

# CUMBERLAND RESOURCES LTD.

#950 - 505 Burrard Street  
Box 72, One Bentall Centre  
Vancouver, B.C V7X 1M4

Tel: (604) 608-2557  
Fax: (604) 608-2559  
E-Mail: [info@cumberlandresources.com](mailto:info@cumberlandresources.com)  
Website: [www.cumberlandresources.com](http://www.cumberlandresources.com)

July 19, 2006

**BY FAX (867 983-2594) and e-Mail**

Ms. Karlette Tunaley  
Technical Advisor  
Nunavut Impact Review Board  
P.O. Box 2379  
Cambridge Bay, Nunavut X0B 0C0

Dear Ms. Tunaley:

**Re: Meadowbank Written Hearing: NIRB's Final Questions to Parties and  
Cumberland Resources Ltd.'s Responses**

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In accordance with the Nunavut Impact Review Board's (NIRB or Board) letter dated July 17th, 2006 regarding NIRB's final questions, Cumberland is pleased to supply responses to questions directed at Cumberland.

**Question #1 to Cumberland**

**Issue: Chesterfield Inlet Marine Mammal Monitors**

NIRB would like to know what proportion of vessels would be carrying fuel and NIRB would like justification for why Chesterfield Inlet marine monitors would not be allowed to board vessels not carrying fuel.

**Cumberland's Response:**

*There will be approximately 5 – 6 barges or ships per shipping season to carry fuel exclusively for the Meadowbank Gold Project. Depending on the type and capacity of these barges, these barges or ships will also be carrying dry freight (in addition to the fuel). All of these barges or ships will have local monitors on board. Any other dry freight required by the Meadowbank project that can't be placed on barges or ships hired exclusively to ship freight for the Meadowbank project, will arrive by barges or ships carrying freight for other customers as well. It was felt that the logistics of placing local monitors on vessels carrying freight from multiple customers would be too difficult to arrange and therefore Cumberland did not want to commit to arranging the placement of any local monitors on board these vessels. The proportion of freight sent with freight from multiple customers will be approximately 20% of the freight shipped carrying local monitors.*

**Question #2 to Cumberland:****Issue: Marine Shipping and Safety**

NIRB would like to know when this Plan will be made available for review and whether or not Cumberland will be able to impose the commitments of the approved Plan on its shipping contractor.

**Cumberland's Response:**

*Cumberland has submitted a Spill Contingency Plan for the mine site, laydown area and the access road as part of the Final EIS: Supporting Documents. Tendering the shipping contract will be carried out under the IIBA. The successful shipper will supply a spill plan at that time. The plan will also be presented and discussed with the community of Chesterfield during the shipping workshop as described in Cumberland's shipping commitments specifically:*

*"Once the shipping company is hired, the shipper and Cumberland will return to Chesterfield Inlet for a one-day workshop to more fully discuss the successful companies' procedures, type of ships, spill equipment, etc."*

*A copy of the shippers spill contingency plan will be sent to NIRB as soon as it is available. Copies will also be sent to any party that wish to receive a copy. Compliance with the plan will be a condition of the contract.*

**Question #3 to Cumberland****Issue: All-weather Road – Monitoring of Wildlife Harvested**

NIRB requests that Cumberland provide a response to the recommendation from Nunavut Tunngavik Incorporated (NTI) to NIRB on July 13, 2006 (attached).

**Cumberland's Response:**

*As suggested by NTI and further to Cumberland's response to NIRB's April 24, 2006 letter (pages 36 and 37), monitoring of wildlife harvested in the Baker Lake area will be initiated prior to construction of the all-weather road and will be continued for at least five years after the road opens. Harvest data on caribou, wolverine and grizzly bear will be collected on a monthly basis for the duration of the study.*

*Road-related mortality of all mammals will be reported by Cumberland as indicated in the Terrestrial Ecosystem Management Plan and in Cumberland's response to NIRB's April 24, 2006 letter (pages 33-35). The harvest study will also be expanded to ask hunters to document all accidental deaths of wildlife on roads in the Baker Lake region.*

**Question #4 to Cumberland****Issue: All-weather Road – Gates**

NIRB requests clarification from Cumberland regarding which of the four bridges will be gated along the all-weather road. Figure 1 of Part 2 of Cumberland's Response to the NIRB's April 24<sup>th</sup> letter shows Bridges 1 and 4 will be gated, while Bridges 2 and 3 will not be gated. The third paragraph of Pg 5, Part 1 of this report states that Cumberland will install locked gates at each of the major bridges. Finally, issue 2.1 of INAC's July 7, 2006, submission, states that Cumberland will gate the road at four strategic bridge crossings.

