

Appendix B-2

2018 Annual Geotechnical Agnico Eagle Responses and Actions Table

Annual Geotechnical Inspection Recommendation (Golder, 2018)		Priority Level (Golder, 2018)	Recommendation (s) to be Implemented?	AEM Response to Recommendation	Additional Action(s) Required	Responsible Department(s)	Expected Date of Implementation	Status (End of 2019)	Comment/Additional Action (s) Required
1. Inspection and Monitoring	Geotechnical inspections should be carried out and documented for D-CP1 and D-CP5 following the schedule developed in the OMS manual. These activities were completed in 2019; however, not quite to the schedule in the OMS. The OMS manual indicates that daily inspections should be completed and documented using the same form as the weekly inspection, which were not completed in 2018. The OMS manual does not indicate if there is seasonal variability to the frequency of documented inspections. It may be acceptable to seasonally vary the frequency of inspections, but this should be reviewed with the Engineer of Record (EoR) for the dikes and the OMS manual should be updated as required.	High	Yes	The intent, feasibility and value of daily inspections, as well as seasonality variability, are issues that will be addressed during the annual review of the OMS. The frequency of documented visual inspections will be reviewed and discussed with internal stakeholders, the Design Engineer, the EoR and members of the Independent Review Board.	Discuss visual inspection schedule with all stakeholders during annual OMS review. Update OMS as required.	Engineering	July 2019	On-Going	Visual inspection schedule was discussed with stakeholders during MIRB meeting held July 2019. Revision of OMS to incorporate revised inspection schedule is on-going and will be completed pre-freshet 2020 .
	In addition, instrumentation should be monitored and the data should be plotted and reviewed following the schedule developed in the OMS manual.	High	Already Implemented	The current schedule of instrumentation data collection, analysis and documentation follows the schedule developed in the OMS.	No	NA	NA	NA	NA
	The OMS should be reviewed and updated annually and is next due for review in June 2019.	High	Already Implemented	An annual review and update of the manual is a requirement of the OMS. The 2019 review will be scheduled to occur in June.	Encourage comments/suggestions from all registered users of the OMS prior to June 2019. Schedule review with registered manual holders and update and improve manual as required.	Engineering	July 2019	Complete	A review of the OMS occurred in July 2019. The update of the OMS to incorporate these revisions is on-going and will be completed pre-freshet 2020 .
	Make sure thermistors in the water management dikes are well marked so they can be located and maintained during the winter and are not damaged during snow removal operations.	High	Already Implemented	Data loggers were installed on all ground temperature cables at both D-CP1 and D-CP5 in October 2018. Each data logger and solar panel is well marked and clearly visible.	No	NA	NA	NA	NA
2. Water Management	Water volumes within the containment ponds should be managed to the levels defined in the OMS manual, including maintaining the water level below the elevation defined for the end of October in the OMS manual over the winter to promote freezing of the dikes.	High	Already Implemented	Upstream water elevations are checked on a daily basis during open water season and monthly during the winter as per the OMS guidelines. Deviations from the levels defined in the OMS are communicated to all stakeholders and management strategies are adjusted accordingly.	No	NA	NA	NA	NA
3. Dike Repair/Maintenance	Cracks and areas of settlement in the containment pond dikes should be filled and/or recontoured to close the cracks and reduce the potential for infiltration and erosion.	Medium	No	The permanent water retention dikes have been in operation for almost two years and are currently stable, with no significant geotechnical concerns identified during the Annual Inspection. Although the dikes were not designed to be resistant to water infiltration (ie. no sloping of the crests to shed surface water), it is acknowledged that the establishment of preferential water pathways within the thermal cover could lead to undesirable impacts on the stability of the structures over time. Therefore, the requirement to close the observed cracking systems on the crest of D-CP5 and the upstream crest of D-CP1 and the implementation of a regularly scheduled maintenance program will be discussed during the OMS review in June 2019 with internal stakeholders, the Design Engineer, the EoR and members of the independent Review Board.	Discuss infill of cracking and regular maintenance program with all stakeholders during annual OMS review. Update OMS as required. Schedule maintenance as required.	Engineering	July 2019	Complete	Infill of cracking and additional maintenance requirements were discussed during the Internal Review Board meeting, as well as with the Design Engineer during the 2019 Annual Geotechnical Inspection. As is discussed in the 2019 Annual Inspection report, no maintenance on the dikes is required at this time.
	The pipe ramp constructed out of sand upstream of D-CP1 near Stn. 1+140 is susceptible to erosion and some erosion was observed since the 2017 inspection. It is recommended that the pipe ramp be covered with a coarser rockfill to protect it from erosion.	Not Provided	Yes	The pump ramp at D-CP1 should be covered with a more robust construction material. In addition, the HDPE pipe running over D-CP1 should be covered with enough rockfill material to allow for emergency equipment/vehicle access to the dike.	Cover pump ramps with rock fill material. Protect HDPE with screened esker material/sand. Repair work will be scheduled with the appropriate department.	Engineering/E&I/Construction	Late summer 2019	On-Going	The pump ramp at D-CP1 was covered with rockfill in the fall of 2019. However, rockfill has not been placed over the HDPE pipe to provide vehicle access to D-CP1. Discussions are currently on-going as to the best solution to provide access to the dike crest (ie. moving the HDPE pipe etc.)
	Survey monitoring plate M-3 on D-CP5 should be replaced.	Medium	Yes	Survey monuments M3 and M1 (damaged early 2019) will be replaced once the thermal cover on D-CP5 has thawed to allow hand excavation.	Continue monitoring temperatures within the dike (vertical GTC's) to determine depth of thaw and schedule survey monument replacement. Enhance protection of monuments once replacement has been completed. Restrict access to the crest of D-CP5 to authorized personnel only.	Engineering/E&I	Fall 2019	Complete	Work was completed in the fall of 2019. In addition, permanent prisms were installed on the survey monuments of both dikes to improve the accuracy of the survey readings.
	Where access is feasible, removal of snow from the water collection pond dikes (temporary and permanent) is recommended to reduce the insulating effects of the snow, thereby allowing the temperature of the core material in the dikes and the foundations to drop as low as possible. Snow removal is more important if thermistor data is indicating that the dike and/or foundation temperatures are warmer than expected.	Medium	No	Snow clearing activities have the potential risk of damaging dataloggers, thermistor installations and trench sumps from the downstream of D-CP1 and the upstream of D-CP5. Thermistor data indicates that both dikes are generally performing as expected, with key trench and foundation conditions generally remaining below 0°C. Snow removal is therefore not currently a scheduled maintenance activity. However, snow will be cleared from the downstream toe of D-CP5 prior to freshet as a mitigation measure to prevent overtopping of the D-CP5 trench sump (an area of risk observed during freshet 2018). Thermistor records will continue to be assessed to ensure dike/foundation temperatures do not follow unexpected trends and if warmer than expected conditions arise, routine snow clearing will be reconsidered.	No	NA	NA	NA	NA
4. Sump/Channels	Monitor the cracking observed in the D-CP1 downstream sump berms and adjacent to the downstream channel.	Medium	Already Implemented	Regular inspection and documentation of the D-CP1 downstream sump and channels occur as part of the OMS inspection plan for the dike.	No	NA	NA	NA	NA
	Recontour and/or compact the areas of cracking in the D-CP1 downstream sump berms to reduce the potential for water to infiltrate into the cracks leading to warming of the permafrost and additional thaw settlement and cracking	Medium	No	The D-CP1 downstream sump was constructed as per design and was not intended to be impervious to water infiltration. The sump area was excavated into natural ground, lined with geotextile and the slopes were covered with rip rap protection of thicknesses varying from 0.2 m to 0.4 m. This material was bucket-tamped into place. It is therefore not anticipated that any amount of recontouring or compacting would reduce the potential for water infiltration. This being noted however, routine maintenance of the sump area is specified in the OMS to prevent erosion and deterioration of the downstream water collection system. This maintenance will occur as required at the direction of the Geotechnical Engineer.	No	NA	NA	NA	NA
	The D-CP1 sump and downstream collection channel should be emptied in the fall/early winter to refreeze the ground around these facilities.	Medium	Already Implemented	As per the design specifications and OMS requirements for the downstream channel and sump, these facilities are emptied in the late fall prior to freeze-up.	No	NA	NA	NA	NA
	During open water season, keeping the water level in the downstream channel and sump low will reduce the potential for thaw of the ground around and associated settlement.	Medium	Already Implemented	Water levels in the D-CP1 sump are monitored and pump-back is automatically triggered when water levels exceed the height of the pump.	No	NA	NA	NA	NA

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1. OMS	If the P-Area dikes will continue to be used, they should be added to the OMS manual that was developed for D-CP1 and D-CP5. Geotechnical inspections and instrumentation monitoring should be carried out and documented following a schedule developed in the OMS manual.	High	No	The Annual Inspection points out that any potential failure of the P-Area dikes would now report to either CP1 or CP5 and as such, these structures are no longer considered as dams in accordance with CDA classification. AEM therefore does not consider these structures as significant enough in nature to warrant inclusion in the OMS for D-CP1 and D-CP5. However, as part of AEM's commitment to exercising due diligence, geotechnical inspections and instrumentation monitoring will continue for as long as these structures remain functioning.	No	NA	NA	NA	NA
2. Inspection and Monitoring	AEM personnel should continue to conduct geotechnical inspections and document visual observations such as cracking, slumping and/or seepage. Inspection reports should continue to be prepared for documentation. It is recommended that the frequency of visual geotechnical inspections be conducted weekly during freshet and monthly during the open water period.	Not Provided	Already Implemented	Visual geotechnical inspections and documentation will continue in 2019 on a monthly basis during the open water season.	No	NA	NA	NA	NA
	Thermistor data should continue to be collected, plotted and reviewed and pond water levels should continue to be measured and tracked.	Not Provided	Already Implemented	Pond water levels will continue to be read daily during open water season and tracked against the measured depth of thaw in the berms. Thermistor data will be collected, plotted and reviewed on a monthly basis.	No	NA	NA	NA	NA
	Make sure each thermistor cable is well marked so they can be located and maintained during the winter and are not damaged during snow removal operations.	Not Provided	Already Implemented	All thermistor cables are clearly marked and delineated.	No	NA	NA	NA	NA
	Consider adding data loggers to record the temperatures to facilitate data collection, particularly in the winter.	Low	No	Data loggers were installed for the permanent dikes in October 2018. However, owing to the temporary nature of the P-Area, the lower risk of failure and the greater accessibility of the thermistors, the expense of adding data loggers is not felt to be justified.	No	NA	NA	NA	NA
3. Water Management	Continue to collect and pump back seepage water as deemed necessary,in areas where seepage could impact downstream areas.	Not Provided	Already Implemented	Water levels within the collection ponds and seepage channels are monitored daily. Pumping of seepage water occurs as required and pumping records are provided daily.	No	NA	NA	NA	NA
	The water levels in the ponds should be reduced as much as possible in the winter to promote freezing of the dam cores. This would also increase the capacity within the ponds to manage water during the freshet, if necessary. The water levels should also be maintained as low as possible in the summer to reduce thermal warming due to water over the upstream toe of the dikes.	High	Already Implemented	Water levels within the collection ponds are monitored daily during open water season and are kept as low as possible based on the water management strategy and available treatment/discharge options. Daily meetings take place to discuss current water level statuses and targets with stakeholders. When water levels are deemed to be of concern, pumping to the P-Area is stopped and removal is maximized via transfer to the Saline Pond or active evaporation. Prior to freeze, a feasible water level target is made and reached via treatment or discharge. This target will be sufficient to ensure OMM is not reached during freshet.	No	NA	NA	NA	NA
4. Repair/Maintenance	If the dikes continue to be used, consideration for filling in the cracks, with additional fine rockfill or granular fill, regrading and re-compacting the slopes and crests may be warranted.	Medium	No	The Annual Inspection points out that overall, the P Area berms appear stable, with no significant geotechnical concerns identified. Therefore, owing to the temporary nature of the P Area berms and low risk of failure, AEM does not feel that the time and expense of regrading and re-compacting the slopes and crests is warranted. The exception however, would be Jetty #2 off of DP1-B. As was noted during the inspection and as documented in internal inspections throughout 2018, slumping and cracking in this area has been observed to increase over the past year. As Jetty #2 supports an evaporator and there is a risk of impacting operation of the area if the jetty fails, repair and mitigation work will be scheduled for 2019.	Schedule maintenance work with E&I for late summer 2019. Closely monitor jetty condition during summer thawing.	Engineering/E&I	September 2019	Not Complete	Maintenance work on Jetty #2 was not completed in 2019 due to low usage of the evaporators, low volumes of crushed rockfill, pending closure of the P Area and higher priority items.
	Consider adding rockfill material to cover the till berm in P1, to protect the till and maintain its integrity if this berm is required for water management.	Low	No	The till berm in the middle of the P1 collection pond is not required for water management.	No	NA	NA	NA	NA
	Where access is feasible, removal of snow from the water collection pond dikes is recommended to reduce the insulating effects of the snow, thereby allowing the temperatures of the core materials in the dikes and the foundations to drop as low as possible with the potential that temperatures could get cold enough to maintain frozen conditions throughout the summer. Snow removal is more important if thermistor data indicates that temperatures within the dikes and/or foundations are warmer than expected.	Medium	No	Snow clearing activities have the potential risk of damaging thermistor installations, trench sumps and other infrastructure in the P Area. In addition, thermistor data indicates that the P Area berms will experience complete thawing during the summer/fall months, regardless of any snow removal efforts. Snow removal will therefore not be a scheduled maintenance activity.	No	NA	NA	NA	NA

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1. Channel 1 The cracking and sloughing along Channel 1 should be assessed to determine if the channel is too steep and rip rap is sloughing over geotextile or if it is caused by thermal degradation or permafrost adjacent to the channel.	Medium	No	The lateral slopes of Channel 1 were locally steepened (2H:1V) for approximately 80 m to accommodate the final crusher ramp design footprint. This deviation from the original design (3H:1V) was done with the approval of the Design Engineer. As discussed in the Tetra Tech as-built report "Construction Summary (As-Built) Report for Channel and Culvert #13, #1, #2, #15, #16" issued to the NWB February 18, 2019, it is acknowledged that this localized steepening may result in the possibility of slope problems. Channel 1 will be monitored and any signs of instability, sloughing or ravelling will be corrected if observed.	Include Channel 1 in routine geotechnical inspection program and finalize inspection schedule. Prepare inspection criteria and documentation forms. Schedule any repair and/or maintenance work required.	Engineering	Pre-freshet 2019	Complete	Channel 1 was monitored throughout 2019 with inspections documented. No repair or maintenance work was required. The channel will continue to be monitored throughout 2020 as per the 2019 inspection recommendations.
If possible, the channel should be kept empty through the winter to promote freezing of the permafrost around the channel.	Medium	No	Channel 1 was constructed as per design and was mechanically excavated within the active layer, lined with geotextile and covered with rip rap protection of minimum thickness 0.3 m. As the channel lies entirely within the active layer, aggradation of the underlying permafrost was neither intended nor foreseen. AEM therefore feels that snow removal throughout the winter is not worth the risk of damage to the infrastructure.	No	NA	NA	NA	NA
If the bottom of Channel 1 remains below the inlets for Culvert 16, consider lowering the invert of the lowest culvert or adjust the invert of the channel, if possible, so that water will not need to pond in the channel before flowing through the culverts.	Not Provided	No	Culvert 16 was installed as per design specifications as per "Construction Summary (As-Built) Report for Channel and Culvert #13, #1, #2, #15, #16" (Tetra Tech, 2019). As with all culvert systems installed at site, performance will be monitored regularly during freshet and open water season, with any adjustments or mitigation work conducted as required.	No	NA	NA	NA	NA
2. Wesneg Esker The Wesneg Borrow area should be recontoured and either capped with a coarser material or revegetated to reduce erosion.	Medium	Already Implemented	Rehabilitation of all site esker sources (Wesneg, Meladine and Triganaq) is scheduled to occur before the cessation of construction activities in 2019. Rehabilitation of the Wesneg esker is currently on hold pending completion of construction activities at the West Raise. Once drilling and concrete work has finished, the excavated area will be backfilled with the material currently stockpiled on the esker and final rehabilitation of the surface will be completed.	Follow up required upon completion of construction activities.	Engineering/Construction	Fall 2019	Complete	NA
3. Channel 5 Monitor the cracking adjacent to Channel 5.	Medium	Yes	A routine geotechnical monitoring schedule and documentation process for water management infrastructures outside of the temporary and permanent dikes is currently being formalized by the AEM Geotechnical Engineer. Channel 5 will be on the list of infrastructure to be inspected by AEM personnel.	Include Channel 5 in routine geotechnical inspection program and finalize inspection schedule. Prepare inspection criteria and documentation forms. Schedule any repair and/or maintenance work required.	Engineering	Pre-freshet 2019	Complete	Channel 5 was monitored throughout 2019 with inspections documented. No repair or maintenance work was required. The channel will continue to be monitored throughout 2020 as per the 2019 inspection recommendations.
If cracking gets worse, recontouring and/or compacting the areas of cracking to close the cracks will reduce the potential for water to infiltrate into the cracks leading to warming of the permafrost and additional thaw settlement and cracking.	Medium	No	Channel 5 was constructed as per design and was not intended to be impervious to water infiltration. The channel was excavated into natural ground, lined with geotextile and the slopes were covered with rip rap protection of thicknesses approximately 0.3 m. This material was bucket-tamped into place. It is therefore not anticipated that any amount of recontouring or compacting would reduce the potential for water infiltration. It is also noted that the area adjacent to the Channel is the remnants of the access road placed for construction of Berm 3. The esker material used to construct this access road was removed and placed as rip rap protection during the final stages of Berm construction. There was no expectation that the remnants of the road would be trafficable or usable at the conclusion of construction activities in the area.	No	NA	NA	NA	NA
4. Berm 3 Ponding upstream of Berm 3 should be monitored to determine how much and how often ponding occurs and if Berm 3 can perform as required with the ponding.	Medium	Already Implemented	AEM currently monitors this area during freshet and throughout the open water season. Monitoring will continue in 2019. To-date, Channel 5 effectively drains to CP5 and no ponding against Berm 3 has been observed.	No	NA	NA	NA	NA
The Berm 3 cover materials may be susceptible to erosion. This should be monitored, and if there is erosion, consideration should be given to placing coarser material on the berm to reduce the potential for erosion.	Medium	Yes	A routine geotechnical monitoring schedule and documentation process for water management infrastructures outside of the temporary and permanent dikes is currently being formalized by the AEM Geotechnical Engineer. Channel 5 will be on the list of infrastructure to be inspected by AEM personnel.	Include Berm 3 in routine geotechnical inspection program and finalize inspection schedule. Prepare inspection criteria and documentation forms. Schedule any repair and/or maintenance work required.	Engineering	Pre-freshet 2019	Complete	Berm 3 was monitored throughout 2019 with inspections documented. No repair or maintenance work was required. The berm will continue to be monitored throughout 2020 as per the 2019 inspection recommendations.
5. Portal 2 Monitor slopes above Portal 2 for rockfall instability during backfill placement.	High	Already Implemented	AEM Engineering oversaw an extensive scaling and ground support program of the rock and overburden faces at Portal 2 prior to the commencement of construction activities within the excavation. Regular, documented inspections by Ground Control Engineers were on going during the backfill placement. Backfilling of Portal 2 was completed late in 2018.	No	NA	NA	NA	NA
Snow management around and above Portal 1 and 2 may be advisable prior to freshet to reduce inflows entering the underground.	Low	Already Implemented	AEM currently clears snow around Portal 1 and Portal 2 throughout the winter and places the snow within P3 as deleterious substances may be mixed with snow. Clearing is conducted throughout the winter and is ensured in the weeks prior to freshet.	No	NA	NA	NA	NA
6. Exploration Landfill A coarser rockfill layer should be placed over the decommissioned exploration landfills to reduce erosion and cracking.	Medium	No	The exploration landfill will be incorporated into Waste Rock Storage Facility 1 (WRSF1) once construction of this facility commences in 2019.	No	NA	NA	NA	NA
7. Saline Pond Consideration for filling in the cracks with fine rockfill, recontouring and re-compacting the slopes and crests may be warranted to reduce the potential for infiltration into the berms that may increase the cracking and settlement.	Not Provided	No	A routine geotechnical monitoring schedule and documentation process for water management infrastructures outside of the temporary and permanent dikes is currently being formalized by the AEM Geotechnical Engineer. The perimeter berm of the Saline Pond will be on the list of infrastructure to be inspected by AEM personnel.	Include Saline Pond in routine geotechnical inspection program and finalize inspection schedule. Prepare inspection criteria and documentation forms. Schedule any repair and/or maintenance work required.	Engineering	Pre-freshet 2019	Complete	Saline Pond 1 was monitored throughout 2019 with inspections documented. No repair or maintenance work was required. The pond will continue to be monitored throughout 2020 as per the 2019 inspection recommendations.
Monitor the downstream side of the perimeter berm for ponding water and consider diverting it or pumping it so it does not seep into the saline pond and warm the foundation below the berm.	Not Provided	Yes	Monitoring is conducted site-wide as a means to identify areas of concern/seepage. The perimeter berm around the Saline Pond will specifically be added to the inspection template as an area of concern.	Add specific item to monitor the downstream side of the perimeter berm at Saline Pond for ponding. This will be added to the freshet and water structure inspection templates.	Environment	Pre-freshet 2019	Complete	NA
Where possible, try not to allow seepage water from DPS-A to pond against the Saline Pond berm to avoid permafrost degradation.	Medium	Already Implemented	AEM actively pumps the trench downstream of DPS-A during freshet and the open water season. In 2018, the trench pump was upgraded from a 3-hp submersible pump to a 5-hp submersible in order to ensure the trench remains below the elevation of the pump.	No	NA	NA	NA	NA
8. Industrial Pad Where erosion is occurring on the slopes of the pads, the existing materials should be regraded and compacted, and a coarser material should be placed to further reduce erosion potential. Higher priority should be given to areas where erosion is encroaching on sea containers or other facilities placed close to the slope. The most significant pad erosion was observed at the north side of the main camp/industrial pad and the Emulsion Plant pad.	Medium	Yes	Construction of the Industrial Pad is scheduled to be completed in 2019. Final grading, capping and compaction will occur at this time.	Complete construction of the Industrial Pad to final grade as per design and technical specifications.	Construction	Summer 2019	Complete	NA
9. Emulsion Plant/Road If erosion occurs in the esker sand material used to construct the emulsion plant road, rockfill should be placed to cap the road and reduce erosion. Placement of gravel road capping may also be beneficial to improve the road surface, particularly over the northern section of the road.	Not Provided	Already Implemented	The road to the emulsion plant was constructed using 600 mm minus esker material, due to the requirement of using "clean" (non-underground sourced) construction materials outside of the contained watershed areas. Capping of the access road with a finer grade produced esker material occurred in late 2018.	No	NA	NA	NA	NA
Consider adding a crushed surface material to the Emulsion Plant and storage area pads if trafficability continues to be an issue.	Medium	No	The Emulsion Plant and storage area pads are outside of the contained watersheds for the Project. Therefore, the choice of construction materials was limited to esker materials. Accordingly, the final grade of the Emulsion Plant pad was sloped to encourage drainage. In addition, a ditch was constructed around half of the pad to further encourage water away from the Plant and garage areas. It is expected that proper snow management in this area prior to freshet 2019 will alleviate many of the trafficability issues observed during 2018.	Ensure correct snow management occurs prior to freshet. Monitor trafficability pre/post freshet. Enhance drainage if required.	Environment/E&I	Prior to Freshet 2019	Complete	Snow management and ensuring drainage paths remained unblocked was observed to alleviate trafficability issues over the 2019 freshet period. Correct snow management will continue to be practiced to mitigate issues with trafficability at the Emulsion Plant
It is recommended that the disturbed areas adjacent to the emulsion plant road be regraded so that water does not pond adjacent to the road and thaw the permafrost around and under the road which could lead to settlement.	Medium	Yes	Regrading of natural lands is difficult. If not impossible to achieve without further thermal disturbance, however, the disturbed areas will be rehabilitated by application of a thermal cap of rock fill material of sufficient thickness to prevent thermal degradation.	Rehabilitate either side of the roadway by replacing the natural peat cover with a thermal cap of rockfill.	Engineering/E&I/Construction	Prior to August 2019	Not Complete	Clean rockfill was at a premium during 2019. This item will be added to the maintenance and repair list for summer 2020.
Culverts should be installed in areas of the emulsion plant road where water was flowing over the road in 2018.	Medium	No	The Emulsion Road was monitored daily for flow across the road, with very minor flows observed for 4 days during the 2018 freshet. AEM will continue to monitor and measure flow rates in this area and culverts will be installed accordingly if required.	Measure flow across road during 2019 freshet and install culvert accordingly.	Environment	Freshet 2019	Complete	Only minor and immeasurable flow across the road observed in 2019. No issues of erosion or concerns for washout observed. AEM will continue to monitor in 2020.
10. Site Roads/Culverts Implement a road and culvert monitoring program for site roads, as is done for the AWAR, which is tied to the maintenance program	Medium	Already Implemented	AEM monitors culverts and potential sources of TSS from erosion of site roads at a frequency of daily during freshet, monthly thereafter and following rainfall events.	No	NA	NA	NA	NA
Consider lowering the lower culvert of Culvert 1 so that water won't pond against the road prior to flowing through the culverts.	Not Provided	Already Implemented	The temporary culverts at Culvert 1 were removed in late 2018, replaced with the design specified diameter culverts and were lowered 0.2 m from the design invert elevations based on field observations from the previous year.	No	NA	NA	NA	NA
Ponding of water adjacent to roads should be avoided. Disturbed areas from road construction should be recontoured to promote drainage away from the road and consideration should be given to installing culverts if ponding occurs in naturally low areas. This was most notable along the Emulsion Plant and Wesneg Borrow access roads.	Medium	Already Implemented	Ponding has been noted to be ephemeral in most areas adjacent to roadways and thus permafrost degradation is not a concern when ponds only exist following rainfall events or for the first couple of weeks following freshet. With respect to TSS, transport and road washout, AEM agrees that ponded areas should not be allowed to overtop during heavy rainfall.	AEM will continue to monitor roadways to identify locations of long-term ponding and plan to install culverts as needed to reduce ponding and potential for road wash outs.	Environment	Freshet/Open water season 2019	Complete	No concerns of road washout were observed over 2019. This will continue to be monitored over 2020 freshet.
If the Wesneg Borrow access road is blocking drainage near Lake B33A that is leading to ponding adjacent to the road, a culvert should be installed to allow drainage so that there isn't permafrost degradation and settlement.	Medium	Yes	Ponding will be tracked at this location and a culvert will be installed if permanent ponding is occurring over the 2019 season.	Monitor ponding and install culvert if needed.	Environment	Freshet/Open water season 2019	On-Going	Ponding was observed at the B33A basin over 2019 and remained at freeze-up. Ponded elevations and durations will be assessed further over 2020 freshet and a decision for culvert installation will be made based on 2020 observation.
11. Operation Landfill The slopes of the Operation Landfill should be monitored, particularly the northeast corner where water was observed to be ponding downstream and there was some possible sloughing on the slope. Regrading and compacting the slope in this area will reduce the potential for erosion.	Medium	No	The Operation Landfill was built to design specifications, with the floor sloped to encourage drainage to the northeast corner. During the design phase, some ponding in this area was anticipated, particularly during freshet and after rainfall events, as it was acknowledged that it may take some time for water to percolate through the perimeter berm. The designer-approved change in the construction materials of the Landfill from 600 mm minus waste rock to 600 mm minus esker material does increase the potential for erosion and/or sloughing of the perimeter berms. However, as the Landfill will be encapsulated within WRSF1 (surrounded by waste rock), it is not felt that additional maintenance on the facility will be of value at this time.	No	NA	NA	NA	NA
12. Other A coarser rockfill cover should be placed over the pipe berm constructed out of sand on the south side of the effluent water treatment plant to protect against erosion.	Not Provided	Yes	The pipe berm at the EWTP should be covered with a more robust construction material.	Cover pipe berm with 600 mm minus esker/ROM material. Protect HDPE with screened esker/land material.	Engineering/E&I/Construction	Late summer 2019	Complete	NA

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1.	Landfarm Minimize the amount of water contained within the exploration landfarm until it is decommissioned and remediated.	Medium	Already Implemented	AEM monitors water levels within the landfarm daily during freshet and following rainfall. Water is pumped to the contaminated snow cell for oil-water separation as needed.	No	NA	NA	NA	NA
2.	Camp Pad Repair surface erosion along south slope of exploration camp pad. Grade surface to reduce channelization of surface water flows and therefore reduce the potential for the erosion to reoccur. In this area, a coarser surfacing layer could be placed to help reduce the potential for future erosion.	Low	No	Decommissioning of the exploration camp facilities is scheduled to begin in 2019. Grading and rehabilitation works will occur as per closure and reclamation plans.	No	NA	NA	NA	NA
3.	Site Roads The diffuser access road could be regraded to close up the cracks and reduce the potential for future cracking.	Low	No	The diffuser access road sees very limited light vehicle traffic. As this item is of low priority with a limited impact, maintenance work on this road will not be scheduled at this time. The roadway will continue to be monitored and addressed if required for trafficability.	No	NA	NA	NA	NA
	The exploration camp access road should be regraded and consideration given to placing some coarser rockfill on the slopes where there is erosion.	Medium	Yes	The areas of erosion along the exploration access road are observed to be along the shoulder area and could cause safety issues during pullovers. The side slopes should be regraded in these areas.	Regrade side slopes of exploration camp access road in areas where erosion affects shoulder stability.	E&I	Post-Freshet 2019	Complete	No issues with shoulder stability were observed during 2019. The area will continue to be monitored and regrading will occur if required in 2020.
4.	Culverts The culverts through the exploration camp access road should be cleared of material. Large boulders should be removed from above the culverts to prevent potential damage to the culverts and appropriately sized riprap should be added to the road fills around the culverts for erosion protection where there isn't any.	Medium	Already Implemented	AEM performs culvert inspections weekly prior to freshet, daily during freshet, weekly thereafter during the open water season and following rainfall events. All material (i.e., snow, ice, boulders) is removed when observed. As per AEM's Sediment and Erosion Management Plan, when erosion or sediment entrainment is of concern, rip-rap will be applied to armor the system.	No	NA	NA	NA	NA
5.	Fuel Storage The cracks in the fuel storage pad should be monitored; however they are not considered to be a geotechnical concern.	Low	No	Due to the very minor nature of the cracking observed on the pad, and the low priority of the recommendation, additional monitoring of this area will not be undertaken at this time.	No	NA	NA	NA	NA

Annual Geotechnical Inspection Recommendation (Golder, 2018)		Priority Level (Golder, 2018)	Recommendation (s) to be Implemented?	AEM Response to Recommendation	Additional Action(s) Required	Responsible Department(s)	Expected Date of Implementation	Status (End of 2019)	Comment/Additional Action (s) Required
1. Culverts	Continue to monitor culverts and hydraulic effectiveness to assess if current culverts provide adequate capacity and if any changes are required. Evaluate if any culverts need to be installed at a lower elevation to reduce ponding and downstream erosion.	Medium	Already Implemented	AEM will continue to inspect AWAR culverts weekly prior to freshet, daily during freshet, weekly thereafter and during rainfall events. Focus is given towards identifying ponding and potential sources of sediment. Culvert effectiveness and ponding as the result of perched culverts are assessed.	No	NA	NA	NA	NA
	Monitor areas that have ponding, but no culverts and consider installing culverts to manage water.	Medium	Already Implemented	AEM will continue to monitor the AWAR for ponding, track ponded areas and assess the need for culverts.	No	NA	NA	NA	NA
2. Road Maintenance	The kilometer markings on the AWAR culverts should be checked and replaced with accurate numbers. At the time of the 2018 site visit, AEM indicated that new markers had been ordered but had not yet arrived.	Medium	Already Implemented	AEM has received the new marker signs for the culverts and installation will occur in 2019.	Install new markers on AWAR culverts.	E&I	End of July 2019	Not Complete	Correct signage for the AWAR culverts will be installed during the 2020 summer.
3. Inspections	Conduct inspections and document observations and recommendations as laid out in the Road Management Plan (AEM 2015b). Road inspections were completed and documented in 2018, but documentation indicates that the frequency of the inspections did not quite meet what is laid out in the Road Management Plan.	High	Already Implemented	Caribou migration affected inspections for approximately three weeks of July 2018, as only essential outdoor work was permitted for much of this duration. Aside from the caribou migration period and severe winter weather conditions, AEM will conduct inspections at the frequency stated within the Road Management Plan.	No	NA	NA	NA	NA

