

	Nunavut Water Board Preliminary Guidelines for Applicant Cumberland Resources Ltd. – Meadowbank Project Dated: 14 March 2007	EC	GN	DFO	INAC	NWB
	The Applicant shall submit with the application a concise executive summary of the application and of any separate supporting document, report or study, in English, Inuktitut and Inuinnaqtun. A summary document should be presented which is to contain details of the information requested rather than general statements.		Yes			Provide Innuinnaqtun version of executive summary
	In complying with the NWB information guidelines, the Applicant, where practical, may combine components of the information requested in List 2.1 and 2.2 as well as the information requested in Section 3 into more concise plans to provide clarity and eliminate duplication. If this practice is considered, than the Applicant shall clearly outline, through proper referencing and clear detailed statements, how the NWB shall consider the documents that have combined elements of information. Information management is the responsibility of the Applicant. The Applicant is to guide the NWB through its application in a fluid logical manner.		Yes - Recommendations in the List 2.1, 2.2 and Section 3 have not been fully addressed in the Type A Water License Application (Document 485); these deficiencies are discussed in details in respective sections below. In regard to the organization of the application, GN-DOE (Government of Nunavut, Department of Environment) finds information is often hard to locate in some of the supporting documents due to the absence of tables of contents. Finally, the applicant should ensure all documents referenced in the application and its supporting documents be provided. For example, the applicant makes references to the Project Alternatives Report on page 8-4 of the Preliminary Closure & Reclamation Plan, but this report is not submitted or identified in the license application.	No - The applicant has not provided the Type 'A' Water License Application in a fluid logical manner and has not properly referenced the combined elements of information.		Recommend combining monitoring plans into one plan; combining QA/QC procedures into one plan; integrating technical memos and addendums into appropriate supporting documents
	The Applicant is to recognize that the NWB water licence application process is independent of NIRB's environmental assessment process. As such, the materials provided to NWB must be able to support the application on their own merit. If documents used during the NIRB process are also being used to support the NWB water licence then they must be submitted and adequately referenced in the NWB water licence application. It is inferred that information filed at NIRB may form the basis of the design, operations, and management of the infrastructure and systems proposed in the water licence application. The Applicant is to decide in what fashion they wish to complement the water licence application with materials filed with NIRB. Of course the Applicant is required to guide the NWB through water licensing materials with appropriate referencing of materials that may complement the water licence		YES			Recommend table 1.1 from Document No. 485 be revised. Recommend Document No. 502 be revised to cross reference with Table 1.1 and section 1.1 of Document No. 485. Recommend improving referencing.
	The Applicant is to understand that each piece of design or management correspondence shall act as a discrete stand-alone document that effectively discusses the specifics of a particular design or management plan (that is signed for authorship, and where appropriate, sealed by a qualified professional) The Applicant is to provide a CV (curriculum vita) for each signing professional as well as any other representative that intends to participate at a Public Hearing in its water licence application. The CV, partnered with the application materials and/or testimony provided, will allow the NWB to understand the weight of opinions presented through the written and verbal records.	Yes	YES	No - The NNLP references the EIA and supporting documents when it is to act as a stand alone document. CVs have been provided.		Recommend adding Norbert R. Morgenstern CV. Recommend that the following plans be signed: ARD/ML Sampling and Testing Plan; Testing and Monitoring of Faults; Water Quality and Flow Monitoring Plan; Hazardous Materials Management Plan; Emergency Response Plan; Spill Contingency Plan; Mine Waste and Water Management Plan; Preliminary Closure and Reclamation Plan; Aquatic Effects Management Plan; Habitat Compensation Addendum; No Net Loss Plan
	The NWB will not engage in an exhaustive process of conditionally approving technical reports through conditions set in a water licence. Thus it will be necessary to provide information related to design and management prior to water licence issuance. With this in mind the Applicant is encouraged to develop the design of infrastructure, and formulate management, operational, and contingency plans beyond the conceptual and intermediate phases before the submittal of a water licence application.	Yes - Incineration Management and Emission Monitoring Plan not submitted. Landfill Design and Management Plan still conceptual in nature; Potential effects from the proposed landfill on VEC's and site-specific mitigative measures and monitoring should be appropriately cross referenced to include Document number, section and page number. NIRB T&C no. 10 Sewage Treatment System not selected for the project. Selection should be made and details provided for licensing.	YES			Provide signed and stamped detailed design drawings for infrastructure and earthworks.
	Through the design of a full scale operational mine, it is intuitively understood that individual designs and management plans will interconnect with one another (i.e. Site water management is a function of the structures on site set to convey waters). The Applicant is to communicate the connectivity of discrete design and management plans through discussion in the discrete designs and management plans or through a separate document that details the macroscopic view of mine component interconnectivity. A statement should be included to further clarify interlinking and cross-referencing of sub-documents. For example, if a main summary document is used to guide the reader through the application, links to sub-documents along with cross-linking between sub-documents may be required (when examining the contents of Annex A, a discrete Abandonment and Restoration (A&R) Plan is not presented. It must be understood that the Applicant is to still guide the NWB through A&R practices presented in individual reports through a covering document that outlines all components of the A&R Plan in the water licence application). Cross-referencing to all sub-documents and reference	Poor Cross-referencing: Information difficult to find	No - The GN-DOE found that on some occasions links between the main summary document and supporting documents (i.e. the Type A Water License Application or Document 485) as well as links between supporting documents are insufficient. This makes it difficult for reviewers such as GN-DOE to find the information needed for review.			Recommend table 1.1 from Document No. 485 be revised. Recommend Document No. 502 be revised to cross reference with Table 1.1 and section 1.1 of Document No. 485.

