



Technical Memorandum

Date: December 4, 2015

To: Phyllis Beaulieu (NWB)

From: Luis Manzo (KIA);

cc: Richard Nesbitt, Dennis Gregor, Neil Hutchinson (HESL);
Alan Sexton (GeoVector)

Re: Kivalliq Inuit Association Submission: Review of Updated Meadowbank Management Plans

1. Introduction

This technical memorandum was prepared on behalf of the Kivalliq Inuit Association (KIA) for submission to the Nunavut Water Board (NWB) by Hutchinson Environmental Sciences Ltd. (HESL) and GeoVector Management Inc. (GeoVector), in response to the NWB notice titled *"151104 2AM-MEA1525 Submission of Mgmt Plans for Approval – Meadowbank Project Kivalliq Region-OMLE"*. The submission made by Agnico Eagle Mines Ltd. (AEM) to the NWB was comprised of the following Management Plan amendments required for the Meadowbank Water Licence:

1. Aquatic Effects Management Plan (AEMP)
2. Core Receiving Environment Monitoring Program (CREMP)
3. Water Management Report and Plan
4. Freshet Action Plan
5. Ammonia Management Plan
6. Groundwater Monitoring Plan
7. Tailings Storage Facility: Operation, Maintenance and Surveillance Manual
8. Operation and Maintenance Manual: Sewage Treatment Plan, and
9. Spill Contingency Plan

2. Review

HESL and GeoVector were active participants in the review process of AEM's Meadowbank Renewal Application on behalf of the KIA. Our interpretation of this submission by AEM to the NWB is that the revised management plans were provided in response to intervener requests made during the review process and discussions held during the NWB technical meetings and public hearings. We have therefore approached our review of these plans under the assumption that they have not substantially changed from those reviewed in 2014 as part of the Meadowbank Renewal Application. Our focus was on assessing if the concerns raised on behalf of the KIA have been addressed in these Management Plan updates. We provide the following table which summarizes the concern raised during our review of the renewal application and whether AEM has adequately addressed the concern through their updated plans. The primary issues have been tracked using the numbering system used throughout our review of the Licence application; we have appended our final submission made to the NWB on behalf of the KIA to this memorandum.

Table 1. Concordance Table Indicating Resolution of Outstanding KIA Issues Raised During Formal Review.

