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NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN KATIMAYINGI

Water Licence Application
Supplementary Questionnaire
for Mine Development

Cumberland Resources Ltd.
Meadowbank Gold Project

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SECTION 1: GENERAL

1. Applicant

**Cumberland Resources Ltd.
Suite #950 – One Bentall Centre
Box 72 - 505 Burrard Street
Vancouver, B.C., V7X 1M4**

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Email: cumberland@telus.net

kcurtis@cumberlandresources.com.

Corporate Address (if different from above): **As above**

Project Name **MEADOWBANK GOLD PROJECT**

Location **70 km North of Baker Lake, District of Kivalliq, Nunavut**

Closest Community **Baker Lake**

Latitude/Longitude **N 65° 00' 46.2 W 96° 04' 26.0**

Show the location of the project on a general location map (eg: 1:1,000,000)

Please refer to Project Description Report.

2. Environmental Manager **Craig Goodings**
(Name)

604-608-2557
(Telephone No.)

3. Indicate the status of the mine or mill on the date of application. (Check the appropriate space.) Indicate schedule or time table of project activities.

Design	<u>3</u>
Under construction	<u> </u>
In operation	<u> </u>
Suspended	<u> </u>
Care and Maintenance	<u> </u>
Abandoned	<u> </u>

4. If a change in the status of the mine or mill is expected, indicate the nature and anticipated date of such change.

The Meadowbank Gold Project is in the feasibility study stage.

5. Indicate the proposed schedule for the Mine/Mill operating schedule.

Hours per week	<u>168</u>
Days per week	<u>7</u>
Weeks per year	<u>52</u>
Number of employees	<u>135-145</u>
Number of Inuit employees	<u>~60</u>

6. How will the project effect the traditional uses on Inuit Owned Lands?

No negative effect anticipated. Access for hunters and fisherman may be improved.

7. Have the Elders been consulted on effects to the traditional use on Inuit Owned Land? If so, list them. If not, why not?

Elders in Baker Lake have been consulted on several occasions between 1996 and 2002 regarding the potential effects of the project on traditional use. Some elders have been flown to the proposed mine site. Additional field visits and ongoing consultations will continue as the project proceeds.

8. Has the proponent consulted Inuit Organization in the Area? If so, list them.

The Meadowbank Gold Project is located on Inuit Owned Lands. Consultation has been ongoing with KIA, NTI, NWB, NIRB, NPC and CLARC.

9. Has the proponent consulted surrounding communities on traditional water use areas? If so, list them. If not, why not?

Surrounding communities, including Baker Lake, Chesterfield Inlet, and Rankin Inlet, have been consulted regarding traditional water use areas. Consultation will continue as the project proceeds.

10. Attach a detailed location map (1:50,000) drawn to scale showing all on site and off site facilities and activities. Show the relative locations of the (proposed) locations of the mine, mill, water treatment facilities, sewage and solid waste facilities, and tailings containment areas. The plan should include the water intake and pumphouse, fuel and chemical storage facilities, any existing or proposed concentrate, ore and waste rock storage piles, any existing and proposed drainage controls, piping distribution systems, gas, electric and water utility route locations, and transportation access routes around the site. The map also should include elevation contours, water bodies and an indication of drainage patterns for the area.

Please refer to Project Description Report.

11. If applicable, provide a brief history of property development which took place before the present company gained control of the site. Include shafts, adits, mills (give rated capacity, etc.) waste dumps, chemical storage areas, tailings disposal areas and effluent discharge locations. Make references to the detailed map.

There has been no mine development activity on the property previous to that conducted by Cumberland Resources.

12. Give a short description of the proposed or current freshwater intake facility, the type and operating capacity of the pumps used, and the intake screen size.

Final design and engineering will be done after the feasibility study has been completed. However, it is anticipated that the potable water supply will be pumped 1.3 km in heat traced and insulated HDPE lines from Third Portage Lake to the west of the plant. The pump station will have a maximum capacity in the order of 250 m³/hr to supply all water requirements in cases where reclaim water is not available.