Annual Geotechnical Inspection Recommendation (Golder, 2018)		Priority Level (Golder, 2018)	Recommendation (s) to be Implemented?	AEM Response to Recommendation	Additional Action(s) Required	Responsible Department(s)	Expected Date of Implementation	Status (End of 2019)	Comment/Additional Action (s) Required
1.	Reporting The locations of some of the culverts through the Itivia by-pass road do not correlate with the design drawings (Tetra Tech 2017e) due to changes made during construction. The culvert locations should be referenced to the as-built report and drawings during the 2019 annual geotechnical inspection. The as-built report should confirm culvert sizes, locations and invert elevations have been constructed to the design. The as-built report should also confirm that safety berms have been constructed where required based on road fill height and confirm that road slopes have been constructed to design.	Medium	Already Implemented	The as-built report for the Itivia By-Pass Road was completed by the Design Engineer (Tetra Tech) and submitted to the NWB February 20, 2019.	No	NA	NA	NA	NA
2.	Inspection The section of the road and safety berm that is constructed with esker material may be susceptible to erosion. This should be monitored and maintenance completed as required.	Low	Already Implemented	The Bypass Road and one of the safety berms were constructed with material approved by the Design Engineer (600 mm minus esker material). Inspections of the roadway for erosion will be conducted as per the Road Management Plan.	No	NA	NA	NA	NA
	Conduct insepctions along Itivia by-pass road, as per the Road Management Plan (AEM 2015b), now that the road is complete.	Not Provided	Already Implemented	AEM will conduct inspections as per the Road Management Plan	No	NA	NA	NA	NA
3.	Water Management Ponding of water along the road should be monitored and if it is impacting the condition of the road, mitigation measures should be implemented, such as, lowering the culverts or ditching or placing fill to direct water to the culvert inlets.	Medium	Already Implemented	AEM will conduct inspections and implement mitigation measures as per the Road Management Plan	No	NA	NA	NA	NA
4.	Culverts The culverts should be cleared of all materials prior to freshet.	High	Already Implemented	As per AEM's Freshet Action Management Plan and Procedure, culverts will be cleared of all material prior to freshet and inspections will be carried out to ensure no blockages during freshet.	No	NA	NA	NA	NA
	The damaged outlets of the culverts through the entrance to the Itivia fuel storage area should be fixed.	Not Provided	No	Water levels observed within the culvert over 2018 did not pose a concern with respect to being impacted by the damage at the top of the culvert. The culvert will be monitored and if the damage is of concern then repairs will be made.	Monitor the outlet of the culvert to ensure damage does not pose an impact to flow passage.	Environment	2019 Open Water Season	Complete	No concerns were observed over 2019 with respect to the damage at the outlet of the culvert impeding flow. This item will remain an item of Itivia inspections that take place over 2020.
5.	Fuel Farm Cover material should be re-established over the liner that has been exposed on the south containment berm of the Itivia fuel storage facility to protect the liner.	Medium	Yes	After freshet 2019 is completed, cover material should be raked into place over the liner system (exposed geotextile) to protect the system against exposure to UV radiation and risk of damage.	Schedule maintenance with E&I to occur post freshet 2019. Geotechnical Engineer to inspect maintenance work during and afterwards to ensure liner integrity is not compromised.	Engineering/E&I	Post 2019 Freshet	Not Complete	<u>This item will be added to the maintenance and repair list for summer 2020.</u>

Appendix B-3

2019 Annual Geotechnical Report Agnico Eagle Responses and Actions Table

Annual Geotechnical Inspection Recommendation (Tetra Tech, 2019)		Priority Level (AEM 2020)	Recommendation (s) to be Implemented?	AEM Response to Recommendation	Additional Action(s) Required	Responsible Department(s)	Expected Date of Implementation	Status (End of 2020)	Comment/Additional Action (s) Required
1. Inspection and Monitoring	The high water levels (in CP1) may have an impact on the ground temperatures in the dike. Temperatures should be monitored to determine the impact of the high-water level on them.	Medium	Already Implemented	The current schedule of instrumentation data collection, analysis and documentation follows the schedule developed in the OMS.	No	NA	NA	NA	NA
	The current OMS manual is dated September 2018. Update the OMS on an annual basis.	High	Yes	The annual review was held during the 2019 MIRB meetings in July 2019. Revisions to the document have been on-going.	A review of the OMS occurred in July 2019. The update of the OMS to incorporate these revisions is on-going.	Engineering	June 2020		
2. Water Management	(The water level in CP1) is higher than both the specified levels for the end of October and before the following spring freshet. A water management strategy must be developed to deal with the current high water levels in CP1.	High	Yes	Multiple workshops and a risk assessment have been held to evaluate different discharge strategies, and an operational risk assessment is currently ongoing to prepare for freshet. A plan is in place to enable discharge immediately at the onset of thaw/runoff. The plan is in place to enable the ability to manage water levels as soon as freshet begins.	Implement freshet management plan.	E&I/Environment/Engineering	May 15 2020		
3. Dike Repair/Maintenance	Minor cracking and small settlement were observed along portions of the upstream and downstream crest. The open cracks and depressions observed in the dike crests should continue to be monitored.	Medium	Already Implemented	The current schedule of visual inspections follows the schedule developed in the OMS.	No	NA	NA	NA	NA
	Three settlement survey monuments were installed over the liner crest in the dike (D CP5); however, all of the points were damaged at the time of the inspection. It is understood they were replaced in October 2019. The GTCs and survey monitoring points should continue to be monitored following the schedule and procedures developed in the OMS manual.	Medium	Already Implemented	The current schedule of instrumentation data collection, analysis and documentation follows the schedule developed in the OMS.	No	NA	NA	NA	NA
	The high water levels (in CP1) may have an impact on the ground temperatures in the dike. It is understood that snow clearing on the downstream crest will be done to mitigate the impact of the high water levels.	High	Yes	Typically, snow clearing activities on the downstream of D-CP1 hsa the potential risk of damaging dataloggers, thermistor installations and trench sumps and is therefore not currently a scheduled maintenance activity. However, to offset the impacts of the high upstream water levels and decrease any possible downstream issues during freshet, snow clearing of the downstream of D-CP1 has been added t hte snow management and freshet plans.	Carefully remove snow from the downstream of D-CP1 prior to freshet.	E&I	May 1 2020		
4. Sump/Channels	The downstream collection channel pond was filled with water at the time of the site visit due to recent precipitation events and wet ground conditions downstream of the dike. The D-CP1 sump and downstream collection channel should be emptied in the fall/early winter to refreeze the ground around these facilities.	High	Already Implemented	The D-CP1 sump was emptied in the fall of 2019 as per OMS guidelines. However, very late season rainfall followed by freezing temperatures means the sump and channels were full at the onset of winter conditions. Prior to freshet 2020, a hole in the ice will be excavated so that pumping can commence immediately upon thawing.	Enable immediate pumping of sump upon freshet. Follow OMS guidelines for removal of water prior to 2020 freeze-up.	E&I	May 15 2020		
	During open water season, keeping the water level in the downstream channel and sump low will reduce the potential for thaw of the ground around and associated settlement.	Medium	Already Implemented	The D-CP1 downstream sump should be empty during open water season as per OMS guidelines and the AEM Water Management Plan.	Follow OMS guidelines for removal of water prior to 2020 freeze-up.	E&I	October 2020		

Annual Geotechnical Inspection Recommendation (Tetra Tech, 2019)		Priority Level (AEM, 2020)	Recommendation (s) to be Implemented?	AEM Response to Recommendation	Additional Action(s) Required	Responsible Department(s)	Expected Date of Implementation	Status (End of 2020)	Comment/Additional Action (s) Required
1.	OMS	If the P-Area ponds and associated dikes continue to be used by AEM, it is recommended that they are included in an OMS manual.	Low	No	P3 of the P-Area was decommissioned with the construction of SP3 in 2019. P1 and P2 are scheduled to be decommissioned in 2020.	No	NA	NA	NA
2.	Inspection and Monitoring	Cracks with settlement (vertical displacement or slump) and small circular voids evident along the dikes should continue to be monitored.	Low	No	P3 of the P-Area was decommissioned with the construction of SP3 in 2019. P1 and P2 are scheduled in 2020.	No	NA	NA	NA
		AEM personnel should continue to conduct geotechnical inspections and document visual observations such as cracking, slumping and/or seepage. Thermistor data should continue to be collected, plotted and reviewed and pond levels should continue to be measured and tracked. Inspection reports should continue to be prepared for documentation. It is recommended that the frequency of visual geotechnical inspections be weekly during freshet and monthly during the open water period.	Low	No	P3 of the P-Area was decommissioned with the construction of SP3 in 2019. P1 and P2 are scheduled in 2020.	No	NA	NA	NA
3.	Water Management	Continue to collect and pump back seepage water as deemed necessary,in areas where seepage could impact downstream areas.	Low	Already Implemented	If the P-Area is not fully decommissioned by freshet 2020, any seepage from the area will continue to be collected and pumped back until such time that decommissioning activities can commence.	No	NA	NA	NA

Annual Geotechnical Inspection Recommendation (Tetra Tech, 2019)		Priority Level (AEM, 2020)	Recommendation (s) to be Implemented?	AEM Response to Recommendation	Additional Action(s) Required	Responsible Department(s)	Expected Date of Implementation	Status (End of 2020)	Comment/Additional Action (s) Required
1.	Channel 1	No recommendations.	NA	NA	No	NA	NA	NA	NA
2.	Channel 2	No recommendations.	NA	NA	No	NA	NA	NA	NA
3.	Channel 3	Monitor the cracking and subsidence in the native ground above Channels 3 and 4 to determine if they impact the channels performance.	Low	Already Implemented	The area in question will be monitored during open water season as part of the site-wide geotechnical monitoring program.	Continue to monitor channel performance.	Engineering/Environment	Open Water 2020	
4.	Channel 4	Monitor the cracking and subsidence in the native ground above Channels 3 and 4 to determine if they impact the channels performance.	Low	Already Implemented	The area in question will be monitored during open water season as part of the site-wide geotechnical monitoring program.	Continue to monitor channel performance.	Engineering/Environment	Open Water 2020	
5.	Channel 5	Monitor the slumping and cracking adjacent to Channel 5 to determine if sediment from the area is blocking the channel.	Low	Already Implemented	The area in question will be monitored during open water season as part of the site-wide geotechnical monitoring program.	Continue to monitor channel performance.	Engineering/Environment	Open Water 2020	
6.	Channel 7	No recommendations.	NA	NA	NA	No	NA	NA	NA
7.	Berm 2	Erosion of the slopes should be monitored.	Low	Already Implemented	The area in question will be monitored during open water season as part of the site-wide geotechnical monitoring program.	Continue to monitor berm performance.	Engineering/Environment	Open Water 2020	
8.	Berm 3	Erosion of the slopes should be monitored and consideration given to placing coarser material on Berm 3 to reduce the potential for erosion if it becomes substantial.	Low	Already Implemented	The area in question will be monitored during open water season as part of the site-wide geotechnical monitoring program.	Continue to monitor berm performance.	Engineering/Environment	Open Water 2020	
9.	Pond CP3/Berm CP3	It is recommended that an OMS manual be developed for the collection pond.	Medium	Yes	AEM Meliadine is currently developing an OMS for all water management infrastructure on site.	Develop OMS for all water management infrastructure on site.	Engineering/Environment	Q4 2020	
		A water management strategy should be developed to deal with potential pond levels next spring	High	Already Implemented	The pond currently has capacity for 2.5 days of a 7-day, 1:100 wet freshet (IDF). The pumping system is planned to be in place to ensure pumping is possible immediately upon runoff.	No	NA	NA	NA
		Pumps should be in place to deal with freshet as it begins.	High	Yes	This will be completed prior to the onset of thaw. Associated pipelines have been cleared of water and winterized prior to freeze-up 2019.	Install pumping system prior to freshet.	E&I	May 15 2020	
		It should be verified that there is enough pumping capacity to deal with the IDF during spring freshet.	High	Already Implemented	It has been verified that the 250hp diesel pump at CP3 has the pumping capacity sufficient to keep up with the IDF (1:100 wet freshet occurring over 7 days). This equates to 9,400 m3/day.	No	NA	NA	NA
10.	Pond CP4/Berm CP4	It is recommended that an OMS manual be developed for the collection pond.	Medium	Yes	AEM Meliadine is currently developing an OMS for all water management infrastructure on site.	Develop OMS for all water management infrastructure on site.	Engineering/Environment	Q4 2020	
		The settlement and the impact on the pond should be monitored in future years to determine if remedial action is required.	Low	Already Implemented	The area in question will be monitored during open water season as part of the site-wide geotechnical monitoring program.	Continue to monitor pond performance.	Engineering/Environment	Open Water 2020	
		A water management strategy should be developed to deal with potential pond levels next spring.	High	Already Implemented	The pond currently has capacity for 2.6 days of a 7-day, 1:100 wet freshet (IDF). The pumping system is planned to be in place to ensure pumping is possible immediately upon runoff.	No	NA	NA	NA
		Pumps should be in place to deal with freshet as it begins.	High	Yes	This will be completed prior to the onset of thaw. Associated pipelines have been cleared of water and winterized prior to freeze-up 2019.	Install pumping system prior to freshet.	E&I	May 15 2020	
		It should also be verified that there is sufficient pumping capacity to deal with the IDF during freshet.	High	Already Implemented	It has been verified that the 250hp diesel pump at CP4 has the pumping capacity sufficient to keep up with the IDF (1:100 wet freshet occurring over 7 days). This equates to 11,000 m3/day.	No	NA	NA	NA
11.	Saline Pond 1	The settlement and cracking in the berm should continue to be monitored.	Low	Already Implemented	The area in question will be monitored during open water season as part of the site-wide geotechnical monitoring program.	Continue to monitor berm performance.	Engineering/Environment	Open Water 2020	
12.	Saline Pond 2	Monitoring of the settlement and cracking in the overburden above the pond should continue.	NA	No	Saline Pond 2 lies within the footprint of Tiriganiaq Pit 02. Development of this open pit is currently slated to begin in Q2 2020.	No	NA	NA	NA
		The subsidence area on the access ramp should continue to be filled. Vehicle traffic into the area should continue to be restricted.	NA	No	Saline Pond 2 lies within the footprint of Tiriganiaq Pit 02. Development of this open pit is currently slated to begin in Q2 2020.	No	NA	NA	NA
13.	Saline Pond 3	The pond should continue to be monitored for signs of settlement etc. as it was constructed on the native ground.	Medium	Already Implemented	The area in question will be monitored during open water season as part of the site-wide geotechnical monitoring program.	Continue to monitor pond performance.	Engineering	Open Water 2020	

Annual Geotechnical Inspection Recommendation (From Tech. 2020)	Priority Level (2020-2025)	Recommendation (a) to be implemented?	AFM Response to Recommendation	Additional Action(s) Required	Responsible Department(s)	Expected Date of Implementation	Status (End of 2020)	Comments/Additional Action (s) Required
1. Inspection and Monitoring The ground temperatures should continue to be monitored in the TSP and the foundation and the 2020 seasonally completed.	Medium	Already implemented	Temperatures in the TSP and foundation will continue to be monitored on a monthly basis.	No	NA	NA	NA	NA
It is recommended that the findings be tested to determine final surface contact zone below 5' to determine true result of the findings versus surface.	Low	Yes	Discussions with the design engineer will occur regarding the recommended test program and expected outcomes.	Discuss sampling plan with design engineer and potentially implement testing.	Engineering	Q4 2020		
On-going water quality tests to 275 grains water testing and 340/160 testing can be used to assess the geochemical performance of the facility.	Medium	Already implemented	The current schedule of geochemical sampling and testing will continue in 2020.	No	NA	NA	NA	NA

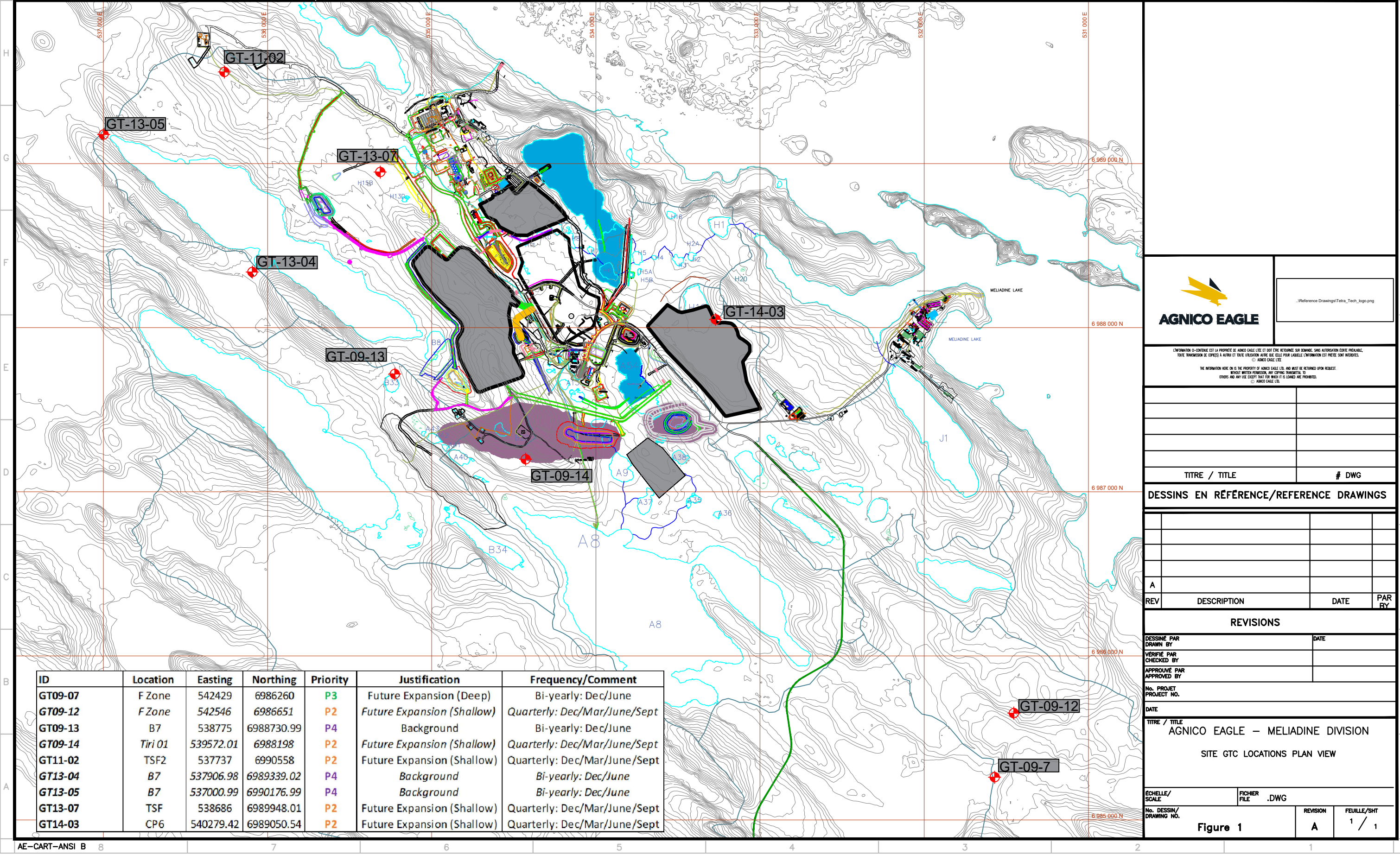
Annual Geotechnical Inspection Recommendation (Then Tech. 2020)	Priority Level (2024 - 2025)	Recommendation (to be implemented?)	ASR Response to Recommendation	Additional Action(s) Required	Responsible Department(s)	Expected Date of Implementation	Status End of 2025	Comments/Additional Action (if Required)
1. Site Slope The review was completed in accordance with future erosion and draw settlement. The need for further reclamation can be assessed in future years.	Low	Already implemented	No	No	NA	NA	NA	NA
2. Basin Severe Weirings, Moderate North, Moderate, Tipping, SPV Temporary)	Low	Already implemented	The review is complete after reclamation during open water season as part of the site-wide geotechnical monitoring program.	No	NA	NA	NA	NA
3. City Drainage No recommendations.	NA	NA	NA	No	NA	NA	NA	NA
4. Coupler Basin No recommendations.	NA	NA	NA	No	NA	NA	NA	NA
5. Active Water Treatment Plant (SWTP) It is recommended that the plant be monitored to determine how much movement has occurred since the plant was released.	Low	Already implemented	It is known that significant settlement has occurred in the building foundations. Some points were established in the SWTP shortly after the facility was commissioned and routine survey had been regularly conducted since meeting here and September 2019 when a quarterly schedule was adopted. Quarterly readings will continue throughout 2025.	No	NA	NA	NA	NA
A structural assessment of the plant and possibly the building should be carried out if it is determined that significant settlement has occurred since it was last released.	Low	Yes	SWTP operation is planned to be minimal during 2025. Prior to recommencing operations, a structural assessment will be conducted if the quarterly survey readings show that additional significant settlement has occurred.	Relevant assessment by structural engineer if additional significant settlement observed and operations to be enhanced.	EA/Engineering	Q3 2025		
It is also recommended that the geotechnical conditions under the building be evaluated and CTC monitored under the building to evaluate how much additional settlement may occur.	Low	No	ASR agrees that the settlement is the result of thawing of the ice-rich permafrost below the building pad and differential settlement between the original building foundation and the extension. It is not felt that additional evaluation or CTC monitoring are required at this time.	No	NA	NA	NA	NA
6. Operation Landfill It is recommended that the landfill be covered in stages with intermediate cover to avoid large debris. A program to separate burnable debris could reduce the landfill requirements. The landfill is nearing its current design capacity. A plan must be developed to cover the landfill items.	Medium	Yes	The short-term landfill management options are currently under review. Access may be prohibited to avoid spill from the landfill.	Complete review of landfill management options.	Environment/ES&P	May 1 2025		
7. Division Plant Pad It is recommended that the pad settlement and erosion should continue to be monitored.	Low	Already implemented	The feasibility of engaging untreated wood for reuse or burning is currently being assessed. During the landfill items is use of several options currently under evaluation.	Complete review of landfill management options.	Environment/ES&P	May 1 2025		
8. Landform It is recommended that the water in the landform sump be tested as per ASRA's protocol and then removed from the landform.	Low	Already implemented	The area in question will be monitored during open water season as part of the site-wide geotechnical monitoring program. The post-pilot treatment water samples were collected and water was removed from the landform using an oil water separator.	No	NA	NA	NA	NA
9. Crude Storage Ponds No recommendations.	NA	NA	NA	No	NA	NA	NA	NA
10. Division Fuel Storage No recommendations.	NA	NA	NA	No	NA	NA	NA	NA
11. Industrial Fuel Storage No recommendations.	NA	NA	NA	No	NA	NA	NA	NA
12. Inventory Pad No recommendations.	NA	NA	NA	No	NA	NA	NA	NA
13. Wine Site Fuel Pans No recommendations.	NA	NA	NA	No	NA	NA	NA	NA
14. Wine Site Fuel Pans No recommendations.	NA	NA	NA	No	NA	NA	NA	NA
15. Wine Site Fuel Pans No recommendations.	NA	NA	NA	No	NA	NA	NA	NA
16. Wine Site Fuel Pans No recommendations.	NA	NA	NA	No	NA	NA	NA	NA
17. Exploration Camp Road No recommendations.	NA	NA	NA	No	NA	NA	NA	NA

Annual Geotechnical Inspection Recommendation (Tetra Tech, 2019)		Priority Level (AEM, 2020)	Recommendation (s) to be Implemented?	AEM Response to Recommendation	Additional Action(s) Required	Responsible Department(s)	Expected Date of Implementation	Status (End of 2020)	Comment/Additional Action (s) Required
1. Culverts	Consider adding armouring around culverts to reduce potential for erosion. (km 7.0)	Low	Already Implemented	Culvert will continue to be monitored for signs of erosion.	No	NA	NA	NA	NA
	Consider installation of a culvert at this location to reduce the risk of overtopping. (km 19.5)	Low	Already Implemented	This area of the road will be monitored over 2020 freshet and flow events, and evaluated for the need of a culvert	No	NA	NA	NA	NA
	Consider installation of a culvert in this area to reduce the risk of overtopping. (km 21.2 to 21.5)	Low	Already Implemented	This area of the road will be monitored over 2020 freshet and flow events, and evaluated for the need of a culvert	No	NA	NA	NA	NA
	Clear culvert inlet of road fill material. Consider adding armouring around culverts. Consider adding additional culverts if water management continues to be an issue during freshet. (km 25.8)	Medium	Yes	When feasible, inlet of this culvert will be cleared of road fill material. Adding armouring will be considered. Water level and erosion during freshet will be monitored to assess need for additional culverts.	Clear culvert inlet.	E&I	Open water 2020		
	Lower pipe should be replaced. Consider adding additional culverts if water management continues to be an issue during freshet. (km 26.2)	Low	Yes	Lower pipe is planned to be replaced over 2020. Water levels during freshet will be monitored to assess need for additional culverts	Replace lower pipe.	E&I	Open water 2020		
	Monitor riprap and add more protection if more erosion occurs. (km 27.1)	Low	Already Implemented	This area will continue to be monitored for erosion, and riprap added as needed.	No	NA	NA	NA	NA
	A culvert could be installed to reduce the risk of overflow. (km 28.7)	Low	Already Implemented	This area will continue to be monitored over 2020 freshet and need for additional culvert will be assessed.	No	NA	NA	NA	NA
	Monitor areas that have ponding, but no culverts and consider installing culverts to manage water.	Medium	Already Implemented	AEM will continue to monitor the AWAR for ponding, track ponded areas and assess the need for culverts.	No	NA	NA	NA	NA
2. Bridge/Road	Replace or repair damaged gabion. Continue to monitor for erosion and/or settlement. (M-5 Bridge)	Medium	Yes	Gablon is planned to be repaired or replaced over 2020. Culvert will continue to be monitored for signs of erosion and/or settlement.	Replace gabion. Continue monitoring.	E&I/Environment	Open water 2020		

Annual Geotechnical Inspection Recommendation (Tetra Tech, 2019)		Priority Level (AEM, 2020)	Recommendation (s) to be Implemented?	AEM Response to Recommendation	Additional Action(s) Required	Responsible Department(s)	Expected Date of Implementation	Status (End of 2020)	Comment/Additional Action (s) Required
1.	Itivia Fuel Farm	No recommendations.	NA	NA	No	NA	NA	NA	NA
2.	Culverts	Monitor ponding of water upstream of inlets and consider lowering culverts to reduce ponding. (km 1.8)	Low	Already Implemented	As recommended, ponding will continue to be monitored upstream of inlets, and need for adjustment of the culvert height will be assessed.	NA	NA	NA	NA
		Additional culverts should be installed in low road area to the northwest; alternatively, the low area in the road could be raised but would result in a large flooded area.	Low	Already Implemented	Low area in road was raised in October 2019 with approval of the design engineer.	NA	NA	NA	NA

Appendix B-4

Site Wide Ground Temperature Cable Location and Readings



ID	Location	Easting	Northing	Priority	Justification	Frequency/Comment
GT09-07	F Zone	542429	6986260	P3	Future Expansion (Deep)	Bi-yearly: Dec/June
GT09-12	F Zone	542546	6986651	P2	Future Expansion (Shallow)	Quarterly: Dec/Mar/June/Sept
GT09-13	B7	538775	6988730.99	P4	Background	Bi-yearly: Dec/June
GT09-14	Tiri 01	539572.01	6988198	P2	Future Expansion (Shallow)	Quarterly: Dec/Mar/June/Sept
GT11-02	TSF2	537737	6990558	P2	Future Expansion (Shallow)	Quarterly: Dec/Mar/June/Sept
GT13-04	B7	537906.98	6989339.02	P4	Background	Bi-yearly: Dec/June
GT13-05	B7	537000.99	6990176.99	P4	Background	Bi-yearly: Dec/June
GT13-07	TSF	538686	6989948.01	P2	Future Expansion (Shallow)	Quarterly: Dec/Mar/June/Sept
GT14-03	CP6	540279.42	6989050.54	P2	Future Expansion (Shallow)	Quarterly: Dec/Mar/June/Sept



