



**Avalon Rare Metals Inc.**

**RESPONSE TO THE MARCH 22, 2012 CLARIFICATION FROM  
MACKENZIE VALLEY ENVIRONMENTAL IMPACT REVIEW BOARD  
FOR THE THOR LAKE RARE EARTH ELEMENT PROJECT  
DEVELOPER'S ASSESSMENT REPORT**

**Submitted To:  
MACKENZIE VALLEY ENVIRONMENTAL IMPACT REVIEW BOARD**

**April 2, 2012**

Avalon Rare Metals Inc. (Avalon) is pleased to provide the following responses to the information request (IR) response clarification to the Mackenzie Valley Environmental Impact Review Board (MVEIRB) on March 28, 2012. Avalon's responses are found after each information clarification request.

**IR Clarification: #1**

Source: MVEIRB

To: Avalon Rare Metals Inc.

**MVEIRB IR Clarification Request #1**

Please submit results of both sublethal and chronic toxicity tests (as well as the associated acute toxicity test) on a sample of simulated effluent from the March 2012 pilot plant testing Avalon refers to in both Avalon Response #3.1 (in response to AANDC's IR# 3.1) and Avalon Response #23 (Environment Canada's IR#23).

**Avalon IR Clarification Response #1**

Avalon understands that the MVEIRB is requesting the results of new acute, sublethal and chronic toxicity testing of the simulated pilot plant testing program. Avalon is also aware that we had indicated that the most recent round of pilot plant testing, carried out in March 2012, would generate a simulated effluent that could be tested for these bioassay parameters.

The primary objective of this particular pilot test program was to produce a concentrate for the hydrometallurgical pilot plant and six tonnes of concentrate were successfully produced. A second objective was to confirm previous flotation testwork results and identify opportunities for process optimization.

Unfortunately the 40 tonne full-scale pilot plant trial on Basal Zone ore that was completed in February 2012, at SGS Minerals in Lakefield, Ontario is still under analysis for the more important optimization efforts Avalon is focused on. Avalon did capture an effluent stream from this pilot plant program; however, the effluent is undergoing final simulation tests to accurately reflect the retention time within the tailings management facility prior to discharge. Additional time is required for this testwork to be completed.

Initial results indicate that the recoveries achieved were generally consistent with those achieved previously at the bench-scale. Further work on the process flowsheet is required to optimize the recoveries from this material. The pilot plant trial also identified opportunities to simplify the reagent scheme and reduce costs. None of these optimization efforts change the outcomes presented in the DAR; rather, Avalon's optimization efforts serve to improve upon the operational process while further minimizing potential environmental effects .

Avalon is continuing its optimization efforts for the flotation plant and is continuing testwork on expected effluent from these optimization efforts. However, it should be noted that Avalon has already provided acute toxicity testing for a 5-day decant solution generated in an earlier pilot plant test program undertaken by SGS Canada Inc. and presented the results of those tests in Section 4.9 of the SGS report found in the DAR, Appendix L. Since these results were a 5-day decant test and

Avalon plans to have a minimum of 30-day retention prior to decant during operations, we feel that these data remain representative of the expected effluent quality and toxicity.

AANDC Information Request (IR) #3 also indicated “if this is not practical, please provide a compelling reason why toxicity testing should not be done.” Avalon believes that based on the toxicity test results previously provided and its commitment to meeting CCME guideline values as site-specific water quality objectives in the downstream receiving environment, Avalon has compelling reasons why additional toxicity testing is not necessary at this time. However, Avalon fully intends to honour its prior commitment in response to AANDC IR #3 by conducting both acute and chronic toxicity testing on representative Nechalacho Flotation plant effluent as soon as practical.

Avalon respectfully requests that the Review Board not delay, but continue with, the Environmental Assessment Process, with the full understanding of the commitments already provided by Avalon. Upon completion of both acute and chronic toxicity testwork, Avalon will be pleased to provide the Review Board with those results. Avalon is confident that the future toxicity test results, when they become available, will be comparable to the toxicity test data reported to the Board to date.

**IR Clarification: #2**

Source: MVEIRB

To: Avalon Rare Metals Inc.

**MVEIRB IR Clarification Request #2**

Please adequately address Aboriginal Affairs and Northern Development Canada's (AANDC) Information Request #1 by submitting:

- a. appropriate site-specific water quality objectives specific to the effluent likely to be discharged from the Thor Lake Rare Earth Element Project; and
- b. specific location(s) where Avalon proposes to meet the site-specific water quality objectives.

**Avalon IR Clarification Response #2(a/b)**

In responding to this information request, it is Avalon's opinion that it may be somewhat premature to be requesting the Developer to propose specific receiving water quality objectives for water quality parameters of potential concern at this early stage (i.e., pre-regulatory review phase) of the overall Project review and approvals process. However, as indicated by the MVEIRB in its preamble to this IR clarification, the expectation of establishing site-specific water quality objectives prior to technical sessions has precedent in previous and recent environmental assessments.

Avalon has also noted that the Review Board suggested that Avalon meet with AANDC to establish appropriate site-specific water quality objectives and submit the ensuing objectives with adequate justification and supporting documentation to the Review Board for posting to the public registry.

However, as previously indicated in the DAR and in response to AANDC IR Response #1.4, the water quality modeling conducted for the Thor Lake Project to date indicates that directly downstream of the Tailings Management Facility (TMF) the receiving water quality (including in Drizzle, Murky, Thor and Fred lakes) is predicted to effectively meet CCME guideline values for applicable CCME parameters over the entire 20 year simulation period.