**Cumberland's Response:**

*To clarify, gates will be placed on bridges 1 and 4. Sorry for the confusion.*

**Question #5 to Cumberland****Issue: Non-Project uses of the all-weather road and their potential impact**

Cumberland has agreed to INAC's issue 2.3 recommendation, to collect and maintain information on road-use to facilitate monitoring of the non-project uses of the road. NIRB would like to know how this information will be collected, maintained and used to assess actual effects versus predicted effects (for example, through what monitoring program). And finally, NIRB would like to know how unanticipated impacts will be mitigated.

**Cumberland's Response:**

*Monitoring and recording of non-mine use will be the responsibility of all mine personnel using the road. If it is determined that the non-mine use was underestimated, then monitoring efforts and patrols would be increased and possibly additional gates added. In addition public meetings would be held in the community and notices placed on the radio and TV to reinforce the importance of restricting the road to mine use only.*

**Question #6 to Cumberland****Issue: Timing of revised TEMP**

NIRB would like to know Cumberland's best estimate for the timing of availability of the revised TEMP?

**Cumberland's Response:**

*A revised Temp will be submitted in the fall or early winter.*

**Question #7 to Cumberland****Issue: List of Commitments**

NIRB requests that Cumberland submit an updated List of Commitments (exhibit #68)

**Cumberland's Response:**

*See attached list.*

**Question #8 to Cumberland and the Government of Nunavut (GN)****Issue: Timing of Cumberland's detailed Socio-Economic Monitoring Plan**

Is it possible for Cumberland in consultation with the RMMC to develop the details of Cumberland's socio-economic monitoring plan (including defining issues, indicators, methodologies for data collection and analysis, roles and responsibilities, schedules and budgets) before construction of the project begins?

**Cumberland's Response:**

*INAC, in consultation with the Government of Nunavut (GN), has advised Cumberland that their preference is that the establishment of a Kivalliq Region RMMC depart from decisions made with regard to the Kitikmeot Region RMMC. Cumberland agrees that this is certainly in the interests of efficient and effective monitoring, insofar as comparability of monitoring results between regions can inform government response to the effects of mining (or other large) projects on communities in Nunavut as a whole.*

*Cumberland has therefore been requested, and has agreed, to stand by, pending contact by GN. It will be recalled that the mandate of the Kivalliq Region RMMC is expected to be much broader than that of Cumberland's participation and that the RMMC initiative will be led by GN. In any interim of course, Cumberland will work with the KIA to implement monitoring prescribed under the IIBA, and will maintain normal human resource records on the particular issue of concern - the extent to which employment is accessed by residents of other Kivalliq communities. It is this information that will establish the potential for any consequent community level effects experienced outside Baker Lake and any need to extend Cumberland's monitoring efforts.*

*It is Cumberland's view that the details of a Kivalliq Region RMMC could be agreed within a time frame of two to three months. A participatory and collaborative approach to monitoring however means that agreement depends on the availability of partners to engage. Cumberland can commit to providing the requisite resources to developing the details of its participation in the RMMC at the convenience of other parties to the process. It is also noted in this regard that INAC has determined, in their July 7th submission to NIRB, their sense that the Project Certificate should not be contingent on a functioning RMMC.*

In closing, we trust that the additional information provided will provide clarity and resolve any concerns.

Yours truly,

CUMBERLAND RESOURCES LTD.

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Craig Goodings  
Manager, Environmental and Regulatory Affairs