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	The NWB encourages and expects the Applicant to adhere to best engineering practices and sound construction methods when designing and managing infrastructure related to the use of waters or the deposition of wastes. The NWB encourages the use of ASTM standards when defining and developing project specifics in technical documents. Generally the following information should be presented, though not limited to, when submitting application designs and plans as outlined in List 2.1		Yes			
List 2.1						
i	Design rational; design requirements, design criteria, design parameters, design standards/analysis/method;		Yes			Yes
ii	Design assumptions and the limitations associated with such design assumptions;		Yes			Yes
iii	The inclusion of clear, definable engineering qualifiers with all design drawings and reports;		No - Preliminary engineering designs and drawings for some of the facilities have not been submitted for review; see Line 29 to 31 for details.			Design drawings not provided for various components including Landfill, Landfarm, Waste Rock Storage Facilities, Effluent Outfall, Fuel storage areas, Explosives storage areas, and Roads. Conceptual drawings provided for Sewage Treatment Plant and Water Intake facility
iv	Site specific data and analysis to support the design and management decisions made;		Yes			Yes
v	Materials that appropriately delineate the particulars of a design or plan;		No - Management details for some project components (i.e., the all-weather road, airstrip and quarries) have not been provided for review; see Line 33 and 40 below for details.			No
vi	Construction methods and procedures on how infrastructure will be put in place on-site.		Yes			Not found for landfarm, sewage treatment facility, effluent outfall diffuser, fuel and explosive storage areas, and roads
vii	Instrumentation and monitoring requirements of the proposed designs and plans;		No - Management details for some project components (i.e., the all-weather road, airstrip and quarries) have not been provided for review; see Line 33 and 40 below for details.			Not found for landfarm, sewage treatment facility. See GN Comments.
viii	Details on how facilities, structures, and plans will be operated, maintained and implemented;		Yes			Not found for landfarm, sewage treatment facility, effluent outfall diffuser
ix	Details on chemicals or other hazardous or potentially hazardous materials that will be used and will be in contact with or may impact water either directly or indirectly;		Yes			Not found for landfarm, sewage treatment facility,
x	Mitigation measures that will be implemented when working in close proximity to water;		Yes			Not found for landfarm, sewage treatment facility.
xi	Appropriate referencing of other documents and annexed materials.		No - see Line 8 above for more details			Recommend revising as appropriate given deficiencies noted above
	The Applicant should also consider that the concept of Adaptive Management includes the need to describe the methods used to assess the risks associated with uncertainty in design and management, and clearly outline the measures and quantifiable markers for when a final design decision will be made. The Applicant shall keep in mind that Adaptive Management is a flexible framework to implement final decisions through a mature intermediate design and not a "revolving door" design method that allows for multi-iterations to a preliminary design. A commitment to a final design needs to be made through the designs and plans submitted in the water licence application, or a clear defined criteria for which final design decisions will be made must be submitted when a final design can not be presented. Installing the strategy of Adaptive Management through the design and management of the Meadowbank Project can positively refine mine operations through the dynamics of scientific modeling, experimentation and monitoring to improve processes and lessen environmental impact. The NWB will consider the key		Yes			Unclear how adaptive management strategies for dike construction and tailings freezeback satisfy this guideline. Provide adaptive management strategies where there is uncertainty in the detailed designs noted above (Row 7)
	The NWB expects that plans and designs shall be presented where the use of water or deposit of waste will take place. The Applicant shall also consider that information must be presented where there is a potential impact through the deposition of waste, and describe the measures the applicant proposes to take to avoid or mitigate any adverse impact of the use of waters or the deposit of waste; This may include, but not be limited to, the design and management of the issues in List 2.2.		Yes			
List 2.2						
i	earthwork infrastructure;		Yes			Yes
ii	water intake facilities and how water will be withdrawn;		Yes			Conceptual plan and design provided in application. Final decision and details of design not found.
iii	interim and permanent waste rock facilities;		Yes			Details of waste rock storage facility design and drawings not found
iv	tailings containment area;		Yes			Yes
v	landfills;		No - The Landfill Design and Management Plan or Document 458 discusses management and design of landfills, but there is no preliminary engineering design or drawings; only a cross-section of the landfills is included in the document.			Conceptual plan and design provided in Landfill Design and Management Plan. Details of design not found. See GN Comment.