13. At the rate of intended water usage for the exploration activity, explain water balance inputs and outputs in terms of estimated maximum draw down and recharge capability of the water source from fresh water will be drawn.

A detailed water balance model is currently being developed. Please refer to Project Description Report for hydrometric information.

14. Will any work be done that penetrates regions of permafrost ?
Yes 3 No

15. If "YES" above, is the permafrost continuous or discontinuous ?

Continuous.

16. Were (or will) any old workings or water bodies (be) dewatered in order to conduct the exploration activity ?
Yes _____ No 4

17. If "YES" above, indicate the name of the water body, the total volume of water to be discharged and the chemical characteristics of the water. Also included should be the receiving water body and expected schedule of the dewatering.

Not applicable.

18. Was (or will) the above discharge (be) treated chemically ?
Yes _____ No **Not applicable.**

19. If “YES” above, describe the applied treatment.

Not applicable.

SECTION 2: GEOLOGY AND MINERALOGY

20. Physiography; Provide an analysis and interpretation of the geologic and hydrologic environment in the immediate vicinity of the mine or plant. The investigation should extend from ground surface downward to the base of the glacial drift. Include large scale topographic map(s) covering the area where the mine, mill and waste disposal basin are (or were to be)located. The map(s) should provide information on groundwater patterns and permafrost variations in the area.

Please refer to Project Description Report.

21. Briefly describe the physical nature of the orebody, including known dimensions and approximate shape.

Nature, dimensions and approximate shape of the orebody will be available at the conclusion of the feasibility study.

22. Briefly describe the host rock in the general vicinity of the orebody (from the surface to the mineralized zone.)

The Meadowbank Gold Project is underlain by a sequence of Archean greenstone (i.e., ultramafic and mafic flows) and metasedimentary rocks. Enclosed within the greenstone are volcanoclastic sediments, felsic to intermediate flows and tuffs, sediments (greywackes) and oxide iron formations.

23. Provide a geological description of the ore minerals of the deposit. (If possible, include the percentage of metals.)

Please refer to Project Description Report.

24. Describe the geochemical tests which have been (or will be) performed on the ore, host rock, and waste rock to determine their relative acid generation and contaminant leaching potential. Outline methods used (or to be used) and provide test results in an attached report (ie. Static, Kinetic tests.)

Please refer to Project Description Report.

SECTION 3: THE MINE

25. Indicate the type of mining method to be used on the property:

Open Pit _____4
Underground _____4
Strip mining
Other mining activity
Explain:

Please refer to Project Description Report.

26. Outline any possible operational changes and when that might occur. (Eg. Open pit to underground)

Please refer to Project Description Report.

27. Describe the type(s) of explosives to be used in mining operations.

Types of explosives will be determined during the feasibility study.

28. Indicate the number of shafts or other openings that are presently on the property. Signify whether or not the openings are presently in use. (Submit measurement in metres)
Indicate if used seasonally.

Not applicable.

29. Are any entrances to shafts, adits, etc. below ground water level.

Not applicable.

30. Are permafrost conditions expected?

Yes.

31. Indicate the expected life of the mine.

At least 10 years.

32. Indicate the present average rate of production from all ore sources on the property.

Mine is still at feasibility stage.

33. Indicate the expected maximum rate of production from all ore sources on the property.
An estimated 4700 tonnes per day.
34. Outline all water usage in the mine. Indicating the source and volume of water for each use.
Please refer to Project Description Report.
35. Indicate the volume of natural ground water presently gaining access to the mine workings.
Not applicable. _____ M³/day
36. Outline methods used (planned) underground to decrease minewater flow. (For example: recycling)
Please refer to Project Description Report.
37. Indicate the average daily volume of water to be discharged from the mine during normal operations.
No discharge from the mine is expected.
38. If a mill will be operating on the property in conjunction with mining, will all minewater (underground, open pit, etc.) be directed to the mill for reuse?
See #37 above.
39. If not, indicate the proposed point and volume of discharge for the minewater.
Not applicable.
40. What are the chemical and physical characteristics of the preceding minewater?
Not applicable.
41. Are there any treatment plans for minewater and will any chemicals be used in such treatment? Explain.
Not applicable.