..Reference Drawings\Tetra_Tech_logo.png

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TITRE / TITLE	# DWG
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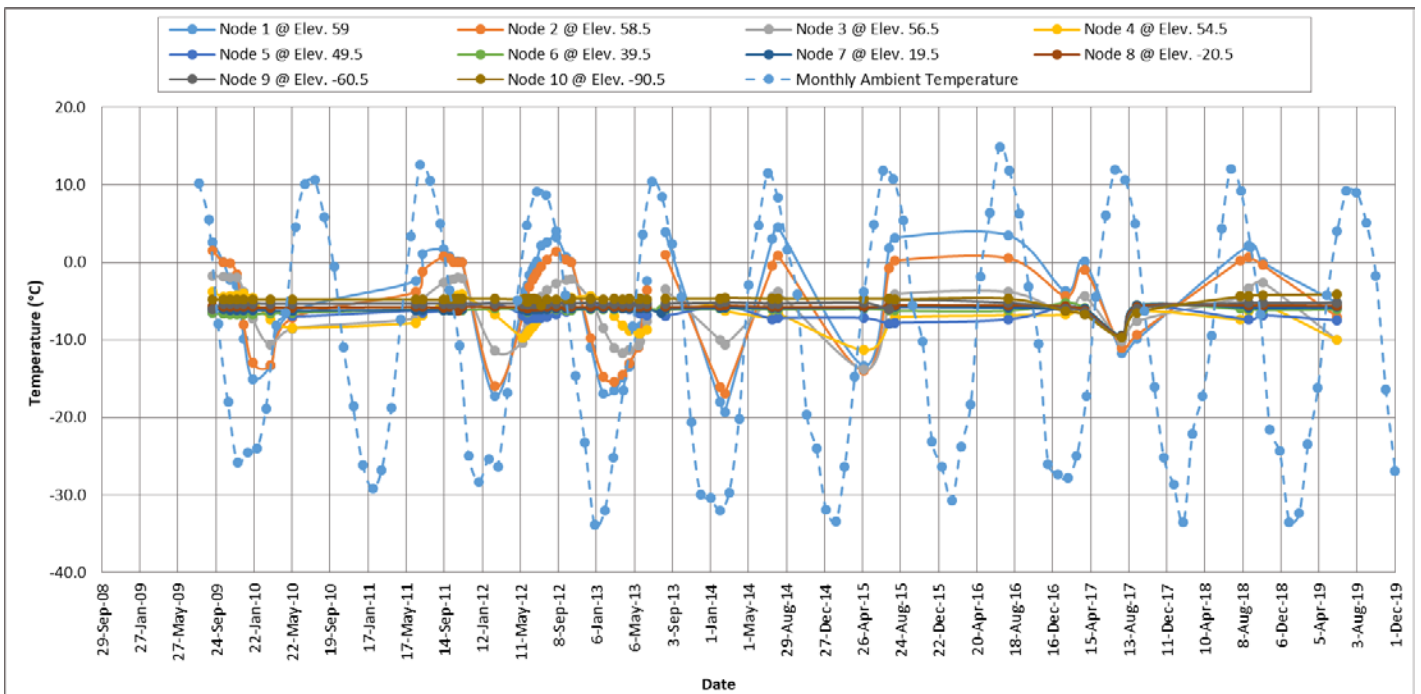
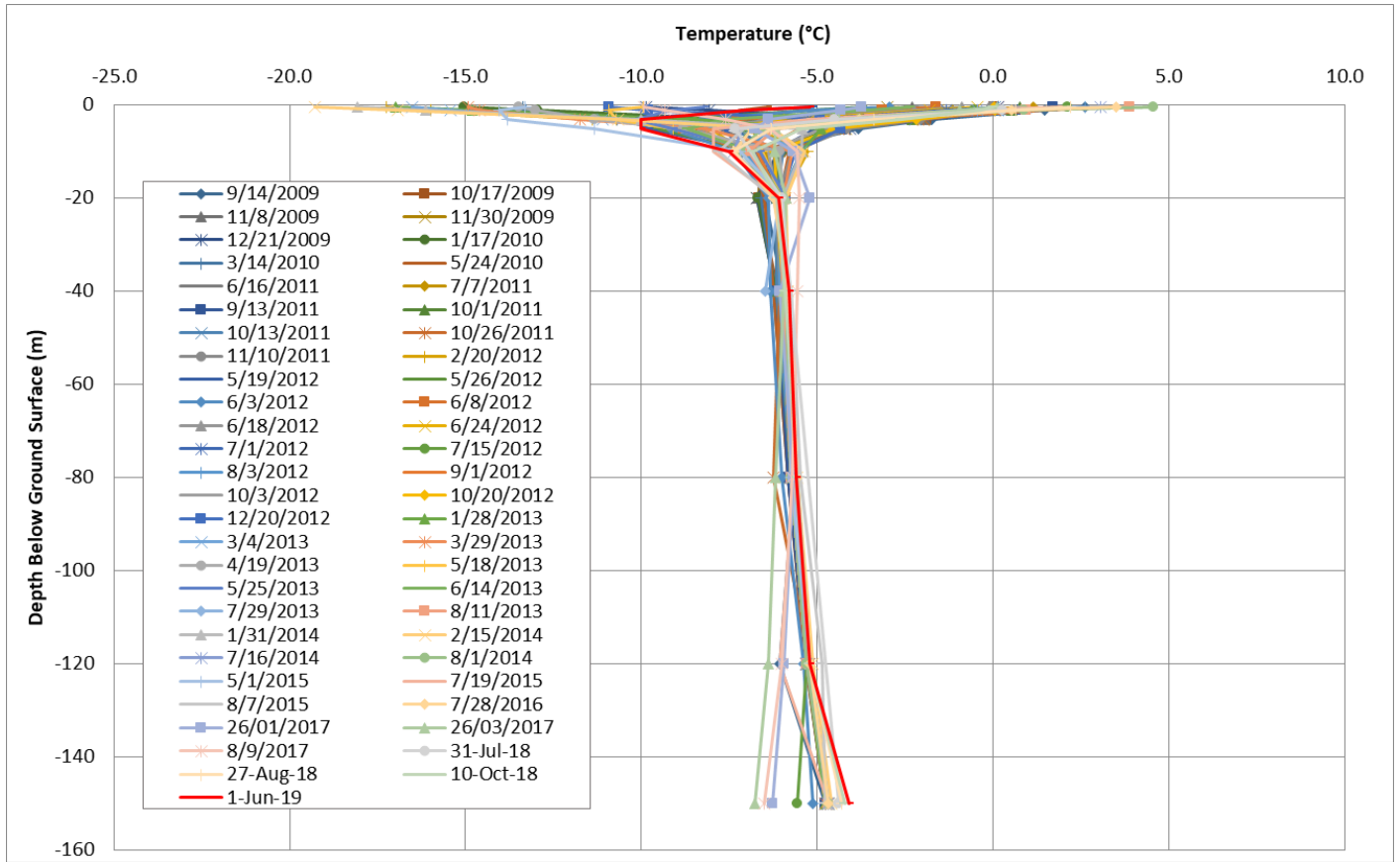
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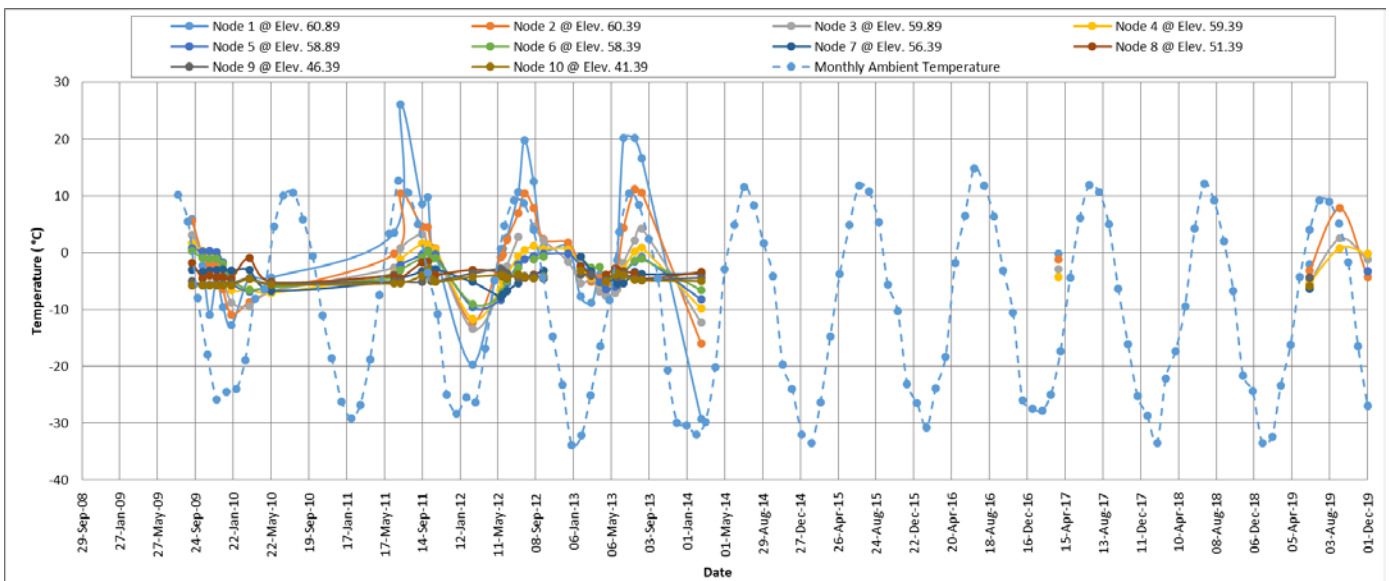
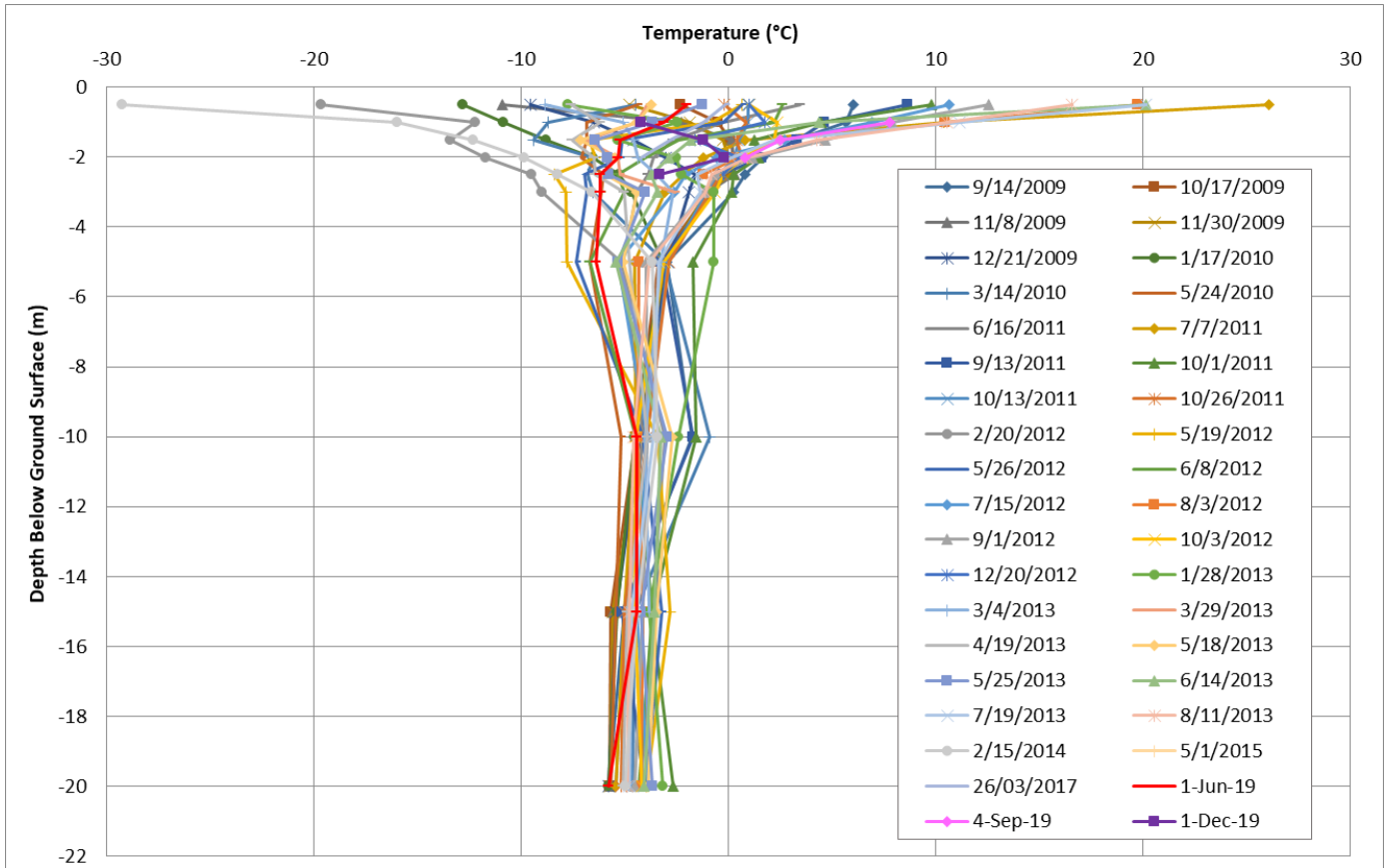
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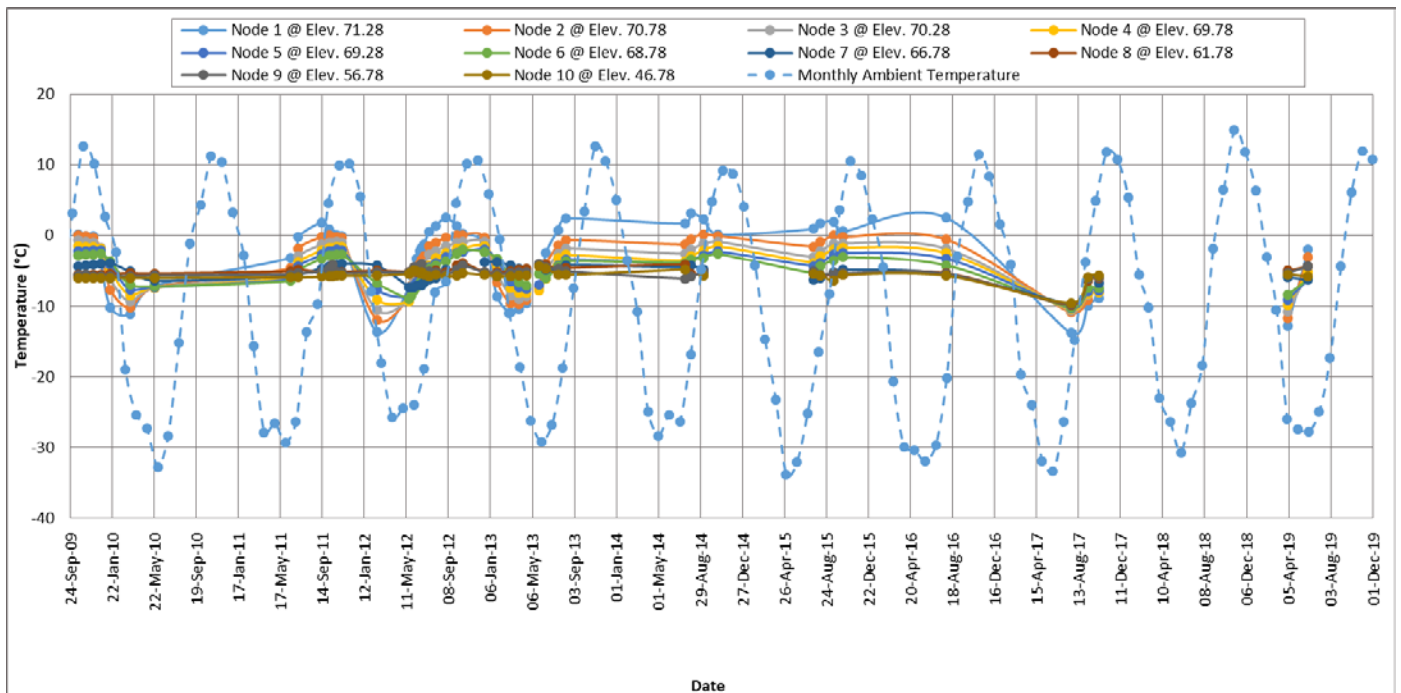
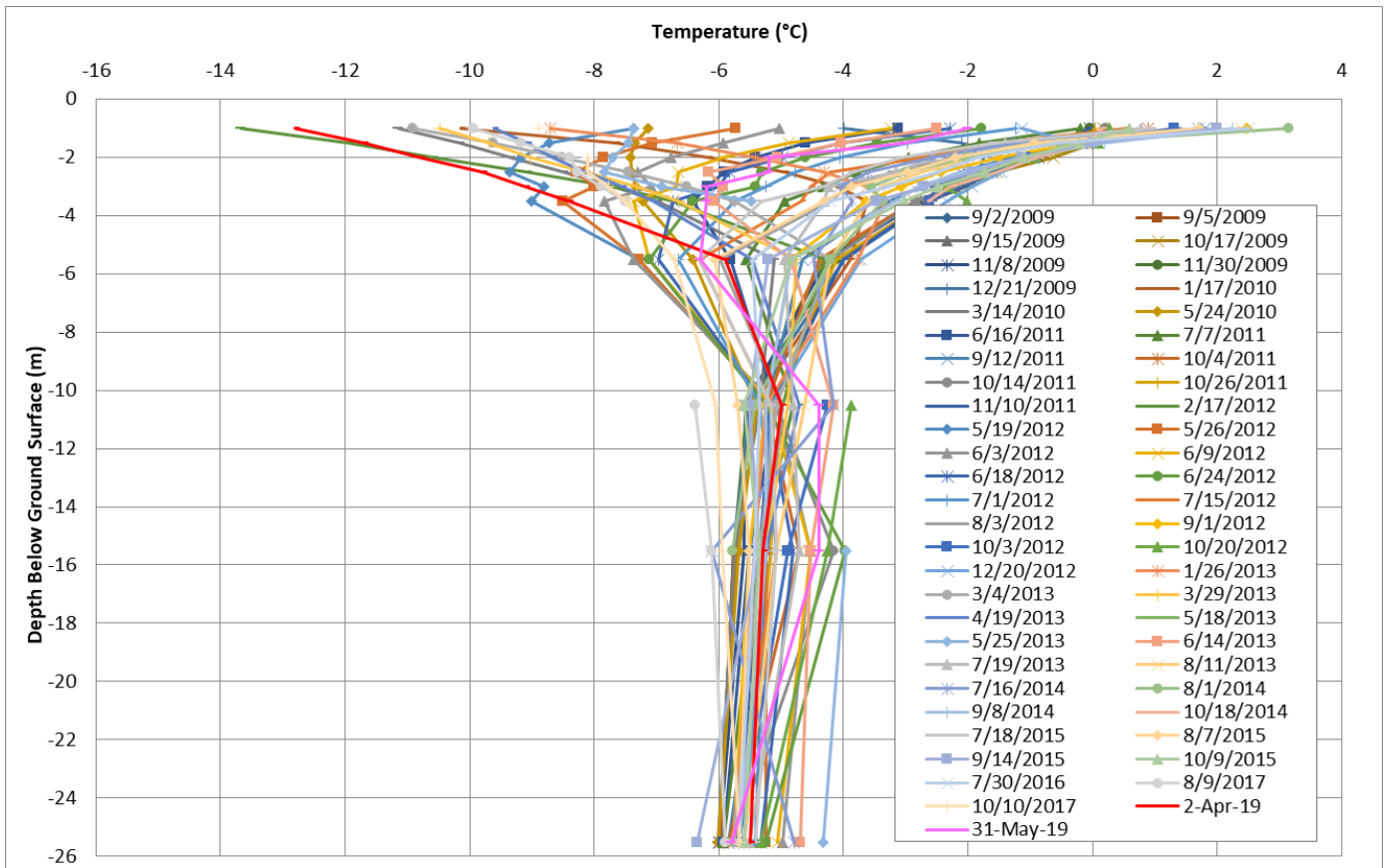
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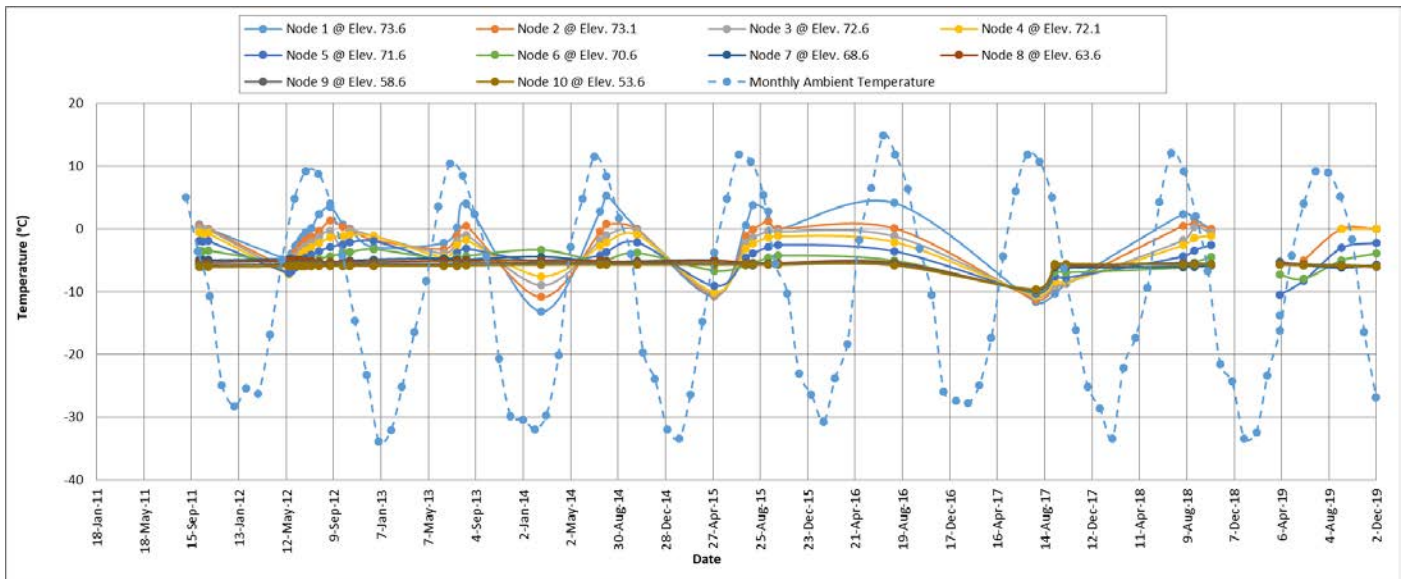
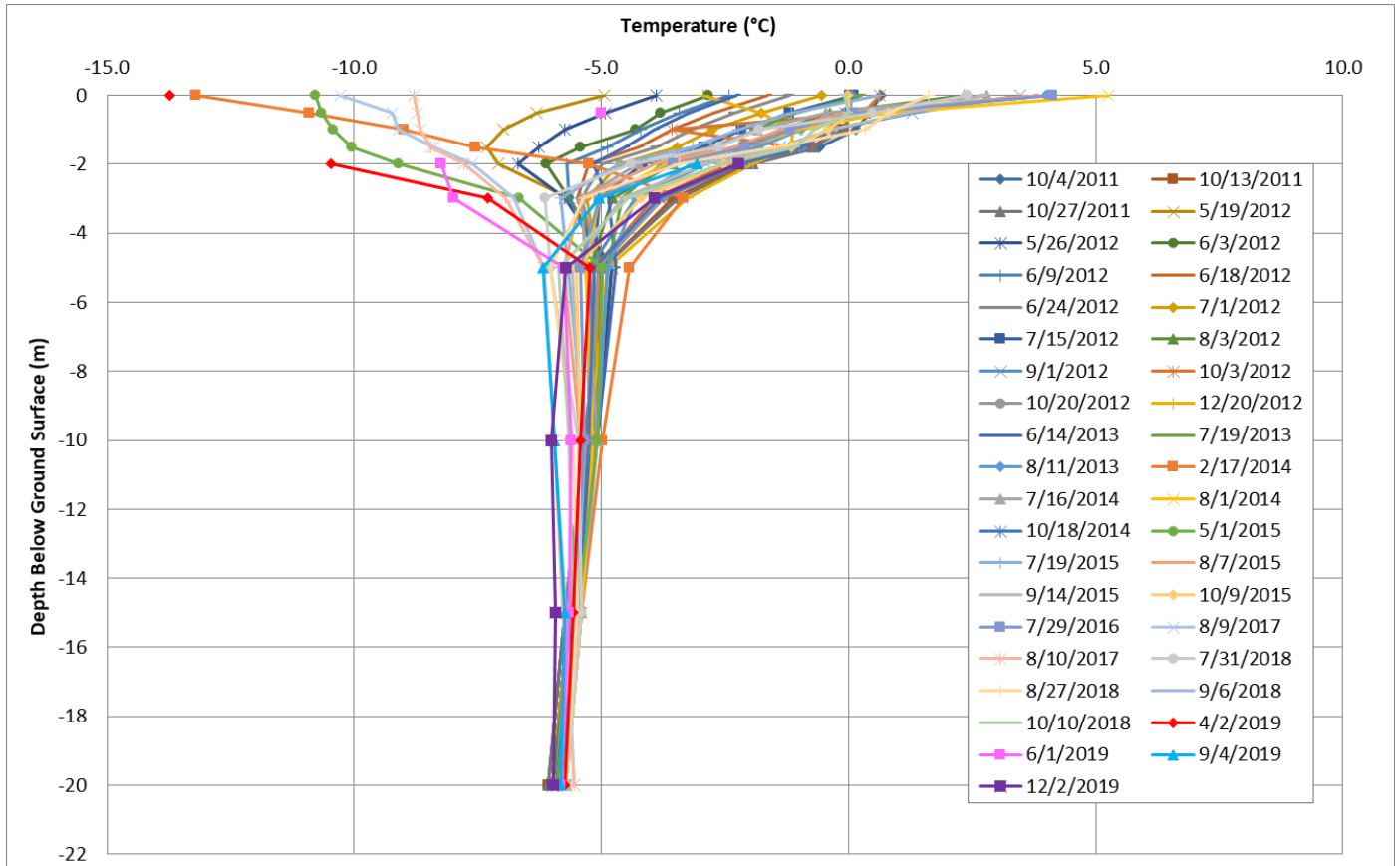
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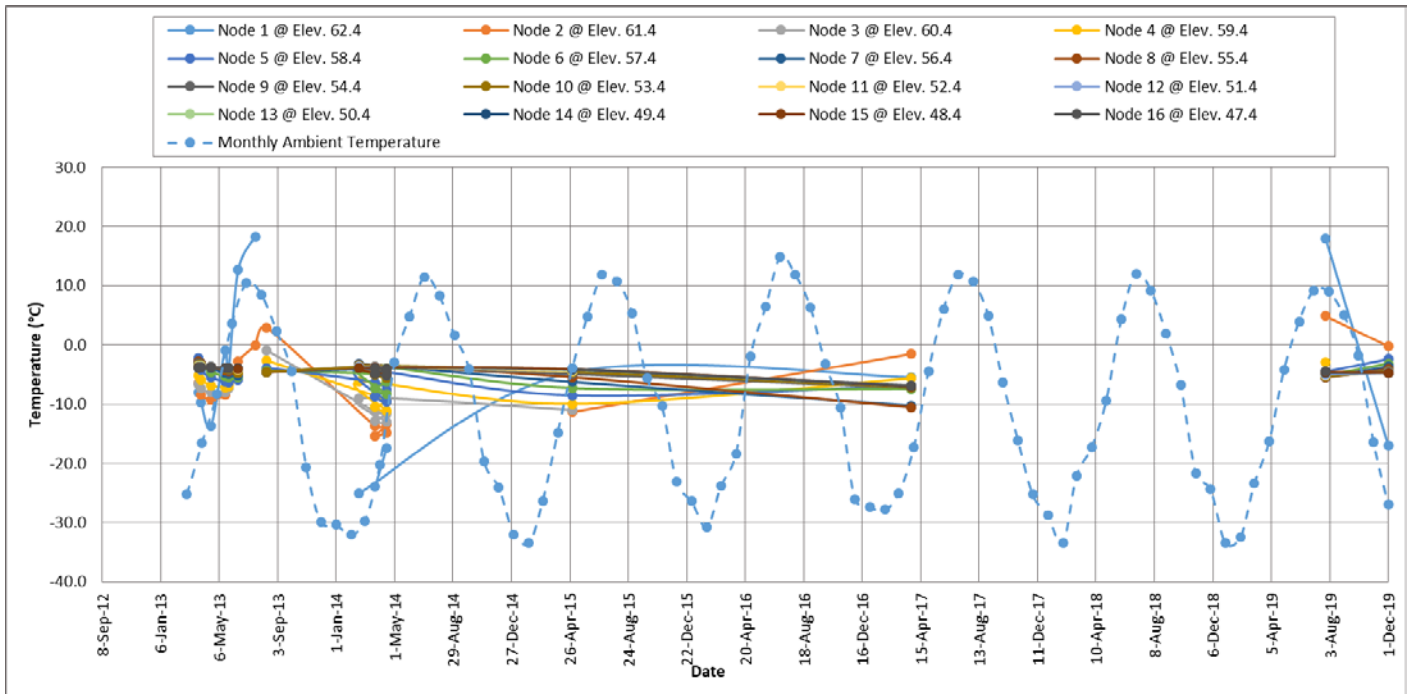
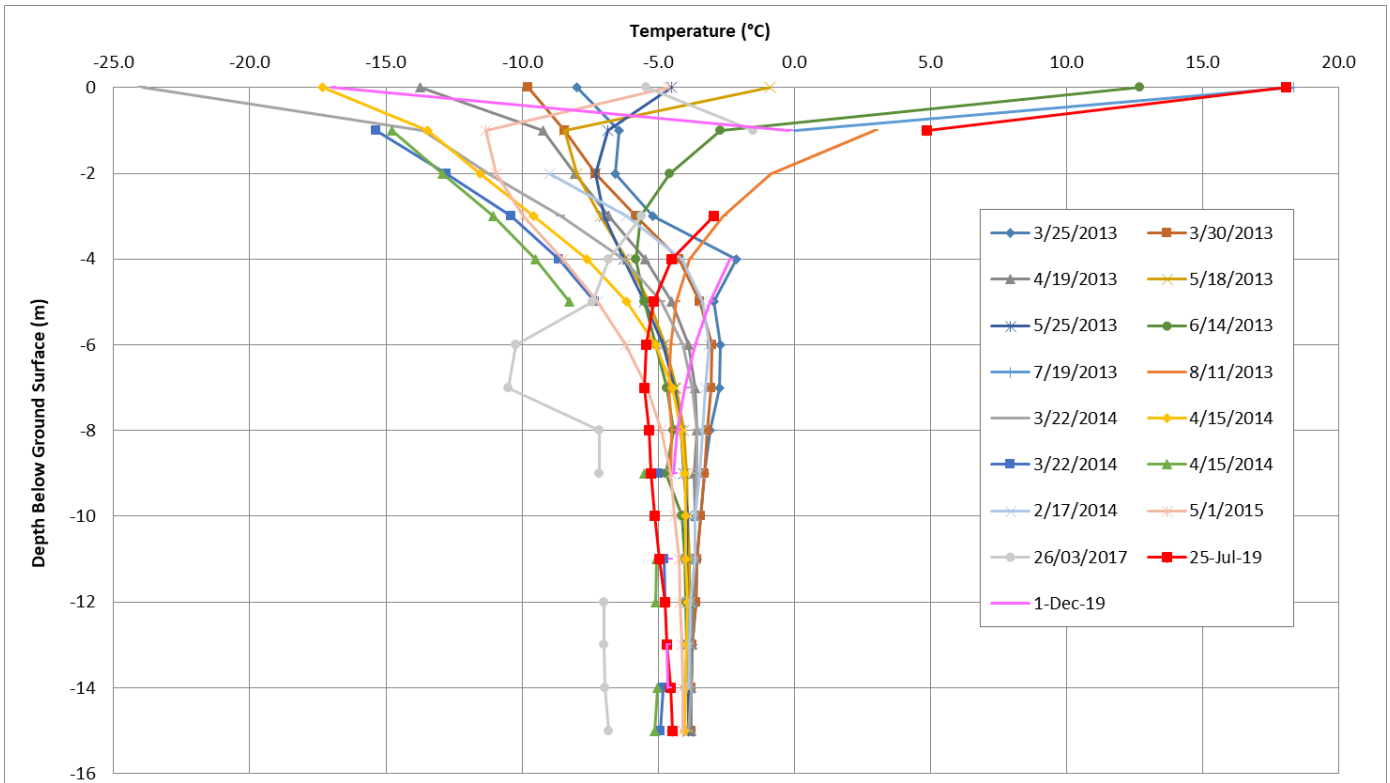
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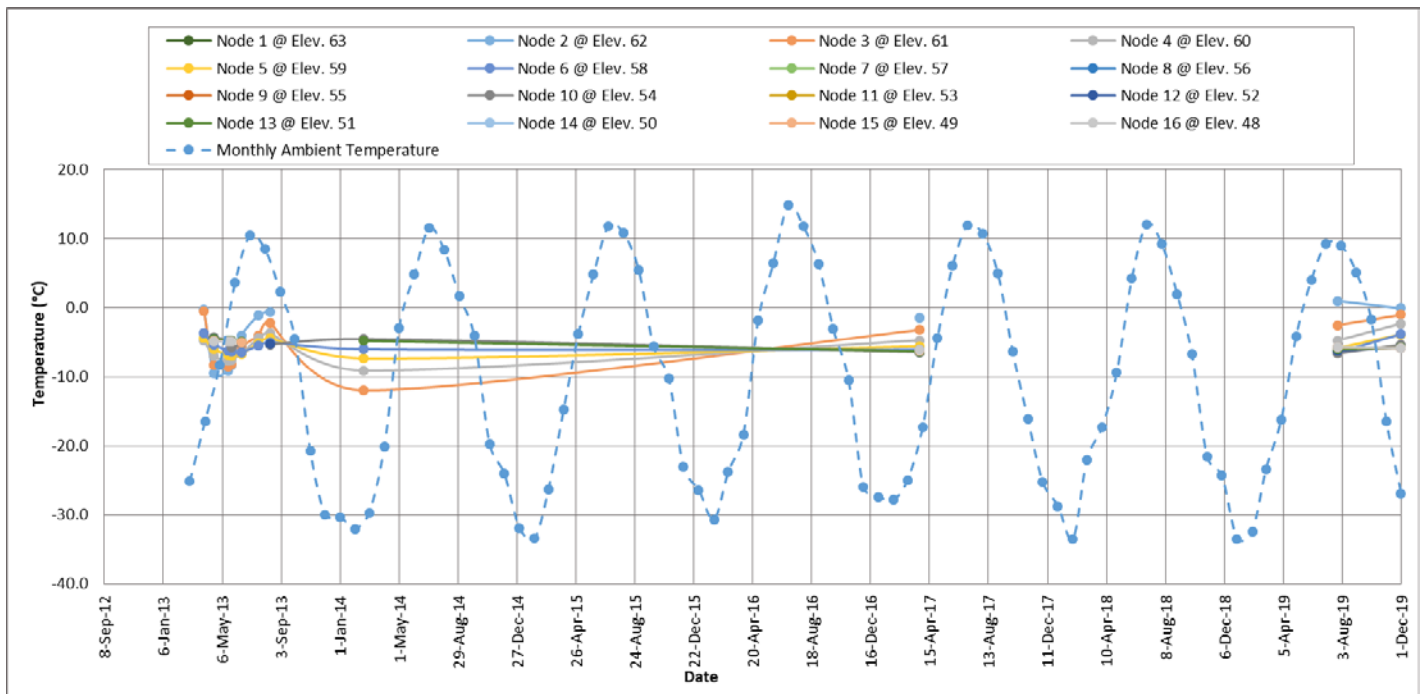
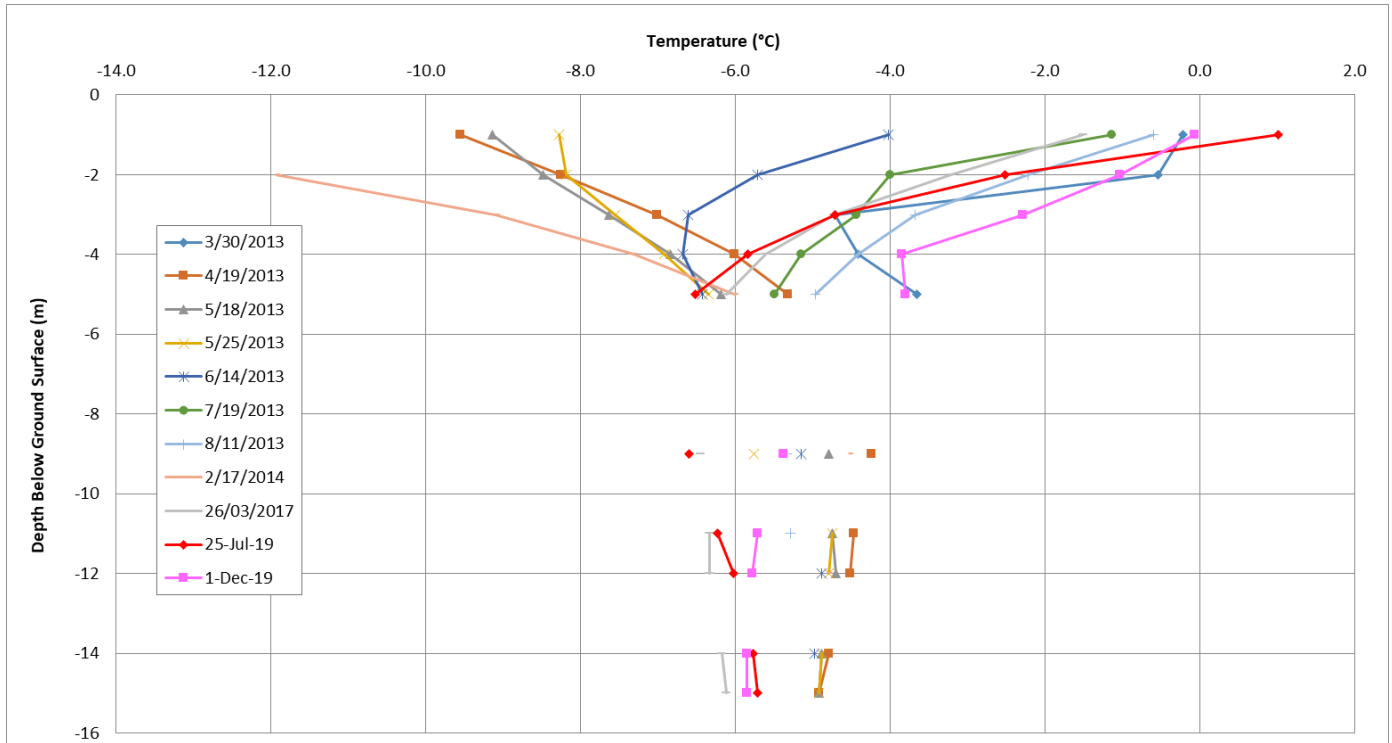