## **Commitments**

Commit to re-run model for a sensitivity analysis on total dissolved solids concentration in pit waters
Commit to resample groundwater monitoring wells in summer 2006
Commit to considering capping Vault pile with fine grain material and/or establish corridors for wildlife
Commit to identifying mitigation measures <u>if</u> groundwater contamination (tailings) has occurred during operation. Include what triggers would be used in this evaluation.
Commit to assessing permeability of fault upon drawdown of North arm of Second Portage Lake and commit to establishing trigger levels and mitigation strategies.
Compile a technical memo that addresses "Accidents and Malfunctions" resulting from catastrophic events
Monitor the accuracy of predictions of the impact of road on wolverine and bears
Adaptive road management plan that considers the all wildlife mortality incidents
<p>Include in next Wildlife Monitoring summary report (March 2007):</p> <ul style="list-style-type: none"> <li>• Review and evaluation of size of RSA</li> <li>• Report of the natural variability of VECs</li> <li>• Detailed analysis of distribution and abundance of cows, bulls and calves to distinguish between potentially different groups of caribou.</li> </ul>
<p>Issue a revised TEMP document which will provide more detailed information on the following:</p> <ul style="list-style-type: none"> <li>• Study used determine effects on ungulate populations from the increased human access caused by the all-weather road</li> <li>• Collaring study and cooperative agreement between DOE, CRL and other studies proposed</li> <li>• Investigative tools used to conduct monitoring surveys prior to construction</li> </ul>
Provide details on statistical approach and validation to support conclusions drawn from monitoring impacts on wildlife
Participate in socio-economic monitoring programs that will be developed in collaboratively by the RMMC.
Develop a wellness monitoring plan for Baker Lake and other communities that might be impacted by the project. The geographic scope of wellness monitoring to be defined at that time.
Work with INAC and other interested parties to develop details of all-weather road management plan.
Update of Access and Air Traffic Management Plan to incorporate adaptive management

practices
Effectively communicate to community of Baker Lake the private nature of the road and inform residents of CRL road-use restrictions.
Effectively communicate CRL road-use policy to community of Baker Lake.
Observe, collect and maintain information on road-use to facilitate monitoring of the non-project uses of the road.
Consult with stakeholders and update its reclamation and closure plan with the final design for decommissioning once this information becomes available.
Should CRL maintain or operation the road beyond the current proposal, INAC suggests a subsequent environmental assessment may be required.
Track the community of origin of hired Nunavimmiut to direct monitoring and follow-up activities.
Consider adaptive monitoring and mitigation measures for communities other than Baker Lake should these be substantially affected by the Project.
Data collected during normal mine operation will be gathered and reported in a form that is compatible with socio-economic project monitoring
Submit complete Spill Contingency Plan to EC for review, once available. This plan will address the concerns of the residents of Chesterfield inlet.
Follow DFO recommendations on the design of water course crossings to minimize impacts to fish and fish habitat (March 10, 2006 letter from DFO)
Engage local HTO in the development, implementation and reporting of creel surveys within water bodies affected by the project.
Provide clarification on what vessels will marine mammal monitors be allowed to board. Notify Navigable Waters Protection Program to assess the navigability of additional water crossings, if any, along the all-weather route.
Engage in discussions with representatives of the Canadian Coast Guard to reassess where response and spill kits are presently located within Nunavut , and not put the onus on TC for placing community spill kits in the Hamlets of Chesterfield Inlet and Baker Lake.
Identification of the proper Transport Canada branches and other federal government departmental responsibilities will be specified where appropriate
Monitoring of caribou within the study area be completed on a monthly basis once all-weather road is completed
Notify the Department of Land and Resources of any changes in the proposed project.
Only a Transport Canada Certified Shipper will be hired to carry Cumberland's supplies
The shipping company will have spill equipment on board with crew trained to deploy the equipment
The Coast Guard will be notified as soon as a spill has occurred and, if required, will provide further spill support
Once the shipping company is hired, the shipper and Cumberland will return to Chesterfield Inlet for a one-day workshop to more fully discuss the successful companies' procedures, type of ships, spill equipment, etc.