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vi	landfills;		No - The Landfarm Option Analysis (Document 498) discusses management options for landfills. Specifically, the applicant provides option analysis for locations and disposal/treatment but no information on the preferred option for disposal/treatment methodology is included. Additionally, no information is provided regarding operation/maintenance, and engineering design/drawings of the landfills.			Conceptual plan and design provided in Landfarm Option Analysis. Details of design not found. See GN Comment.
vii	fuel and chemical storage facilities;		No - The Hazardous Materials Management Plan (Document 457) discusses management of hazardous materials (i.e. fuel and chemicals), but there is no information regarding engineering design/drawings of the storage facilities for these hazardous materials.			Discussed in Hazardous Materials Management Plan. Layout provided but detailed drawings not found. See GN Comment.
viii	explosives management areas and facilities;		Yes			Discussed in Hazardous Materials Management Plan. Layout provided but detailed drawings not found.
ix	construction materials (i.e. quarried rock);		No - Quarry locations, volumes of quarried rock along the road, and quarrying methodology have not been provided for review. The Preliminary Closure & Reclamation Plan (Document 511), page 8-4 indicates that information on quarry locations along the all-weather road has been provided in the Project Alternatives Report; however, this report has not been submitted for review.			Yes - Construction material generated from pe stripping operations at Third Portage deposit, starter pit. Mine plan development sequence and materials balance has been provided. Quarrying for all weather private access road permitted under separate water licence.
x	hazardous waste facilities;		Yes			Yes - Discussed in hazardous Materials Management Plan.
xi	site water management facilities;		Yes			Yes - Discussed in Mine waste and water management plan
xii	wastewater treatment facilities;		Yes			Discussed in technical document "Sewage Treatment System to be used at Meadowbank Gold Project". Conceptual drawings provided in Main Document. Final design and drawings not found.
xiii	ore stockpiles and waste rock piles;		Yes			Discussion of ore stockpile not found
xiv	dewatering programs;		Yes			Yes - Discussed in Mine waste and water management plan
xv	hydrostatic testing programs;		Yes			Details of hydrostatic testing programs at it relates to fuel storage tanks and fisheries not found.
xvi	road, airstrip and ice road construction;		No - Details for the all-weather road and airstrip construction are not provided (i.e., construction methodologies, volume of rock needed for construction, length of the road/airstrip).			Plans and designs for roads and airstrip not found. Ice road may not be not applicable. See GN Comment.
xvii	water use;		Yes			Provide clarification of annual water volumes
xviii	macroscopic site surface water and groundwater management;		Yes			Yes - Discussed in Mine waste and water management plan
xix	spill contingency and emergency response;		No - See comments in Lines 81 to 85 below.			Yes - Discussed in Spill Contingency and Emergency Response Plan. See GN Comment.
xx	interim and final abandonment and reclamation of the mine site;		Yes			Yes - Discussed in Preliminary Closure and reclamation plan
xxi	aquatic effects monitoring;		Yes			Yes - Discussed in Aquatic Effects Monitoring Plan
xxii	general monitoring;		Yes			Yes - Discussed in various Monitoring Plans. Recommend submitted a stand-alone Monitoring Plan
xxiii	quality assurance and quality control;		Yes			Yes - Discussed in various plans. Recommend submitting stand alone QA/QC Plan
xxiv	geotechnical and structural monitoring		Yes			Yes - Discussed in Dike designs
xxv	the collection of weather data for purposes of mine design;		Yes			Yes - Discussed in Dike designs
xxvi	metal leaching / acid rock drainage management;		Yes			Yes - Discussed in Operational ARD/ML Sampling and Testing Plan
xxvii	permafrost protection.		Yes			Yes - Discussed in Dike designs and Mine waste and water management plan as it relates to monitoring thermal modelling predictions for Dikes, Tailings Impoundment Facility and waste rock storage piles.

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	It is understood that the Meadowbank Project may not include all of the design, construction, monitoring, and management plans listed above and that other designs and management plans may be required to be submitted by the Applicant. The NWB is available to assist and provide additional guidance on each design and management plan through future interactions with the Applicant. The Applicant shall understand that there will be a requirement to provide appropriately qualified as-built construction drawings once structures have been constructed and are in operation.		Yes			Yes
	A summary table of all monitoring commitments is to be provided that details all Surveillance Network Program (SNP) locations. The table should include, but not limited to, parameter(s), location, frequency, and mining phase, along with, cross-referencing to sub-document where detailed information was provided. Where appropriate, a map detailing location of monitoring is to be provided within the application. It is suggested that the Applicant contact Peter Kusugak, Manager of Field Operations at Indian and Northern Affairs Canada (INAC).	Yes	Yes			Yes - Provided in Appendix A of Water Quality and Flow Monitoring Plan.
	The application is to include a summary table of expected quality and quantity of waters over time in all sumps, SNP, and discharge points, along with i) if applicable, adaptive management criteria to benchmark if mitigation/contingency are to be implemented, ii) if applicable, water quality criteria, and iii) management action.	Yes	Yes			Yes - Provided in Water Quality and Flow Monitoring Plan.
	The Applicant is to detail what information will be included in annual reports along with a proposed layout of information that will be submitted to the NWB within the application.	Yes	Yes			Yes - Annual and exceedance reporting is discussed in Water Quality and Flow Monitoring Plan. Main Document makes commitment to provide updates to project activities and management plans in an annual report or series of facility specific or management plan specific reports (sec 4 pg 81)
	The Applicant is to submit a water licence application report that communicates structure design and management plans that use waters or may impact waters through the deposition of wastes. The Applicant is encouraged to develop design and management discussion through a clear methodical layout that is logical in nature. Additional information may be required from the Applicant following an initial assessment of the application by the NWB. The NWB will assist the Applicant in completing water licence application materials and recommends that the Applicant communicates with the NWB if uncertainty exists when preparing water licence application materials.	Yes	Yes	Yes		Yes
	The Applicant is to file, through cover letter correspondence, a declaration of application completeness authored and signed by the Chief Executive Officer indicating that the application submitted is considered complete and the guidelines issued have been consulted.	Not reviewed	Yes			Cover letter signed by VP Environment. Letter signed by CEO not found. Letter does not state that application is complete in accordance with guidelines.