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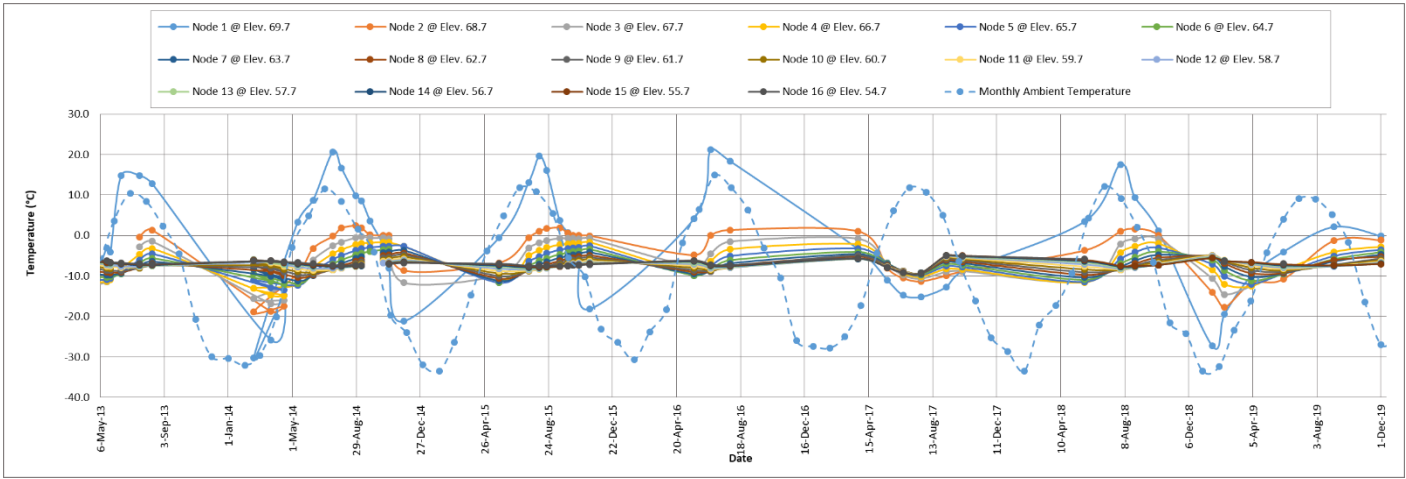
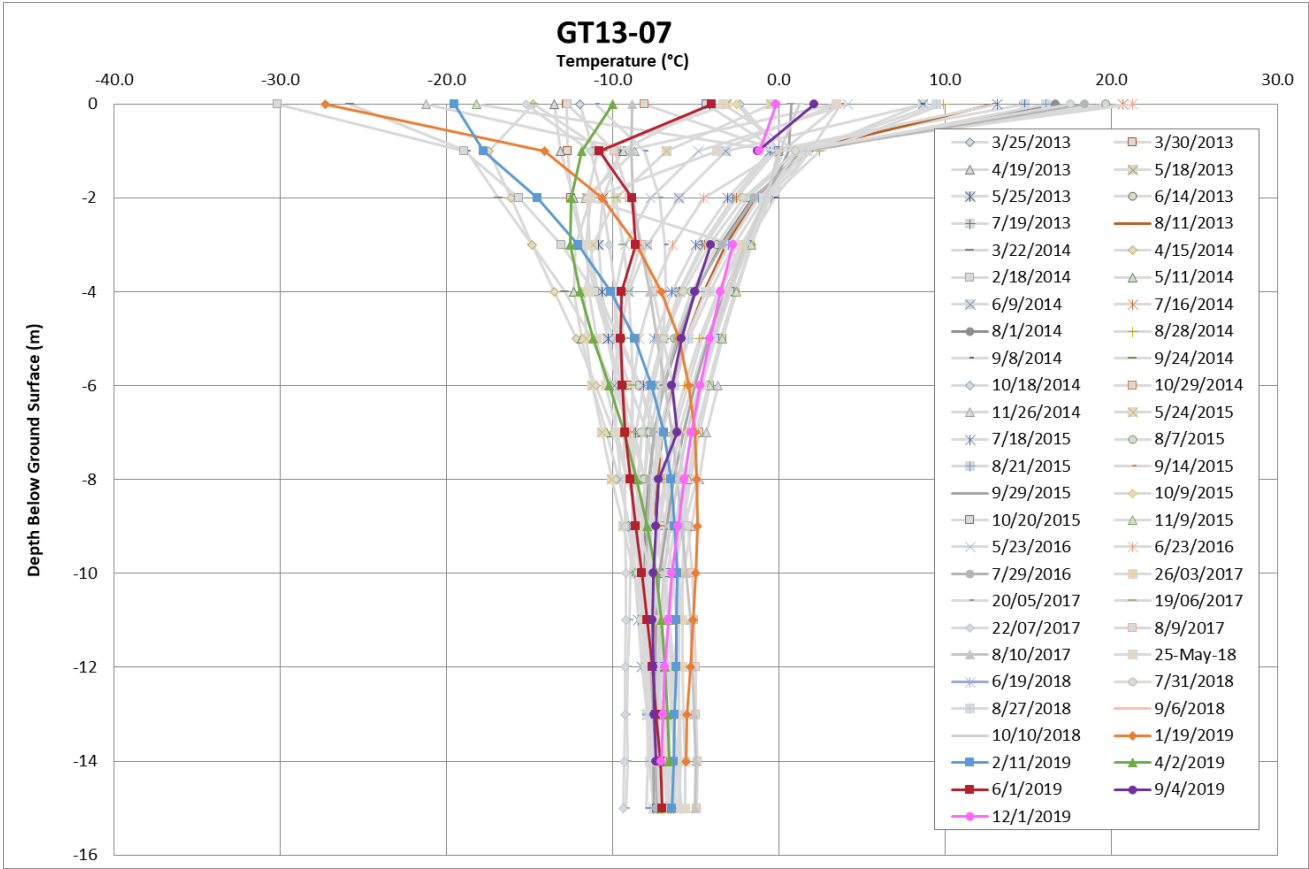
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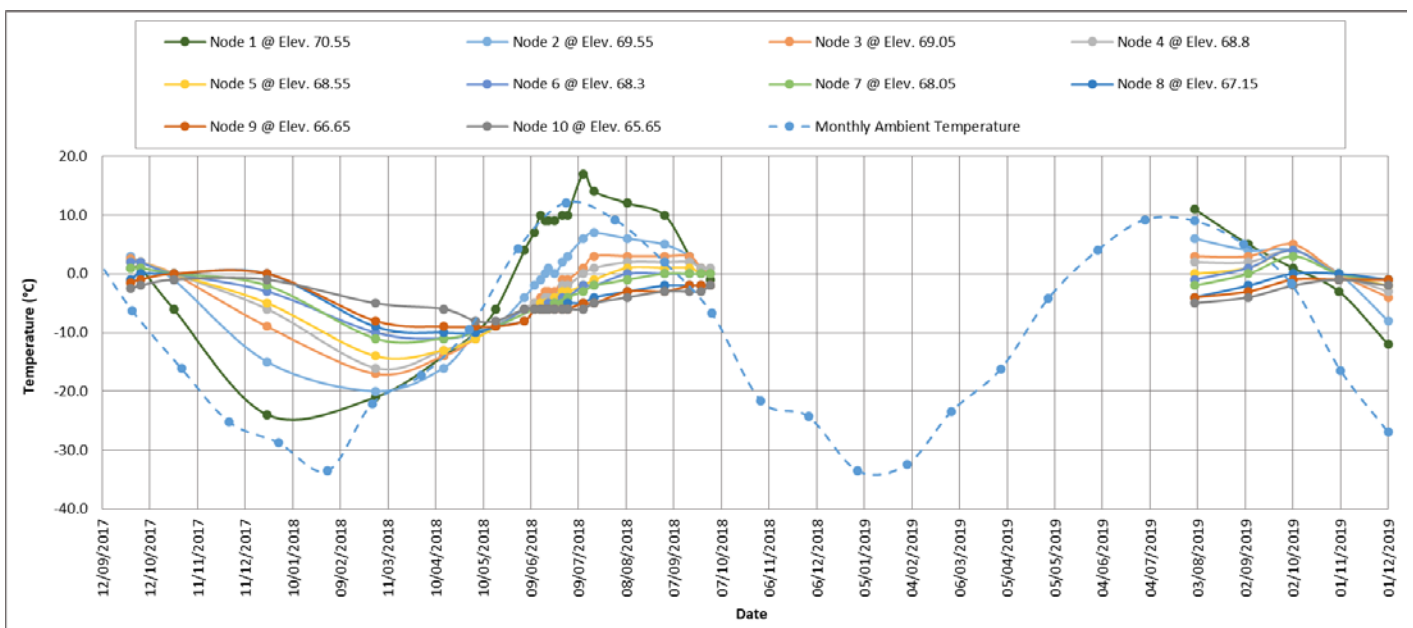
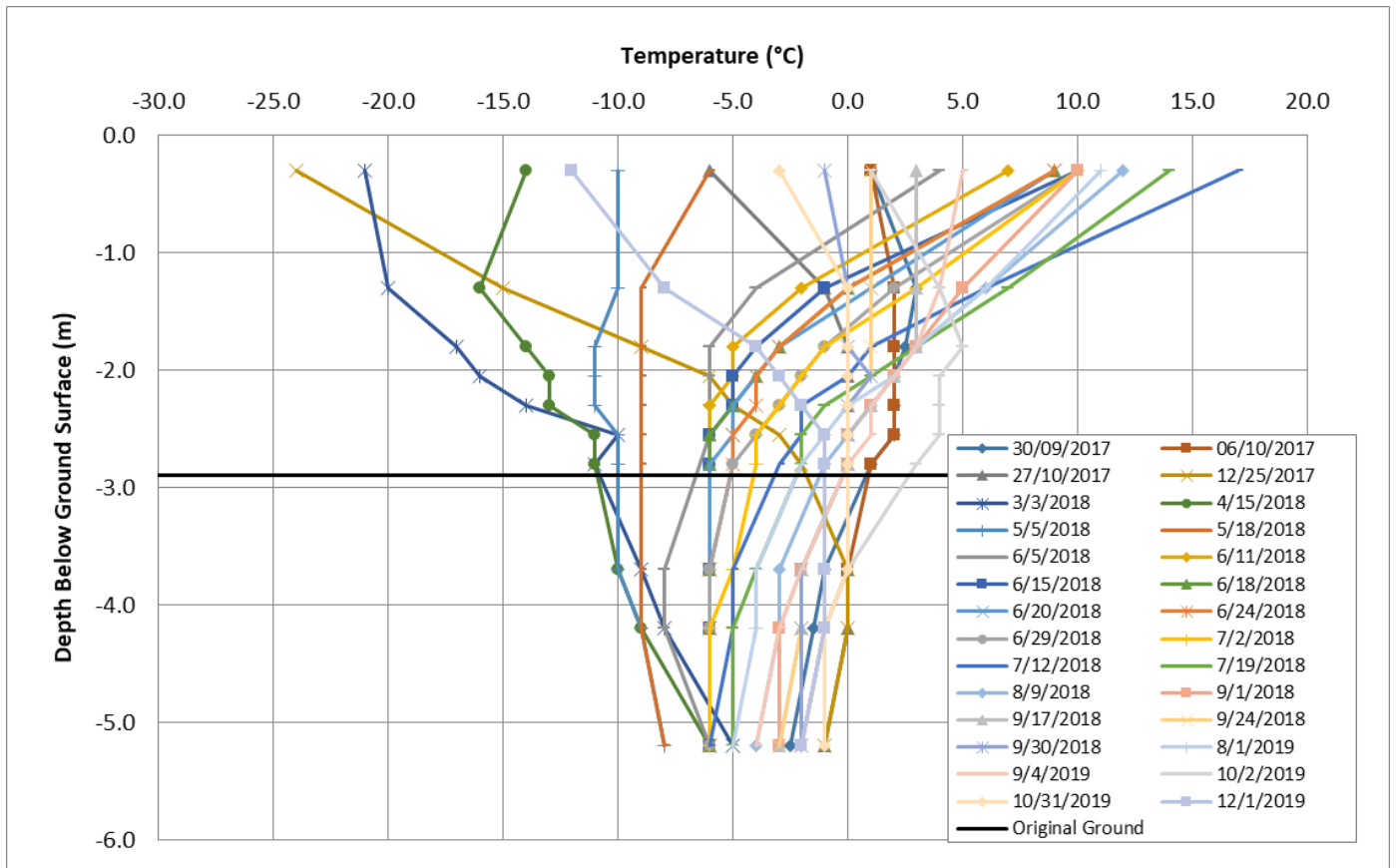
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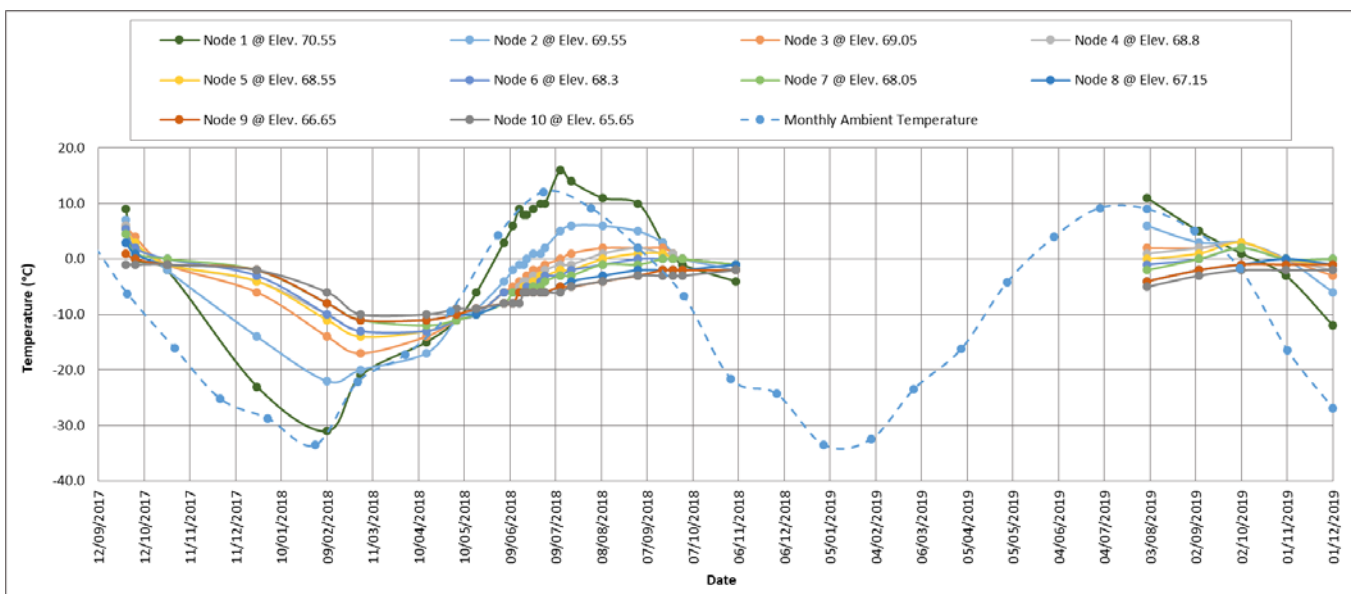
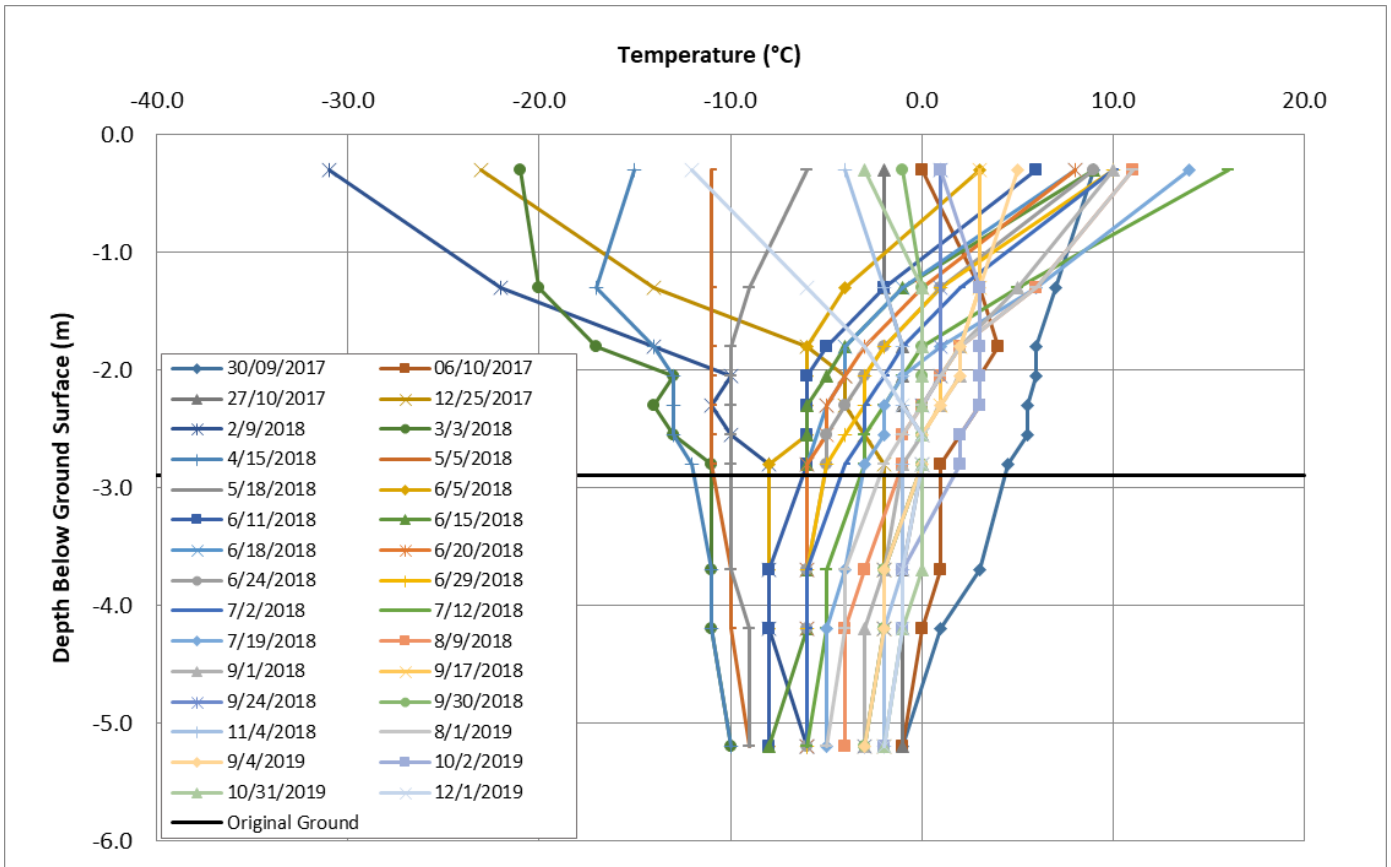
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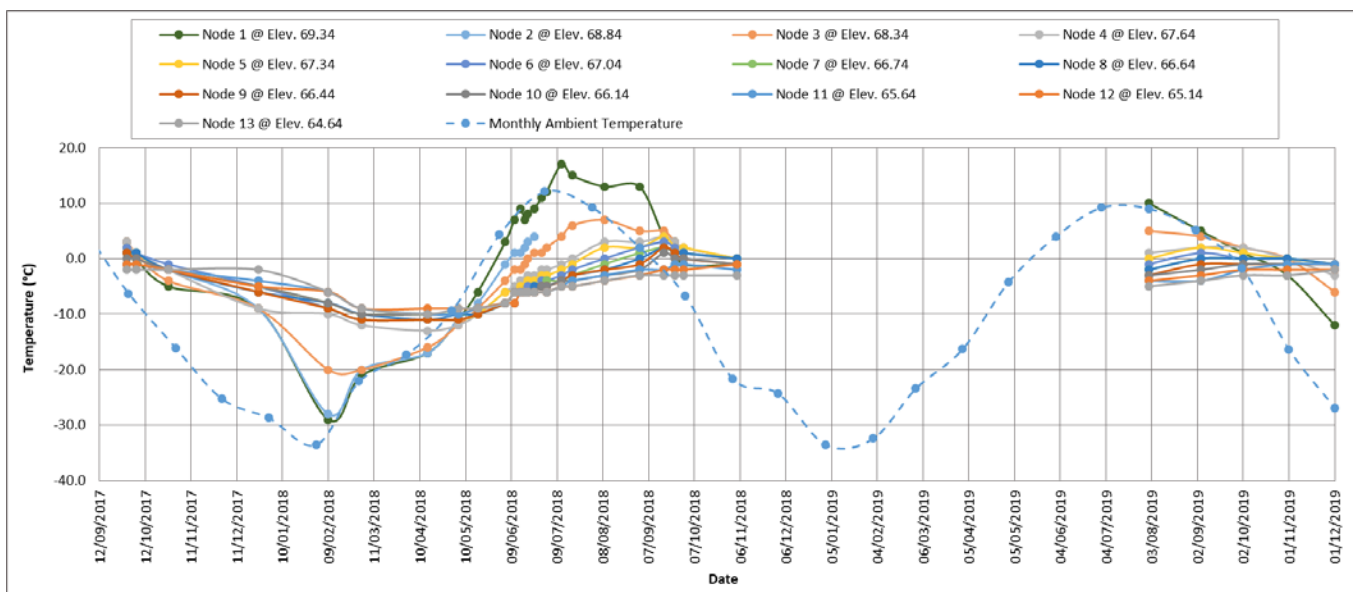
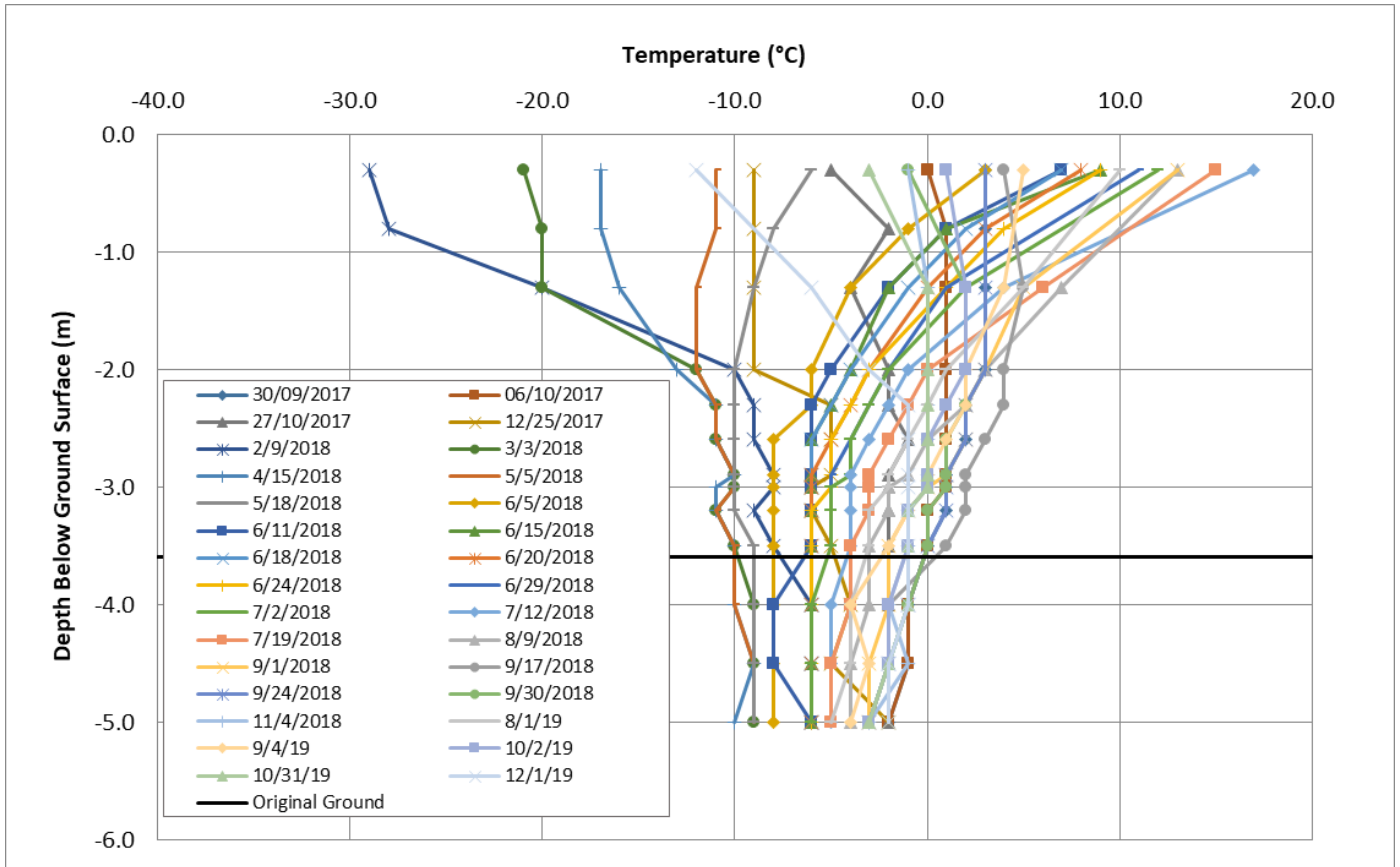
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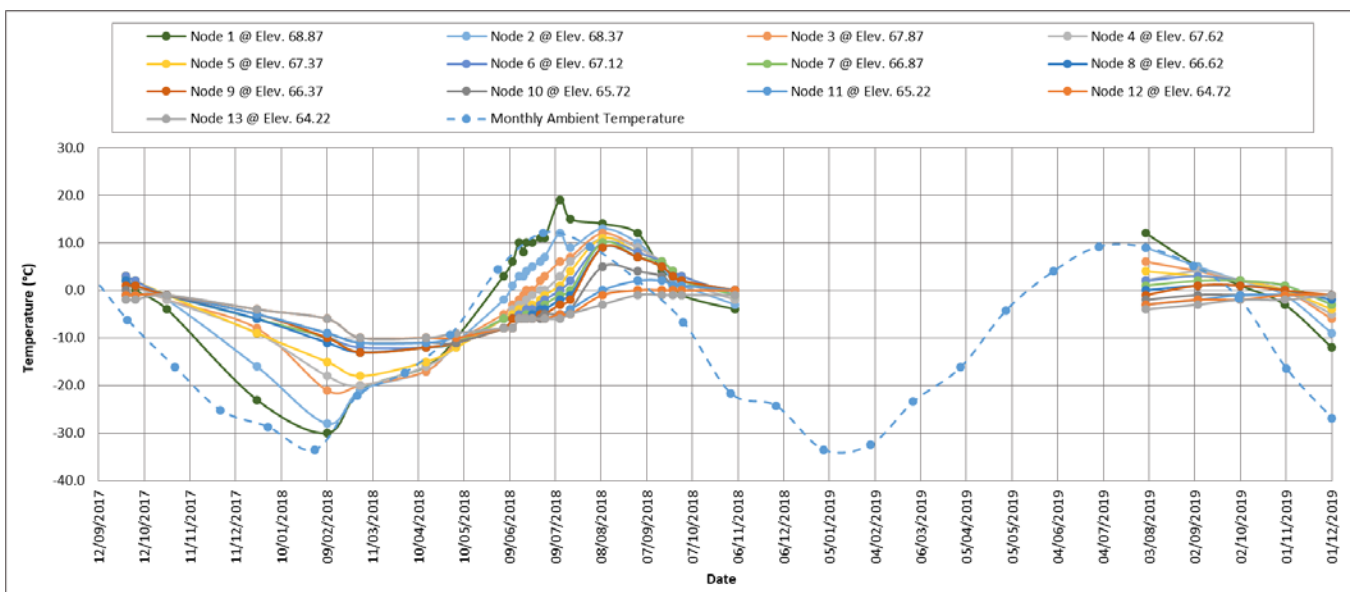
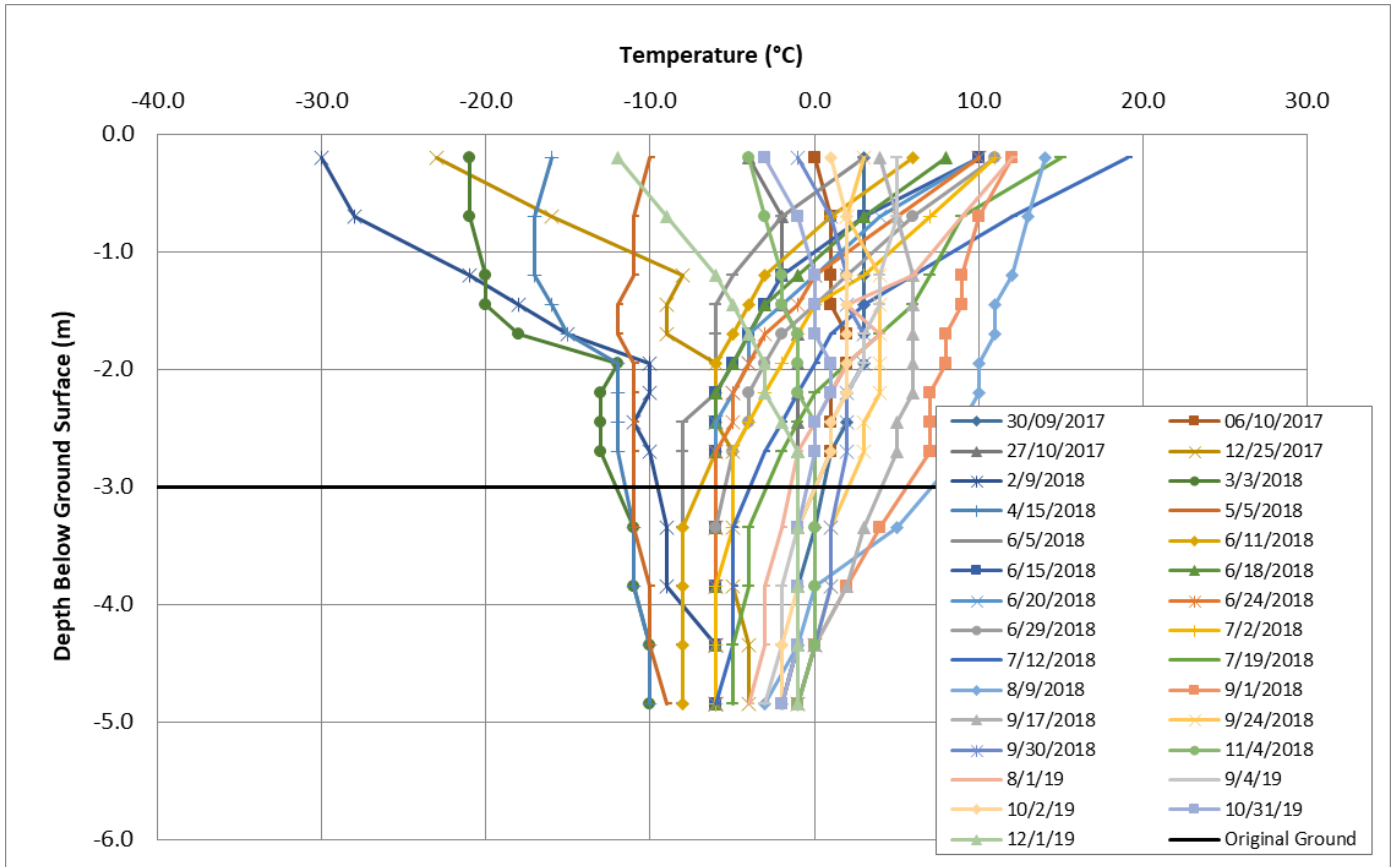
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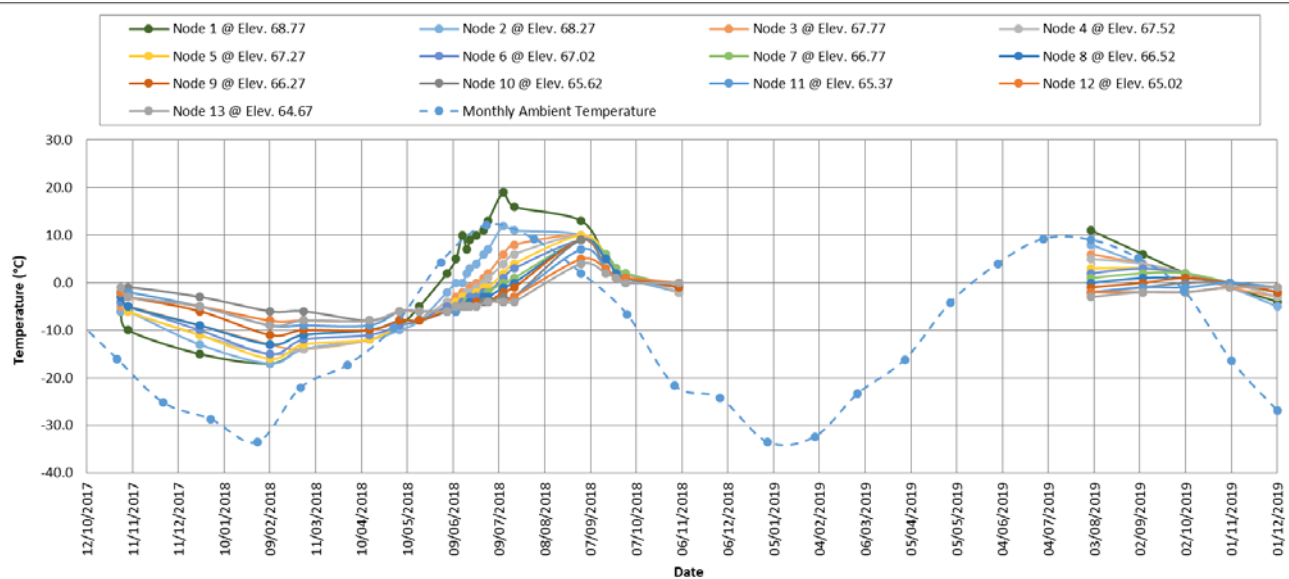
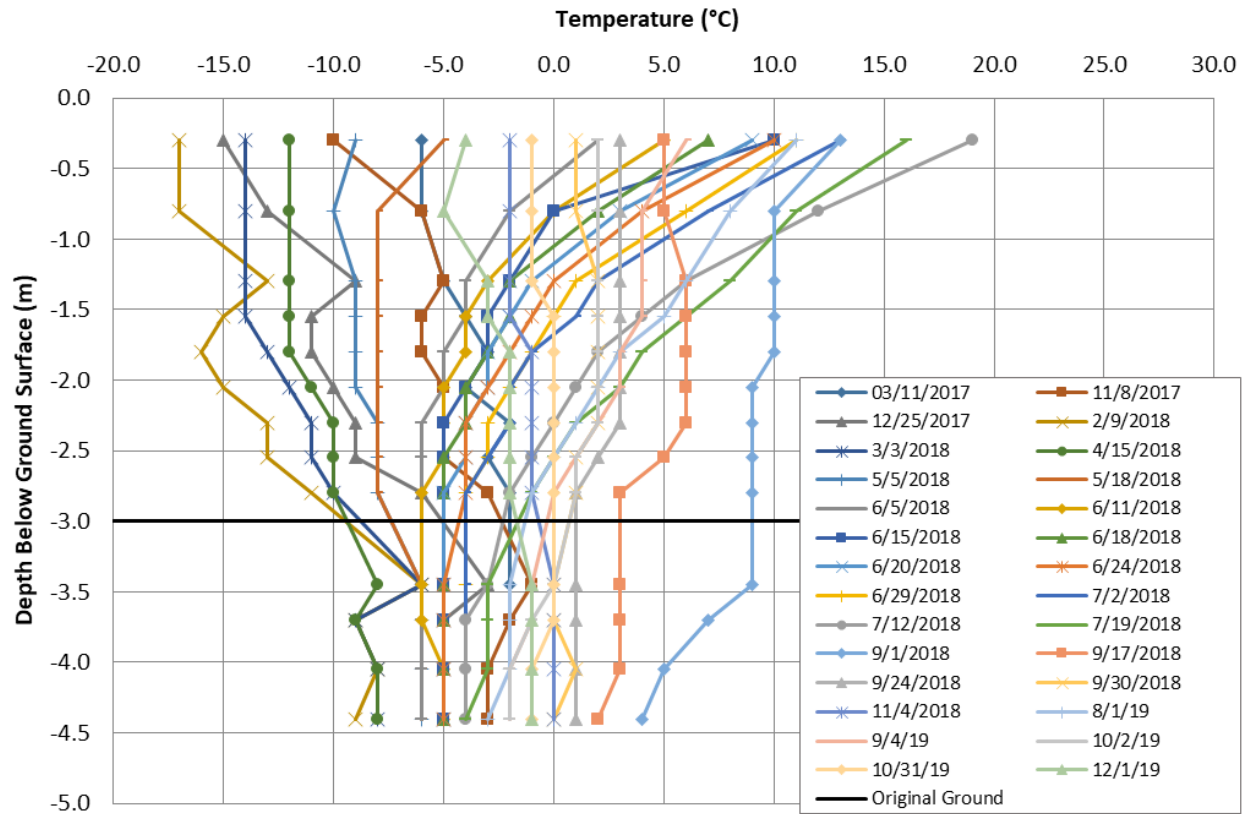
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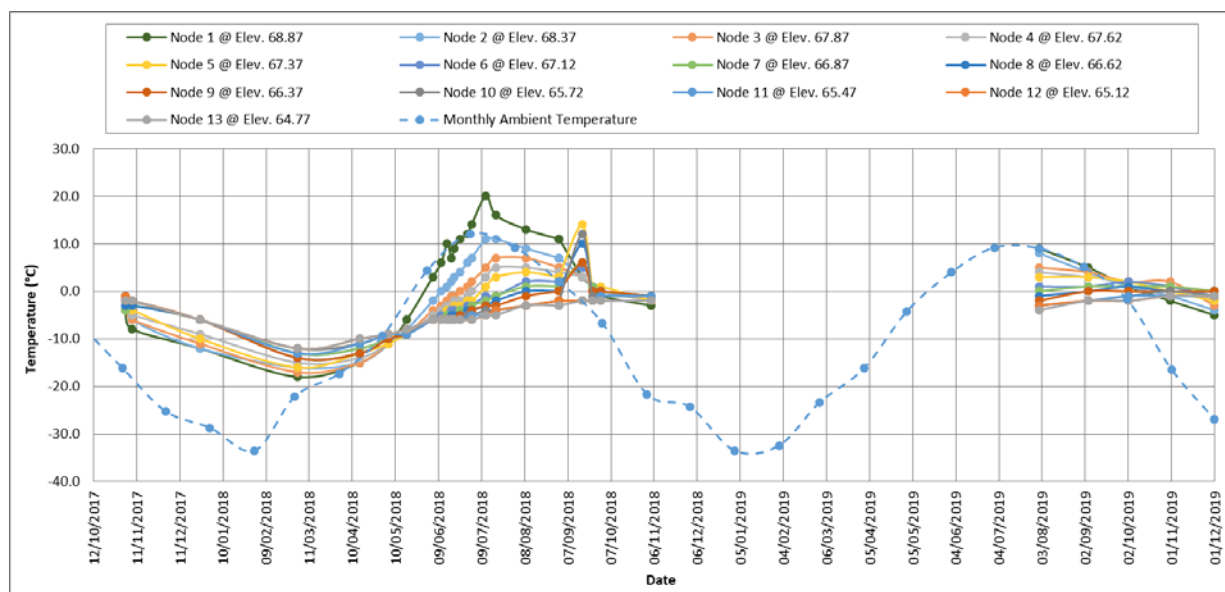
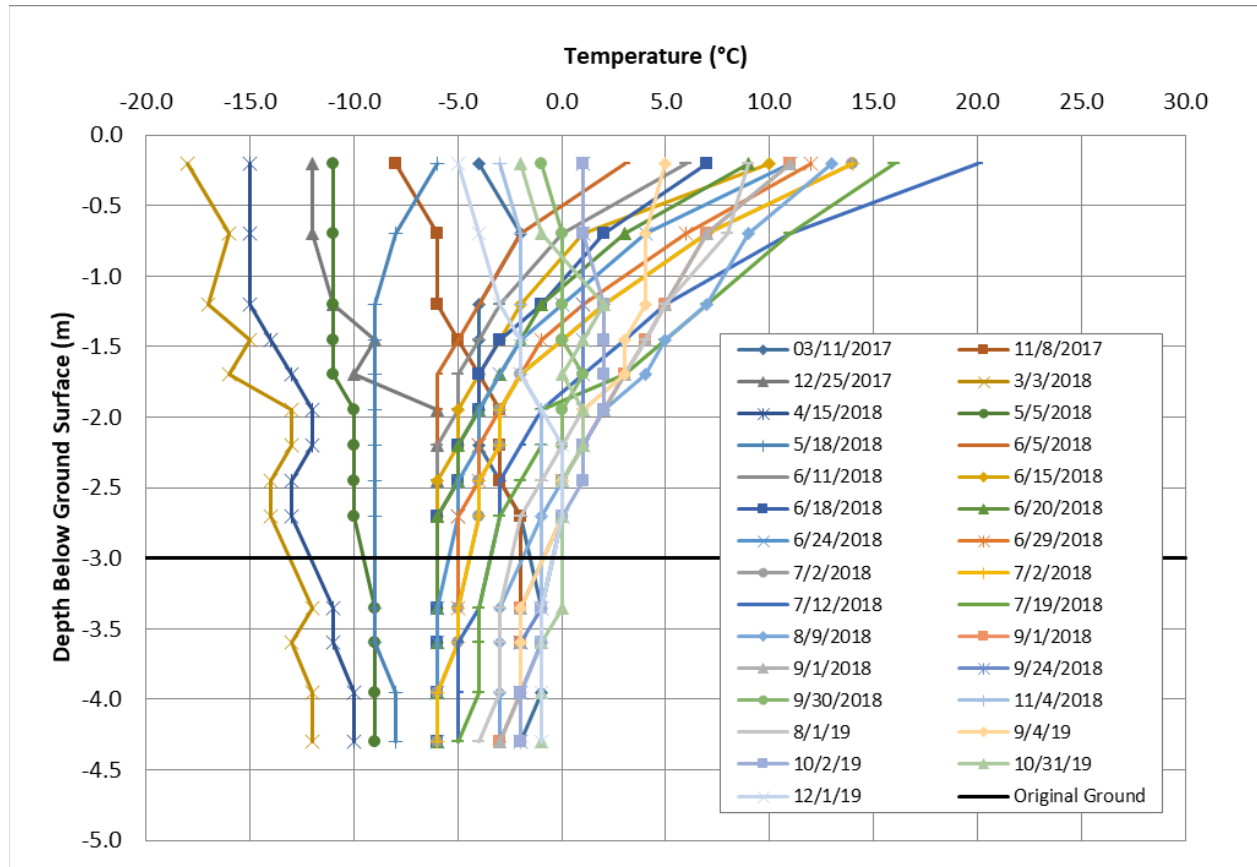
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Appendix C-1