Primary Issue	Issue Details	Meadowbank Approach	Resolution
2.1 Freshwater Quantity: KIR-01, 01B, 23	Increase in volume requested by AEM and the potential impact additional freshwater use may have on Third Portage Lake.	This issue has been resolved through the agreed implementation of a staged water license that will limit unnecessary excess freshwater consumption in a given year. AEM has also provided further documentation indicating that no negative impact to Third Portage Lake will result from the additional freshwater use.	Resolved
2.2 Waste Disposal and Management: KIA-20, 22, 27	Concerned with seepage from the tailings storage facility (TSF) into the receiving environment. This concern was raised in light of the 2013 seepage detected at AEM's ST-16 monitoring station and subsequent elevated cyanide concentrations in Lake NP-2. AEM agreed to update the Freshet Action Plan, a subsection in the Water Management Plan, within 60 days of the license issuance – Documented changes were to include:	<p>Reference: AEM Freshet Action Plan, Sept. 2015, Section 3.1, p. 24</p> <p>AEM indicates that water migrated underneath the RSF through a former watercourse into the seepage sump area (ST-16). AEM states that they took immediate measures to stop the seepage and implement corrective measures to prevent a recurrence. This included: <i>“keeping the sump area pumped to a low level, installation of an impermeable barrier (till plug) in the rockfill road, implementation of a comprehensive monitoring program and ensuring tailings deposition was enhanced in the North Cell to create beaches that would stop any water egress (this activity is continuous as it is part of AEM's Tailings Deposition Plan). A permanent pumping system was installed in 2014 in order to direct seepage back to the North Cell TSF. In addition, as mentioned previously (Section 2.3.1.6), snow will be removed from the ditches and culvert at the outlet of NP- 2 to NP-1 Lake to ensure freshet flows do not back up and overflow into the ST-16 seep location and that the north watershed non-contact runoff flows freely through to NP- 1 Lake and further downstream (Dogleg Lake) Pumped volumes will be documented and daily inspections of the area will be undertaken.”</i></p>	AEM has completed a variety of additional works that appear likely to prevent any further occurrences and state that <i>“The water quality in NP-2 Lake has improved significantly and no impacts have been observed in the aforementioned downstream lakes.”</i> (Section 3.1, p. 25) Confirmation of the problem having been resolved will require inspection of 2015 data as part of the review of the next Meadowbank Annual Report.
	a) Increased tailings beaches on RF-1 and RF-2 in 2015;	<i>“In 2014, in accordance with the overall mitigation plan for this incident, tailings beaches were built along RF-1 and RF-2 before tailings deposition switched to the South Cell TSF on November 19 2014.”</i>	Resolved
	b) Documenting installation of fines filters on RF-1 and RF-2, completed as part of the mitigation response to the initial seepage;	<p>Filter barriers were installed along RF-1 and RF-2 to prevent water egress from the North Cell (suspected source area for cyanide in Lake NP-2) and an impermeable barrier (till plug) was installed in the rock fill road.</p> <p>Water Management Plan Section 3.1.5: <i>“As seen in the water balance and the tailings deposition plan (AEM, 2014), no tailings will be deposited in the South Cell during the summer 2015 (June 2015 – October 2015) in order to finalize deposition in the North Cell.”</i></p> <p>Section 3.1.4: Tailings deposition to the North Cell recommenced from June, 2015 to October, 2015 as part of the closure of the North Cell (fill to final design elevation).</p>	Resolved

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	c) Commence capping of the North Cell in the TSF as part of progressive reclamation to stem the seepage at its source;	<p>Reference: 2015 AEM Water Management Plan, p. 25, Sect. 3.1.4:</p> <p><i>“Tailings deposition will commence again from June, 2015 to October, 2015 as part of the closure of the North Cell (fill to final design elevation). Closure and capping of the North Cell TSF will occur progressively. This is anticipated to commence in 2015. As per the design specifications and regulatory requirements, the level of the North (and South) cell reclaim pond must maintain a two meter freeboard with the surrounding structures, which is 148.0m elevation for the North Cell. As seen in the water balance presented in appendix A, no tailings will be deposited in the North Cell during the winter 2015 (October 2014 - June 2015) due to the difficulty of operating the TSF during the winter months.”</i></p>	In process. No further action is required at this time. Resolution will be confirmed upon review of the next Meadowbank Annual Report.
	d) Drain water from the TSF North Cell to the TSF South Cell in 2015;	<p>Reference: 2015 AEM Water Management Plan, p. 26-27, Sect. 3.1.8.1</p> <p>In 2015 and 2016, water transfers from the North Cell towards the South Cell are required for adequate operation and closure of the North Cell. In 2016, 2017 and 2018, water transfers from the South Cell (SC) to the pits (Goose and Portage) will be undertaken to close this TSF.</p>	In process. No further action is required at this time. Resolution will be confirmed upon review of the next Meadowbank Annual Report.
	<p>e) Install thermistors in the Rock Storage Facility (RSF) between the TSF and Lake NP-2 in conjunction with closure assessments;</p> <ul style="list-style-type: none"> AEM will consider installation of piezometers in the RSF as part of the adaptive management if thermistor data indicates insufficient freeze back to cut off flow between the TSF and Lake NP-2; 	<p>Reference: Freshet Action and Incident Response Plan, Oct. 2015, Sect. 3.1, p. 25:</p> <p><i>“Also, in 2014, in accordance with the overall mitigation plan for this incident, tailings beaches were built along RF-1 and RF-2 before tailings deposition switched to the South Cell TSF on November 19 2014. Filters barriers were installed along RF-1 and RF-2 to prevent water egress from the North Cell (suspected source area). Cover placement was installed in late 2014 and early 2015 along RF-2. Thermistors installed in 2013 indicate that freezeback is occurring along the seepage path. All the information collected in 2014 from the inspections, pumping, thermistors, and sampling results were compiled and submitted as progress reports to regulators. This report “Follow up AEM Report – Seepage Water From Waste Rock Storage Facility – Sample Location ST-16” can be found in Appendix G2 of the 2014 Annual report.”</i></p>	<p>No reference to the installation of piezometers in the RSF has been located. However, piezometer installation was optional if the thermistor data indicated insufficient freeze back to cut off flow. As noted, the thermistors installed in 2013 indicate that “freezeback is occurring along the seepage path”.</p> <p>This issue is resolved so long as ongoing monitoring of thermistors indicates that freeze back is continuing. We have confirmed this was included in the 2014 annual report. This will be reviewed in the 2015 annual report as it becomes available to confirm continuation of the freeze back.</p>
	f) Submit monitoring results as part of the Annual Report to the NWB;	<p>Reference: Freshet Action and Incident Response Plan, Oct. 2015, Sect. 3.1, p. 24:</p> <p>All the information collected in 2014 from the inspections, pumping, thermistors, and sampling results were compiled and submitted as progress reports to regulators. This report “Follow up AEM Report – Seepage Water From Waste Rock Storage Facility – Sample Location ST-16” can be found in Appendix G2 of the 2014 Annual report.</p>	<p>This has been addressed. We note that the referenced report was not included with this submission. We have reviewed and confirmed AEM’s statement.</p> <p>Ongoing review of annual reports by</p>