SECTION 4: THE MILL (PROCESSING PLANT)

42. Attach a copy of the (proposed) mill flow sheet. Indicate the points of addition of all the various reagents (chemicals) that are (or will be) used.

Please refer to Project Description Report.

43. If milling is in progress on the property at the present time, indicate the rate of milling.

_____ 4 _____ not applicable (check) OR _____ tonnes/day

44. What is the present (or proposed) maximum capacity of the mill?

Not applicable.

45. List the types and quantities of all reagent used in the mill process (in kg/tonne ore milled.)

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

46. Is the (proposed) milling circuit based on autogenous grinding?

Yes _____ No _____ Partially _____ 4

47. Indicate the amount(s) of concentrate(s) produced in the mill.

Not applicable.

48. Will fresh water undergo treatment prior to use in the mill process? Explain.

Not applicable.

49. Indicate all uses of water in the mill. Include the quantity and source of the water for each use.

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

Use	Source	Volume m ³ /day

50. Indicate the total volume of water discharged from the mill.

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

51. Of the preceding volume, what quantity is (will be) recycled to other areas on the property (mine, mill, etc.)? Indicate location of use and quantity.

Not applicable.

52. Based on yearly production, indicate the average quantity of tailings (Dry weight) discharged from the mill.

1,715,500 tonnes per year.

53. What is the average liquid-solid ratio of tailings leaving the mill?

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

By weight: _____ By volume: _____
Liquid: Solid Liquid: Solid

54. If applicable, identify any chemical treatment applied to the liquid phase before being discharged to the tailings area. (Attach flow sheet if available.)

All tailings containing cyanide will be processed through the cyanide destruction circuit.

55. Based on present production or bench test results, describe the chemical and physical characteristics of liquid mill wastes directed to the tailings area.

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

56. Provide a geochemical description of the solid fraction of the tailings.

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

57. Identify the current source of power production.

No current source of power production. The proposed power plant will be a diesel-fired 10 MW plant with multiple gensets for load bearing flexibility and efficiency.

58. At present, is the mill handling custom lots of ore from other properties (or will the mill be handling any in the future)?

Not applicable currently and not anticipated during mill operation.

59. If so, specify ore characteristics and describe any mill processes which will change as a result.

Not applicable.

60. If tailings are being recovered in the mill or elsewhere for use as backfill etc.), indicate the quantity of solid tails (tonnes/day) recovered from the mill process.

Not applicable.

61. Will exits be bermed to prevent spills from escaping the mill?

Yes.

62. Will all sumps for process tanks have the required 110% holding capacity of the largest tank?

Yes.

SECTION 5: THE CONTAINMENT AREAS

63. Is the tailings containment area (being) designed for total containment?

Total containment of solids.

64. Attach detailed scale plan drawings of the proposed (or present) tailings area. The drawings must include the following:

Please refer to Project Description Report. Most details requested below will be available on conclusion of the feasibility study and will be documented within the project EIS.

- a. details of pond size and elevation;
- b. precise details of all retaining structures (length, width, height, materials of construction, etc.);
- c. details of the drainage basin, and existing and proposed drainage modification;

- d. details of all decant, siphon mechanisms etc., including water treatment plant facilities;
- e. the plan for tailings deposition and final tailings configuration;
- f. details with regard to the direction and route followed by the flow of wastes and/or waters from the ore; and
- g. indication of the distance to nearby major watercourses.

Note: Individual detailed large scale drawings of any facility (dam, decant system, ditch, dike, water treatment plant, etc.) (to be) constructed must be attached. Specific details with regard to the methods of construction, materials (to be) used, etc., are required.