	The NWB will not process an application that it deems to be incomplete and/or when supporting documents have not been submitted. The NWB will give the required hearing notice of no less than sixty-days after it deems the application to be complete. The Applicant shall understand that the water licence application must be a stand-alone document.		Yes			
	Although the NWB water license application is a stand alone document the Applicant must understand that it can not replace or supersede any other government regulations, territorial or federal. As such the commitments made by the Applicant to other governmental bodies (i.e. NIRB) should be described in a conformity table for all conditions pertaining to the water licence. Section 3 lists information that should also be included in the water licence application.		Yes	No		Yes
	The NWB understands that the Applicant has communicated with and will provide each organization included on the NWB's distribution list with the application and determine the number of copies and the format (electronic and/or hard copies) each interested organization requires to complete their respective reviews.			No - Currently, interveners such as GN-DOE only received electronic copies from the applicant. GN-DOE recommends that hard copies of the application are provided once the application is deemed appropriate for technical review.		See GN Comment
3	Additional Information to be Considered by the Applicant					
1	Water Quality					
i	Results of the assessment of the permeability of any faults beneath the northwest arm of Second Portage Lake (i.e. the tailings impoundment area);	Yes	Yes		Yes - Work Plan to collect data to assess permeability is in place, Fault Testing and Monitoring Plan	Yes - Hydraulic Conductivity provided, not permeability. Permeability to be assessed through monitoring.
ii	Mitigation measures that can be undertaken if groundwater monitoring around the Second Portage tailings facility demonstrates that contamination from tailings has occurred through the fault;	Yes	Yes			Yes - Mitigation measure involves grouting and/or freezing the fault zone
iii	Results of the re-sampling of the existing groundwater monitoring wells, which was to occur as soon as possible upon reopening the camp in 2007;	Yes		No - The 2006 Baseline Ground Water Quality (Document 317), page 1 states additional groundwater samples were taken in 2006, but there is no mentioning of samples to be taken once the camp is reopened.	No - (D317) 2006 gw program completed; no 2007 program.	Resampling in 2007 not found. See INAC and GN Comments.

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iv	Revised estimates of the quality of the groundwater that will flow into the open pits, using existing groundwater data from both rounds of sampling (i.e. 2003 and 2004);	Yes	Yes		Yes - (D499) Pit water model re-run for higher mining rate of 8,500 TPD - shows pit water TDS may be 3x higher if gw TDS 3x higher; if hydraulic conductivities of Second Portage and Bay Zone Faults are 3x higher, pit water TDS may be 40% higher than base case.	Yes - Discussed in Water Quality Predictions report
v	Revised site water quality model using the updated estimates of the quality of groundwater flowing to the pits, and additional groundwater quality data collected on site. The revised water quality model should be used to assess the impacts of pit water discharges on the environment and to the develop mitigation measures for disposing of pit water of poor quality;	Yes	Yes		Yes - (D499) Pit water model re-run for higher mining rate of 8,500 TPD - shows pit water TDS may be 3x higher if gw TDS 3x higher. (D467) Water treatment plans predicated on water not requiring significant treatment; implied assumption that mitigation measures for "disposing of pit water of poor quality" not needed.	Yes - Discussed in Water Quality Predictions report and Revised Predictions of Brackish water upwelling in open pits
vi	Detailed contingency plans for the treatment of turbid water during dewatering activities and/or increased suspended solids during operations (i.e. rewatering);	Yes - more detail needed	Yes			Plans for treatment of turbid water during rewatering not found
vii	Detailed information regarding the disposal of lake bottom sediments;	Yes	Not applicable - The Type A Water License Application (Document 485), page 59 states that construction of dewatering dikes will not involve removal of lake bottom sediments; therefore, this recommendation is not relevant.			Yes - Discussed in Mine Waste and Water Management Plan
viii	Detailed water treatment plans for discharges from the Tailings Impoundment Area, as well as the Vault Pit attenuation pond (on a contingency basis). Water treatment plans should include estimates of treatment efficiency for each parameter of concern and a description of pH adjustment methods;	Yes	Yes		Yes - (D467) Water treatment for tailings reclaim water and tailings slurry are provided; water treatment contingencies provided for attenuation pond and mine contact waters; treatment efficiencies not described; pH adjustments are provided.	Yes - Discussed in technical memo entitled "Proposed Water Treatment Methods"
ix	Details regarding treatment of camp sewage, including the type of treatment system and the expected treatment capabilities;	Yes	Yes			Yes - Discussed in Technical Memo entitled "Sewage Treatment System to be used at Meadowbank Gold Mine"
x	The NIRB Project Certificate requires the establishment of "receiving environment discharge criteria" for discharges into Wally Lake and Third Portage Lake. The water license application should clearly outline the proposed discharge criteria, how the criteria were developed, and how these criteria will be used to prevent ecological effects in the receiving environment as a result of reconnecting the pit lakes to the watershed (especially in regards to contaminants, major ions and nutrients);	Yes - To be decided by water board. MMER is a minimum national standard and any discharge at the end of pipe is to be protective of the receiving environment. A moderately sized mixing zone should be included that ensures no chronic toxicity to the receiving environment. Applicant should discuss rationale for using Nunavut drinking water criteria and how this will be sufficient to protect aquatic life in the Meadowbank project area. Table A-1 refers to RRNWT. Applicant is to clarify what guidelines are being used. EC is unaware of Nunavut drinking water guidelines, the applicant should clarify.	Yes		No - additional detail required	Yes - Discussed in Report on Conceptual Design of the Effluent Outfall Diffuser for Wally Lake, Assessment of Effluent Dilution Potential for Third Portage Lake Diffuser, and Proposed Discharge Water Quality criteria for the Portage and Vault Attenuation Ponds. See EC Comment.