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			the KIA will continue to assure that monitoring results confirm expectations.
	g) Continue the current monitoring plan as stated in the Freshet Action Plan until:		<p>Monitoring plan only proposes monthly sampling for many variables at locations that are affected by freshet.</p> <p>This is insufficient for freshet as it may only last a month and thus will not be sampled adequately – sampling should be weekly at least until a large proportion of snow and ground ice has melted.</p> <p>See Table 2 below for ST-16 Seepage Monitoring Program.</p> <p>This issue is unresolved.</p>
	<ul style="list-style-type: none">Five years of consecutive water quality results in Lake NP-2 meet Canadian Council of Ministers of the Environment (CCME) criteria for key parameters (free cyanide, nickel, copper); and		<p>The KIA recognize that remedial actions have restored and maintained water quality and that ongoing monitoring is incorporated into the monitoring outlined in Table 2 shown below from the Freshet Action Plan.</p> <p>This issue is resolved.</p>
	<ul style="list-style-type: none">Five years of consecutive water quality results for total and WAD cyanide are below accepted method detection limits (0.005 mg/L).	AEM has incorporated WAD and total cyanide analysis as part of the freshet action plan and in the CREMP.	<p>AEM has indicated that WAD Cn sampling has been incorporated into the freshet action plan. The KIA recognize that remedial actions have restored and maintained water quality and that ongoing monitoring is outlined in Table 2 shown below from the Freshet Action Plan.</p> <p>We note that the freshet action plan does not specify detection limits for the analysis of parameters in Table 2. As cyanide is the primary COPC in this analysis, we are satisfied with AEM's commitment to use a method detection limit of 0.005 mg/L or lower as per the commitment list established during the technical</p>