Geochemical Report



AGNICO EAGLE

MELIADINE GOLD PROJECT

2019 METAL LEACHING AND ACID ROCK DRAINAGE MONITORING REPORT

**In Accordance with NIRB Project Certificate No. 006 and
Water License 2AM-MEL1631 Schedule B, Item 6.**

**Prepared by Agnico-Eagle Mines Limited –
Meliadine Division**

March 2020

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1 INTRODUCTION

In February 2015, Agnico Eagle Mines Ltd. (Agnico Eagle) was issued the NIRB Project Certificate No. 006, which was subsequently amended in February 2019, for the Meliadine Gold Project, near Rankin Inlet, NU. In April 2016 Agnico Eagle was also issued the Water License No 2AM-MEL1631. In accordance with Conditions 19, 22, and 31, of the Project Certificate, Agnico Eagle has developed a waste rock and quarry monitoring plan to characterize the metal leaching and acid rock drainage (ML/ARD) potential of excavated materials on-site. This report provides the ML/ARD characterization results of samples collected in 2019 from underground development areas at the Meliadine Mine, containment/sedimentation ponds (SP2, CP3 and CP4) and filtered tailings samples taken from the mill.

The baseline geochemical findings for the site (Golder 2014) found that there was low potential for ARD generation in all of the deposits except the Discovery Zone. Mining activities have not started at Discovery and as a result, 2019 sampling was not expected to find samples with ARD potential. Potential for ARD from containment/sedimentation ponds and filtered tailings was also expected to be low based on characterization studies performed by Golder (2010).

Metal and metalloid (hereafter referred to simply as metal) leaching was also found to have low potential for the areas being mined and processed (i.e. tailings) in 2019, with no management requirements. Arsenic was the element of interest in the deposit, although at concentrations that were predicted to not pose a water quality risk. The results from 2019 are presented in context of sampling from 2017 and 2018 results, as well as in comparison to the range of concentrations predicted from project development studies.

As a result of the project baseline studies establishing that management criteria were not required for the operation, the objective of this characterization program was to confirm the findings from the baseline studies and to ensure that the current management plan is protective of the receiving environment.

2 SAMPLING

2.1 WASTE ROCK

In 2019, 84 samples were collected from waste rock produced as part of underground development activities. The location of the samples are shown in Figure 1 and were taken throughout the mine on levels 125 to 425. Roughly half of the samples were taken in primary footwall drives, primarily in Meta-Volcanic rocks. The other half of samples came from cross-cuts being done to access the ore and were a predominantly Meta-Sediments with or without minor Iron Formation. A few samples were taken in the primary along with a few other miscellaneous headings, which were all in Meta-Volcanic Rocks.

Sample collection was performed by the operational geology team as follows:

- Monthly sampling to recover 6 samples plus one replicate for a total of 7 samples per month.
- The dominant lithology's encountered in the waste rock were selected by:
 - choosing 3 from each of the top three priority waste headings in the month (i.e. one from each heading);
 - 3 additional samples from the other most active headings each month; and
 - the rock type (i.e. volcanic (VOL), sedimentary (SED) or iron formation (IF)) were noted with each sample.

Each sample was approximately 1 kg and representative of the bulk composition of the rock being sampled.

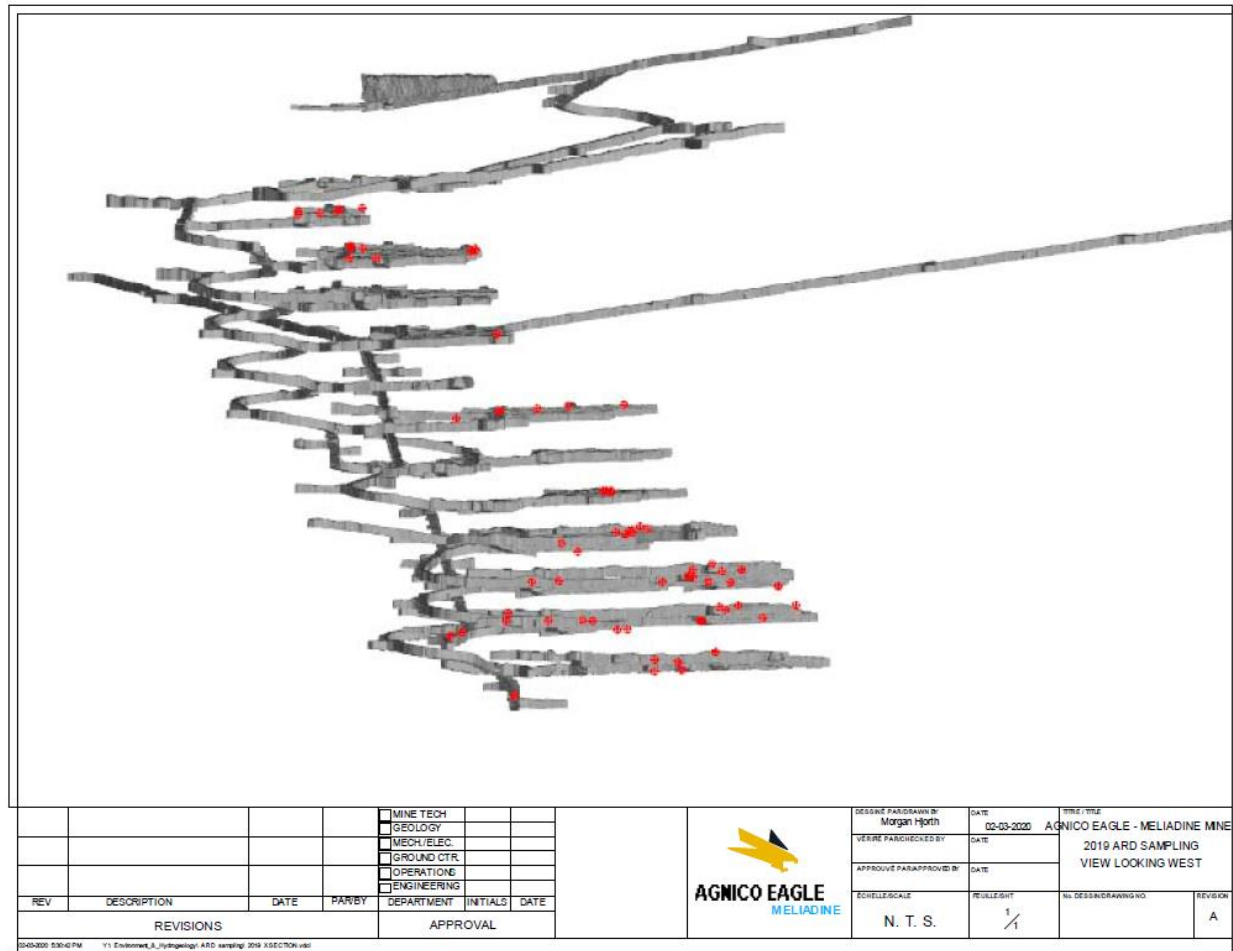


Figure 1: Cross section of underground mine ML/ARD sampling locations.

Note: Sample locations are indicated by red circles.

2.2 CONTAINMENT AND SEDIMENTATION PONDS

In 2019, 28 waste rock samples were collected during construction from the containment and sedimentation ponds (CPs and SPs, respectively) from around the mine site that served as water storage facilities. Pond CP3 was constructed as a run-off storage for the tailings facility water prior to it being transported to CP1. CP4 was built to store water from the waste rock pile prior to being transported to CP1. SP2 was constructed as a storage for underground water prior to the water being treated and discharged to sea.

The number of samples collected at each location was based on the estimated volume prior to sampling using a ratio of 8 samples/100,000 tonnes as recommended by MEND (2009). Total volume of the infrastructure ponds was estimated for bank (in situ) volume using an estimated bulk density based on typical published values of 2.5 g/cm³. During excavation of the ponds, more material was

removed from CP3 and SP2 while less material was mined from CP4 than what was initially estimated. In all scenarios the sampling rate was higher than 8 samples/100,000 tonnes.

Sampling for the three ponds were done differently. Borehole drilling cutting samples were taken for CP3 and CP4 while for SP2 there were some grab samples taken along with cuttings from borehole drilling. For all locations approximately 1 kg of material was collected. The location of ponds is provided in Figure 2.

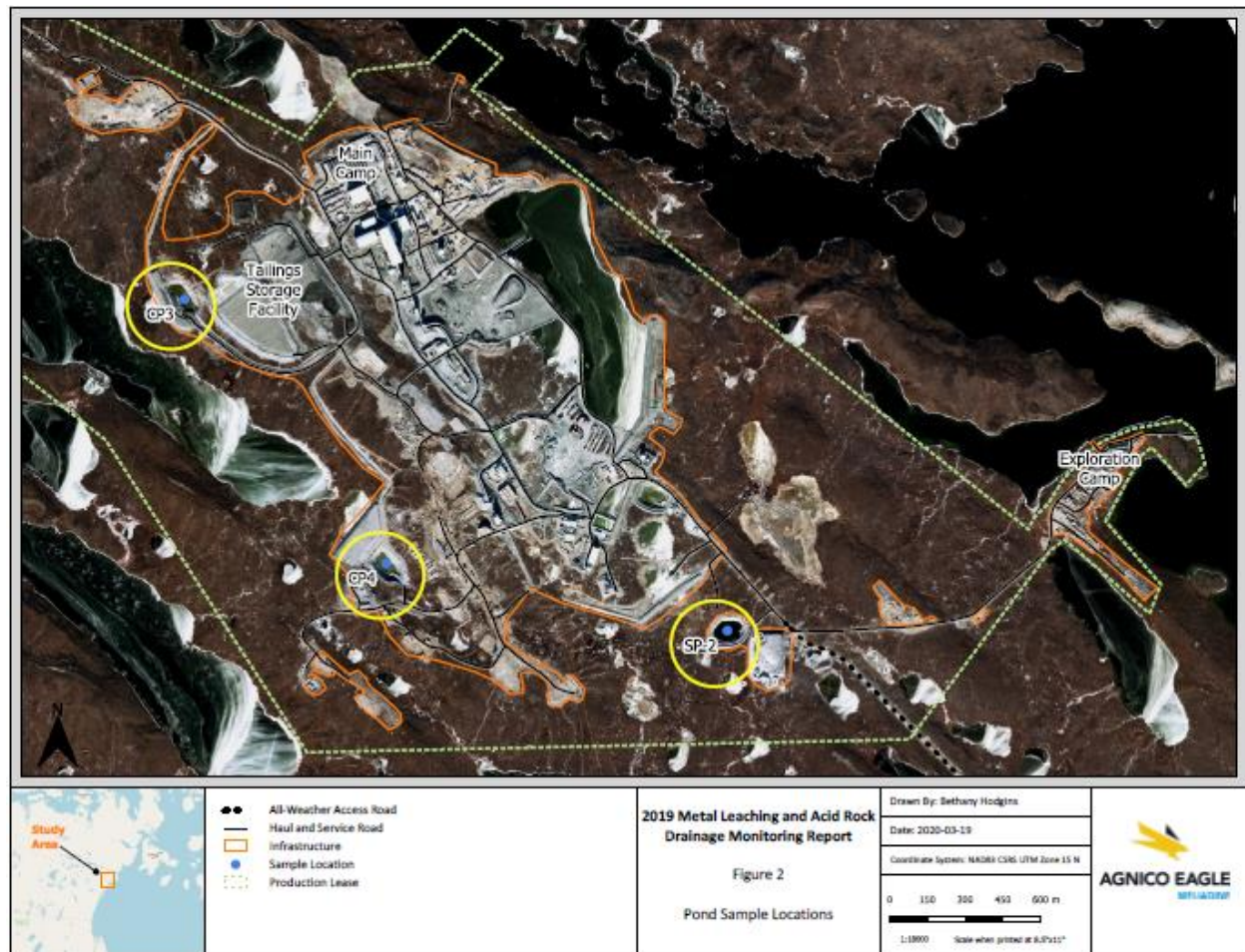


Figure 2: Containment and Sedimentation Pond locations tested in 2019.

2.3 FILTERED TAILINGS

In 2019, 27 filtered tailings samples were taken at Meliadine as processing of the underground ore commenced in the first quarter of 2019. Samples were taken in the mill immediately after the filter press with approximately 1 kg of sample collected. Samples were initially taken weekly and then changed to a minimum of monthly towards the end of the year due to minimal temporal changes seen in the data set collected to date.

3 LABORATORY TESTING

All samples collected were shipped off-site to SGS Lakefield, Ontario, a commercial laboratory with specialization in ML/ARD. Analyses included:

- Acid-base accounting
 - Paste pH
 - Total sulphur (LECO)
 - Sulphate sulphur (HCl leach)
 - Total carbon (LECO)
 - Total inorganic carbon (TIC)
 - Neutralization potential (modified Sobek)
- Element scan by aqua regia digestion and a 3:1 element ICP-MS finish.

4 RESULTS & DISCUSSION

4.1 MINE DEVELOPMENT WASTE ROCK

4.1.1 ARD POTENTIAL

Neutralization Potential

Neutralization potential (NP) is expected to be primarily provided by calcite and dolomite, with some ankerite (Golder 2014). As a result, carbonate analysis is likely appropriate for determining NP, which was recommended by Golder (2014) to be the more conservative method to determine buffering capacity. The NP to NP-Carbonate relationship continued to be checked in 2019 and the relationship generally held, especially at low NP values.

Complete results from NP characterization are provided in Appendix A, with summary statistics provided in Table 1. NP ranged from a minimum of 0.4 kg CaCO₃/t to a maximum of 367 kg CaCO₃/t, with a median of 106 kg CaCO₃/t

Table 1: Summary Statistics for 2019 ARD and Arsenic Results.

Parameter	Units	Min	P5	P25	Median	Mean	P75	P95	Max
Paste pH	s.u.	5.5	8.1	8.3	8.5	8.5	8.7	9.2	10
NP	kg CaCO ₃ /t	1	37	56	128	147	234	269	372
AP	kg CaCO ₃ /t	0.62	1.0	3.1	5.3	7.8	9.1	21	58
Sulphur (total)	% S	0.01	0.06	0.14	0.23	0.31	0.36	0.77	2.2
Acid Leachable SO ₄ -S	% S	0.02	0.02	0.02	0.04	0.06	0.09	0.17	0.38
Carbon (total)	% C	0.01	0.53	0.8	1.7	2.0	3.3	3.5	5.0
Carbonate (CO ₃)	% CO ₃	0.03	1.6	2.9	6	8.3	14	16	22
NP-Ca	kg CaCO ₃ /t	0.4	27	49	106	139	235	265	367
NP-Ca/AP	ratio	0.0	3.2	10	21	18	39	101	153
Arsenic	mg/kg	4.1	8.4	51	140	446	440	1180	8700

Notes: P stands for percentile (e.g. P5 equals 5th percentile); NP-Ca is stands for NP by carbonate content.

Acid Potential

Project prediction studies indicated that the main sulphide minerals in the waste rock was pyrite, but also with arsenopyrite and lesser pyrrhotite, and chalcopyrite (Golder 2014). As a result, the main consideration for acid potential (AP) is the presence of sulphide minerals at Meliadine.

Project prediction studies were confirmed in 2019 sampling with acid-base accounting testing showing that sulphur is primarily present in the sulphide form (Table 1 summary, full results in Appendix A). Sulphur ranged from below detection 0.01% to a maximum of 2.2%, with a median of 0.23%.

ARD Assessment

The potential for ARD was assessed using NP-Ca/AP ratios (or neutralization potential ratios, NPR). AP was calculated from total sulphur. Ratios below 2 were used to indicate potential for ARD (PAG or potentially ARD generating), whereas ratios above 2 indicate low potential for ARD (non-PAG).

The classification of all Meliadine waste rock samples from underground since testing began in 2017 are provided in Figure 3 and a summary of ratios are provided in Table 1. As predicted by Golder (2014), the majority of operational waste rock (i.e. muck) samples collected to date were non-PAG. Samples from 2017 and 2018 have also been included for ease of comparison to historical results.

The one exception was a sedimentary sample with an NPR of 1.8. This sample is not considered a risk as there is excess buffering in all other samples collected and it is only marginally below the non-PAG criterion. Given the carbonate mineralogy of the Meliadine samples, the threshold for a sample to

produce ARD is likely closer to an NPR of 1 and this sample is unlikely to produce ARD even without the buffering of any other samples.

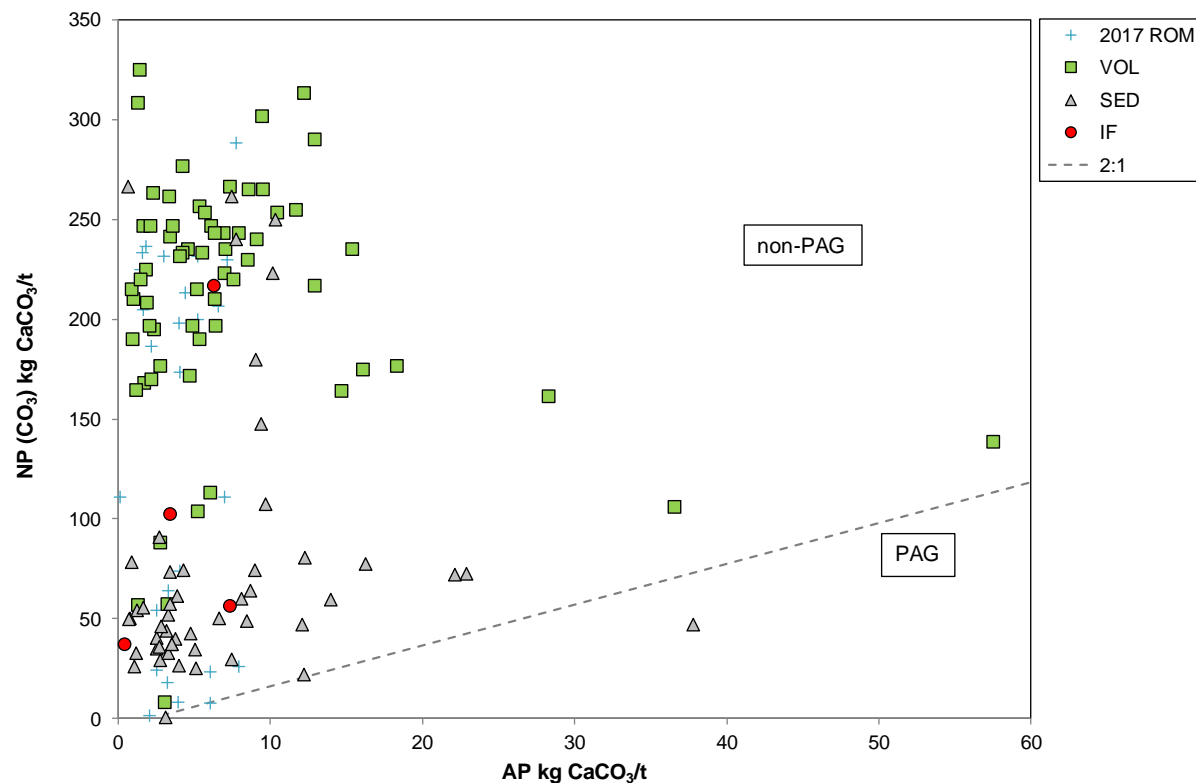


Figure 3: ARD classification of Meliadine Underground Waste Rock Samples.

Notes: ROM stands for run of mine; VOL for volcanics; SED for sedimentary/greywacke; IF for iron formation.

4.1.2 METAL LEACHING

Metal leaching was predicted by Golder (2014) to be low enough that management of waste rock to inhibit leaching was not required. However, based on project screening studies, arsenic was determined to be the main element of interest and analysis of this element (and all regulated elements) were part of operational monitoring since mining began. A statistical summary for arsenic is provided in Table 1, with complete element composition results provided in Appendix B.

To ensure arsenic concentrations were within project predictions, results have been compiled and compared against average and maximum arsenic concentrations reported by Golder (2014). As shown in Figure 4, solid phase arsenic concentrations mainly fall within or below the average

concentration, with only one sample in the past three years exceeding the maximum concentration reported by Golder (2014).

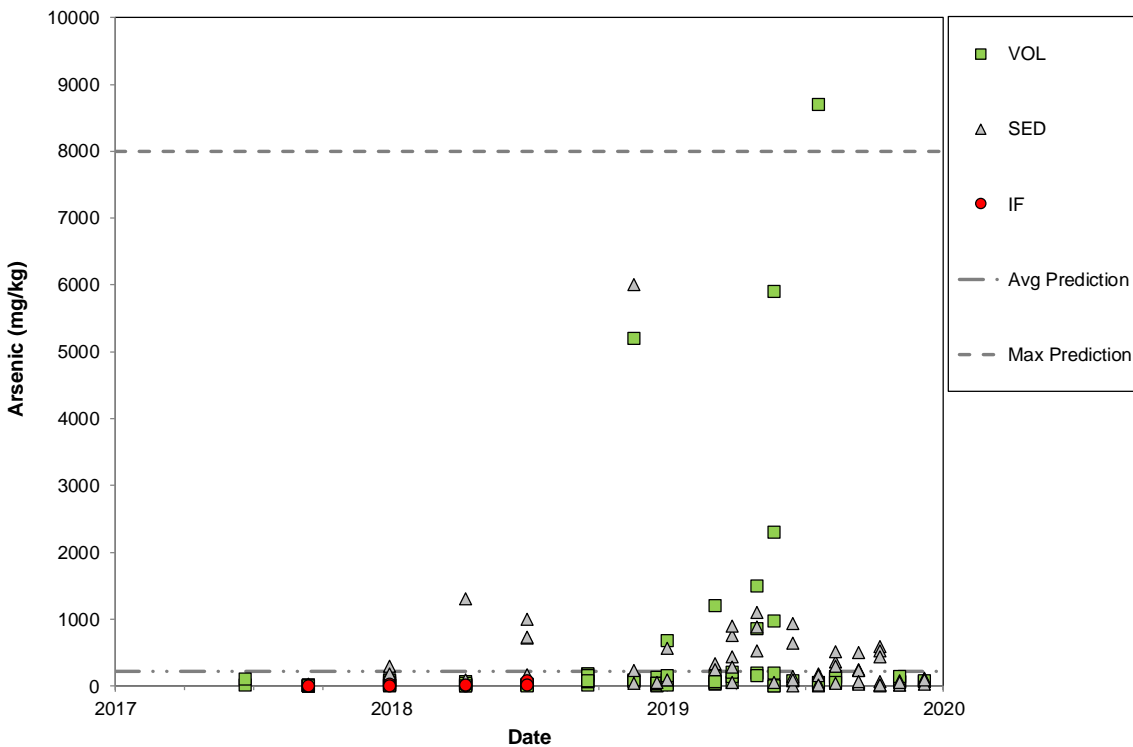


Figure 4: Arsenic concentrations in waste rock compared to project prediction studies.

4.2 CONTAINMENT AND SEDIMENTATION PONDS

4.2.1 ARD POTENTIAL

The potential for ARD from CP and SP samples collected in 2019 was assessed by the same approach described above for waste rock in Section 4.1, whereby NP was provided by carbonate (NP-Ca) and AP was estimated based on total sulphur.

Complete results are provided in Appendix C with summary statistics provided in Table 2 and illustrated in Figure 5. NP-Ca ranged from 25 to 96 kg CaCO₃/t, with a median of 50 kg CaCO₃/t. Total sulphur ranged from 0.1% to a 0.4%, with a median of 0.21%.

The potential for CP and SP facilities to produce ARD was based on NPR ratios, but also a sulphur limit of 0.1%, meaning that any samples with 0.1% or less sulphur would be non-PAG regardless of the NPR ratio. Based on the two criteria, one of the pond samples collected were classified as PAG. However, this sample had relatively minor sulphur (~ 0.2%), would be surrounded by other rocks with excess NP, and was also crushed and used as road bedding underground. After operations cease

water flooding will inhibit further oxidation. As a result, the risk from this one samples is assumed to be negligible.

Table 2: Summary Statistics for Containment and Sedimentation Pond Rock Samples Collected in 2019.