xi	Details regarding the effluent outfall configuration;	Yes	Yes		No - Requirements were for the preparation of details on the outlet configuration, discharge characteristics, plume behavior and bathymetric information at two selected diffuser sites at Third Portage Lake and one site at Wally Lake. EBA did not find mention of potential cumulative impacts based on an extended life of the mine at respective locations. Also, a monitoring program to confirm mine effluent and dilution chemistry results should also be prepared prior to the final design and implementation program.	Yes - Final design not provided due to insufficient site specific data. Conceptual design is based on effluent discharge criteria, mixing zone boundaries and predicted dilution factors and multi port diffuser design.
xii	Predictions for the likely behaviour of the discharge plume;	Yes	Yes		Yes - modelling completed	Yes - Discussed in Report on Conceptual Design of the Effluent Outfall Diffuser for Wally Lake, Assessment of Effluent Dilution Potential for Third Portage Lake Diffuser
xiii	Bathymetric information for Wally Lake;	Yes	Yes		Yes - bathymetric survey completed	Yes - Provided in Report on Conceptual Design of the Effluent Outfall Diffuser for Wally Lake
xiv	Detailed treatment plans for the treatment of effluent from attenuation pond and/or reclaim pond prior to transfer to the Goose Pit	Yes	Yes			Yes
xv	Discussion of the consequences of long-term stratification in the pit lakes and associated contingency plans; and	Yes	Yes			Yes

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xvi	Monitoring plan for the Baker Lake collection sump, including parameters to be sampled, sampling frequency and sampling locations.	No - Management, mitigation and monitoring for Baker Lake collection sump has not been included as per NIRB condition no. 12. Where applicable details and commitments outlined in the proponents Water Use and Management Plan submitted as part of the 8BC-MEA type B water license should be incorporated into Meadowbank Type A water license project proposal and any outstanding concerns raised by intervenors should be addressed. EC feels that no monitoring for Baker Lake facilities in unacceptable.	No - The Aquatic Effects Management Program, page 10-13 states that water quality monitoring related to the Baker Lake facility will not be conducted due to the localized and small-scaled impact related to this project component. The applicant should be reminded that the facility is located next to Baker Lake which is a drinking water source for the Baker Lake Hamlet; therefore, there is a need for monitoring to ensure water in Baker Lake will remain uncontaminated. Finally, the GN-DOE would like to remind the applicant that this monitoring term is a requirement under the NIRB project certificate (term & condition no. 12), and the applicant is required to fulfill this obligation during the NWB licensing stage.			No - See EC and GN Comments
2	Spill Contingency Plan					
i	Detailed Spill Contingency Plan for the mine site, the all-weather road, and the marine components. The Spill Plan should include, but not be limited to, the following information:	Yes	No - The Spill Contingency Plan (Document 483) doesn't discuss spill contingency related to the all-weather road and the marine components.		No - Cannot Find	See GN Comment.
ii	Identification, description and evaluation of the potential impacts of all project-related accidents and malfunctions (i.e. types, sources, threat-risk assessment, worst-case scenarios, etc.) that may occur during each phase of the project, including, but not limited to:	Yes - Evaluation of potential impacts should include a discussion on the potential impacts to marine and terrestrial wildlife.	No - GN-DOE is aware that this was addressed during the NIRB environmental assessment process; however, this information does not appear to have been carried forward into this license application.		pending receipt of Type B WLA	See GN Comment. See Comments in Lines 82 - 85
	Spills of petroleum hydrocarbons, hazardous materials, and other contaminants of concern onto land, ice, and into marine waters (i.e. ocean/sea/salt waters), freshwaters, ground waters, and potable water supplies;	No - For each product breakdown mitigation should include more details for treatment and recovery on snow and ice, water, streams and site-specific landforms. Environmental factors need more consideration such as recovery on sandy beaches, bedrock, gravel beaches, ice covered or mixed-sediment beaches ect..	No - See comment in Line 81 above			Emergency Response Plan includes dike failure scenarios. Impact identification, description or evaluation not found. See EC Comment.