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			meeting. This issue is resolved.
	h) Continue the current mitigation strategy of pumping seepage back to the TSF and regular (weekly during the open water season, monthly outside of the open water season) inspections.	<p>Reference: Spill Contingency Plan v. 6, Sect. 3.1, p 3-1 and 3-2; Section 5.5 p. 5-4; Section 5.6 p. 5-4.</p> <p>Table 1 shows: Seepage from the TSF and WRSF of any quantity have been identified as actionable and reportable spills.</p> <p>AEM further indicates that spills of non-petroleum hydrocarbon material fewer than 100 L will be placed in the Tailings Storage Facility. Spills over 100 L of non-petroleum hydrocarbon material (e.g. solvents, glycol) will be placed in drums and stored in the on-site hazardous material area for shipment south to approve facilities during barge season.</p> <p>It is also noted that <i>“Daily inspections will be conducted of the pumping, collection systems and perimeter area and the pumped volumes will be recorded in 2015”</i>.</p> <p>This section also states that: <i>“The specific parameters monitored as part of the EM program will depend on the nature of the spill, and will be determined for the specific hazardous material released. EM sampling is to occur following the clean-up of a release and the frequency of sampling will depend on the type of material spilled (wet or dry spill), the environment into which the chemical was released (surface water body or soil; frozen or thawed), and the quantity of spill material. The EM program for a particular spill will cease upon obtaining satisfactory analytical results (within 20% of background level, to accommodate for analytical accuracy) from the potentially affected areas or as required by regulators.”</i></p>	It is clear that seepage from the TSF and WRSF will now be treated as actionable and reportable spills. However, we did not find a clear reference in the Spill Contingency Plan to the management of seepage. It should be made clear in the Spill Contingency Plan that the current mitigation of seepage will be to pump it back to the TSF and that regular inspections will occur. At present, the Spill Contingency Plan is vague and thus the issue is not resolved.
2.3 Emergency and Spill Contingency Planning: KIA-20, 22, 27	The KIA wanted to ensure AEM adequately characterized spills, monitored and mitigated their environmental impacts, and followed up with anomalous instrumentation readings.	<p>Reference: Spill Contingency Plan v. 6, Sect. 3.1, p 3-1 and 3-2, Table 1:</p> <p>Seepage from the TSF and WRSF of any quantity have been identified as actionable and reportable spills; however mitigation is not fully documented in the Spill contingency Plan and there is no mention of addressing anomalous readings.</p>	Not fully resolved (See also Issue 2.2 h.)

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2.4 Monitoring: KIA-2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 24, 26 and 28	The majority of issues raised on behalf of the KIA focused on ensuring AEM adequately assessed mine related impacts to the aquatic environment. Comments therefore focused on AEMs environmental monitoring programs - the Aquatic Effects Monitoring Program (AEMP) and the Core Receiving Environment Monitoring Program (CREMP). Specific concerns included:	See below.	
	a) Concerning water and sediment quality monitoring results being compared to Water Licence Limits	<p>CREMP, Appendix D - Updated thresholds and trigger development for CREMP water parameters appears to address this as follows:</p> <ol style="list-style-type: none"> 1. When a threshold (e.g., CCME guideline) was established, the trigger was set as the maximum of either (a) the value halfway between the baseline median and the threshold ("Method A"), or (b) the 95th percentile of the baseline data ("Method B"). 2. When a threshold was not established, the trigger was set equal to the maximum of either the 95th percentile of the baseline data ("Method B") or two times the current detection limit ("Method C"). and 3. Special cases specifically for total phosphorus, aluminum, cadmium, manganese, and zinc; dissolved aluminum; ammonia as nitrogen; pH; and total suspended solids. <p>The triggers for special cases were computed for each system (Meadowbank, Wally and Baker lakes) and were considered over and above the licence requirements (i.e. more stringent) for Meadowbank, Wally and Baker lakes as they were set below the CCME guidelines.</p>	Resolved
	b) Monitored parameters including biological indicators, the suite of assessed chemical parameters, and water quality detection limits	AEM proposed to discontinue sampling for zooplankton and periphyton due to the variability in the data collected and its lack of sensitivity to change (e.g. >50%). Subsequently, KIA noted that <i>"Our updated understanding of laboratory variability introduces too much uncertainty into year to year periphyton data interpretation rendering little utility of the analysis."</i>	<p>This has been resolved to the KIA's satisfaction.</p> <p>AEM has committed to achieve the lowest commercially available water quality detection limits - resolved.</p>
	c) Modelling results and comparisons to measured values,	This is to be (was) discussed during the technical meetings.	Resolved. AEM has committed to continue comparing modelled results to measured values and has agreed to changes in the CREMP reporting framework.
	d) Data quality objectives to ensure accuracy of reported data,	AEM defended their approach in KIA-IR-11 based on their specific situation. AEM argued that <i>"The success of this approach is exemplified by the CREMPs proven ability to identify mine-related changes over time, which is founded on the integrated interpretations CREMP data accumulated over the years."</i>	KIA notes in this IR that they consider this to have been addressed. This issue is resolved.