Thus, based on the predicted effluent quality and water quality modeling results, Avalon is pleased to commit to achieving CCME guideline values for applicable CCME parameters specified for the protection of freshwater aquatic life in the downstream receiving environment, with the exception of aluminum and iron. For both of these parameters, the baseline water quality monitoring results indicated that natural exceedances of the CCME guideline values occurred in some area lakes in the winter period, including Drizzle and Murky lakes. Thus for these parameters, the water quality objectives should be tied to the natural baseline values measured in the area.

Avalon is of the view that the general adoption of the CCME guideline values for the protection of freshwater aquatic life for the Nechalacho Mine site would be a very appropriate and conservative approach to take for the establishment of site-specific water quality objectives for the Thor Lake Rare Earth Element Project. Furthermore, since the CCME guidelines are intended to be applied to the downstream freshwater receiving environment, and not to the quality of the effluent stream (which will be regulated by MMER and MVLWB), Avalon would propose that the specific location where the site-specific water quality objectives would be met is at the outlet stream of Drizzle Lake.

**IR Clarification: #3**

Source: MVEIRB

To: Avalon Rare Metals Inc.

**MVEIRB IR Clarification Request #3**

Please submit the full suite of water quality test results associated with the March 2012 pilot plant testing Avalon refers to in both Avalon Response #3.1 (in response to AANDC's IR# 3.1) and Avalon Response #23 (Environment Canada's IR#23).

**Avalon IR Clarification Response #3**

Please see response to MVEIRB IR Clarification #1 above. As indicated in that response, the analytical results of the 40 tonne full-scale pilot plant trial on Basal Zone ore that was completed in February 2012, at SGS Minerals in Lakefield, Ontario will unfortunately take longer than expected to be completed for the reasons identified in Avalon IR Clarification Response #1.

Although water quality testing is ongoing in relation to the February 2012 pilot plant trial, it should be noted that such data were presented in the DAR for the initial pilot plant testing program carried out by SGS in 2010 and was also reported in SGS (2011). In addition, these results were summarized in Table 20 presented in response to EC IR #13.1.

Avalon will endeavor to provide the Review Board with the requested additional data as soon as practical; however, Avalon respectfully requests that the Review Board continue the Environmental Assessment Process with the understanding that testwork presented in the DAR and in Table 20 of EC IR #13.1 response is representative of the expected effluent stream and is not expected to vary significantly.

**IR Clarification: #4**

Source: MVEIRB  
To: Avalon Rare Metals Inc.

**MVEIRB IR Clarification Request #4**

Avalon has indicated pending test results related to AANDC IR#22 will be relayed to the Board. Please relay the May 2012 results as soon as possible, and also relay pending test results (for May) as soon as possible for the tests referred to in AANDC IR#20. Please also relay pending test results related to these information requests as soon as possible for the pending July and October tests. Please also indicate the scope of testing related to AANDC IR#22, and Avalon's expected submission date for such results. In the Review Board's view these information requests speak to important issues that must be addressed within the environmental assessment.

**Avalon IR Clarification Response #4**

Avalon wishes to note that the last paragraph of the MVEIRB letter was requesting that a number of additional results from various ongoing field water quality sampling programs be provided to the Board when they become available, but no IR number was associated with these requests. As a result the following responses are covered under the heading IR Clarification Response #4.

Regarding ongoing surface and groundwater sampling being conducted at the Pine Point site, Avalon, in conjunction with Knight Piesold, is currently planning to conduct the next water quality sampling program over the summer. As a result it is anticipated that this new set of data will be available for the MVEIRB by the end of October 2012.

The scope of the proposed surface and groundwater sampling at Pine Point will be as outlined in the November 2011 Knight Piesold Memorandum (NB11-00552), which was previously provided to the MVEIRB. As described in this report, a total of thirteen (13) groundwater monitoring wells and seven (7) surface water sites will be sampled at the locations identified in NB11-00552.

Regarding the additional groundwater quality sampling planned to be conducted at the Nechalacho mine site area in May, July and October 2012 (as referred to in AANDC IR#20), the analytical results from these sampling efforts will be provided to the MVEIRB as soon as they become available. However, with respect, Avalon would like to note, that although these sampling efforts will contribute to the existing data base, we do not anticipate that the results will dramatically alter our current understanding of groundwater quality in either the Nechalacho or Pine Point areas.

**Final Comments**

As committed in the DAR and subsequent Information Requests, Avalon fully intends to meet the CCME guideline values and water quality objectives as defined in the next phase of regulatory process, except for parameters that naturally exceed CCME values. Delaying the EA process any further will inhibit Avalon's ability to develop its Nechalacho deposit.

The rare earth market is unique: China, which controls 97% of rare earth production, has decided to reduce its exports and this has opened a window of opportunity for 3-4 companies to enter the market at the end of 2015. Avalon is competing with dozens of projects around the world to enter the market and needs to start construction during the seasonal window beginning in March 2013. Any delay will mean Avalon will miss the 2013 window and essentially be delayed a year. This will enable non-Canadian projects to overtake our schedule. The number of rare earth customers in the world, outside China, are finite. Missing the 2013 construction window will endanger the viability of the whole project.

Based on the above commitments, potential concerns, the fact that Avalon and the Review Board share a common goal towards environmental and social stewardship, given the strategic importance to Canada's leadership in the mining industry for REE and its importance to the increasingly important green technology industry that uses these metals, Avalon respectfully requests that the Review Board proceed to the next phase of the Environmental Assessment Process.

Thank you,

David Swisher  
VP Operations  
Avalon Rare Metals Inc.