	Explosions;	No - Cross-reference to Ammonia and Nitrate treatment methods found in other documents should be made. No mitigation for Ammonia Nitrate on snow or water. No details on how to handle an explosion on-site and tying this in with the potential of fires and/or other accidents on site.	No - See comment in Line 81 above			Impacts not identification, description or evaluation not found. See EC Comment
	Fires;	No - Burning of spilled product is mentioned as a mitigation method however more details are required; does proponent have a policy on burning; decision to burn? No details on decision making for when/when not to extinguish fire and how fires will be extinguished or controlled, no contingency plan.	No - See comment in Line 81 above			Impacts identification, description or evaluation not found. See EC Comment
	Transportation accidents involving aircraft, marine vessels and barges, and land based motor vehicles, including any hazardous material cargoes for all modes.	Yes - Require more detail on transportation accidents including fires, collisions, responding to spills from barge in Baker lake that often involves controlling slick at the source and removing product that escapes containment. Require detail on shoreline protection and recovery for Baker Lake (and lakes at mine site)	No - See comment in Line 81 above			Transportation component not found. Impacts identification, description or evaluation not found. See EC Comment
iii	Description of emergency response plans and procedures for the accidents, and malfunctions, including: the level of preparedness; safety; response capacity; and technological capability and any deficiencies or shortcomings in this regard, and indicate how the latter will be addressed. Plans should incorporate sufficient detail to understand and assess emergency preparedness and response capability; ensure emergency response plans will work; and, determine how and when plans will work.	Yes	Yes		pending receipt of Type B WLA	Yes
iv	Identification of communities, organizations, agencies, boards, and governmental parties (and their regulatory requirements) involved in preparing programs and identify opportunities for partnerships, coordination, and participation	Yes	Yes		No - Cannot Find	Mention of partnerships, coordination or participation with communities, organizations, agencies, boards or governmental parties not found.
v	Explanation of how the Applicant will ensure project contractors meet the Applicants' due diligence standards with respect to oil and hazardous material spill prevention, preparedness, response, and restoration.	Yes	No - The Spill Contingency Plan (Document 483), page 1-2 indicates the applicant will ensure their contractors comply with the company policies; however, the document does not provide further details on how this will be achieved.		No - Cannot Find	See GN and INAC comments
vi	A timetable for when the Applicant will file the appropriate plans and procedures as required by the governmental parties.	Yes	Yes		No - Cannot Find	Not found
3	Closure and Reclamation Plan					
i	Details regarding the timing of the removal of dewatering dikes and the implications of this action on water quality; and	Yes	Yes	Yes		Yes

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ii	Detailed information regarding the method used to remove/breach the dewater dykes, including details of any mitigation measures for any adverse impacts.	Yes	Yes	Yes		Yes
4	Air Quality					
i	Monitoring plan for incinerator emissions (including, but not limited to, stack testing and annual reporting).	No - not included	Yes			See EC Comment
ii	Detailed waste management plan; and	No - not included	Yes			See EC Comment
iii	Justification regarding the selection of incinerators in regards to the use of best available economically feasible technologies.	No - Not Done	Yes			See EC Comment
5	Fisheries					
	Generally, to mitigate potential impacts to fish and fish habitat, any works or undertakings associated with the Meadowbank Project that are in or near waters frequented by fish should:		Not assessed	Yes		
i	Comply with the DFO legislation/policies/guidelines/Operational Statements as outlined below or noted within Section 3 of the Preliminary Guidelines for the Applicant.		Not assessed	Yes		Yes
ii	Be done in manner that prevents the deposit of any materials in waters frequented by fish.		Not assessed	Yes		Yes
iii	Comply with the DFO Freshwater Intake End-of-Pipe Fish Screen Guideline (March, 1995), to minimize impingement/entrainment of fish.		Not assessed	Yes		Yes
iv	Comply with the Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters (Wright and Hopky, 1998), whenever possible		Not assessed	Yes		Yes
v	Ensure that hydrostatic testing be done in manner that prevents the transfer of aquatic species into water bodies where they do not currently frequent.		Not assessed	Yes		Not found
vi	Ensure that groundwater is managed in a manner that prevents any seepage of hazardous waste materials into waters frequented by fish.		Not assessed	Yes		Yes
	Site specific environmental data considerations for works in or near waters that are frequented by fish should include, but not be limited to:		Not assessed	Yes		
vii	Description of proposed works or undertakings (culvert crossing, bridge, intake, infilling pipeline, etc.)		Not assessed	Yes		Yes
viii	Construction Plans:		Not assessed	No - The construction plans for the intake and effluent discharge pipes, Turn Lake Road crossing and the diversion of Fraser Lake outflow from Vault Lake to Turn Lake have not been provided.		See DFO Comment
a	proposed start and completion dates		Not assessed	Yes		Yes
b	methods of construction		Not assessed	No - The methods of construction are noted that information can be found in the EIA and supporting documents. As the Type A water license is a stand alone document, this information should be included in the NNLP.		See DFO Comment
c	detailed site description (incl. diagrams, photos)		Not assessed	No - Photos are required		Conceptual plans for some fisheries works provided. See DFO Comment.