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	e) Water license wording for clarity and precision,	<p>See KIA-IR-03, 04, 05, 06 07, 08.</p> <p>KIA-IR-04 refers to a request that the current schedule of annual comparisons of predicted water quality and quantity within the pits to measured water quality and quantity be continued. We note that the renewed NWB A Licence (2AM-MEA1525) identifies specific monitoring locations, parameters and frequencies for operations (early/late) and closure phases for each of the pits (CREMP 2015, Section 3, p. 31) including pit sumps (operations), pit lakes (late operations/closure) and pit lakes (post closure). We further note that AEM committed during the technical hearings to continue comparing modelled water quality to measured results. This would appear to address KIA-IR-04.</p> <p>KIA-IR-05 concerns the inclusion of weak acid dissociable cyanide be analysed at Vault Attenuation Pond monitoring station ST-10 in addition to total cyanide. We have found no evidence that ST-10 will be sampled and analysed for weak acid dissociable cyanide as requested.</p>	<p>We note that KIA considers KIA-IR-03, 06, 07 and 08 are considered to have been addressed. Resolved</p> <p>KIA-IR-04 is resolved by this commitment. KIA recommend that the commitment be captured in the wording of the Water Licence.</p> <p>KIA-IR-05 has not been addressed and therefore remains outstanding.</p>
	f) Conditions to require the collection of water quality samples at depth,	AEM generally only collects surface samples unless there is evidence of stratification based on conductivity. <i>“This has been incorporated into the CREMP by instructing field teams to take samples at depth when vertical profiling suggests the presence of stratification (e.g., abnormally high conductivity measurements)”</i> . As noted by KIA in their response, thermal stratification that does not reflect conductivity based stratification may also occur and should warrant investigation. This now seems to have been addressed in the CREMP (see Section 2.4.1, p. 18) in that <i>“vertical profiling for temperature (°C), dissolved oxygen (mg/L), specific conductivity (µS/cm), and pH at every meter from surface to 1 m off the bottom (or up to 20 m) using the YSI Professional Plus meter. If, during an open-water sampling month (July-September), a vertical profile shows abnormally low dissolved oxygen, or abnormally high conductivity or temperature for a particular depth, then a water chemistry sample is collected from that depth and analysed alongside the other water chemistry samples (see below).”</i>	This now appears to have been addressed. Resolved
	g) Requirements to discuss elevated water and sediment chemistry results in the body of reports,	AEM indicated that they will discuss these recommendations and comments related to sediment during the technical hearings.	Resolved. The KIA raised their concerns during the technical hearing and AEM provided additional details on their Adaptive Management framework.
	h) Photographic record of preconstruction conditions,	In KIA-IR-08 AEM indicated that they agreed with the KIA recommendation.	In KIA-IR-08, KIA indicates that they consider this issue to be resolved.
	i) A reference site for Wally Lake,	A rationale was provided by AEM in KIA-IR-10 as to this not being necessary and was accepted by KIA	KIA notes in this IR that they consider this to have been resolved.

