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November 13, 2024

Nana Kwamena
Canadian Nuclear Safety Commission
Government of Canada
280 Slater Street
Ottawa, ON K1P 5S9

Dear Ms. Kwamena,

Re: Wheeler River Project Federal Indigenous Review Round 4 Follow-up Clarifications for Information Requests 114 & 174

During a November 8, 2024 discussion between the Canadian Nuclear Safety Commission (CNSC) and Denison (Kwamena - Switzer), and a subsequent discussion between the CNSC and Denison (Way-England) on November 12, 2024, the CNSC requested further information on two of Denison's Round 4 responses. Specifically, the CNSC requested Denison clarify whether the responses to Information Request (IR) 114 and 174 would alter the conclusions of the assessment. Denison confirms that the information provided in the response to these two IRs did not change the conclusions of the Environmental Impact Statement (EIS).

The enclosed memo provides further clarification in support of Denison's determination. Minor updates that have been made to the final EIS (October 2024), as part of Denison's response to the aforementioned IRs, have been noted in the memo.

Kindly,

[redacted]

Janna Switzer
Vice President, Environment Sustainability & Regulatory
Denison Mines

Cc Jessica Way (CNSC)
Brianne England (Denison)

Wheeler River Project Environmental Impact Statement (EIS)
Round 4 Information Requests (IRs) 114 and 174 consideration of conclusions
November 13, 2024

IR-114

For reference, we note that the nature of IR-114 has changed over the two-year review period. Initially the primary focus of IR-114 concerned inclusion of Metal and Diamond Mining Effluent Regulations (MDMER) parameters, the use of baseline receiving environment concentrations to derive water quality thresholds, and data and analysis for mercury / methyl mercury. The use of the copper (Cu) federal environmental quality guideline (FEQG), that is now the focus of IR-114, was raised by the federal-Indigenous review team (FIRT) in the draft Round 4 comments received by Denison in September 2024.

In response to Round 4 IR comments, the EIS technical team updated the EIS (final EIS; October 2024) as described in the following bullet points. Discussion regarding the updates is also provided for context and clarity:

- The changes requested to **Section 8 Aquatic Environment** were made. This includes corrections/revisions to table footnotes, removal of MDMER effluent limits for arsenic and total suspended solids as short-term screening criteria, and the inclusion of the Cu FEQG in the assessment. The following is noted regarding the Cu FEQG in particular as this seemed to be the most salient issue raised in the IR, specifically related to the calculation of the Cu FEQG. At baseline and reference conditions, the FEQG was calculated to be 0.0002 mg/L. When evaluating results predicted during operations, the FEQG was calculated in consideration to the toxicity modifying influence of the effluent – that is, the FEQG was calculated using the BLM model in consideration of the effluent-induced hardness in the receiver and the value of 0.00098 mg/L was used. As noted in the Round 4 response to this IR, Denison and its SMEs believe it is relevant to consider all aspects of the receiving environment and this includes induced hardness since the scenario being evaluated only occurs during periods of effluent discharge. This approach is used in other jurisdictions (e.g., water licences in northern Canada issued through local water boards) and therefore the concept of utilizing induced toxicity modifiers, like hardness, that would be associated with the receiving environment is not unique.

  With the above in mind, the results show no exceedances of the adjust Cu water quality guideline as defined by the BLM derived FEQG in the operations phase during periods of effluent discharge. In consideration of this there is no rationale on which to change the conclusion of the EIS. Text has been added to the EIS documentation (see below regarding Appendix 10-A) that considers the FEQG reflecting baseline and reference conditions from a sensitivity analysis perspective which Denison and its SMEs believe is an appropriate treatment of the information. The sensitivity acknowledges the perceived increased risk to aquatic biota at the lower, baseline FEQG since the predicted copper concentration is greater than the FEQG; however, this sensitivity analysis does not require a change to the overall conclusions of the EIS.