d	details of materials and machinery to be used		Not assessed	No		See DFO Comment
e	a description of types and quantities of explosives to be used, if any		Not assessed	No		See DFO Comment
f	operation and maintenance plans		Not assessed	No		See DFO Comment
ix	Fish and Fish Habitat Present:		Not assessed	Yes		
a	detailed area description (including Photographic record).		Not assessed	No - Photos are required		See DFO Comment
b	description of fish habitat (including river or lake bottom substrates such as silt, sand, or cobble).		Not assessed	Yes		Yes
c	presence of sensitive habitats (spawning, migration corridors etc.).		Not assessed	Yes		Yes
d	description of aquatic and riparian vegetation.		Not assessed	Yes		Yes
e	fish community and life stage present.		Not assessed	Yes		Yes
f	depth and watercourse width.		Not assessed	Yes		Yes
g	max/min water flows, currents, tides		Not assessed	Yes - Tides relate to marine environments which are not part of the Water License		Yes
h	turbidity and sediment loads (total suspended solids).		Not assessed	Yes		Yes
i	sport, commercial, subsistence fishery present.		Not assessed	Yes		Yes
x	Potential Environmental Effects and Mitigation Measures to Protect Fish Habitat		Not assessed	Yes		
a	potential effects on fish or fish habitat.		Not assessed	Yes		Yes
b	area (in m ²) to be impacted.		Not assessed	No - Areas are indicated in hectares not square metres.		Yes
c	measures to avoid sensitive periods and habitat areas (i.e., spawning beds, migration corridors).		Not assessed	Yes		Yes
d	measures to avoid physical impacts on habitat.		Not assessed	Yes		Yes
e	measures to maintain flows and fish passage.		Not assessed	Yes		Yes
f	measures to avoid sedimentation.		Not assessed	Yes		Yes
xi	Compensation/Monitoring:					
			Not assessed	No - Compensation plans for the net loss of habitat related to the TIA and the dewatering dikes have been provided; however, the compensation plans for the elimination of the westernmost channel have not been provided.		See DFO Comment
a	Detailed habitat no-net-loss plan and site restoration plan.		Not assessed	Yes		Yes

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b	on site construction monitoring plan,		Not assessed	No - Section 6 of the NNLP indicates that a Sampling and Analysis Plan will be prepared to outline all monitoring required to meet the conditions of a Fisheries Act authorization. The SAP has not been provided.		See DFO Comment
c	post construction monitoring		Not assessed	Yes		Yes
6	Transportation		Not assessed			
	The Applicant will also be responsible to provide formal applications to the Navigable Waters Protection Program (NWPP) for any works		Not assessed			Statement confirming application not found
7	Annual Reporting					
	The annual report should include, but not be limited to, reporting of:					
i	Water related monitoring:		Yes			Yes
ii	Comparison of water quality and quantity monitoring data to the forecasted information in the summary table attached to the application;		No - Section 7 of the Aquatic Effects Monitoring Program indicates water quality monitoring results at receiving environment will be compared against baseline data/control sites, but it is unclear if the monitoring results will also be compared against water quality objectives. The Water Quality Predictions report (Document 516) predicts water quality at receiving environment will meet both MMER and CCME guidelines, but it is not clear if these two guidelines are the objectives that the applicant plans to achieve. It is important that the applicant compares the monitoring result to both baseline/control, and water quality objectives to ensure local water quality will not be significantly compromised, and will be maintained at an approved standard.			See GN Comment
iii	Implementation of the conditions in the NIRB project certificate related to NWB mandate;		No - This recommendation is not stated in the license application or its supporting documents in the context of annual reporting.			See GN Comment
iv	Project changes under Adaptive Management; and		No - This recommendation is not stated in the license application and its supporting documents in the context of annual reporting.			See GN Comment
v	Any actions took to resolve directions from the Inspector.		No - This recommendation is not stated in the license application and its supporting documents.			See GN Comment
8	Security					
	The Applicant is to provide an estimate of security as defined under Section 76 of NWNSRTA and Section 12 of the NWT Water Regulations.		Yes			Yes
	The Applicant must inform the NWB if a compensation agreement is in place as required under Section 58 otherwise an estimate of compensation as suggested under Section 60 of the Act for the Board's decision is required.					Status of compensation agreement not found
4	Additional Documents to Assist the Applicant					
	For the development of supplemental information the Applicant should be guided by, and is directed to, the following standards/guidelines/legislation that includes, but is not limited to:					
	• AWWA (American Water Works Association) - Standard Methods for the Examination of Water and Wastewater.					
	• CCME (Canadian Council of Ministers of the Environment) – Environmental Code of Practice for Above Ground and Underground Storage Tanks Systems containing Petroleum Product and Allied Petroleum Products (2003);					
	• CCME – Canadian Environmental Quality Guidelines					
	• CCME – Canadian-Wide Standards for Petroleum Hydrocarbons in Soil					
	• DFO – Freshwater Intake End-of-Pipe Fish Screen Guide;					
	• DFO – Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters;					
	• DFO - Guidelines for the Use of Explosives in or near Canadian Fisheries Waters.					