Cumberland will place a local monitor from Chesterfield Inlet on ships carrying fuel for the Meadowbank project
Cumberland will request that the shipping company contracted to carry fuel for the project carry out practice drills deploying their spill equipment in various locations within the inlet.
In addition to the initial TK information currently being gathered by Andrea Tautu of the HTO on cabins and hunting areas, Cumberland will conduct a one-day workshop to more fully gather TK relating to local activities in the inlet.
In addition to the local monitor, captains will follow the following mitigation procedures in the event that marine mammals are in the vicinity of the shipping activities:
i) Wildlife will be given right of way.
ii) Ships will maintain a straight course, constant speed, and will avoid erratic behaviour.
iii) When marine mammals appear to be trapped or disturbed by barge/ship movements, the barge/ship will stop until the mammals have moved away from the area.
Cumberland and the Shipper will carry shipping insurance
Cumberland will conduct annual community consultation visits in Chesterfield to report on the project and related shipping activities and to hear any concerns/comments from Chesterfield Inlet residents.
Re-do WQ modeling with less conservative assumptions: no rock wetting factors, no permafrost, use 1-kg IV rather than 100-kg IV rates for poor-end; used 100-kg for best estimate; higher temperature of soil to air by 4.4°C; long-term WQ w global warming; minimal improvement to WQ from UM cover (not automatic transition)
Additional Field and lab analysis of WR to segregated PAG and non-PAG rock
Diffuser design and impact of effluent on receiving environments
Adaptive management of (placement of) mine waste material considering monitoring results obtained during operation
Confirmatory sampling of Road alignment rock and pre-approval of ARD criteria
Detailed plans for water treatment
Evaluation of viability of proposed in-situ and active treatment system and subsequent effects of effluent to receiving environment (near and far-field)
Re-evaluate model using 2003 and 2004 groundwater data
Replace defective wells and conduct 3 to 4 semi-annual groundwater monitoring rounds
After 1 year of additional data collection (in 2007) re-evaluate water quality (model) to compare to actual performance once mine start up.
1.1 Reconsider ARD screening criteria and include regulators in approval of ratios/guidelines as warranted
1.2 Long-term chemical stability (metal leaching) of UM rock
1.4 revise water balance and water quality predictions. Measures to monitor and confirm predictions, trigger for mitigation
1.5 operational criteria for waste management and use of WR
1.6 provide/develop summary of treatment needs

1.7 effluent plume delineation (near-field) modeling and revised WQ predictions
1.9 Monitoring of all-weather road rock quality, ARD/ML potential
1.10 Continued geochemical characterization (laboratory and filed tests) of UM, PAG and uncertain PAG rock and input into adaptive waste management plan.
Lake bed sediment samples to be collected and analyzed for geotechnical properties
Review tailings and waste management alternatives including climate change, conduct gap analysis to determine deficiencies required for engineering and construction of dikes.
Consolidate Tailings management alternatives assessment into one document
Perform a technical review of dewatering dikes
Carry out coupled seepage-thermal and solute transport modeling including Second Portage lake fault zone
Revise the No Net Loss plan to address specific requirements related to the scheduling the northwest arm of Second Portage Lake as a Tailings Impoundment Area
Investigate additional "A" and "B" list compensation options during summer 2006
Incorporate hydrology information at fish bearing stream crossings into detailed design of bridges and culverts along the all-weather road
Provide detailed engineering of water intake pipe to avoid fish habitat disturbance along the shoreline
Prepare and implement Incinerator Waste Management Plan.
Develop Energy Conservation Plan.
Incorporate the Government of Nunavut Dust Suppression Guidelines issued under the Environmental Protection Act to Cumberland Air Quality Management Plan.
Conduct annual incinerator stack emission monitoring for mercury, dioxins and furans and report results to Environment Canada and Government of Nunavut
Provide annual report of the quantity and type of waste generated at the mine site distinguishing landfilled, recycled and incinerated streams.
Reassess the selection of incinerators and justify the decision in regards to best available economically feasible technologies (BAEFT).
Provide a list of all personnel trained to operate the incinerator.
Install and operate two particulate samplers at the project site and report annually monitoring results conforming to detailed reporting protocol.
Perform sound level monitoring twice a year and document results
Justification for existing RSA.
Elaboration of threshold mortality levels of "1" for Grizzly Bear, Wolverine, Caribou and Muskox, and commitment to report any mortalities of the above species immediately and enact adaptive mitigation measures immediately
Details of hunter harvest study.
Discussion of aircraft over-flight height limits (610 m for point to point; 1000m vertical and 1500m horizontal for concentrations) and proposed efforts to monitor impacts of air traffic at mine site on wildlife