- Additionally, the following is noted:
    - The Surface Water Quality valued component (VC) is an intermediate VC, where a change in an intermediate VC has the potential to result in an effect on a receptor VC and receptor VCs are generally biological or integrated assessment endpoints. Significance determination is not completed on intermediate VCs, but integrated into the residual effect evaluation, residual effect characterization, and significance determination for related receptor VCs.
    - If a water quality guideline is exceeded, this does not directly correspond to an effect on receptor VCs or a significant effect on a receptor VC. A close review of Section 8 residual effect analysis was conducted. This included a review of the ratings for residual effect characteristics: direction, magnitude, geographic extent, duration, frequency, reversibility, context, and likelihood for aquatic environment VCs. The information contained in the revised draft EIS was acceptable, and it was determined that no updates to the assessment conclusions were required with the inclusion of the Cu FEQG. While some additional risk to sensitive receptors is possible, the overall integrity of the VC populations within the aquatic regional study area is unlikely to be changed.
    - The assessment is conservative on many fronts, and one of the central issues with copper is that the analytical lab's detection limit for surface water sample was at the background FEQG of 0.0002 mg/L. Additional surface water sampling with a lower detection limit was initiated in 2024 and will provide a more accurate value for baseline copper concentrations. Denison's commitment to collect more water samples prior to construction and incorporate new water quality data into Denison's application for a licence to operate, along with updated effluent quality data, in outlined in commitment 8-48. The conceptual environmental sampling plan for aquatic environment VCs included in the EIS is at the appropriate level of detail needed at the environmental assessment (EA) stage and does not need to be updated because of this IR.
- **Appendix 8-E Constituent Concentrations and Mixing Zone Assessment Report** has been updated to be consistent with the revisions to Section 8 described above, e.g., updating table footnotes, removing MDMER effluent limits as short-term screening criteria for arsenic and total suspended solids, and including the copper FEQG as appropriate.
- **Appendix 10-A Environmental Risk Assessment** a new section *6.2.4 Copper Aquatic Toxicity Reference Values* was added to Appendix 10-A, Section 6.2 Sensitivity Analysis. The content of this new section is effectively the information provided to the CNSC in Attachment IR-114 Round 4.

IR-174

For reference the following is noted with respect to the chronology and evolution of IR-174 for context. This IR was “not accepted” in the draft, Round 4 IRs provided to Denison in September; however, in the October 2024 version of the Round 4 IRs, this IR was deemed to be "under discussion.”

Despite this change in status, Denison nevertheless included a detailed response to IR-174 in the October 18, 2024, IR response package to address the specific comments contained in the draft IR-174 Round 4.

As part of Denison’s response to this Round 4 IR, clarification on data provided in the baseline bat detection map legend was provided and this was updated in the final EIS (October 2024) in Figure 2.9 of Appendix 9-F, methodology for future pre-construction baseline bat survey was provided, and commitment 9-37 was updated as requested.

The results of bat surveys (acoustic) completed in 2024 were provided to the CNSC (OMNIA memo dated October 29, 2024). Four bat species or species groups were detected during the surveys: little brown myotis (*Myotis lucifugus*), northern myotis (*M. septentrionalis*), hoary bat (*Lasiurus cinereus*), and western small-footed bat (*M. ciliolabrum*). Hoary bat and western small-footed bats were not detected during the 2019 acoustic survey.

The detection of different or additional bat species has no implications on the EIS baseline report (Appendix 9-B). The baseline report is an inventory of species detected during the focused surveys completed to support the EIS and reflects the information gathered to the date of publication; the OMNIA memo included with the IR response is now part of the EIS record and therefore the record includes documentation of all species encountered. The assessment and conclusions surrounding bat species in Appendix 9-D are unchanged in consideration of the results of the 2024 acoustic surveys and the reasoning for this is discussed below.

The assessment provided for bat species focussed on bat species at risk (SAR) including northern myotis and little brown myotis. The assessment is provided in Appendix 9-D and follows an accepted habitat-based assessment. The information provided in Appendix 9-D includes a summary of the life history requirements, the expected Project effects, proposed mitigation measures (including project design measures, general mitigations for wildlife SAR, and species-specific measures for bat species), and anticipated residual effects on those species. Since the hoary and western small-footed bats occupy the same ecological niche and have similar life histories to northern myotis and little brown myotis, the information provided in Appendix 9-D applies equally to them (and all bat species with similar life histories and niche requirements), including the conclusions of the assessment. With that in mind, Denison and its SMEs do not have a rationale to alter the EIS conclusions in this regard.

The above rationale is consistent with typical EA practice. The EIS was not designed to include an assessment of every species that has been detected at a given Project site, nor is such an assessment necessary considering the EA methodology used for the EIS. Scoping is completed to focus the assessment on key VCs, and this is considered EA best practice. This approach is outlined in within the EIS documentation, including Section 5 Approach and Methodology of the Assessment and Section 9 Terrestrial Environment.