



July 4, 2011

Chuck Hubert
Environmental Assessment Officer
Mackenzie Valley Review Board
Suite 200, 5102 50th Avenue,
Yellowknife, NT
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Dear Mr. Hubert

**RE: Environmental Assessment EA0809-002, Prairie Creek Mine
Proposed Water Quality Objectives Committee**

We refer to the letter from the Review Board on the above noted subject dated June 27, 2011. As you know, during the June 23-24 public hearings in Fort Simpson, several parties expressed an interest in forming and participating in a committee to evaluate site specific water quality objectives (SSWQO) for the Prairie Creek Mine. Canadian Zinc Corporation (CZN) is interested in pursuing this initiative.

CZN met with Aboriginal Affairs and Northern Development Canada (AANDC) on June 27, 2011 to collaborate in setting out an efficient approach, and to develop a framework for how the proposed initiative would be managed and how it could be completed during the environmental assessment (EA) phase. Following the meeting, AANDC and CZN exchanged drafts of a proposed framework and considerable progress was made on a mutually agreeable process. There were some differences of opinion regarding the exact content and basis of a program, and therefore we have agreed to each submit a similar process, but with slightly different content.

CZN's recommended process – "Proposed Framework for Recommending Water Quality Objectives - Prairie Creek Mine" – is attached (the Framework). Steps 1-8 of the Framework are substantially similar to the last draft circulated by AANDC, with the key differences in approach in Steps 9-12.

In the June 27 meeting, CZN re-iterated its position that water management, SSWQO's and the approach used to determine effluent quality criteria (EQC) are linked. CZN has proposed a load-based approach to set EQC. AANDC indicated that they will still not be in a position to comment on CZN's proposed load-based approach until after the EA process is completed. CZN noted their concern that an agreement on the approach used to set EQC would not be part of the process recommending SSWQO's. CZN requested that AANDC evaluate the load-based approach with a view to resolving their outstanding issues. While CZN has not included the load-based approach in the proposed Framework, we will be recommending the load-based approach in the permitting phase.

CZN's main concern is that, in the context of a timely conclusion of the EA process, defensible and protective SSWQO's are collaboratively identified to the extent possible. Therefore, we have separated the work in the Framework into those activities that can be completed in 5 weeks and be part of the EA decision, and those that will continue after the EA until the Water Licence hearing. For example, while the screening of water treatment options can be completed as part of the EA, further water treatment testing would only be completed post-EA because this would take approximately 6 months. Similarly, additional data collection for parameters for which there is consensus regarding a need for more data points in order to develop a reference condition approach (RCA) benchmark would continue post-EA for approximately one year.

The proposed Framework provides a 5 week process that will produce collaboratively developed SSWQO's for some parameters, and a submission containing interim SSWQO's for the remainder of the parameters. The Parties to the EA expressing interest in being involved in the water quality committee (WQ Committee) will have the opportunity to comment on the process and the Report produced by CZN at the end of the 5 week process. The Review Board will then make its decision based on the Report and comments from WQ Committee members.

The proposed framework also provides a post-EA process for further analysing the interim SSWQO's to produce additional, collaboratively developed, SSWQO's. This will hopefully result in only a few parameters about which there is any disagreement. For those parameters, the Review Board is assured that the SSWQO's will be at or lower than the SSWQO's proposed by CZN at the Public Hearing, and therefore sufficiently protective to ensure that there will be no significant adverse impact on the environment.

CZN listened to parties' concerns with interest during the recent hearings, and is willing to compromise in a process aimed at recommending suitable SSWQO's. However, we maintain that RCA benchmarks are only one approach that may be used for this purpose, and not the standard process, this being the first time AANDC has proposed the use of RCA to determine SSWQO's for all parameters for a mine in the north (in their June 3 technical report). Therefore, CZN believes the RCA method is not necessarily appropriate for determining objectives for all parameters.

CZN proposes the following schedule for the process outlined in the Framework, as well as provision for final submissions:

- | | |
|-----------------|--|
| July 4, 2011 | – Work commences according to the attached Framework |
| August 8, 2011 | – CZN submits a Draft SSWQO Report to the WQ Committee and responses to party technical reports |
| August 18, 2011 | – WQ Committee members provide CZN with comments on the Draft SSWQO Report, and all parties submit final submissions to the Review Board, including arguments. |
| August 29, 2011 | – CZN provides Final SSWQO Report and its final submission to the Review Board. |

We look forward to the Review Board's direction on this matter, and an efficient and timely completion of the EA process.

Yours truly,
CANADIAN ZINC CORPORATION

A handwritten signature in blue ink, appearing to read "D. Harpley".