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	j) Capacity to statistically detect changes in the receiving environment.	<p>This does not seem to have come to any concurrence in the IR. There does not appear to be any record in the CREMP or other reports that indicates it has been dealt with. However, CREMP (2015) Section 2.6.1, p. 23 and 24, states:</p> <p><i>“while monthly mean values are compared to trigger values to identify short-term, episodic exceedences in water chemistry parameters, formal application of the trigger for decision-making purposes is to the yearly mean for each sampling area.”</i> and <i>“The hierarchical process for water chemistry variables is as follows (implemented separately for Meadowbank lakes and Baker Lake, for which triggers were independently derived [Azimuth, 2012a]):</i></p> <ol style="list-style-type: none"> <i>1. Computation of Yearly Means – monthly means calculated first for each parameter, then yearly means on an area-specific (i.e., lake or basin-specific) basis. Note that values < MDL are conservatively set equal to the MDL.</i> <i>2. Comparisons of Yearly Means to Triggers – yearly means for each sampling area are compared to the triggers to identify all cases for which the mean equals or exceeds the trigger.</i> <i>3. Statistical Testing of Yearly Means Exceeding Triggers – cases where the yearly means exceed the triggers are formally tested using statistical analyses; this process is conducted differently for Meadowbank lakes and Baker Lake: Meadowbank Lakes</i> <ul style="list-style-type: none"> <i>○ Before-After-Control-Impact statistical framework with multiple paired “before” and “after” period events (BACIP) is applied.</i> <i>○ INUG is used as the reference (“control”) area; the other areas are tested as exposure (“impact”) areas. Neither PDL nor TEFF can be utilized as controls for BACIP as no data exists for 2006 – 2008 for these areas⁴. Instead, these areas are used to compare reference and exposure area data patterns.</i> <i>○ True “pre-impact” data (i.e., when both INUG and the test area had “control” (“C”) status; see Table 2-2) are used for the “before” data; the data for the year being tested (e.g., 2015) are used as the “after” data (only events when both INUG and the test area were sampled).</i> <i>○ All data are log-transformed (natural logs). Thus, the exponent of the BACI interaction term coefficient provides the proportional change in the year being tested (e.g., 2015) relative to the “before” period.</i> <i>○ One-tailed tests of the null hypothesis (i.e., that test areas experienced no relative change) are conducted; the alternative hypothesis is a relative increase in a parameter at the test area.</i> 	Resolved.
2.5 Closure and Reclamation Planning: KIA-8, 29, 30, 31	Concern was raised on behalf of the KIA regarding adequate monitoring to confirm no long-term mine related impacts to the aquatic environment and assurance that potentially acid generating rock and the TSF would be successfully capped.	Reference is made to a revised <i>“Final Reclamation and Closure Plan”</i> (see 2015 Water Management Plan, Sect. 3.2, p. 36) that is not included in the documents reviewed. Presumably it is not complete at this time. The current Closure Plan is dated 2014.	We accept that the CRP is an evolving document. The revised Closure Plan should be reviewed when it is available to assess whether this and any other concerns are addressed. This is not resolved.

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Tailing Storage Facility – Operation, Maintenance and Surveillance Manual. Section 8.2.4 on page 8-3	Bullet point that states “ <i>The person at the casualty(s) will administer First Aid if trained to do so.</i> ”	The overall plan is a very thorough plan for the Tailing Storage Facility. However, the KIA suggests that all persons working on the site should be trained in Basic Emergency First Aid.	The KIA suggests that all persons working on the site should be trained in Basic Emergency First Aid.

Table 2. Monitoring frequency at ST-16 Excerpted from 2015 AEM Freshet Action Plan, p. 53.