Please refer to Project Description Report.

65. Explain your choice of location for the tailings pond design by rationalizing rejection of other options. Consider the following criteria in your comparisons; subsurface strata, permeability, abandonment of tailings, recycling/reclaiming waters, and assessment of runoff into basins. Attach a brief summation.

A detailed study of tailings and waste management options was completed in 1999. The study included the development of a site selection decision matrix which considered qualitative and quantitative aspects of the alternative disposal options such as affected watersheds, long-term closure considerations, creek crossings, technical issues, and geochemical issues, among others. Three sites were considered (please refer to Project Description Report). The current feasibility study will develop the site selection decision criteria further, based on current resource estimates, and more detailed information relating to environmental and cultural considerations.

66. The total area for the existing tailings basin in hectares and for any proposed tailings area is _____ Hectares.

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

67. The average depth of the tailings basin is _____ metres.

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

68. Indicate the total capacity for the existing tailings area by using water balance and stage volume calculation and curves. (Attach a description of inputs and outputs along with volume calculations.)

Not applicable.

69. Indicate the total capacity for the proposed tailings area using water balance and stage volume calculation and curves. (Attach a description of inputs and outputs along with volume calculations.)

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

70. Will the present tailings area contain the entire production from the mine-mill complex for the life of the project?

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

71. If “NO” above, or if production output increases tailings volumes. Indicate what plans have been made for future tailings disposal on the property.

Not applicable.

72. Has any land in the immediate area been identified as native or crown land or withdrawn pending native claim settlement?

The Project is on Inuit Owned Lands.

73. Do the tailings area and all related treatment facilities lie on company held claims?

Yes.

74. If not, indicate mine claim boundaries (and owners) on tailings area plan map. Also, attach a copy of all pertinent agreements signed with the owners of the claims not held by the company.

Not applicable.

75. Will the proposed tailings area engulf or otherwise disturb any existing watercourse?

Yes.

76. If "YES", attach all pertinent details (name of watercourse, present average flow, direction of flow, proposed diversions, etc.).

Please refer to Project Description Report.

77. If any natural watercourse will gain access to the proposed tailings area, what methods will be used to decrease the amount of runoff water entering the containment area? Indicate the volume of water which will enter the tailings area from the source(s) in question and attach all pertinent details of proposed diversions.

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

78. Indicate on the tailings area plan drawing all sources of seepage presently encountered in the vicinity of the tailing area, the volume of each seepage flow (m³/day), and the direction of each flow.

Water balance details will be provided within the project EIS.

79. Are the seepage flows from the property presently being treated chemically? _____ If so, describe how.

Not applicable.

80. If NOT, explain.

Not applicable.

81. Please attach a conceptual abandonment and restoration plan for all tailings areas being developed. Describe the measures that have been (or will be) taken to contain and stabilize the tailings area(s) against leaching and seepage after operations on the property cease.

Please refer to Project Description Report.

82. Describe the proposed or present operation, maintenance and monitoring of the tailings area.

Please refer to Project Description Report. Details will be provided on conclusion of the feasibility study and documented within the project EIS.

SECTION 6: WATER TREATMENT

83. Describe the methods of chemical treatment that are presently being used and/or will be used to control the quality of the tailings effluent . Attach engineering drawings where applicable and a process flow chart. If a pilot test has been conducted please attach description of methodology and results.

Please refer to Project Description Report.

84. List the names of chemicals to be used in the water treatment process.

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

85. What is the proposed or present average rate of effluent treatment of the plant (if applicable)?

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

86. What is the proposed or present maximum effluent treatment capacity of the plant (if applicable)?

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

87. Will treated effluent be discharged directly to a natural water body or will polishing or settling ponds be employed? Describe location control structures and process of water retention and transfer. Attach any relevant design drawings.

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

88. Name the first major watercourse the discharge flow enters after it leaves the area of company operations.

Third Portage Lake.