Parameter	Units	Min	P5	P25	Median	Mean	P75	P95	Max
Paste pH	s.u.	8.7	8.8	8.9	9.0	9.0	9.2	9.3	9.4
NP	kg CaCO ₃ /t	25	31	43	50	50	54	65	96
AP	kg CaCO ₃ /t	2.19	2.61	3.4	4.1	4.1	4.5	5.7	8.1
Sulphur (total)	% S	0.10	0.13	0.16	0.21	0.20	0.22	0.27	0.4
Acid Leachable SO ₄ -S	% S	0.02	0.02	0.03	0.07	0.07	0.09	0.13	0.16
Carbon (total)	% C	0.21	0.34	0.58	0.64	0.64	0.72	0.85	1.3
Carbonate (CO ₃)	% CO ₃	0.37	0.71	2.0	2.3	2.3	2.6	3.3	5.4
NP-Ca	kg CaCO ₃ /t	6.2	12	33	38	38	43	55	90
NP-Ca/AP	ratio	1.4	3.1	7.5	9.6	9.1	12	17	22
Arsenic	mg/kg	12	16	40	59	83	86	238	370

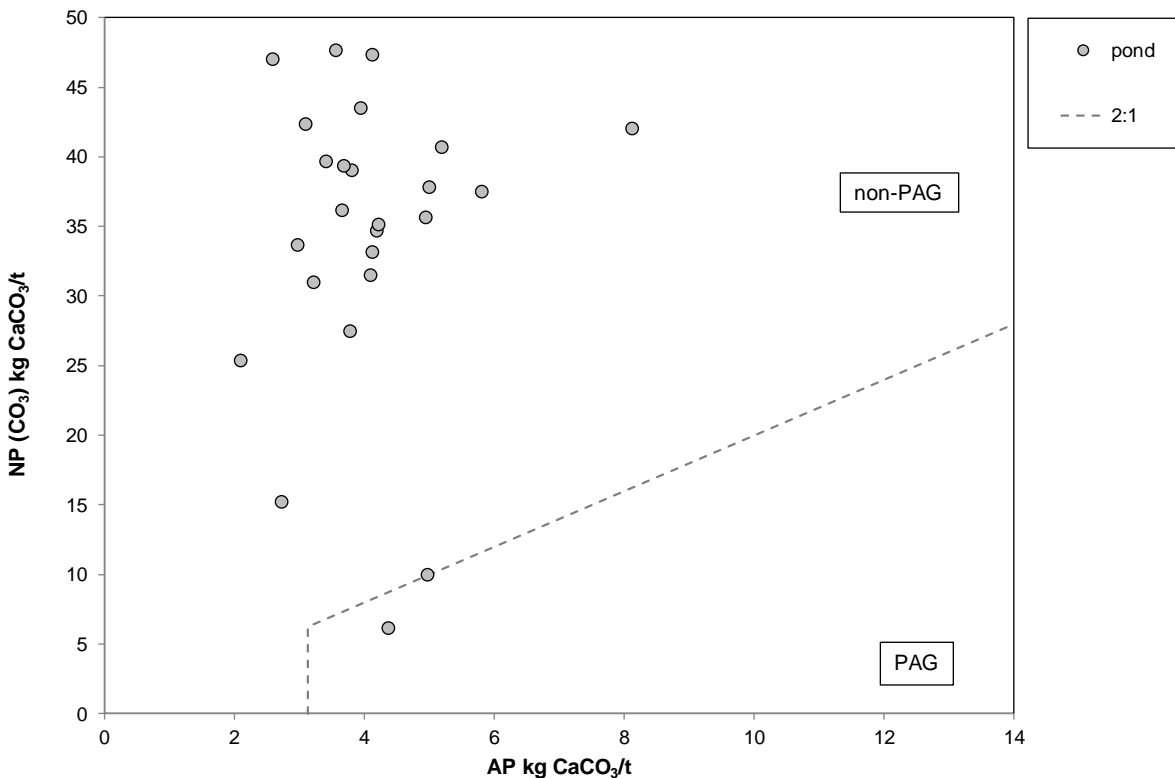


Figure 5: Containment and Sedimentation Pond ARD Assessment.

Note: the vertical dashed line represents 0.1% S threshold.

4.2.2 METAL LEACHING

All regulated elements were analyzed in solid samples are included in Appendix D. Given the general presence of arsenic in the waste rock and background concentrations in the area, results for this element are summarized below.

Arsenic concentrations ranged from a minimum of 12 mg/kg to a maximum of 370 mg/kg, with a median of 59 mg/kg. These values are relatively low compared to waste rock and are below the 8000 mg/Kg values discussed previously. A statistical summary is provided in Table 2 and all results since sampling began in 2019 are provided in Appendix D.

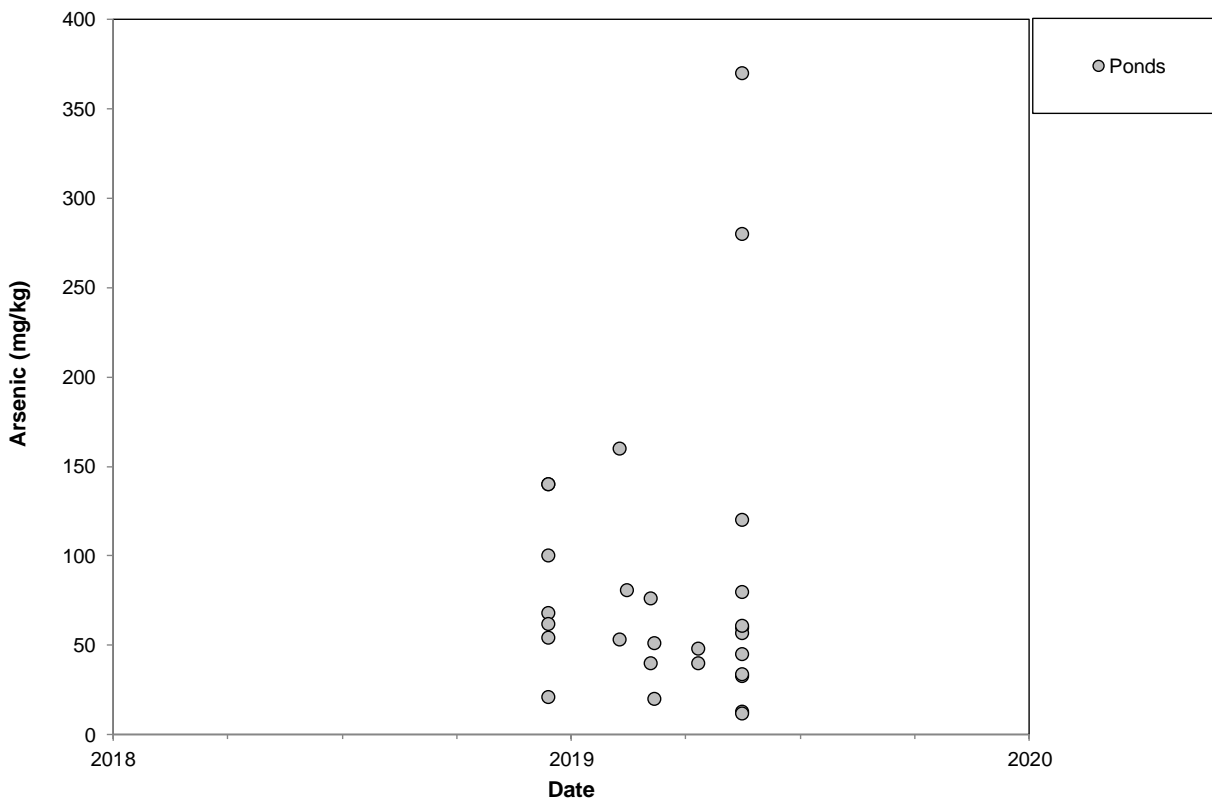


Figure 6: Solid Phase CP and SP Arsenic Concentrations.

5 FILTERED TAILINGS

5.1 ARD POTENTIAL

The potential for ARD from operational tailings samples collected in 2019 was assessed by the same approach described above for waste rock in Section 4.1, whereby NP was provided by carbonate (NP-Ca) and AP was estimated based on total sulphur.

Results are provided in Attachment E with summary statistics provided in Table 3. NP-Ca ranged from 29 to 76 kg CaCO₃/t, with a median of 61 kg CaCO₃/t. Total sulphur ranged from 1.4% to a 2.5%, with a median of 1.7%. The higher sulphur content in the filtered tailings compared to the waste rock and pond rock is a result of the sulphides associated with gold.

Based on the more conservative NP-Ca and total sulphur, all of the samples collected to date are classified as PAG using an NPR ratio of 2 (Figure 7), but with all but two above an NPR of 1. The median NPR was 1.4.

Table 3: Summary Statistics for Filtered Tailings Samples Collected in 2019.

Parameter	Units	Min	P5	P25	Median	Mean	P75	P95	Max
Paste pH	s.u.	8.2	8.2	8.2	8.3	8.5	9.2	8.5	8.6
NP	kg CaCO ₃ /t	78	79	82	85	86	89	95	102
AP	kg CaCO ₃ /t	38	38	43	48	50	54	66	76
Sulphur (total)	% S	1.4	1.4	1.6	1.7	1.8	1.9	2.4	2.5
Acid Leachable SO ₄ -S	% S	0.02	0.02	0.08	0.19	0.19	0.26	0.35	0.50
Carbon (total)	% C	1.2	1.2	1.3	1.4	1.4	1.5	1.6	1.8
Carbonate (CO ₃)	% CO ₃	1.7	2.4	3.4	3.7	3.6	4.1	4.4	4.6
NP-Ca	kg CaCO ₃ /t	29	40	56	61	60	68	74	76
NP-Ca/AP	ratio	0.54	0.69	1.1	1.4	1.2	1.5	1.7	1.9
Arsenic	mg/kg	7900	8260	9450	10000	10581	12000	13700	14000

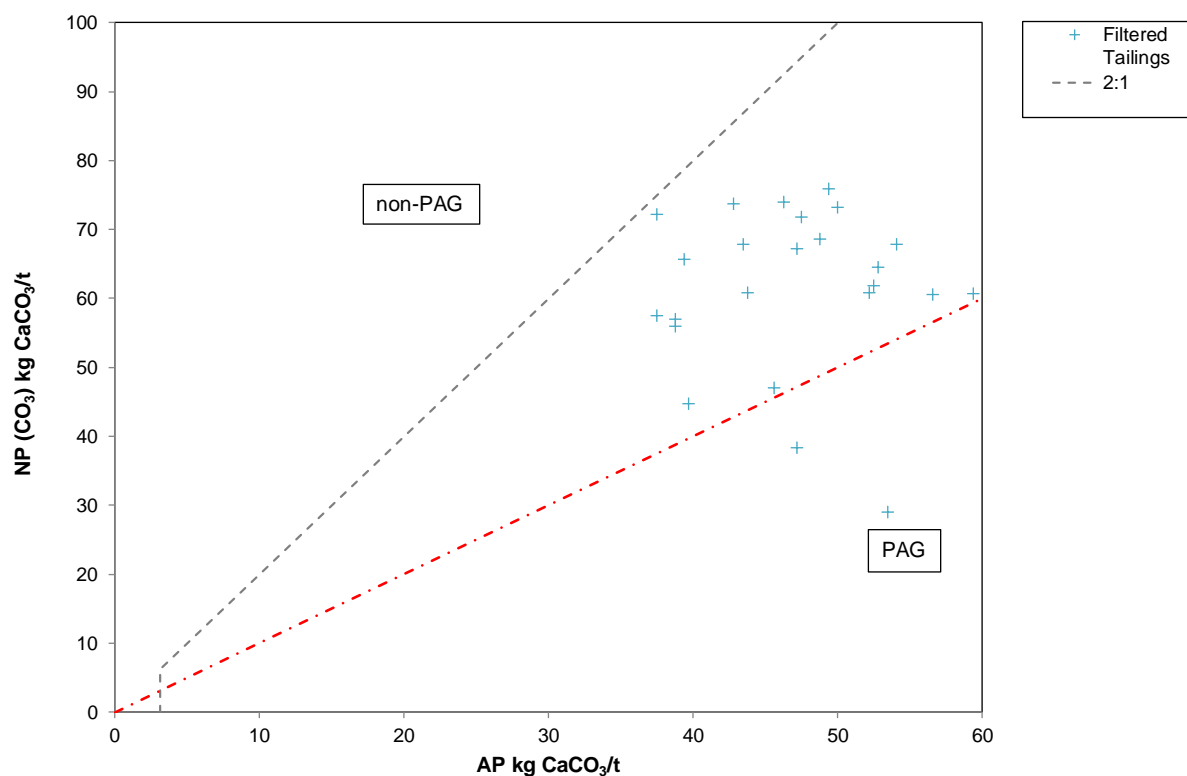


Figure 7: Operational Filtered Tailings ARD classification.

Project prediction studies in the FEIS estimated an NPR of 2.7 for the tailings, although that estimate was done using NP from titration (i.e. modified Sobek), which is slightly less conservative than the approach used herein. When the modified Sobek NP is used for the operational studies, the NPR is 1.8, slightly higher than 1.4.

Despite the PAG classification of the operational tailings samples, Agnico Eagle does not consider the tailings to pose an ARD risk for the site for a number of reasons:

- the tailings are being stored in a facility that will freeze back (i.e. re-develop permafrost) and inhibit water movement within a few years post-operations;
- placement of the tailings includes compacting by a vibrator packer and sloping to shed water off the facility, which will lower oxygen diffusion into the tailings and limit water contact, both established mechanisms to reduce ARD;
- there is enough carbonate in the tailings that ARD may never occur as the actual ratio that ARD onset is expected is much closer to 1.0;
- if ARD could develop, permafrost will develop at least one hundred years before the onset of ARD due to the amount of carbonate in the tailings and arctic climate slowing reaction rates; and
- progressive reclamation is a part of the facility management for closure, meaning a cover will be placed over most of the tailings before the mine ceases operations.

5.2 METAL LEACHING

All regulated elements were analyzed in solid samples are included in Attachment F. Given the presence of arsenic in the ore rock and background concentrations in the area, results for this element are summarized below. A statistical summary is provided in Table 3 and the arsenic results are provided in Figure 8.

Arsenic concentrations ranged from a minimum of 7900 mg/kg to a maximum of 14,000 mg/kg, with a median of 10,000 mg/kg. These values are higher when compared to waste rock and the containment ponds and this is not unexpected as the ore is associated with sulphides, most predominately pyrrhotite and arsenopyrite.

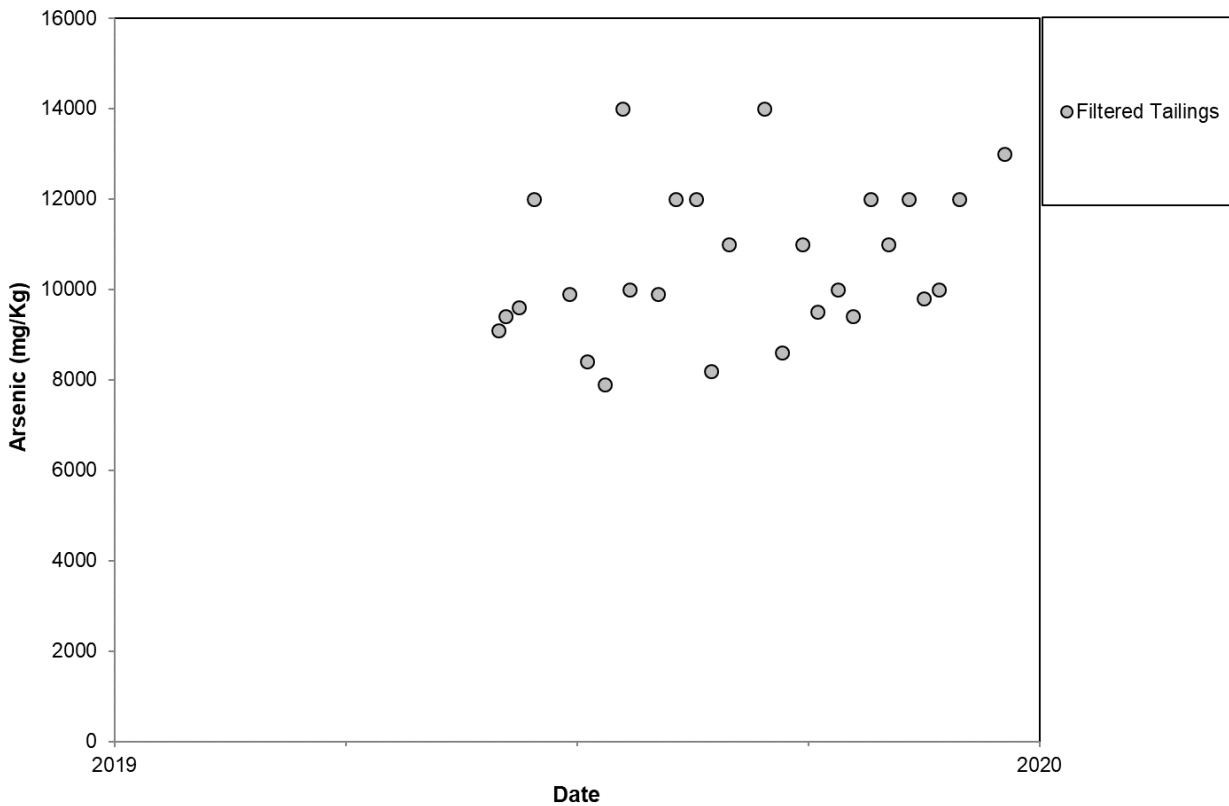


Figure 8: Solid Phase Arsenic Results in 2019 Operational Tailings.

6 CONCLUSIONS

Based on geochemical characterization results obtained to date for the waste rock and containment pond samples, there is low risk for ARD or metal leaching from the materials. Results are within project prediction studies for the project. The filtered tailings results are showing a slightly lower NPR than what was predicted in the baseline study, but are still assessed to pose a low risk for ARD as a result of the management system and close approach developed for the storage facility.

Sample collection for operational waste rock, tailings, and contact water for all mine waste facilities will continue in 2020, with results reviewed internally as soon as they become available to ensure there is no risk to the receiving environment.

APPENDIX A: WASTE ROCK ACID-BASE ACCOUNTING DATA

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
 Lakefield - Ontario - K0L 2H0
 Phone: 705-652-2000 FAX: 705-652-6365

ABA - Modified Sobek**Project : PO#OL-664693****28-January-2019****Agnico Eagle Mines Limited****Attn : Meliadine Coordinator****Date Rec. : 14 January 2019****LR Report: CA15160-JAN19**

Baker Lake
 , Nunavut
 X0C 0A0, Canada

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Phone: (819) 759-3555 x3928

Fax:(819) 759-3663

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: CAML116501- RP1-425-450-M V	6: CAML11650-R P3-375-400-MV	7: CAML116503- FW1-375-W-MV
Paste pH	23-Jan-19	15:35	26-Jan-19	16:02	8.16	8.39	8.92
Fizz Rate [---]	24-Jan-19	08:18	26-Jan-19	16:02	3	3	3
Sample weight [g]	24-Jan-19	08:18	26-Jan-19	16:02	2.01	2.02	2.01
HCl Added [mL]	24-Jan-19	08:18	26-Jan-19	16:02	144.30	166.10	135.60
HCl [Normality]	24-Jan-19	08:18	26-Jan-19	16:02	0.10	0.10	0.10
NaOH [Normality]	24-Jan-19	08:18	26-Jan-19	16:02	0.10	0.10	0.10
NaOH to pH=8.3 [mL]	24-Jan-19	08:18	26-Jan-19	16:02	40.88	67.75	42.71
Final pH	24-Jan-19	08:18	26-Jan-19	16:02	1.73	1.51	1.55
NP [t CaCO ₃ /1000 t]	24-Jan-19	08:18	26-Jan-19	16:02	257	243	231
AP [t CaCO ₃ /1000 t]	---	---	26-Jan-19	16:03	9.06	5.31	5.31
Net NP [t CaCO ₃ /1000 t]	---	---	26-Jan-19	16:03	248	238	226
NP/AP [ratio]	---	---	26-Jan-19	16:03	28.4	45.8	43.5
Sulphur (total) [%]	23-Jan-19	15:02	26-Jan-19	13:10	0.361	0.191	0.256
Acid Leachable SO ₄ -S [%]	---	---	26-Jan-19	13:10	0.07	0.02	0.09
Sulphide [%]	25-Jan-19	15:19	26-Jan-19	13:10	0.29	0.17	0.17
Carbon (total) [%]	23-Jan-19	15:02	26-Jan-19	13:10	3.37	3.38	2.79
Carbonate [%]	25-Jan-19	11:33	25-Jan-19	13:58	14.4	15.4	12.9

Analysis	8: CAML116504- DP1-175-157-K SC	9: CAML116505- FW1-325-W-KS C	10: CAML116506- DP1-325-163-M V	11: CAML116506- DP1-325-163-M V S-DUP
Paste pH	8.13	7.96	8.16	8.20
Fizz Rate [---]	3	3	3	3
Sample weight [g]	1.98	2.01	1.99	1.98
HCl Added [mL]	55.30	53.10	173.20	150.50
HCl [Normality]	0.10	0.10	0.10	0.10
NaOH [Normality]	0.10	0.10	0.10	0.10

Analysis	8: CAMLM116504- DP1-175-157-K SC	9: CAMLM116505- FW1-325-W-KS C	10: CAMLM116506- DP1-325-163-M V	11: CAMLM116506- DP1-325-163-M V S-DUP
NaOH to pH=8.3 [mL]	26.54	21.59	65.21	56.63
Final pH	1.53	1.72	1.50	1.51
NP [t CaCO3/1000 t]	72.6	78.4	271	237
AP [t CaCO3/1000 t]	4.38	9.06	10.6	12.8
Net NP [t CaCO3/1000 t]	68.2	69.3	261	224
NP/AP [ratio]	16.6	8.65	25.5	18.5
Sulphur (total) [%]	0.168	0.317	0.375	0.584
Acid Leachable SO4-S [%]	0.03	0.03	0.04	0.17
Sulphide [%]	0.14	0.29	0.34	0.41
Carbon (total) [%]	1.19	1.17	3.50	3.08
Carbonate [%]	4.47	3.84	15.2	13.0

*NP (Neutralization Potential)

= $50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})$

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Sample IDs taken from bags. List was not provided.

Chris Sullivan



Chris Sullivan, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety



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Agnico Eagle Mines Limited

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MEL

Project : ABA - Modified Sobek

28-March-2019

Date Rec. : 05 March 2019

LR Report: CA15067-MAR19

Reference: ABA - Modified Sobek

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: CAML106701- RP3-400-425-M V	6: CAML106702- FW1-375-W-SE D	7: CAML106703- FW1-275-W-SE D	8: CAML106704- FW1-175-W-MV D	9: CAML106705- DP-1-175-162-M V	10: CAML106706- FW1-150-W-MV V	11: CAML106707- FW1-150-W-MV S-DUP
Sample Date & Time					5-Mar-19	5-Mar-19	5-Mar-19	5-Mar-19	5-Mar-19	5-Mar-19	5-Mar-19
Paste pH [no unit]	19-Mar-19	15:16	20-Mar-19	09:02	8.17	8.12	10.54	8.26	8.38	8.43	8.49
Fizz Rate [no unit]	18-Mar-19	09:54	20-Mar-19	09:02	4	4	4	4	4	4	4
Sample weight [g]	18-Mar-19	09:54	20-Mar-19	09:02	1.98	1.99	1.99	1.98	2.02	2.00	2.03
HCl_add [mL]	19-Mar-19	07:56	20-Mar-19	09:02	137.40	152.00	103.00	137.20	155.70	132.80	124.60
HCl [Normality]	18-Mar-19	09:54	20-Mar-19	09:02	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	18-Mar-19	09:54	20-Mar-19	09:02	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	19-Mar-19	07:56	20-Mar-19	09:02	49.42	63.11	26.92	55.45	61.01	50.75	47.24
Final pH [no unit]	19-Mar-19	07:56	20-Mar-19	09:02	1.64	1.63	1.90	1.61	1.60	1.62	1.62
NP [t CaCO ₃ /1000 t]	19-Mar-19	07:56	20-Mar-19	09:02	222	223	191	206	234	205	190
AP [t CaCO ₃ /1000 t]	20-Mar-19	09:03	20-Mar-19	09:03	6.56	9.06	9.06	5.31	5.00	2.50	15.9
Net NP [t CaCO ₃ /1000 t]	20-Mar-19	09:03	20-Mar-19	09:03	216	214	182	201	229	203	175
NP/AP [ratio]	20-Mar-19	09:03	20-Mar-19	09:03	33.9	24.6	21.1	38.9	46.9	82.0	12.0
S [%]	19-Mar-19	10:36	19-Mar-19	16:13	0.225	0.298	0.319	0.175	0.167	0.115	0.575
Acid Leachable SO ₄ -S [%]	19-Mar-19	16:13	19-Mar-19	16:13	< 0.02	< 0.02	0.03	< 0.02	< 0.02	0.04	0.06
Sulphide [%]	19-Mar-19	14:19	19-Mar-19	16:13	0.21	0.29	0.29	0.17	0.16	0.08	0.51
C [%]	19-Mar-19	10:36	19-Mar-19	11:12	2.72	2.92	2.44	2.72	3.06	2.57	2.45
CO ₃ [%]	19-Mar-19	10:51	19-Mar-19	11:12	11.8	10.8	8.85	11.8	14.1	11.7	10.5
Weight [g]	---	---	---	---	3100	2946	3559	2513	2694	1675	1334

*NP (Neutralization Potential)



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MEL

Project : ABA - Modified Sobek

LR Report : CA15067-MAR19

= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

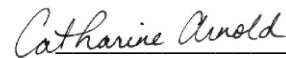

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

No dates samples were provided so the date received has been entered as the date sampled as per the client.



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Project Specialist,
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26-April-2019

Agnico Eagle Mines Limited

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Date Rec. : 03 April 2019
LR Report: CA14157-APR19
Reference: ABA - Modified Sobek

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Date Completed	4: Analysis Time	5: CAMLM106708- FW1-275W-SED	6: CAMLM106709- FW1-325W-SED	7: CAMLM106710- FW1-325W-SED
Sample Date & Time					28-Mar-19	28-Mar-19	28-Mar-19
Paste pH [no unit]	16-Apr-19	09:31	18-Apr-19	16:01	8.29	8.32	8.39
Fizz Rate [no unit]	16-Apr-19	09:31	18-Apr-19	16:01	3	3	4
Sample weight [g]	16-Apr-19	09:31	18-Apr-19	16:01	2.00	2.01	2.04
HCl_add [mL]	16-Apr-19	09:31	18-Apr-19	16:01	49.50	70.40	170.00
HCl [Normality]	16-Apr-19	09:31	18-Apr-19	16:01	0.10	0.10	0.10
NaOH [Normality]	16-Apr-19	09:31	18-Apr-19	16:01	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	16-Apr-19	09:31	18-Apr-19	16:01	24.45	42.65	75.24
Final pH [no unit]	16-Apr-19	09:31	18-Apr-19	16:01	1.59	1.58	1.57
NP [t CaCO3/1000 t]	16-Apr-19	09:31	18-Apr-19	16:01	62.6	69.0	232
AP [t CaCO3/1000 t]	18-Apr-19	16:13	18-Apr-19	16:01	9.38	37.8	14.1
Net NP [t CaCO3/1000 t]	18-Apr-19	16:13	18-Apr-19	16:01	53.2	31.2	218
NP/AP [ratio]	18-Apr-19	16:13	18-Apr-19	16:01	6.68	1.82	16.5
S [%]	16-Apr-19	14:03	17-Apr-19	11:24	0.480	1.24	0.547
Acid Leachable SO4-S [%]	17-Apr-19	11:48	17-Apr-19	11:24	0.18	0.03	0.10
Sulphide [%]	17-Apr-19	11:23	17-Apr-19	11:24	0.30	1.21	0.45
C [%]	16-Apr-19	14:03	17-Apr-19	14:14	0.915	1.16	3.33
CO3 [%]	17-Apr-19	14:12	17-Apr-19	14:14	2.81	3.58	15.0

Analysis	8: CAMLM106710-CAMLM106711- FW1-325W-SEDRP3-400-425MV DUP	9: CAMLM106711- FW1-150W-MV	10: CAMLM106712- FW1-175W-MV	11: CAMLM106713- FW2-400E-SED	12: CAMLM106714- FW2-400E-SED
Sample Date & Time	28-Mar-19	28-Mar-19	28-Mar-19	28-Mar-19	28-Mar-19
Paste pH [no unit]	8.42	8.96	8.74	8.39	7.99
Fizz Rate [no unit]	4	4	4	4	4
Sample weight [g]	1.99	2.05	2.03	1.99	2.00
HCl_add [mL]	163.20	64.00	148.00	152.00	64.00
HCl [Normality]	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	0.10	0.10	0.10	0.10	0.10

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LR Report : CA14157-APR19

Analysis	8: CAMLM106710-CAMLM106711- FW1-325W-SEDRP3-400-425MV DUP	9: CAMLM106712- FW1-150W-MV	10: CAMLM106713- FW1-175W-MV	11: CAMLM106714- FW2-400E-SED	12:
Vol NaOH to pH=8.3 [mL]	69.34	23.32	57.65	62.49	32.37
Final pH [no unit]	1.62	1.78	1.61	1.63	1.62
NP [t CaCO3/1000 t]	236	99.2	222	225	79.1
AP [t CaCO3/1000 t]	10.3	2.81	1.56	2.19	7.50
Net NP [t CaCO3/1000 t]	225	96.4	221	223	71.6
NP/AP [ratio]	22.9	35.3	142	103	10.5
S [%]	0.360	0.128	0.172	0.113	0.308
Acid Leachable SO4-S [%]	0.03	0.04	0.12	0.04	0.07
Sulphide [%]	0.33	0.09	0.05	0.07	0.24
C [%]	3.44	1.16	2.96	3.25	1.22
CO3 [%]	15.7	5.28	14.8	15.8	3.67

*NP (Neutralization Potential)
= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)

Weight of Sample

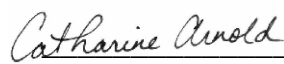
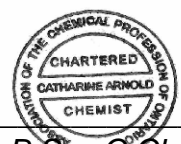
*AP (Acid Potential) = % Sulphide Sulphur x 31.25

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

No dates samples were provided so the date received has been entered as the date sampled as per the client.



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Project Specialist,
Environment, Health & Safety



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MEL

18-June-2019

Date Rec. : 30 April 2019

LR Report: CA15480-APR19

Reference: ABA - Modified Sobek

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: CAML117551- FW1-175-W-MV	6: CAML117552- FW1-150-W-MV	7: CAML117553- FW2-400-E-SED	8: CAML117554- RP3-400-169-M R	9: CAML117555- RP3-400-425-M V	10: CAML117556- FW3-375-E-SED
Sample Date & Time					28-Mar-19	28-Mar-19	28-Mar-19	28-Mar-19	28-Mar-19	28-Mar-19
Paste pH [no unit]	21-May-19	08:40	22-May-19	17:09	8.38	8.06	8.65	8.13	8.20	8.45
Fizz Rate [no unit]	21-May-19	08:40	22-May-19	16:58	4	4	4	4	4	4
Sample weight [g]	21-May-19	08:40	22-May-19	16:58	1.98	2.04	1.99	2.05	2.05	1.98
HCl Added [mL]	21-May-19	08:40	22-May-19	16:58	175.00	196.00	56.00	202.00	183.00	170.00
HCl [Normality]	21-May-19	08:40	22-May-19	16:58	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	21-May-19	08:40	22-May-19	16:58	0.10	0.10	0.10	0.10	0.10	0.10
NaOH to pH=8.3 [mL]	21-May-19	08:40	22-May-19	16:58	79.14	94.34	36.84	98.96	86.96	83.18
Final pH [no unit]	21-May-19	08:40	22-May-19	16:58	1.60	1.59	1.62	1.56	1.59	1.55
NP [t CaCO3/1000 t]	21-May-19	08:40	22-May-19	16:58	242	249	48.1	251	234	219
AP [t CaCO3/1000 t]	23-May-19	14:54	23-May-19	13:28	7.19	8.44	3.75	6.88	4.38	12.2
Net NP [t CaCO3/1000 t]	23-May-19	14:54	23-May-19	13:28	235	241	44.4	244	230	207
NP/AP [ratio]	23-May-19	14:54	23-May-19	13:28	33.7	29.5	12.8	36.6	53.5	18.0
Sulphur (total) [%]	21-May-19	15:09	23-May-19	13:28	0.265	0.342	0.214	0.272	0.176	0.581
Acid Leachable SO4-S [%]	23-May-19	14:53	23-May-19	13:28	0.04	0.07	0.09	0.05	0.04	0.19
Sulphide [%]	23-May-19	13:24	23-May-19	13:28	0.23	0.27	0.12	0.22	0.14	0.39
Carbon (total) [%]	21-May-19	15:09	22-May-19	13:54	3.28	3.47	0.649	3.60	3.34	3.24



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LR Report :

CA15480-APR19

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: CAMLM117551- FW1-175-W-MV	6: CAMLM117552- FW1-150-W-MV	7: CAMLM117553- FW2-400-E-SED	8: CAMLM117554- RP3-400-169-M R	9: CAMLM117555- RP3-400-425-M V	10: CAMLM117556- FW3-375-E-SED
Carbonate [%]	22-May-19	13:51	22-May-19	13:54	14.1	13.8	1.33	14.6	14.0	13.4

Analysis	11: CAMLM117557- FW3-375-E-SED
Sample Date & Time	28-Mar-19
Paste pH [no unit]	8.40
Fizz Rate [no unit]	4
Sample weight [g]	2.01
HCl Added [mL]	182.00
HCl [Normality]	0.10
NaOH [Normality]	0.10
NaOH to pH=8.3 [mL]	89.04
Final pH [no unit]	1.55
NP [t CaCO3/1000 t]	231
AP [t CaCO3/1000 t]	10.0
Net NP [t CaCO3/1000 t]	221
NP/AP [ratio]	23.1
Sulphur (total) [%]	0.445
Acid Leachable SO4-S [%]	0.12
Sulphide [%]	0.32
Carbon (total) [%]	3.39
Carbonate [%]	14.4

*NP (Neutralization Potential)

$$= \frac{50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.