ST-16 Seepage Monitoring Program (May/early June - as soon as water present until freeze up)			
Parameters	Laboratory	Station	Frequency
pH, Conductivity, Turbidity, Colour, Hardness, Bromide, Thiosulfate, Fluoride, Thiocyanate, Alkalinity, Ammonia-nitrogen, Total Ammonia, Nitrite, Nitrate, TDS, Chloride, Sulfate, Ortho-Phosphate, TOC, TSS, Dissolved Oxygen (DO), Total Kjeldahl Nitrogen (TKN), Mg, K, Dissolved and total metal: Al, Ag, As, Sb, Ba, Be, B, Cd, Cu, Cr, Co, Fe, Pb, Li, Mn, Hg, Mo, Ni, Se, Sr, Ti, Sn, Tl, U, V, Zn, and Chlorophyll A (Lake site), CN tot / CN Wad, Total P	Multilab	ST-16 NP-2 South NP-2 West NP-2 East NP-1 Dogleg SPL	Monthly
CN Free	SGS	ST-16 NP-2 South NP-2 West NP-2 East NP-1 Dogleg SPL	Monthly
CN Wad	Assay Lab	ST-16 NP-2 South	2x/week initially and 1x/week after 1 month

2.1 Summary of Outstanding Concerns

The following are considered to be unresolved issues based upon our review of the referenced documents:

1. Seepage from the tailings storage facility (TSF) into the receiving environment: Although it appears to have been resolved with AEM noting that “The water quality in NP-2 Lake has improved significantly and no impacts have been observed in the aforementioned downstream lakes”(Section 3.1, p. 25), further confirmation that the problem has been resolved will require inspection of 2015 data as part of the review of the 2015 Meadowbank Annual Report.

2. Submit monitoring results as part of the Annual Report to the NWB: All the information collected in 2014 from the inspections, pumping, thermistors, and sampling results were compiled and submitted as progress reports to regulators. This report *“Follow up AEM Report – Seepage Water From Waste Rock Storage Facility – Sample Location ST-16”* can be found in Appendix G2 of the 2014 Annual report. This has been addressed. We note that the referenced report was not included with this submission. We have reviewed and confirmed AEM's statement.

Ongoing review of annual reports by the KIA will continue to assure that monitoring results confirm expectations.

3. Continue the current monitoring plan as stated in the Freshet Action Plan for five years: The monitoring plan only proposes monthly sampling for many variables at locations that are affected by freshet. This is insufficient for freshet as it may only last a month and thus will not be sampled adequately – sampling should be weekly at least until large proportion of snow and ground ice has melted. Final resolution cannot be confirmed until five years of adequate data have been reported.

4. Continue the current mitigation strategy of pumping seepage back to the TSF and regular (weekly during the open water season, monthly outside of the open water season) inspections - Seepages from the TSF and WRSF of any quantity have been identified as actionable and reportable spills. However, we did not find a clear reference in the Spill Contingency Plan to the management of seepage. It should be made clear in the Spill Contingency Plan that the current mitigation of seepage will be to pump it back to the TSF and that regular inspections will occur. At present, the Spill Contingency Plan is vague and thus the issue is not totally resolved.

5. The KIA were concerned that weak acid dissociable cyanide would be included in the water quality analysis at Vault Attenuation Pond monitoring station ST-10 in addition to total cyanide. We have found no evidence that ST-10 will be sampled and analysed for weak acid dissociable cyanide as requested

6. Concern was raised on behalf of the KIA regarding adequate monitoring to confirm no long-term mine related impacts to the aquatic environment and assurance potentially acid generating rock and the TSF would be successfully capped as part of the Closure and Reclamation Plan. - Reference is made to a revised “Final Reclamation and Closure Plan” (see 2015 Water Management Plan, Sect. 3.2, p. 36) that is not included in the documents reviewed. Presumably it is not complete at this time. The current Closure Plan is dated 2014. We accept that the CRP is an evolving document. The revised Closure Plan should be reviewed when it is available to assess whether this and any other concerns are addressed. This is not resolved.

7. The KIA are concerned that all persons working on the project site should be trained in Basic Emergency First Aid.

3. Closing

Should you have any questions, please do not hesitate to contact the Kivalliq Inuit Association or Richard Nesbitt at Richard.Nesbitt@environmentalsciences.ca. We would be happy to answer any questions you may have.