89. In terms of rate of effluent release and volume and flushing rate of the receiving watercourse, estimate the extent of the mixing zone within the receiving waters and where background levels of constituents for that watercourse will be attained.

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

90. Describe the present (proposed from pilot tests) chemical and physical characteristics of the tailings effluent (Decant).

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

SECTION 7: ENVIRONMENTAL MONITORING PROGRAM

91. Have elders been consulted in the establishment of the monitoring program?

Consultation with elders is ongoing.

92. Has Traditional Knowledge of the area been considered?

Traditional knowledge will be considered within the Environmental Monitoring Program. Details will be provided in the Project EIS.

93. Has any baseline data been collected for the main water bodies in the area prior to development?

Yes.

94. If “YES” include all data gathered on the physical, biotic and chemical characteristics at each sampling location. Identify sampling location on a map.

Please refer to Project Description Report.

95. Provide an inventory of hazardous materials on the property and storage locations. (Attach separate Map)

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

96. Attach the present or proposed contingency plan which describes course of action, mitigative measures and equipment available for use in the event of system failures and spills or hazardous materials.

Please refer to Project Description Report. Details will be provided on conclusion of the feasibility study and documented within the project EIS.

97. Provide a conceptual abandonment and restoration plan for the site, detailing the costs to carry out the plan, and a proposal for a financial assurance which covers the costs to carry out the plan.

Please refer to Project Description Report. Details will be provided in the Project EIS.

98. Provide a detailed emergency response plan for the project.

Details will be provided in Environmental Protection and Contingency Plans submitted in support of the Project EIS.

99. Provide a description of the pollution control systems and environmental management procedures.

Details will be provided in Environmental Protection and Contingency Plans submitted in support of the Project EIS.

SECTION 8: ENVIRONMENTAL ASSESSMENT AND SCREENING

100. Has this project ever undergone an initial environmental review, including previous owners.

No.

101. Has any baseline data collection and evaluation been undertaken with respect to the various biophysical components of the environment potentially affected by the project (e.g. wildlife, soils, air quality), i.e. in addition to water related information requested in this questionnaire?

Yes. Extensive information has been collected. Please refer to Project Description Report.

102. Describe any cumulative impacts the project may create?

Please refer to Project Description Report. A more detailed analysis of cumulative impacts will be provided in the Project EIS.

103. Has any meteorological data been collected at or near the site? (E.g. precipitation, evaporation, snow, wind).

Yes.

If so, please include the data and attach copies of reports or site titles, authors and dates.

Please refer to Project Description Report.

104. If no, are such studies being planned? Briefly describe the proposals.

Studies are ongoing.

105. Has authorization been obtained or sought from the Department of Fisheries and Oceans for dewatering or using any water bodies for containment of waste?

An authorization application is being submitted to DFO along with the Project description Report.

106. Please attach an outline briefly describing any options or alternatives considered or reflected for the various mine components outlined in this questionnaire (e.g. mill site, water supply sources, location for ore and waste piles).

Details will be provided on conclusion of the feasibility study and documented within the project EIS.

107. Has a socio-economic impact assessment or evaluation of this project been undertaken? (This would include a review of any public concerns, and water and cultural uses of the area, implication of land claims, compensation, local employment opportunities, etc.)

Yes. Assessment and evaluation are ongoing.

108. If yes, please describe the proposal briefly.

A baseline socio-economic is currently underway. Issues such as compensation and employment opportunities will be negotiated in an Inuit Impact and Benefit Agreement (IIBA).

109. If no, is such a study being planned? Yes_____ (When) OR No

Not applicable.

110. Does the project alter the quantity or quality or flow of waters through Inuit Owned Lands?

Yes.

111. If yes, has the applicant entered into an agreement with the Designated Inuit Organization to pay compensation for any loss or damage that may be caused by the alteration.

Compensation will be negotiated within the IIBA and other mechanisms in due course.

112. If no compensation arrangement has been made, how will compensation be determined?

See #111 above.