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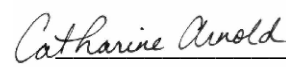

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MEL

LR Report :

CA15480-APR19

No dates samples were provided so the date received has been entered as the date sampled as per the client.



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MEL

Project : PO#676765

16-June-2019

Date Rec. : 27 May 2019

LR Report: CA15536-MAY19

Reference: ABA - Modified Sobek

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: CAML117558-FW1-400-W-SE D	6: CAML117559-DP1-150-152-M V	7: CAML117560-DP1-350-163-M V	8: CAML117561-DP1-400-169-M W	9: CAML117562-FW1-150-E-MV W	10: CAML117563-FW1-150-E-MV W	11: CAML117564-DP1-175-153-M V
Sample Date & Time					NA	NA	NA	NA	NA	NA	NA
Paste pH [no unit]	12-Jun-19	08:31	13-Jun-19	13:06	8.31	8.46	8.52	9.02	8.08	8.06	8.25
Fizz Rate [no unit]	12-Jun-19	08:31	13-Jun-19	13:06	4	4	4	4	4	4	4
Sample weight [g]	12-Jun-19	08:31	13-Jun-19	13:06	1.97	1.98	2.03	2.01	2.03	2.00	2.05
HCl_add [mL]	12-Jun-19	08:31	13-Jun-19	13:06	155.00	161.00	177.00	191.00	160.00	151.00	145.00
HCl [Normality]	12-Jun-19	08:31	13-Jun-19	13:06	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	12-Jun-19	08:31	13-Jun-19	13:06	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	12-Jun-19	08:31	13-Jun-19	13:06	42.13	56.31	67.87	86.71	54.28	40.63	61.22
Final pH [no unit]	12-Jun-19	08:31	13-Jun-19	13:06	1.75	1.70	1.58	1.57	1.64	1.74	1.60
NP [t CaCO3/1000 t]	12-Jun-19	08:31	13-Jun-19	13:06	286	264	269	259	260	276	204
AP [t CaCO3/1000 t]	14-Jun-19	17:22	14-Jun-19	17:22	8.44	6.25	4.38	10.3	2.81	3.44	18.4
Net NP [t CaCO3/1000 t]	14-Jun-19	17:22	14-Jun-19	17:22	278	258	264	249	258	272	186
NP/AP [ratio]	14-Jun-19	17:22	14-Jun-19	17:22	34.0	42.3	61.4	25.2	92.6	80.3	11.1
S [%]	13-Jun-19	09:37	14-Jun-19	17:22	0.268	0.202	0.156	0.325	0.087	0.127	0.636
Acid Leachable SO4-S [%]	14-Jun-19	17:22	14-Jun-19	17:22	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Sulphide [%]	14-Jun-19	11:43	14-Jun-19	17:22	0.27	0.20	0.14	0.33	0.09	0.11	0.59
C [%]	13-Jun-19	09:37	14-Jun-19	08:14	3.55	3.40	3.55	3.68	3.12	3.36	2.83



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MEL

Project : PO#676765

LR Report : CA15536-MAY19

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: CAMLM117558-CAMLM117559-CAMLM117560-CAMLM117561-CAMLM117562-CAMLM117563-CAMLM117564-FW1-400-W-SE DP1-150-152-M DP1-350-163-M DP1-400-169-M FW1-150-E-MV FW1-150-E-MV DP1-175-153-M	6: D	7: V	8: W	9:	10:	11: V
CO3 [%]	13-Jun-19	14:12	14-Jun-19	08:14	16.0	15.2	16.6	15.9	14.8	15.7	10.6

*NP (Neutralization Potential)

= $50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})$

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

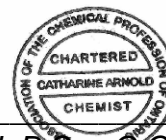
*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Catharine Arnold



Catharine Arnold, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety



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Agnico Eagle Mines Limited

Attn : Meliadine Coordinator

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Canada, X0C 0A0

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MEL

12-July-2019

Date Rec. : 25 June 2019

LR Report: CA15860-JUN19

Reference: ABA - Modified Sobek

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time Completed	3: Analysis DateCompleted	4: Analysis Time Completed	5: CAML117565- DP2-400-137-SE D	6: CAML117566- DP1-275-149-SE D	7: CAML117567- RA1-275W-SED/ MV	8: CAML117568- DP2-375-136-SE D	9: CAML117569- DP2-375-129-SE D	10: CAML117570- DP2-375-129-SE D	11: CAML117571- DP1-225-158-MV D
Sample Date & Time					16-Jun-19	16-Jun-19	16-Jun-19	16-Jun-19	16-Jun-19	16-Jun-19	16-Jun-19
Paste pH [no unit]	08-Jul-19	08:53	09-Jul-19	16:52	8.06	8.72	8.19	8.51	8.52	8.42	8.41
Fizz Rate [no unit]	08-Jul-19	08:53	09-Jul-19	16:52	1	3	3	3	3	3	4
Sample weight [g]	08-Jul-19	08:53	09-Jul-19	16:52	2.04	1.96	1.99	1.95	1.99	2.04	1.97
HCl_add [mL]	08-Jul-19	08:53	09-Jul-19	16:52	20.00	28.00	117.00	45.00	48.00	44.00	90.00
HCl [Normality]	08-Jul-19	08:53	09-Jul-19	16:52	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	08-Jul-19	08:53	09-Jul-19	16:52	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	08-Jul-19	08:53	09-Jul-19	16:52	19.53	12.13	41.80	22.99	21.43	22.12	37.12
Final pH [no unit]	08-Jul-19	08:53	09-Jul-19	16:52	1.00	1.76	1.57	1.59	1.62	1.53	1.58
NP [t CaCO3/1000 t]	08-Jul-19	08:53	09-Jul-19	16:52	1.2	40.5	189	56.4	66.8	53.6	134
AP [t CaCO3/1000 t]	10-Jul-19	09:46	09-Jul-19	16:52	0.62	3.12	8.12	6.56	5.00	5.00	36.6
Net NP [t CaCO3/1000 t]	10-Jul-19	09:46	09-Jul-19	16:52	0.58	37.4	181	49.8	61.8	48.6	97.6
NP/AP [ratio]	10-Jul-19	09:46	09-Jul-19	16:52	1.94	13.0	23.2	8.59	13.4	10.7	3.67
S [%]	03-Jul-19	13:08	04-Jul-19	08:40	< 0.005	0.129	0.259	0.243	0.212	0.244	1.39
Acid Leachable SO4-S [%]	04-Jul-19	10:38	04-Jul-19	08:40	<0.02	0.03	< 0.02	0.03	0.05	0.08	0.22
Sulphide [%]	03-Jul-19	15:24	04-Jul-19	08:40	< 0.02	0.10	0.26	0.21	0.16	0.16	1.17
C [%]	03-Jul-19	13:08	03-Jul-19	15:32	0.011	0.556	2.33	0.791	0.875	0.781	1.93
CO3 [%]	03-Jul-19	15:30	03-Jul-19	15:32	< 0.025	1.77	9.74	3.02	2.08	1.51	6.35

*NP (Neutralization Potential)

= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)



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MEL

LR Report :

CA15860-JUN19

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

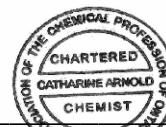
*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Catharine Arnold



Catharine Arnold, B.Sc., C.Chem

Project Specialist,

Environment, Health & Safety



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MEL

07-October-2019

Date Rec. : 13 September 2019

LR Report: CA15235-SEP19

Reference: ABA - Modified Sobek

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: CAML116508- FW2-375E-LJ	6: CAML116509- DP1-425-127S-S ED-LJ	7: CAML116510- DP1-425-127T-S ED-LJ	8: CAML116511- FW2-425-E-SED D/LJ	9: CAML116512- DP1-324-145-SE D/LJ	10: CAML116513- SC1-300E-MV	11: CAML116514- SC1-300E-MV
Sample Date & Time					20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19
Paste pH [no unit]	25-Sep-19	09:16	26-Sep-19	14:07	8.81	8.86	8.66	8.50	5.54	8.78	8.73
Fizz Rate [no unit]	25-Sep-19	09:16	26-Sep-19	14:07	4	4	4	4	4	4	4
Sample weight [g]	25-Sep-19	09:16	26-Sep-19	14:07	1.98	1.99	2.02	2.01	2.01	1.97	1.99
HCl_add [mL]	26-Sep-19	09:17	26-Sep-19	14:07	56.00	40.00	57.00	62.00	57.00	173.00	156.00
HCl [Normality]	25-Sep-19	09:16	26-Sep-19	14:07	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	25-Sep-19	09:16	26-Sep-19	14:07	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	26-Sep-19	09:17	26-Sep-19	14:07	27.07	18.73	32.64	28.35	23.75	78.72	63.53
Final pH [no unit]	26-Sep-19	09:17	26-Sep-19	14:07	1.71	1.91	1.56	1.67	1.72	1.57	1.66
NP [t CaCO3/1000 t]	26-Sep-19	09:17	26-Sep-19	14:07	73.1	53.4	60.3	83.7	82.7	239	232
AP [t CaCO3/1000 t]	04-Oct-19	15:19	04-Oct-19	15:19	12.2	3.12	1.56	3.44	16.2	8.44	7.81
Net NP [t CaCO3/1000 t]	04-Oct-19	15:19	04-Oct-19	15:19	60.9	50.3	58.7	80.3	66.4	231	224
NP/AP [ratio]	04-Oct-19	15:19	04-Oct-19	15:19	6.00	17.1	38.6	24.3	5.09	28.4	29.7
S [%]	03-Oct-19	10:33	04-Oct-19	15:19	0.482	0.132	0.059	0.149	0.620	0.334	0.323
Acid Leachable SO4-S [%]	04-Oct-19	15:19	04-Oct-19	15:19	0.09	0.03	< 0.02	0.04	0.10	0.06	0.07
Sulphide [%]	04-Oct-19	14:48	04-Oct-19	15:19	0.39	0.10	0.05	0.11	0.52	0.27	0.25
C [%]	03-Oct-19	10:33	03-Oct-19	14:14	1.26	0.707	0.818	1.15	1.42	3.44	3.36
CO3 [%]	03-Oct-19	13:55	03-Oct-19	14:14	4.84	2.63	3.25	4.40	4.65	15.9	14.6

*NP (Neutralization Potential)

= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)



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MEL

LR Report :

CA15235-SEP19

Weight of Sample

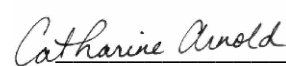

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.



Catharine Arnold, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety



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Agnico Eagle Mines Limited

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MEL

Project : PO#676765

03-December-2019

Date Rec. : 16 August 2019

LR Report: CA15279-AUG19

Reference: ABA - Modified Sobek

Copy: #2

CERTIFICATE OF ANALYSIS

Final Report - Revised

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Analysis CAMLM116515- DP1-425-127S- KSc/LJ	6: Analysis CAMLM116516- DP1-425-127T- KSc/LJ	7: Analysis CAMLM116517- DP3-357-127-K Sc	8: Analysis CAMLM116518- DP2-375-137-K Sc	9: Analysis CAMLM116519- DP1-400-167-M V	10: Analysis CAMLM116520- DP1-400-171-M V	11: Analysis CAMLM116521- DP1-400-171-M V
Sample Date & Time					12-Aug-19	12-Aug-19	12-Aug-19	12-Aug-19	12-Aug-19	12-Aug-19	12-Aug-19
Paste pH [no unit]	04-Sep-19	10:10	06-Sep-19	11:37	8.34	8.29	9.31	8.84	8.49	9.18	9.18
Fizz Rate [no unit]	04-Sep-19	10:10	06-Sep-19	11:37	3	3	1	2	3	3	3
Sample weight [g]	04-Sep-19	10:10	06-Sep-19	11:37	1.96	2.01	1.97	1.96	1.96	2.01	2.01
HCl_add [mL]	05-Sep-19	07:48	06-Sep-19	11:37	66.00	56.00	33.00	47.50	183.00	138.00	177.10
HCl [Normality]	04-Sep-19	10:10	06-Sep-19	11:37	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	04-Sep-19	10:10	06-Sep-19	11:37	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	05-Sep-19	07:48	06-Sep-19	11:37	31.80	26.16	18.91	27.20	82.14	38.57	78.77
Final pH [no unit]	05-Sep-19	07:48	06-Sep-19	11:37	1.68	1.87	1.66	1.66	1.52	1.92	1.57
NP [t CaCO3/1000 t]	05-Sep-19	07:48	06-Sep-19	11:37	87.2	74.2	35.8	51.8	257	247	245
AP [t CaCO3/1000 t]	06-Sep-19	11:37	06-Sep-19	11:37	8.13	8.44	4.06	3.44	6.25	5.63	4.06
Net NP [t CaCO3/1000 t]	06-Sep-19	11:37	06-Sep-19	11:37	79.1	65.8	31.7	48.4	251	242	241
NP/AP [ratio]	06-Sep-19	11:37	06-Sep-19	11:37	10.7	8.79	8.81	15.1	41.2	44.0	60.2
S [%]	05-Sep-19	13:16	06-Sep-19	11:45	0.410	0.411	0.188	0.133	0.262	0.247	0.219
Acid Leachable SO4-S [%]	06-Sep-19	11:37	06-Sep-19	11:45	0.15	0.14	0.06	0.02	0.06	0.07	0.09
Sulphide [%]	06-Sep-19	10:38	06-Sep-19	11:45	0.26	0.27	0.13	0.11	0.20	0.18	0.13
C [%]	05-Sep-19	13:16	06-Sep-19	11:42	1.22	1.02	0.484	0.714	3.31	3.19	3.31
CO3 [%]	05-Sep-19	15:59	06-Sep-19	11:42	3.60	2.92	1.60	2.23	14.6	14.0	13.9

*NP (Neutralization Potential)

= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)



MEL

SGS Canada Inc.

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29-November-2019

Agnico Eagle Mines Limited

Attn : Dan Gorton/Jennifer Brown

Meliadine,
 Canada, X0C 0A0
 Phone: (819) 759-3555, Fax:(819) 759-3663

Date Rec. : 16 September 2019
LR Report: CA15243-SEP19
Reference: ABA - Modified Sobek

Copy: #2

CERTIFICATE OF ANALYSIS

Final Report - Revised

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: CAMLM12802 6-DP1-375-16 3-KSC	6: CAMLM12802 7-DP1-375-16 3-KSC	7: CAMLM12802 8-DP3-375-12 7-KSC
Sample Date & Time					11-Sep-19	11-Sep-19	11-Sep-19
Paste pH [no unit]	03-Oct-19	09:24	04-Oct-19	14:38	8.88	8.80	9.42
Fizz Rate [no unit]	03-Oct-19	09:24	04-Oct-19	14:38	3	3	3
Sample weight [g]	03-Oct-19	09:24	04-Oct-19	14:38	2.02	2.02	1.98
HCl_add [mL]	03-Oct-19	09:24	04-Oct-19	14:38	42.50	37.50	31.00
HCl [Normality]	03-Oct-19	09:24	04-Oct-19	14:38	0.10	0.10	0.10
NaOH [Normality]	03-Oct-19	09:24	04-Oct-19	14:38	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	03-Oct-19	09:24	04-Oct-19	14:38	22.56	22.59	17.28
Final pH [no unit]	03-Oct-19	09:24	04-Oct-19	14:38	1.60	1.52	1.55
NP [t CaCO3/1000 t]	03-Oct-19	09:24	04-Oct-19	14:38	49.3	36.9	34.7
AP [t CaCO3/1000 t]	04-Oct-19	15:19	04-Oct-19	15:19	4.69	3.75	2.50
Net NP [t CaCO3/1000 t]	04-Oct-19	15:19	04-Oct-19	15:19	44.6	33.2	32.2
NP/AP [ratio]	04-Oct-19	15:19	04-Oct-19	15:19	10.5	9.84	13.9
S [%]	03-Oct-19	10:33	04-Oct-19	15:19	0.222	0.211	0.131
Acid Leachable SO4-S [%]	04-Oct-19	15:19	04-Oct-19	15:19	0.07	0.09	0.05
Sulphide [%]	04-Oct-19	14:48	04-Oct-19	15:19	0.15	0.12	0.08
C [%]	03-Oct-19	10:33	03-Oct-19	14:14	0.679	0.529	0.467
CO3 [%]	03-Oct-19	13:55	03-Oct-19	14:14	0.060	2.39	2.10
CO3 [%]	26-Nov-19	15:33	27-Nov-19	12:13	2.56	1.96	1.85

Analysis	8: CAMLM12802 9-DP2-400-13 7-KSC	9: CAMLM12803 0-DP2-400-13 9-KSC	10: CAMLM12803 1-FW2-350-W- KSC	11: CAMLM12803 2-DP1-275-14 8-KSC
Sample Date & Time	11-Sep-19	11-Sep-19	11-Sep-19	11-Sep-19
Paste pH [no unit]	8.91	8.83	8.55	8.28

SGS Canada Inc.

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Phone: 705-652-2000 FAX: 705-652-6365

LR Report : CA15243-SEP19

Analysis	8: CAMLM12802 9-DP2-400-13 7-KSC	9: CAMLM12803 0-DP2-400-13 9-KSC	10: CAMLM12803 1-FW2-350-W- KSC	11: CAMLM12803 2-DP1-275-14 8-KSC
Fizz Rate [no unit]	3	3	3	3
Sample weight [g]	2.02	2.00	2.02	1.98
HCl_add [mL]	42.00	39.00	51.00	73.00
HCl [Normality]	0.10	0.10	0.10	0.10
NaOH [Normality]	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	22.83	21.91	24.97	22.26
Final pH [no unit]	1.58	1.54	1.72	1.79
NP [t CaCO ₃ /1000 t]	47.4	42.7	64.4	128
AP [t CaCO ₃ /1000 t]	2.81	2.50	3.12	9.69
Net NP [t CaCO ₃ /1000 t]	44.6	40.2	61.3	118
NP/AP [ratio]	16.9	17.1	20.6	13.2
S [%]	0.178	0.121	0.145	0.440
Acid Leachable SO ₄ -S [%]	0.09	0.04	0.04	0.13
Sulphide [%]	0.09	0.08	0.10	0.31
C [%]	0.606	0.540	0.930	1.67
CO ₃ [%]	1.74	2.41	3.12	6.44
CO ₃ [%]	2.22	1.95	3.22	6.37

*NP (Neutralization Potential)

= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)

Weight of Sample

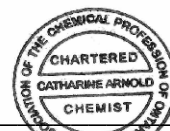
*AP (Acid Potential) = % Sulphide Sulphur x 31.25

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.



Catharine Arnold, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety



SGS Canada Inc.

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Lakefield - Ontario - KOL 2H0

Phone: 705-652-2000 FAX: 705-652-6365

MEL

Project : PO#676765

LR Report : CA15279-AUG19

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

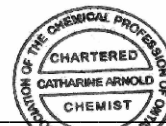
*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Catharine Arnold



Catharine Arnold, B.Sc., C.Chem
Project Specialist,
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Agnico Eagle Mines Limited

Attn : Dan Gorton/Jennifer Brown

Meliadine

, Nunavut

X0C 0A0, Canada

Phone: (819) 759-3555

Fax:(819) 759-3663

MEL

15-November-2019

Date Rec. : 15 October 2019

LR Report: CA15309-OCT19

Reference: ABA - Modified Sobek

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time Completed	3: Analysis DateCompleted	4: Analysis Time DP1-275-148-KS	5: C DP2-325-150-KS	6: C DP2-325-152-KS	7: C FW3-400-E-KSC	8: C DP2-400-140-KS	9: C FW2-350-W-KS	10: C/IF FW2-350-W-KS	11: C/IF S-DUP FW2-350-W-KS
Sample Date & Time				10-Oct-19	10-Oct-19	10-Oct-19	10-Oct-19	10-Oct-19	10-Oct-19	10-Oct-19	10-Oct-19
Paste pH [no unit]	06-Nov-19	09:54	08-Nov-19	13:09	8.65	8.68	9.04	8.65	8.80	8.20	8.45
Fizz Rate [no unit]	06-Nov-19	09:54	08-Nov-19	13:09	4	4	4	4	2	4	4
Sample weight [g]	06-Nov-19	09:54	08-Nov-19	13:09	2.00	2.02	2.01	1.99	2.00	2.04	2.00
HCl_add [mL]	07-Nov-19	07:35	08-Nov-19	13:09	40.00	64.00	64.00	40.00	30.00	65.00	65.00
HCl [Normality]	06-Nov-19	09:54	08-Nov-19	13:09	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	06-Nov-19	09:54	08-Nov-19	13:09	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	07-Nov-19	10:07	08-Nov-19	13:09	19.31	28.70	32.39	18.26	16.01	28.99	30.11
Final pH [no unit]	07-Nov-19	10:07	08-Nov-19	13:09	1.55	1.68	1.52	1.61	1.50	1.66	1.64
NP [t CaCO3/1000 t]	07-Nov-19	10:07	08-Nov-19	13:09	51.7	87.4	78.6	54.6	35.0	88.3	87.2
AP [t CaCO3/1000 t]	08-Nov-19	13:08	08-Nov-19	13:09	2.81	2.81	0.94	0.94	0.94	22.2	22.8
Net NP [t CaCO3/1000 t]	08-Nov-19	13:08	08-Nov-19	13:09	48.9	84.6	77.7	53.7	34.1	66.1	64.4
NP/AP [ratio]	08-Nov-19	13:08	08-Nov-19	13:09	18.4	31.1	83.8	58.2	37.3	3.98	3.82
S [%]	04-Nov-19	13:03	05-Nov-19	16:33	0.227	0.116	0.048	0.044	0.064	0.808	0.822
Acid Leachable SO4-S [%]	05-Nov-19	16:33	05-Nov-19	16:33	0.14	0.03	< 0.02	< 0.02	0.03	0.10	0.09
Sulphide [%]	05-Nov-19	16:02	05-Nov-19	16:33	0.09	0.09	0.03	0.03	0.03	0.71	0.73
C [%]	04-Nov-19	13:03	05-Nov-19	09:12	0.777	1.20	1.02	0.706	0.416	1.30	1.29
CO3 [%]	05-Nov-19	08:32	05-Nov-19	09:12	2.15	5.44	4.70	3.01	1.57	4.32	4.35

*NP (Neutralization Potential)

= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)



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MEL

LR Report :

CA15309-OCT19

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

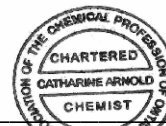
*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Catharine Arnold



Catharine Arnold, B.Sc., C.Chem
Project Specialist,
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MEL

26-November-2019

Date Rec. : 11 November 2019

LR Report: CA15188-NOV19

Reference: ABA - Modified Sobek

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time Completed	3: Analysis DateCompleted	4: Analysis Time	5: CAML118651- FW2-400-141-KDP2-425-136-KSDP2-350-141-KSDP1-175-158-MV Sc	6: CAML118652- c	7: CAML118653- C/IF	8: CAML118654- c	9: CAML118655- PL1-150-W-MV	10: CAML118656- PL1-150-W-MV	11: CAML118657- SDUP
Sample Date & Time					N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paste pH [no unit]	18-Nov-19	09:38	19-Nov-19	14:46	8.77	8.40	8.36	8.59	8.22	8.34	8.35
Fizz Rate [no unit]	18-Nov-19	09:38	19-Nov-19	14:46	2	3	3	3	3	3	3
Sample weight [g]	18-Nov-19	09:38	19-Nov-19	14:46	2.01	2.00	2.00	2.04	2.01	2.04	2.00
HCl_add [mL]	19-Nov-19	07:33	19-Nov-19	14:46	38.50	30.50	43.50	43.00	108.00	141.00	147.50
HCl [Normality]	18-Nov-19	09:38	19-Nov-19	14:46	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	18-Nov-19	09:38	19-Nov-19	14:46	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	19-Nov-19	10:17	19-Nov-19	14:46	15.34	13.69	22.11	23.52	46.08	56.19	57.35
Final pH [no unit]	19-Nov-19	10:17	19-Nov-19	14:46	1.58	1.78	1.69	1.57	1.53	1.55	1.52
NP [t CaCO3/1000 t]	19-Nov-19	10:17	19-Nov-19	14:46	57.6	42.0	53.5	47.8	154	208	225
AP [t CaCO3/1000 t]	19-Nov-19	15:31	19-Nov-19	15:28	0.62	1.25	3.44	12.5	57.5	1.88	1.56
Net NP [t CaCO3/1000 t]	19-Nov-19	15:31	19-Nov-19	15:28	57.0	40.8	50.1	35.3	96.5	206	224
NP/AP [ratio]	19-Nov-19	15:31	19-Nov-19	15:28	92.2	33.6	15.6	3.82	2.68	111	144
S [%]	15-Nov-19	11:09	19-Nov-19	15:28	0.053	0.067	0.148	0.406	2.22	0.105	0.076
Acid Leachable SO4-S [%]	19-Nov-19	15:31	19-Nov-19	15:28	0.03	0.03	0.04	< 0.02	0.38	0.04	0.03
Sulphide [%]	19-Nov-19	14:29	19-Nov-19	15:28	0.02	0.04	0.11	0.40	1.84	0.06	0.05
C [%]	15-Nov-19	11:09	19-Nov-19	15:15	0.723	0.557	0.890	0.811	2.17	2.63	2.88
CO3 [%]	18-Nov-19	15:19	19-Nov-19	15:15	2.99	1.97	3.43	2.83	8.32	11.8	13.2

*NP (Neutralization Potential)

= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)



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MEL

LR Report :

CA15188-NOV19

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

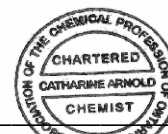
*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Catharine Arnold



Catharine Arnold, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety



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31-December-2019

Date Rec. : 13 December 2019

LR Report: CA15237-DEC19

Reference: ABA - Modified Sobek

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time Completed	3: Analysis DateCompleted	4: Analysis Time	5: CAMLM118658-CAMLM118659- FW1-150W-MV	6: CAMLM118659-CAMLM118660- DP2-375-134-K SC	7: CAMLM118660- DP3-375-146-K SC	8: CAMLM118661-CAMLM118662- FW2-350-W-KS C/LJ	9: CAMLM118662-CAMLM118663- DP3-375-138-K SC/LJ	10: CAMLM118663-CAMLM118664- DP1-175-147-M V	11: CAMLM118664- DP1-175-147-M V
Sample Date & Time					07-Dec-19	07-Dec-19	07-Dec-19	07-Dec-19	07-Dec-19	07-Dec-19	07-Dec-19
Paste pH [no unit]	23-Dec-19	09:23	28-Dec-19	08:22	8.74	8.69	8.71	8.71	8.78	8.60	8.63
Fizz Rate [no unit]	23-Dec-19	09:23	28-Dec-19	08:22	2	1	2	2	2	2	2
Sample weight [g]	23-Dec-19	09:23	28-Dec-19	08:22	2.05	2.00	2.01	2.00	2.04	2.02	2.02
HCl_add [mL]	24-Dec-19	10:03	28-Dec-19	08:22	255.00	28.50	46.50	30.50	41.00	178.00	176.50
HCl [Normality]	23-Dec-19	09:23	28-Dec-19	08:22	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	23-Dec-19	09:23	28-Dec-19	08:22	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	24-Dec-19	01:30	28-Dec-19	08:22	102	13.28	17.59	10.93	18.28	70.22	69.65
Final pH [no unit]	24-Dec-19	10:03	28-Dec-19	08:22	1.56	1.85	1.81	2.00	1.65	1.57	1.58
NP [t CaCO3/1000 t]	24-Dec-19	01:30	28-Dec-19	08:22	372	38.0	71.9	48.9	55.7	267	264
AP [t CaCO3/1000 t]	30-Dec-19	09:27	28-Dec-19	08:22	4.38	3.44	1.56	3.44	2.81	13.1	11.9
Net NP [t CaCO3/1000 t]	30-Dec-19	09:28	28-Dec-19	08:22	368	34.6	70.3	45.5	52.9	254	253
NP/AP [ratio]	30-Dec-19	09:28	28-Dec-19	08:22	85.1	11.1	46.0	14.2	19.8	20.3	22.3
S [%]	18-Dec-19	15:29	19-Dec-19	13:20	0.135	0.136	0.072	0.263	0.170	0.430	0.394
Acid Leachable SO4-S [%]	19-Dec-19	13:40	19-Dec-19	13:20	< 0.02	0.03	0.02	0.15	0.08	< 0.02	< 0.02
Sulphide [%]	19-Dec-19	13:17	19-Dec-19	13:20	0.14	0.11	0.05	0.11	0.09	0.42	0.38
C [%]	18-Dec-19	15:29	19-Dec-19	13:20	4.96	0.528	1.00	0.690	0.781	3.39	3.37
CO3 [%]	19-Dec-19	09:03	19-Dec-19	13:20	22.0	1.95	3.32	2.23	2.77	15.3	14.8

*NP (Neutralization Potential)

= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)



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MEL

LR Report :

CA15237-DEC19

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

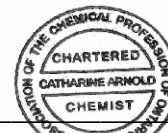
*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Catharine Arnold



Catharine Arnold, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety

APPENDIX B: WASTE ROCK COMPOSITION DATA



SGS Canada Inc.

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2H0
Phone: 705-652-2000 FAX: 705-652-6365

Agnico Eagle Mines Limited

Attn : Eric Marcil

Meadowbank Division 20, Route 395
Cadillac, QC
J0Y 1C0, Canada

Phone: (819) 759-3644

Fax:(819) 759-3663

Project : PO#OL-676765

25-January-2019

Date Rec. : 14 January 2019

LR Report: CA15161-JAN19

Reference: PO#OL-676765

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report


Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAMLM116501- RP1-425-450-M V	6: CAMLM11650-R P3-375-400-MV	7: CAMLM116503- FW1-375-W-MVDP1-175-157-KS	8: CAMLM116504- FW1-325-W-KS C	9: CAMLM116505- DP1-325-163-M C	10: CAMLM116506- DP1-325-163-M V	11: CAMLM116506- DP1-325-163-M V S-DUP
Silver [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Aluminum [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	62000	64000	67000	71000	48000	59000	66000
Arsenic [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	45	680	16	570	91	96	160
Barium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	100	96	88	540	680	120	130
Beryllium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	0.42	0.52	0.30	1.2	1.5	0.45	0.53
Bismuth [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	< 0.09	< 0.09	< 0.09	0.18	0.36	< 0.09	0.099
Calcium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	83000	81000	95000	23000	29000	110000	90000
Cadmium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	0.35	0.27	0.14	0.11	0.14	0.25	0.21
Cobalt [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	47	46	47	12	9.3	53	62
Chromium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	160	110	140	33	42	110	110
Copper [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	100	84	110	22	24	140	140
Iron [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	80000	68000	73000	64000	160000	69000	76000
Potassium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	5700	9200	3500	16000	9900	7300	7800
Lithium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	42	33	55	24	21	36	38
Magnesium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	33000	21000	24000	8800	8600	18000	19000
Manganese [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	1600	2000	2000	320	360	2200	2000
Molybdenum [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	0.32	0.21	0.25	0.77	2.7	0.33	0.22
Sodium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	21000	18000	20000	26000	7300	14000	17000
Nickel [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	120	120	120	25	23	100	110

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAMLM116501- RP1-425-450-M V	6: CAMLM11650-R P3-375-400-MV	7: CAMLM116503- FW1-375-W-MVDP1-175-157-KS	8: CAMLM116504- FW1-325-W-KS C	9: CAMLM116505- DP1-325-163-M C	10: CAMLM116506- DP1-325-163-M V	11: CAMLM116506- DP1-325-163-M V S-DUP
Phosphorus [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	230	230	260	390	670	230	270
Lead [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	24	21	11	39	59	9.1	10
Antimony [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Tin [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Strontium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	140	130	110	280	480	150	160
Titanium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	2800	4400	3900	2100	1600	4400	5100
Thallium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	0.23	0.35	0.19	0.43	0.27	0.36	0.39
Uranium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	0.089	0.087	0.068	1.2	1.0	0.20	0.11
Vanadium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	230	260	240	52	78	240	270
Yttrium [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	6.3	6.0	16	5.1	7.0	11	9.5
Zinc [µg/g]	23-Jan-19	13:46	24-Jan-19	10:42	100	110	100	68	59	93	110

Sample IDs taken from bags. List was not provided.

Chris Sullivan

Chris Sullivan, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety





SGS Canada Inc.

P.O. Box 4300 - 185 Concession St.