	• DFO – Operational Statements					
	• DFO – Policy for Management of Fish Habitat;					
	• DFO – Practitioners Guide to the Risk Management Framework					
	• DFO – Practitioners Guide to Habitat Compensation					
	• EC (Environment Canada) – Guidelines for the Preparation of Hazardous Material Spill Contingency Plans;					
	• EC – MMER Environmental Effects Monitoring Program Protocol;					
	• EC - Canada-Wide Standards for Mercury Emissions					
	• GN (Government Nunavut) – Contaminated Site Remediation;					
	• GN – Environmental Guideline for Contingency Planning and Spill Reporting in Nunavut;					
	• GN – General Management of Hazardous Waste in Nunavut;					
	• GN – Occupational Health & Safety Guidelines;					
	• GN – Spill Contingency Planning and Reporting Regulations;					

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<ul style="list-style-type: none"> • GN – Environmental Protection Act; • GNWT – Ice Road Guidelines; • HC - The Guidelines for Canadian Drinking Water Quality • INAC (Indian and Northern Affairs Canada) – A Policy Respecting the Prohibition of Bulk Water Removal from Major River Basins in Nunavut; • INAC – Mine Site Reclamation Policy for Nunavut; • International Cyanide Management Code • JC (Justice Canada) – Nunavut Waters and Nunavut Surface Rights Tribunal Act; • JC– Territorial Lands Act; • JC – Territorial Land Regulations; • JC – Canadian Environmental Protection Act • Federal Registration of Storage Tank Systems for Petroleum Products and Allied Petroleum Products on federal Lands or Aboriginal Lands Regulation • Sulphur in Diesel Regulation • Fuels Information Regulation No. 1 • Sulphur in Gasoline Regulation • Benzene in Gasoline Regulation • Interprovincial Movement of Hazardous Waste Regulation • Federal Halocarbon Regulation • National Pollutant Release Inventory • Environmental Emergencies Regulation • JC – Fisheries Act • Metal Mining Effluent Regulations • JC – Water Regulations (as attached to the Nunavut Waters and Nunavut Surface Right Tribunal Act) and other guidelines adopted by the NWB; • NWTWB – Guidelines for Abandonment and Restoration Planning for Mines in the NWT; • ASTM - Standards • The Mining Association of Canada "A Guide to the Management of Tailings Facilities" (1998) • CDA – Dam Safety Guidelines • Navigable Waters Protection Act (NWPA) • TC - Navigable Waters Protection Program (NWPP) • TC – Transportation of Dangerous Goods Act/Regulations; • Workplace Hazardous Materials Information System (WHMIS); 						
Copies of all guidelines referenced in this document may be available on the NWB ftp site or with Justice Canada for federal legislation and policies. The Applicant may have to contact the appropriate author of the above listed guidelines for a copy if needed.						
<p>The Applicant is encouraged to consult with governmental agencies on issues related with the above listed guidelines. When a guideline is used by the Applicant the NWB requests the use of well-developed statements within the body of a reports text to clearly reference where a guideline was used. Additionally, a summary table detailing what standards/guidelines was considered with reference to application section, title, and page number shall be included in the main application document. When developing discussion and the Applicant's case, the application is to point the NWB to the appropriate section of a governmental guideline where additional information may be found. It is the Applicant's responsibility to ensure that all necessary standards and guidelines are considered in the water licence application.</p>						
ANNEX A						
The NWB has prepared the attached Table of Contents (TOC) with the Applicant to guide the structure and format of the application. This TOC will act as a reference to where information, relevant to the water licence application, has been filed. Compliance to the TOC does not imply that all necessary materials to deem the application complete are submitted.						
Meadowbank Draft TOC for the NWB Licence Application						
Executive Summary						
English						
Inuktitut						
1.0 Introduction						
2.0 Project Description						
2.1 Summary of Key Baseline Studies						
2.2 Regional and Local Setting						
2.2.1 Surface Water Regime						
2.2.1 Receiving lakes (lake id, hydrology, water quality); bathymetry, overland runoff						
2.2.2 Groundwater Regime						
2.2.2 (Hydraulic conductivity, groundwater quality)2						
2.2.2 Groundwater Regime						
2.2.2 (Hydraulic conductivity, groundwater quality)2						
2.2.3 Ground Conditions for Engineering Designs						
2.2.3 (Dewatering dikes, tailings, faults)						
2.2.4 Mine Rock Geochemistry						
2.2.4 Waste rock						
2.2.4 tailings;						
2.2.4 overburden)						

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2.3	Mine Plan Overview					
3.0	Water Licence Activities					
3.1	Water Withdrawal Activities					
3.1.1	Camp use					
3.1.2	Mill use					
3.2	Water Diversion Activities					
3.2.1	East dike					
3.2.2	Central dike					
3.2.3	Goose dike					
3.2.4	Portage dike					
3.2.5	Walley dike					
	2 The groundwater quality model should be revised using all available data					
3.2.6	Other small dikes					
3.2.7	Ditches and sumps					
3.2.8	Lake dewatering -Vault, Second and Third Portage Lake					
3.2.9	Vault Road culvert					
3.2.10	Discharge into Walley Lake					
3.2.11	Discharge into Third Portage					
3.2.12	Dike Breach					
3.3	Waste					
3.3.1	Mine Rock Waste Piles- Portage and Vault					
3.3.2	Tailings Impoundment Facility					
3.3.3	Landfills3					
3.4	Other Licence Related Activities					No
3.4.1	Baker Lake Fuel Tank Farm					No
3.4.2	Baker Lake ditches and sumps					No
4.0	Management Plans					
4.1	Waste Rock Management					
4.2	Tailings Management					
4.3	Water Management (incl. water balance)					
4.3.1	Water treatment (incl sewage)					
4.4	Baker and Plant Site Facilities4					No
4.4.1	Fuel storage					No
4.4.2	Landfill					No
4.5	Landfill management5					
4.6	Emergency response and spill contingency6					
5.0	Proposed Water Quality Discharge Limits					
6.0	Environmental Monitoring Plans					
	3 The Applicant is to also detail how petroleum contaminated soils on site will be managed during operation. If this includes the use of a Landfarm facility the Applicant is to include pertinent details and design on such.					
	4 Incineration issues related to water licensing shall be included in the water licence application.					
	5 The Applicant is to detail operations and management of Landfarm Facilities if they are proposed.					
	6 This shall be for all operations associated with the project (i.e. mine site, roads, barging activities).					
6.1	Rock Storage Facility					
6.2	Tailings Monitoring					
6.3	Mine Site Water Quality					
6.4	Receiving Water Quality					
6.5	Waste areas (Landfill, hazardous waste, etc)					
6.6	Baker Lake Marshalling Area					No