David P. Harpley, P. Geo.
VP, Environment and Permitting Affairs



PROPOSED FRAMEWORK FOR RECOMMENDING WATER QUALITY OBJECTIVES PRAIRIE CREEK MINE

1. Confirm Reference Condition benchmarks
 - Inclusion of any additional and relevant datasets.
 - Do the concentrations of parameters change between summer and winter or among different locations upstream of the Prairie Creek mine.
 - Transparent treatment of data-points less than detection limits.
 - Consideration of bias in estimated RCA benchmarks due to unequal number of data-points by location and/or season
 - Identify data quality and data gaps
 - Consider use of data from both above and below Harrison Creek and from Harrison Creek itself
2. For confirmed RCA benchmarks, proceed to step 3. For parameters requiring additional data collection due to detection limit issues, poor quality data, etc., data collection will commence immediately. [Note: for parameters requiring additional data collection, the remainder of the steps as described below will be followed post-EA.]
3. Compare highest predicted concentrations to confirmed RCA benchmarks.
 - Recommend RCA benchmarks as SSWQO's at the end of the initial dilution zone for parameters which can be met by the currently envisaged operations. This is based on the highest predicted receiving water concentration at the edge of the initial dilution zone (i.e. mixing zone) in Prairie Creek. (AANDC position)
 - Consider recommending RCA benchmarks as the basis for SSWQO's for parameters which can be met by the currently envisaged operations based on the highest predicted receiving water concentration in Prairie Creek at Harrison Creek. Such consideration will take into account the magnitude of the difference between the highest predicted concentration and the benchmark in order to have confidence that the benchmark can be reliably and consistently achieved without undue constraints on the operation. The consideration will also acknowledge that, if RCA is to be used as the basis for the benchmark, the location of relevance of the RCA concentration will be the down-stream boundary of the expanded NNPR, with SSWQO's for the edge of the initial dilution zone back-calculated from RCA at the down-stream boundary of the expanded NNPR. (CZN position).
4. Identify parameters that cannot achieve the RCA benchmarks confirmed in step 3 above.
 - Based on the currently proposed operation (Highest predicted concentration) (AANDC position)



- Based on a suitable comfort margin under the currently proposed operation (Highest predicted concentration) (CZN position).

*Estimated time for steps 1-4 is 2 weeks, and will be partly concurrent with steps 5-8.

5. For parameters identified in step 4, conduct an evaluation and screening of which water treatment and storage options could achieve confirmed RCA benchmarks. The following items would be considered:

- Desktop evaluation of water treatment options for process water
- Best available treatment technology
- Options for available water storage expansion¹
- Capital and operating costs

¹ The potential for impacts of new or additional water treatment and water storage options will need to be included and assessed as part of the current EA.

6. If different and cost effective water treatment or storage options are recommended for consideration, repeat steps 3 and 4:

7. Identify outstanding parameters.

- for those RCA benchmarks still not achieved (AANDC position)
- for those RCA benchmarks not accepted (CZN position)

8. Report from CZN including recommended SSWQO's² (based upon steps 1-7) and interim SSWQO's for those parameters that required additional data collection from step 2. The interim SSWQO's will be at or below the SSWQO's proposed by CZN in their presentation at the Public Hearing, and therefore, will be sufficiently protective to ensure that there will be no significant adverse impact on the environment. The SSWQO's will collectively define a level of change without significant adverse impacts. The report, as well as comments from parties, will provide the basis for a decision by the Review Board.

²SSWQO's requiring confirmatory testing through Step 9 would be classified as "provisional"

*Estimated time for steps 5-8 is 4 weeks, commencing before steps 1-4 are complete. Total estimated time for steps 1-8 is 5 weeks.

The remaining steps below will be concluded post-EA



9. Complete laboratory testing of water treatment options that passed screening in step 5. Confirm provisional SSWQO's or continue to step 11.
10. Complete steps 3 and 4 for those parameters that required additional data collection from step 2.
11. Conduct further site specific assessment of parameters identified in step 7 and those parameters for which SSWQO's were not recommended in steps 9 and 10. This is to provide a rationale for acceptable non-RCA SSWQO's concentrations at or below the interim SSWQO's proposed by CZN in their report in step 8.
12. Recommend final SSWQO's based on the results of steps 9-11.

*There is a possibility that some SSWQO's will still be in dispute by step 12. These will need to be resolved by the Water Board. However, all SSWQO's will be at or below the interim SSWQO's proposed by CZN, and in CZN's opinion, sufficiently protective to ensure that there will be no significant adverse impacts on the environment.