoring frequency can be reduced, when it must be intensified, and what evidence is required before discontinuation.
Post-closure monitoring	The section lists social monitoring as part of the post-closure assessment framework, but no detailed methodology, indicators, or reporting approach is provided in the material shown.	Add a defined social monitoring program with measurable indicators, community engagement commitments, and reporting requirements, particularly where closure outcomes may affect land use or traditional use concerns.

CCRP

Topic	Specific Comment	Recommendation
Post-closure monitoring	The monitoring program focuses strongly on water chemistry and toxicity, but the linkage between monitoring results and management response is not clearly described.	Include response actions for exceedances or adverse trends, such as additional treatment, engineering review, intensified monitoring, or corrective reclamation measures.
Reclamation completion evidence	The plan contemplates reclamation completion and performance assessment reports, as required by the NWT guidelines.	Specify in advance what evidence will be required for each report, including quantitative closure criteria, monitoring datasets, as-built information, and independent professional sign-off.
Reclamation completion evidence	Maintenance activities are described in general terms, but the plan does not clearly define inspection frequencies, maintenance triggers, or response timelines for issues such as erosion, blockage, animal burrowing, or structural deterioration.	Develop a maintenance management plan with defined inspection intervals, action thresholds, repair priorities, and documentation requirements for each active closure component.
Reclamation completion evidence	The reporting approach does not clearly explain how monitoring results, maintenance findings, and corrective actions will be integrated into an adaptive management cycle.	Require each performance report to include trend analysis, interpretation of monitoring data, summary of maintenance interventions, and recommendations for modifying closure measures where performance is not meeting expectations.