Methodology of all monitoring programs including satellite-collaring.
Description of statistical approach, power and capability.
Details on revegetation monitoring post-closure including commitment to initiate revegetation trials as early as possible
Management approach to waste rock piles and quarry sites.
Elaboration of environmentally sensitive times for blasting.
Map of Key Migratory Bird Site and commitment to avoiding disturbance between mid-June and late-August.
Commitment to collecting and analyzing waterfowl data from monitoring surveys, particularly from aerial surveys of RSA.
Commitment to conducting breeding bird surveys annually during construction phase and at least the first three years of operation.
Elaboration of mitigation measures to reduce denning, roosting, and nesting sites for avian predators and Arctic foxes.
Information on management approach for Short-eared Owl.
Program details of Inuit monitors on barges/ships.
Methodology for interviewing elders and hunters annually – traditional knowledge workshop
Commitment to annual reports summarizing: a) information from traditional knowledge workshop; b) government population and harvest data; and c) on-board Inuit observation and encounter reports
Analyses of natural environmental changes
Discussion of caribou data distinguishing between sex and age
Analysis of waterfowl data collected on aerial and other surveys
Analysis of breeding bird plot and transect survey data
<p>Cumberland, in the FEIS and the letter to INAC in early March, had undertaken to participate with other interested parties in collaborative socio-economic monitoring, specifically focusing on issues related to individual and community wellness. This monitoring will be outside the IIBA, and is similar in concept to that agreed for the Jericho and Doris North projects. Cumberland has agreed with INAC, as a commitment, that Cumberland will initiate a process to agree on objectives, scope, terms of reference and roles and responsibilities for this monitoring before the issuance of any project certificate, with a goal of achieving agreement within six months of the issuance of any project certificate.</p>
<p>Cumberland agrees with INAC that labor force adjustments, the transition to full time wage employment and the relationship between economic growth and community wellness are issues that should be included in socio-economic monitoring.</p>

<p>Cumberland has agreed with INAC, as a commitment, to include pre employment orientation for potential hires by Cumberland in the Labor Force Development Plan that will be developed under the terms of the IIBA. This commitment is in recognition that it is in the interests of both potential hires and Cumberland to ensure to the extent practicable that potential hires are well informed of the implications (nature of the work, workforce management, personal and family challenges etc.) of accepting employment with Cumberland.</p>
<p>Cumberland, in the FEIS and the letter to INAC in early March, had undertaken to participate with other interested parties in collaborative socio-economic monitoring, specifically focusing on issues related to individual and community wellness. This monitoring would be outside the IIBA, and is similar in concept to that agreed for the Jericho and Doris North projects.</p> <p>Cumberland has agreed with GN, as a commitment, that Cumberland will initiate a process to agree on objectives, scope, terms of reference and roles and responsibilities for this monitoring before the issuance of any project certificate, with a goal of achieving agreement within six months.</p>
<p>Cumberland agrees with GN that labor force adjustments, any pressures on physical and social infrastructure (including by emergency response planning), socio-economic impacts of public use of the access road, and community physical and mental health are issues that should be included in socio-economic monitoring</p>
<p>Cumberland also agrees with GN that consultation and traditional knowledge will be integral to socio-economic monitoring methodologies</p>
<p>Cumberland also agrees that socio-economic monitoring results will be used to make recommendations to participating parties on measures to address identified community wellness challenges. This would include recommendations for action by Cumberland where monitoring results indicate negative relationships between community wellness indicators and the project and/or opportunities for enhancing project benefits</p>
<p>Cumberland commits to engage throughout the life of the project with the GN Department of Education in Baker Lake on:</p> <ul style="list-style-type: none"> <li>○ Cumberland's provision of opportunities for training and education including under the Apprenticeship, Trade and Occupations Certification Act</li> <li>○ The working relationship between the Department of Education and Cumberland as this relates to Cumberland's training programs for its workforce</li> <li>○ Information exchange on workforce preparation requirements</li> <li>○ Cumberland's commitment under the IIBA to provide supervisory and management training</li> <li>○ Cumberland's commitment under the IIBA to provide initiatives specific to youth</li> </ul>
<p>Information made available by or to Cumberland under the terms of the IIBA in the areas of support to businesses in accessing project opportunities will be forwarded to the GN.</p>
<p>Cumberland commits to discussions with the GN Petroleum Products Division at least annually for the purpose of planning project jet fuel requirements</p>
<p>Cumberland commits to engage throughout the life of the project with the GN Department of Health and Social Services on:</p> <ul style="list-style-type: none"> <li>○ Cumberland's activities covered by all relevant health legislation, including health legislation relevant to operating mines with more than 50 employees</li> <li>○ Cumberland's commitment under the IIBA to develop the annual Baker Lake Wellness</li> </ul>

Report and Implementation Plan

Cumberland's commitment under the IIBA to provide employment support including counseling workshops and programs

Cumberland undertakes to develop an operational plan for the road which ensures maintenance of its status as a private road. Cumberland will develop this plan in collaboration with INAC, KIA, NTI, GN, and the Baker Lake HTO and Hamlet council.

Commitment to reassess archeology sites