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December 30, 2020

Shannon Allerston
Regulatory Specialist
Mackenzie Valley Land and Water Board
4922 – 48th Street
7th Floor YK Centre Mall
P.O. Box 2130, Yellowknife, NT X1A 2P6

Re: Giant Mine Remediation Project Response to MVLWB Comments on October Monthly Surveillance Network Program (SNP) Report for MV2007L8-0031

Dear Ms. Allerston

The Giant Mine Remediation Project (GMRP) is pleased to submit responses to the Mackenzie Valley Land and Water Board staff comments dated December 3, 2020 on the GMRP October 2020 SNP report.

If you have any questions or comments, or require additional information, please contact the undersigned by email at Andrea.Markey@canada.ca or by phone at 867-445-6267.

Sincerely,

Andrea Markey

Andrea Markey
Environmental Scientist
Giant Mine Remediation Project

Encl.

Table 1 Giant – MV2007L8-0031 - GMRP Response to MVLWB Comments on October 2020 SNP Report

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Topic	Comment	Recommendation	Response
Table B-1 Footnote 1	Footnote 1 states the recorded volume for SNP 43-17 (Supercrest) is capturing intermittent flow since April 2019 and does not imply a pumped volume in October 2020. This is confusing as the results provided in September 2020 indicated zero flow for that month. It is unclear why a difference in reporting approach (i.e., reporting total since April 2019 rather than determining the volume change in the reportable month) has been made.	Could GMRP please explain the difference in reporting approach (i.e., reporting total since April 2019 rather than determining the volume change in the reportable month)?	GMRP completes monthly operational checks to the Supercrest pump. However, during these checks, mine water rarely reached the surface. As such, flow meter readings from the Supercrest pump had historically not been collected monthly during the operational checks. GMRP recently commenced recording these readings monthly during pump checks.
Table B-1 SNP 43-21A	The submersible pumps at SNP 43-21A were installed under Licence MV2010L8-0010 and were deemed to be urgent works to address risks associated with the existing infrastructure. The information submitted for the amendment of Licence MV2010L8-0010 (dated November 17, 2017) indicated that commissioning of the pumps would be completed during freshet 2019. Information in Table B-1, Footnote 2 indicates that the water volume recorded for these pumps is representative of intermittent pumping from maintenance and repair. Given testing and commissioning of these pumps was anticipated to be completed in early to mid-2019, it is unclear why the submersible pumps at SNP 43-21A are operating intermittently rather than as the primary underground pumps with continual flow.	Could GMRP please provide an update on the status of the submersible pumps at SNP 43-21A and an update on the anticipated date these pumps will become fully operational?	The submersible pump supplying SNP 43-21A has become operational since approximately mid-November 2020.
Table D - Turbidity	The field measured turbidity still seems suspect with reported values of zero, which seem improbable given the nature of the water management system (i.e., unlined ponds) and natural conditions of Baker Creek and Yellowknife Bay. An explanation that results may be biased low because the meter was calibrated using a one point calibration method was provided as a footnote. While laboratory analysis of turbidity is completed, the concern with the discrepancy between field measured turbidity and laboratory results for turbidity and TSS remains for future monitoring related to construction. The field data is critical for such monitoring and so it is unclear how this situation will be avoided in future.	Could GMRP please provide further information related to the turbidity meter and how potentially biased low results will be accounted for in future monitoring (both SNP and monitoring associated with construction).	GMRP is in the process of considering an alternate turbidity meter with better sensor capability, proportional-integral-derivative response and overall reliability. GMRP anticipates using a turbidity meter of this equipment sensor capability to eliminate, if not mitigate, field turbidity issues.
Table D - Detection Limits	The detection limit for toluene is listed as 0.00045 mg/L, but results are reported as <0.00050 mg/L.	Could GMRP please verify the toluene detection limit.	The correct detection limit for toluene should have been noted as 0.00050 mg/L.
Table F - Turbidity	The turbidity value for groundwater well SNP MW01-2A seems extremely high for a groundwater sample.	Could GMRP please provide additional information to explain the elevated turbidity value at SNP MW01-2A?	GMRP failed to flag this field data recognizing that this station's turbidity did not achieve stability during field measurement after 20 minutes and was likely an equipment error. GMRP will continue to address desktop-level quality assurance and quality control procedures.
Table F - Footnote s	Footnotes 5 and 6 do not appear to be associated with any data in the table. Is this an omission or should select data be associated with these footnotes?	Could GMRP please confirm the validity of footnotes 5 and 6 in Table F?	Footnotes 5 and 6 were associated with non-SNP data which had been removed from the table prior to Board submission and should have been removed.
Table G - Sampling Dates and Pressure Measure ments	Water quality sample was collected from S-DIAND-001 on September 23, 2020 along with pressure measurements from zones 4 to 10, but the pressure measurements for zones 1 to 3 were collected on October 5, 2020. All of these pressure measurements were included in the SNP report for September. It is not clear why all of these pressure measurements are repeated again in the October SNP report. It is also not clear why the pressure measurements for the upper zones were not collected at the time of sample collection in September.	Could GMRP please explain the duplicate reporting of pressure measurements in September and October as well as provide information to explain why pressure measurements were not collected fully in September and any potential implications on verification of sample collection?	GMRP encountered multi-port sampling equipment issues in September. As such, there were no pressure readings at these zones. The interpretation of the sample geochemistry was unlikely altered with the delay in pressure measurements. The September pressure readings were provided for completeness of data.
Table H - Units	The units reported in Table H for deep well temperature is missing the degrees ("") (i.e., it is reported just as "Celsius").	Future reporting should correct the temperature units.	GMRP will correct this in future reporting.
Table H - Footnote	Footnote 3 does not appear to be associated with any data in the table. Is this an omission or should select data be associated with this footnote?	Could GMRP please confirm the validity of footnote 3 in Table H?	Footnote 3 was associated with non-SNP data which had been removed from the table prior to Board submission and should have been removed.

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Table I - Equipment Rinsate Blank	On p.35 of the SOP for Effluent and Water Sampling state (Feb 2020), it states that an equipment rinsate blanks should be collected for each groundwater and C-shaft void sample event, but results for an equipment rinsate blank are not provided. Although GMRP explained in response to comments on the September SNP Montly Report (letter dated November 30, 2020) that a tiered approach to QA/QC is implemented, this appears to be a deviation from the SOP.	Could GMRP please explain why the equipment rinsate blank was omitted from the groundwater sampling program in October?	GMRP failed to collect equipment rinsate blank during the groundwater sampling program because of an oversight. The GMRP has addressed this omission and implemented refresher training about quality assurance and quality control, and GMRP requirements.
Tables I and J - QC Samples	Although duplicate samples were collected during the groundwater sampling event, it appears (based on sample dates) that the travel blanks were only associated with a portion of the surface water sampling and that no travel or field blanks were associated with the groundwater program. In fact, no field blanks were submitted as part of the October SNP sampling collection. As such, the ability to assess potential contamination is limited.	Could GMRP please provide rationale supporting the omission of field blanks from the October sampling as well as limiting travel blanks only to a subset of the surface water sampling program?	GMRP failed to collect adequate blank samples during the sampling program because of an oversight. The GMRP has addressed these issues with our team and implemented refresher training about quality assurance and quality control, and GMRP requirements.