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Phone: 705-652-2000 FAX: 705-652-6365

Agnico Eagle Mines Limited

Attn : Meliadine Coordinator

Baker Lake,

Canada, X0C 0A0

Phone: (819) 759-3555 x3928, Fax:(819) 759-3663

MEL

09-May-2019

Date Rec. : 30 April 2019

LR Report: CA15481-APR19

Copy: #1

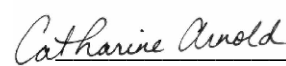

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAMLM117551- FW1-175-W-MV	6: CAMLM117552- FW1-150-W-MV	7: CAMLM117553- FW2-400-E-SED	8: CAMLM117554- RP3-400-169-M R	9: CAMLM117555- RP3-400-425-M V	10: CAMLM117556- FW3-375-E-SED	11: CAMLM117557- FW3-375-E-SED
Sample Date & Time					28-Mar-19	28-Mar-19	28-Mar-19	28-Mar-19	28-Mar-19	28-Mar-19	28-Mar-19
Ag [µg/g]	08-May-19	15:40	09-May-19	09:40	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	08-May-19	15:40	09-May-19	09:40	59000	54000	71000	58000	61000	56000	63000
As [µg/g]	08-May-19	15:40	09-May-19	09:40	210	1500	520	860	200	880	1100
Ba [µg/g]	08-May-19	15:40	09-May-19	09:40	230	110	680	110	110	100	110
Be [µg/g]	08-May-19	15:40	09-May-19	09:40	0.36	0.56	1.1	0.44	0.40	0.41	0.44
Bi [µg/g]	08-May-19	15:40	09-May-19	09:40	< 0.09	< 0.09	0.14	0.11	< 0.09	< 0.09	< 0.09
Ca [µg/g]	08-May-19	15:40	09-May-19	09:40	79000	87000	13000	89000	80000	81000	81000
Cd [µg/g]	08-May-19	15:40	09-May-19	09:40	0.12	0.19	0.12	0.21	0.18	0.19	0.16
Co [µg/g]	08-May-19	15:40	09-May-19	09:40	51	44	20	47	52	47	50
Cr [µg/g]	08-May-19	15:40	09-May-19	09:40	150	95	180	97	210	93	210
Cu [µg/g]	08-May-19	15:40	09-May-19	09:40	110	97	44	130	130	120	110
Fe [µg/g]	08-May-19	15:40	09-May-19	09:40	71000	72000	57000	73000	78000	67000	74000
K [µg/g]	08-May-19	15:40	09-May-19	09:40	7300	7800	22000	8900	10000	7300	8500
Li [µg/g]	08-May-19	15:40	09-May-19	09:40	39	29	25	32	35	32	37
Mg [µg/g]	08-May-19	15:40	09-May-19	09:40	23000	21000	14000	23000	28000	17000	20000
Mn [µg/g]	08-May-19	15:40	09-May-19	09:40	1900	2000	390	2000	1700	1900	2000
Mo [µg/g]	08-May-19	15:40	09-May-19	09:40	0.29	0.39	1.7	0.35	0.31	0.72	0.47
Na [µg/g]	08-May-19	15:40	09-May-19	09:40	16000	17000	15000	15000	14000	15000	15000
Ni [µg/g]	08-May-19	15:40	09-May-19	09:40	120	120	70	120	140	100	130
P [µg/g]	08-May-19	15:40	09-May-19	09:40	220	240	470	230	230	240	270

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAMLM117551- FW1-175-W-MV	6: CAMLM117552- FW1-150-W-MV	7: CAMLM117553- FW2-400-E-SED	8: CAMLM117554- RP3-400-169-M R	9: CAMLM117555- RP3-400-425-M V	10: CAMLM117556- FW3-375-E-SED	11: CAMLM117557- FW3-375-E-SED
Pb [µg/g]	08-May-19	15:40	09-May-19	09:40	12	45	17	14	13	10	12
Sb [µg/g]	08-May-19	15:40	09-May-19	09:40	< 0.8	0.97	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Se [µg/g]	08-May-19	15:40	09-May-19	09:40	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Sn [µg/g]	08-May-19	15:40	09-May-19	09:40	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	08-May-19	15:40	09-May-19	09:40	140	170	230	130	140	120	140
Ti [µg/g]	08-May-19	15:40	09-May-19	09:40	3000	3800	3100	3900	4200	3500	3600
Tl [µg/g]	08-May-19	15:40	09-May-19	09:40	0.29	0.30	0.51	0.26	0.29	0.27	0.33
U [µg/g]	08-May-19	15:40	09-May-19	09:40	0.091	0.15	1.6	0.10	0.065	0.11	0.13
V [µg/g]	08-May-19	15:40	09-May-19	09:40	230	220	110	240	260	220	250
Y [µg/g]	08-May-19	15:40	09-May-19	09:40	6.1	8.6	7.4	6.9	8.7	8.1	7.4
Zn [µg/g]	08-May-19	15:40	09-May-19	09:40	82	83	81	97	95	77	92

Chromium may not recover completely depending on sample matrix.



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Agnico Eagle Mines Limited

Attn : Meliadine Coordinator

Baker Lake,

Canada, X0C 0A0

Phone: (819) 759-3555 x3928, Fax:(819) 759-3663

MEL

28-March-2019

Date Rec. : 05 March 2019
LR Report: CA15068-MAR19

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAML106701- RP3-400-425-M V	6: CAML106702- FW1-375-W-SE D	7: CAML106703- FW1-275-W-SE D	8: CAML106704- FW1-175-W-MV DP-1-175-162-M V	9: CAML106705- FW1-150-W-MV V	10: CAML106706- FW1-150-W-MV S-DUP	11:
Sample Date & Time					05-Mar-19	05-Mar-19	05-Mar-19	05-Mar-19	05-Mar-19	05-Mar-19	05-Mar-19
Ag [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	72000	74000	72000	69000	66000	73000	66000
As [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	140	330	240	1200	33	56	47
Ba [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	66	160	260	410	450	30	31
Be [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	0.46	0.50	0.61	0.47	0.39	0.31	0.33
Bi [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	< 0.09	0.11	0.18	< 0.09	< 0.09	< 0.09	< 0.09
Ca [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	81000	77000	69000	68000	76000	75000	73000
Cd [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	0.17	0.17	0.19	0.23	0.14	0.097	0.12
Co [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	55	51	46	44	50	50	50
Cr [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	150	180	140	150	120	110	120
Cu [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	170	120	100	76	120	92	120
Fe [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	80000	74000	67000	78000	78000	80000	73000
K [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	4400	8800	11000	7200	5100	3100	3300
Li [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	39	38	33	40	46	39	34
Mg [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	25000	25000	22000	25000	26000	21000	18000
Mn [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	1900	1800	1500	1700	1800	1800	1800
Mo [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	0.28	1.3	0.68	0.82	0.21	0.15	0.21
Na [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	23000	19000	20000	17000	13000	20000	17000
Ni [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	150	120	100	110	120	110	100



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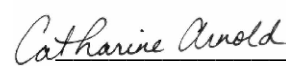
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LR Report :

CA15068-MAR19

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAMLM106701- RP3-400-425-M V	6: CAMLM106702- FW1-375-W-SE D	7: CAMLM106703- FW1-275-W-SE D	8: CAMLM106704- FW1-175-W-MV DP-1-175-162-M V	9: CAMLM106705- FW1-150-W-MV FW1-150-W-MV S-DUP	10: CAMLM106706- FW1-150-W-MV FW1-150-W-MV S-DUP	11: CAMLM106707- FW1-150-W-MV FW1-150-W-MV S-DUP
P [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	220	290	320	300	230	290	260
Pb [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	7.0	18	18	16	12	3.8	4.6
Sb [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	1.1	< 0.8	< 0.8	0.94	< 0.8	< 0.8	< 0.8
Se [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	0.72
Sn [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	140	140	260	180	160	120	130
Ti [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	4500	3800	3600	3900	3600	4800	4500
Tl [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	0.15	0.27	0.31	0.25	0.21	0.11	0.13
U [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	0.12	0.18	0.36	0.22	0.066	0.080	0.061
V [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	280	240	220	260	260	290	260
Y [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	11	11	9.5	8.5	7.1	10	9.3
Zn [µg/g]	18-Mar-19	17:16	19-Mar-19	10:39	110	130	95	110	100	99	85

No dates sampled were provided so the date received has been entered as the date sampled as per the client.

Catharine Arnold

 Catharine Arnold, B.Sc., C.Chem
 Project Specialist,
 Environment, Health & Safety



MEL

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26-April-2019

Agnico Eagle Mines Limited

Attn : Meliadine Coordinator

Date Rec. : 03 April 2019
LR Report: CA14158-APR19

Baker Lake,
Canada, X0C 0A0
Phone: (819) 759-3555 x3928, Fax:(819) 759-3663

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Approval Date	4: Analysis Approval Time	5: CAML106708- FW1-275W-SED	6: CAML106709- FW1-325W-SED	7: CAML106710- FW1-325W-SED	8: CAML106711- FW1-325W-SED DUP	9: CAML106711- FW1-400-425MV
Sample Date & Time					28-Mar-19	28-Mar-19	28-Mar-19	28-Mar-19	28-Mar-19
Ag [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	74000	48000	63000	65000	65000
As [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	760	51	440	900	62
Ba [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	1000	420	120	150	16
Be [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	1.3	0.83	0.47	0.60	0.33
Bi [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	0.36	0.28	0.30	0.27	0.56
Ca [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	18000	23000	79000	76000	92000
Cd [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	0.12	< 0.02	0.23	0.23	0.060
Co [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	26	8.8	58	46	50
Cr [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	92	34	120	130	220
Cu [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	52	26	150	110	130
Fe [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	81000	160000	87000	79000	80000
K [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	19000	7900	10000	12000	750
Li [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	21	19	31	30	17
Mg [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	14000	9700	19000	19000	32000
Mn [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	470	370	2500	2300	1400
Mo [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	1.8	5.0	0.49	0.60	0.51
Na [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	18000	3900	15000	15000	13000
Ni [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	66	19	100	110	110
P [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	690	780	230	260	190
Pb [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	50	4.1	13	13	4.1
Sb [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	< 0.8	< 0.8	< 0.8	< 0.8	2.0
Se [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Sn [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	260	220	140	150	230
Ti [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	3000	1600	4400	4700	4400
Tl [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	0.41	0.18	0.35	0.42	< 0.02
U [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	1.4	1.0	0.078	0.10	0.094
V [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	110	40	250	250	240
Y [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	8.9	7.7	8.2	8.1	15
Zn [µg/g]	16-Apr-19	16:22	17-Apr-19	16:02	110	59	140	130	66

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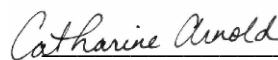
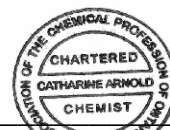
P.O. Box 4300 - 185 Concession St.

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LR Report : CA14158-APR19

Analysis	10:	11:	12:
	CAMLM106712- FW1-150W-MV	CAMLM106713- FW1-175W-MV	CAMLM106714- FW2-400E-SED
Sample Date & Time	28-Mar-19	28-Mar-19	28-Mar-19
Ag [µg/g]	< 1	< 1	< 1
Al [µg/g]	65000	62000	45000
As [µg/g]	53	140	280
Ba [µg/g]	120	190	820
Be [µg/g]	0.37	0.47	0.88
Bi [µg/g]	0.15	0.12	0.32
Ca [µg/g]	79000	70000	26000
Cd [µg/g]	0.070	0.11	0.053
Co [µg/g]	54	46	10
Cr [µg/g]	100	100	40
Cu [µg/g]	86	65	13
Fe [µg/g]	78000	61000	150000
K [µg/g]	6500	7400	8100
Li [µg/g]	45	34	22
Mg [µg/g]	21000	20000	9700
Mn [µg/g]	2000	1700	420
Mo [µg/g]	0.30	0.43	1.3
Na [µg/g]	11000	17000	8800
Ni [µg/g]	100	97	26
P [µg/g]	270	260	650
Pb [µg/g]	4.4	8.7	44
Sb [µg/g]	< 0.8	< 0.8	< 0.8
Se [µg/g]	< 0.7	< 0.7	< 0.7
Sn [µg/g]	< 6	< 6	< 6
Sr [µg/g]	110	170	390
Ti [µg/g]	3700	2900	2000
Tl [µg/g]	0.30	0.30	0.21
U [µg/g]	0.068	0.22	1.2
V [µg/g]	260	200	47
Y [µg/g]	11	6.3	7.5
Zn [µg/g]	100	80	64

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Project Specialist,
Environment, Health & Safety



SGS Canada Inc.

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Agnico Eagle Mines Limited

Attn : Dan Gorton/Jennifer Brown

Meliadine

, Nunavut

X0C 0A0, Canada

Phone: (819) 759-3555

Fax:(819) 759-3663

MEL

Project : PO#676765

16-June-2019

Date Rec. : 27 May 2019

LR Report: CA15537-MAY19

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: Analysis FW1-400-W-SE D	6: Analysis CAML117558-CAML117559-CAML117560-CAML117561- DP1-150-152-M V	7: Analysis DP1-350-163-M V	8: Analysis DP1-400-169-M W	9: Analysis FW1-150-E-MV FW1-150-E-MV	10: Analysis DP1-175-153-M V	11: Analysis CAML117564- V
Sample Date & Time					NA	NA	NA	NA	NA	NA	NA
Ag [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	60000	66000	61000	57000	57000	56000	65000
As [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	54	160	190	2300	7.0	6.4	5900
Ba [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	90	140	85	120	62	69	560
Be [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	0.43	0.47	0.33	0.80	0.30	0.29	1.1
Bi [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.14
Ca [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	110000	88000	94000	82000	100000	110000	68000
Cd [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	0.20	0.21	0.096	0.18	0.13	0.15	0.20
Co [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	60	73	45	44	50	49	45
Cr [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	120	180	170	130	160	160	200
Cu [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	160	160	100	91	120	140	88
Fe [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	70000	64000	66000	61000	74000	74000	78000
K [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	7300	6500	6900	13000	3200	3600	16000
Li [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	47	52	53	30	53	52	40
Mg [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	17000	26000	23000	19000	25000	25000	19000
Mn [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	2500	1700	1700	1900	2300	2400	1600
Mo [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	0.31	1.5	0.26	0.94	0.26	0.26	2.6



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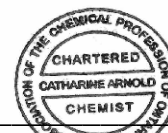
Project : PO#676765

LR Report : CA15537-MAY19

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAMLM117558-CAMLM117559-CAMLM117560-CAMLM117561- FW1-400-W-SE DP1-150-152-M DP1-350-163-M DP1-400-169-M	6: CAMLM117559-CAMLM117560-CAMLM117561- FW1-400-W-SE DP1-150-152-M DP1-350-163-M DP1-400-169-M	7: CAMLM117560-CAMLM117561- FW1-400-W-SE DP1-150-152-M DP1-350-163-M DP1-400-169-M	8: CAMLM117561- FW1-400-W-SE DP1-150-152-M DP1-350-163-M DP1-400-169-M	9: CAMLM117562- FW1-150-E-MV	10: CAMLM117563- FW1-150-E-MV	11: CAMLM117564- DP1-175-153-M
					D	V	V	W			V
Na [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	15000	15000	14000	14000	17000	16000	9100
Ni [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	110	130	110	100	140	130	100
P [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	270	260	260	230	190	190	360
Pb [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	7.9	25	5.7	13	9.0	9.1	19
Sb [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	0.81	< 0.8	< 0.8	1.2	< 0.8	< 0.8	2.1
Se [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Sn [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	150	140	170	140	130	130	170
Ti [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	4700	1900	3400	3600	3400	3200	3500
Tl [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	0.26	0.25	0.33	0.44	0.12	0.14	0.59
U [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	0.16	0.17	0.084	0.077	0.12	0.11	0.54
V [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	260	250	230	220	240	230	210
Y [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	15	7.1	8.3	7.9	12	12	9.1
Zn [µg/g]	11-Jun-19	21:00	12-Jun-19	10:20	100	97	100	95	92	88	120

Sample IDs taken from bags. List was not provided.
Chromium may not recover completely depending on sample matrix.

Catharine Arnold
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Project Specialist,
Environment, Health & Safety





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MEL

12-July-2019

Date Rec. : 25 June 2019

LR Report: CA15861-JUN19

Copy: #1

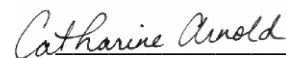
CERTIFICATE OF ANALYSIS

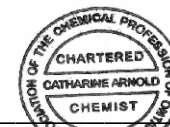
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAML117565- DP2-400-137-SE D	6: CAML117566- DP1-275-149-SE D	7: CAML117567- RA1-275W-SED/ MV	8: CAML117568- DP2-375-136-SE D	9: CAML117569- DP2-375-129-SE D	10: CAML117570- DP2-375-129-SE D	11: CAML117571- DP1-225-158-MV D
Sample Date & Time					16-Jun-19	16-Jun-19	16-Jun-19	16-Jun-19	16-Jun-19	16-Jun-19	16-Jun-19
Ag [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	50000	75000	62000	59000	69000	68000	58000
As [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	4.1	140	210	97	640	930	970
Ba [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	34	490	1300	430	630	640	290
Be [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	2.7	1.2	0.88	0.98	1.3	1.3	0.85
Bi [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	0.23	0.13	0.17	0.12	0.34	0.28	0.26
Ca [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	3600	14000	76000	20000	19000	15000	42000
Cd [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	0.059	0.093	0.17	0.066	0.18	0.15	0.36
Co [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	0.40	16	41	12	22	23	37
Cr [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	40	74	140	44	100	93	110
Cu [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	8.9	35	90	71	50	67	130
Fe [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	5600	63000	72000	94000	53000	48000	82000
K [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	35000	18000	7800	11000	20000	21000	13000
Li [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	17	31	50	25	28	26	39
Mg [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	410	12000	20000	9100	15000	13000	17000
Mn [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	240	320	1800	370	440	380	1000
Mo [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	5.3	1.2	0.66	0.92	1.6	2.2	1.3
Na [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	20000	21000	15000	17000	17000	19000	12000
Ni [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	1.8	47	94	31	73	71	78
P [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	22	480	460	560	500	510	560

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAML117565- DP2-400-137-SE D	6: CAML117566- DP1-275-149-SE D	7: CAML117567- RA1-275W-SED/ MV	8: CAML117568- DP2-375-136-SE D	9: CAML117569- DP2-375-129-SE D	10: CAML117570- DP2-375-129-SE D	11: CAML117571- DP1-225-158-MV D
Pb [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	25	15	44	13	30	28	21
Sb [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Se [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	0.97
Sn [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	19	230	340	270	300	290	170
Ti [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	430	2500	3900	2200	3300	3300	4100
Tl [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	0.65	0.32	0.21	0.17	0.44	0.46	0.42
U [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	4.3	1.5	0.49	0.98	1.5	1.6	0.82
V [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	1.7	92	200	60	110	110	210
Y [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	14	6.1	15	5.6	7.1	6.5	8.0
Zn [µg/g]	05-Jul-19	14:00	05-Jul-19	15:31	22	78	120	65	100	96	250

Chromium may not recover completely depending on sample matrix.


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MEL

07-October-2019

Date Rec. : 13 September 2019

LR Report: CA15236-SEP19

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAML116508- FW2-375E-LJ	6: CAML116509- DP1-425-127S- ED-LJ	7: CAML116510- DP1-425-127T- ED-LJ	8: CAML116511- FW2-425-E-SED	9: CAML116512- DP1-324-145- SE D/LJ	10: CAML116513- SC1-300E-MV	11: CAML116514- SC1-300E-MV
Sample Date & Time					20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19	20-Jul-19
Ag [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	28000	68000	74000	73000	34000	70000	71000
As [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	180	8.2	37	150	12	49	49
Ba [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	280	490	510	1200	170	43	52
Be [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	1.1	1.2	1.4	1.3	0.66	0.34	0.36
Bi [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	0.14	0.15	0.13	0.15	0.15	< 0.09	< 0.09
Ca [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	31000	22000	26000	33000	32000	78000	76000
Cd [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	0.13	0.060	0.080	0.090	0.15	0.13	0.13
Co [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	4.4	8.8	9.5	12	5.6	51	49
Cr [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	16	24	23	29	15	97	100
Cu [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	16	31	14	27	26	88	96
Fe [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	260000	100000	85000	74000	230000	71000	72000
K [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	7000	11000	12000	15000	4700	3900	3900
Li [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	13	36	33	32	9.8	41	42
Mg [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	8700	8400	8300	8500	8300	22000	22000
Mn [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	450	300	350	480	510	1900	1900
Mo [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	1.2	0.93	0.78	0.67	1.2	0.24	0.25
Na [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	850	21000	28000	28000	8500	28000	28000
Ni [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	11	20	21	25	11	120	120
P [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	800	460	450	510	580	220	230



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MEL

Project : PO#676765

03-December-2019

Date Rec. : 16 August 2019

LR Report: CA15280-AUG19

Copy: #2

CERTIFICATE OF ANALYSIS

Final Report - Revised

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Approval Date	4: Analysis Approval Time	5: CAML116515- DP1-425-127S-K Sc/LJ	6: CAML116516- DP1-425-127T-K Sc/LJ	7: CAML116517- DP3-357-127-KS c	8: CAML116518- DP2-375-137-KSDP c	9: CAML116519- DP1-400-167-MVDP c	10: CAML116520- DP1-400-171-MVDP c	11: CAML116521- DP1-400-171-MVDP c
Sample Date & Time					12-Aug-19	12-Aug-19	12-Aug-19	12-Aug-19	12-Aug-19	12-Aug-19	12-Aug-19
Ag [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	45000	51000	87000	74000	34000	72000	67000
As [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	38	360	300	510	75	140	120
Ba [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	240	160	660	520	90	110	110
Be [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	0.55	0.53	1.0	0.97	0.20	0.46	0.48
Bi [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	0.13	0.15	0.61	0.16	< 0.09	0.22	< 0.09
Ca [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	33000	28000	11000	17000	47000	92000	90000
Cd [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	0.12	0.11	0.10	0.078	0.088	0.19	0.16
Co [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	7.3	7.9	18	9.6	22	49	45
Cr [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	67	62	97	45	60	130	120
Cu [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	24	26	26	22	46	110	110
Fe [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	160000	150000	45000	70000	28000	58000	53000
K [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	3700	2700	20000	15000	4900	8300	8200
Li [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	19	23	25	29	20	49	45
Mg [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	8600	10000	12000	9600	8700	20000	19000
Mn [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	430	420	300	270	1000	2300	2200
Mo [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	1.9	0.86	2.1	0.91	0.31	0.49	0.69
Na [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	14000	12000	21000	19000	8000	15000	14000
Ni [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	16	20	61	23	54	120	110
P [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	610	570	420	440	140	300	290



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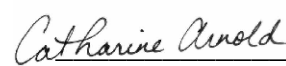

MEL

Project : PO#676765

LR Report : CA15280-AUG19

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAML116515- Sc/LJ	6: CAML116516- Sc/LJ	7: CAML116517- c	8: CAML116518- c	9: CAML116519- c	10: CAML116520- c	11: CAML116521- c
Pb [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	9.4	8.7	24	12	2.4	6.4	6.1
Sb [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Se [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Sn [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	490	440	290	260	65	160	150
Ti [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	1300	1600	2900	2100	1900	4100	3900
Tl [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	0.095	0.075	0.48	0.30	0.21	0.35	0.38
U [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	0.77	0.90	1.5	1.1	0.069	0.48	0.10
V [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	39	42	100	50	120	270	250
Y [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	6.0	6.1	8.3	6.5	5.8	9.9	9.3
Zn [µg/g]	09-Sep-19	20:15	10-Sep-19	11:54	58	76	71	66	41	88	81

Sample IDs taken from bags. List was not provided.
Chromium may not recover completely depending on sample matrix.



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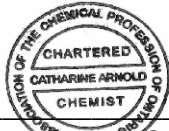
MEL

LR Report :

CA15236-SEP19

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAML116508- FW2-375E-LJ	6: CAML116509- DP1-425-127S-S ED-LJ	7: CAML116510- DP1-425-127T-S ED-LJ	8: CAML116511- FW2-425-E-SED D/LJ	9: CAML116512- DP1-324-145-SE D/LJ	10: CAML116513- SC1-300E-MV	11: CAML116514- SC1-300E-MV
Pb [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	12	9.7	12	53	6.0	11	12
Sb [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Se [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Sn [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	310	470	420	540	300	100	100
Ti [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	1100	2500	2700	3100	1000	5100	5200
Tl [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	0.16	0.22	0.24	0.30	0.11	0.14	0.14
U [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	0.58	0.91	0.93	0.86	0.62	0.057	0.070
V [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	24	47	45	62	20	250	250
Y [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	6.3	5.3	6.1	6.9	4.9	5.3	5.4
Zn [µg/g]	04-Oct-19	12:00	04-Oct-19	16:29	42	56	50	55	50	84	84

Chromium may not recover completely depending on sample matrix.

Catharine Arnold

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MEL

07-October-2019

Date Rec. : 16 September 2019

LR Report: CA15244-SEP19

Copy: #1

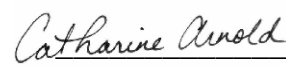

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAML128026- DP1-375-163-KS C	6: CAML128027- DP1-375-163-KS C	7: CAML128028- DP3-375-127-KS C	8: CAML128029- DP2-400-137-KS C	9: CAML128030- DP2-400-139-KS C	10: CAML128031- FW2-350-W-KS C	11: CAML128032- DP1-275-148-KS C
Sample Date & Time					11-Sep-19	11-Sep-19	11-Sep-19	11-Sep-19	11-Sep-19	11-Sep-19	11-Sep-19
Ag [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	80000	78000	79000	73000	74000	73000	71000
As [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	250	230	230	49	24	71	500
Ba [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	450	430	660	550	540	620	370
Be [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	1.2	1.2	1.3	1.3	1.3	1.5	1.0
Bi [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	0.15	0.14	0.13	0.22	0.18	0.13	0.24
Ca [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	16000	12000	11000	18000	16000	23000	48000
Cd [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	0.15	0.13	0.12	0.062	0.066	0.081	0.16
Co [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	24	21	18	9.3	9.4	11	25
Cr [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	98	95	70	22	24	25	100
Cu [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	36	30	34	21	33	19	86
Fe [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	83000	80000	36000	76000	87000	79000	79000
K [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	16000	15000	19000	17000	16000	14000	13000
Li [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	42	42	27	38	43	29	45
Mg [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	17000	16000	12000	10000	11000	8400	17000
Mn [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	480	410	300	340	360	330	900
Mo [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	1.5	1.4	1.3	0.68	0.67	0.85	0.93
Na [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	15000	16000	27000	17000	15000	23000	13000
Ni [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	74	67	57	21	22	23	83
P [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	570	570	430	490	430	490	430

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAMLM128026- DP1-375-163-KS C	6: CAMLM128027- DP1-375-163-KS C	7: CAMLM128028- DP3-375-127-KS C	8: CAMLM128029- DP2-400-137-KS C	9: CAMLM128030- DP2-400-139-KS C	10: CAMLM128031- FW2-350-W-KS C	11: CAMLM128032- DP1-275-148-KS C
Pb [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	14	11	8.0	13	13	7.5	17
Sb [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Se [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Sn [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	200	180	270	230	200	330	220
Ti [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	4400	4300	4000	3000	2700	2900	3300
Tl [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	0.37	0.35	0.47	0.30	0.28	0.31	0.34
U [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	1.4	1.4	1.6	1.4	1.3	1.1	0.85
V [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	130	120	92	50	51	53	160
Y [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	7.9	7.4	6.6	6.0	5.8	5.9	11
Zn [µg/g]	04-Oct-19	12:00	04-Oct-19	16:59	100	100	73	56	67	47	99

Chromium may not recover completely depending on sample matrix.



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MEL

15-November-2019

Date Rec. : 15 October 2019

LR Report: CA15310-OCT19

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAMLML128033- DP1-275-148-KS Time	6: CAMLML128034- DP2-325-150-KS C	7: CAMLML128035- DP2-325-152-KS C	8: CAMLML128036- FW3-400-E-KSC C	9: CAMLML128037- DP2-400-140-KS C	10: CAMLML128038- FW2-350-W-KS C/IF	11: CAMLML128039- FW2-350-W-KS C/IF S-DUP
Sample Date & Time					10-Oct-19	10-Oct-19	10-Oct-19	10-Oct-19	10-Oct-19	10-Oct-19	10-Oct-19
Ag [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	74000	51000	66000	64000	74000	40000	42000
As [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	590	64	11	7.7	20	520	440
Ba [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	600	390	650	500	640	440	450
Be [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	1.3	0.82	1.4	1.0	1.2	1.0	1.0
Bi [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	0.51	< 0.09	0.12	0.15	0.22	0.24	0.25
Ca [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	14000	33000	29000	20000	14000	31000	31000
Cd [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	0.11	0.085	0.089	0.081	0.053	0.13	0.18
Co [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	20	8.2	9.6	7.3	8.7	7.2	7.4
Cr [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	94	43	43	32	30	52	63
Cu [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	56	14	11	16	18	40	41
Fe [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	48000	120000	70000	58000	57000	130000	140000
K [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	21000	9100	15000	18000	22000	15000	15000
Li [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	24	27	25	34	40	16	16
Mg [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	13000	9500	7900	11000	10000	7900	8200
Mn [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	380	470	370	310	270	390	400
Mo [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	1.9	1.3	0.83	0.70	0.79	2.2	2.7
Na [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	24000	11000	24000	18000	23000	3300	3400
Ni [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	61	18	25	20	21	19	20
P [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	500	600	530	440	500	520	550

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAML128033- DP1-275-148-KS C	6: CAML128034- DP2-325-150-KS C	7: CAML128035- DP2-325-152-KS C	8: CAML128036- FW3-400-E-KSC C	9: CAML128037- DP2-400-140-KS C	10: CAML128038- FW2-350-W-KS C/IF	11: CAML128039- FW2-350-W-KS C/IF S-DUP
Pb [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	53	7.1	8.1	9.3	9.4	37	39
Sb [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Se [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Sn [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	260	340	470	220	250	290	300
Ti [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	3000	1700	2400	2000	2300	1400	1400
Tl [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	0.48	0.21	0.28	0.29	0.38	0.35	0.36
U [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	1.6	0.81	0.86	1.3	1.6	0.85	0.87
V [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	97	41	58	43	50	40	41
Y [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	6.6	6.7	6.7	5.5	6.5	6.1	6.4
Zn [µg/g]	06-Nov-19	14:38	07-Nov-19	10:17	79	55	50	56	63	45	48

Chromium may not recover completely depending on sample matrix.

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26-November-2019

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAML118651- FW2-400-141-K	6: CAML118652- DP2-425-136-K	7: CAML118653- SDP2-350-141-K	8: CAML118654- SDP2-350-142-K	9: CAML118655- SDP1-175-158-MV	10: CAML118656- PL1-150-W-MV	11: CAML118657- PL1-150-W-MV DUP
Sample Date & Time					N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ag [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	71000	64000	52000	50000	53000	64000	60000
As [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	18	9.2	74	51	8700	71	60
Ba [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	620	510	270	430	280	75	93
Be [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	1.1	1.3	0.72	1.0	0.70	0.32	0.30
Bi [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	0.13	0.093	< 0.09	0.18	0.22	< 0.09	< 0.09
Ca [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	25000	19000	22000	18000	56000	73000	76000
Cd [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	0.067	0.070	0.094	0.13	0.14	0.10	0.088
Co [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	11	8.7	7.9	13	35	51	48
Cr [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	30	37	56	91	100	140	120
Cu [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	27	18	12	52	140	100	94
Fe [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	35000	97000	170000	150000	100000	77000	69000
K [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	19000	11000	6700	14000	8100	2500	3500
Li [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	28	31	25	24	52	65	57
Mg [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	7200	8000	12000	13000	20000	31000	27000
Mn [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	260	320	360	380	1200	1700	1700
Mo [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	0.44	0.89	1.1	1.1	0.92	0.18	0.12
Na [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	30000	26000	8700	11000	13000	23000	21000
Ni [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	23	22	27	49	81	150	140
P [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	390	480	680	680	380	220	200



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LR Report :

CA15189-NOV19

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAMLM118651- FW2-400-141-K	6: CAMLM118652- DP2-425-136-K	7: CAMLM118653- DP2-350-141-K	8: CAMLM118654- DP2-350-142-K	9: CAMLM118655- SDP1-175-158-MV	10: CAMLM118656- PL1-150-W-MV	11: CAMLM118657- PL1-150-W-MV DUP
Pb [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	9.1	7.2	4.8	11	15	8.7	6.8
Sb [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	< 0.8	< 0.8	< 0.8	< 0.8	2.4	< 0.8	< 0.8
Se [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	< 0.7	< 0.7	< 0.7	< 0.7	0.99	< 0.7	< 0.7
Sn [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	390	380	230	200	190	84	86
Ti [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	2400	2100	1700	2100	1900	1600	1300
Tl [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	0.30	0.23	0.15	0.30	0.26	0.074	0.11
U [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	1.0	0.87	0.95	1.1	0.36	0.065	0.060
V [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	53	50	50	74	180	250	230
Y [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	6.4	5.8	6.6	6.4	8.3	7.5	7.2
Zn [µg/g]	20-Nov-19	12:15	20-Nov-19	15:33	56	55	99	85	81	95	85

Chromium may not recover completely depending on sample matrix.

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24-December-2019

Date Rec. : 13 December 2019

LR Report: CA15238-DEC19

Reference: Bulk Metals

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAMLM118658- FW1-150W-MV	6: CAMLM118659- DP2-375-134-K SC	7: CAMLM118660- DP3-375-146-K SC	8: CAMLM118661- FW2-350-W-KS C/LJ	9: CAMLM118662- DP3-375-138-K SC/LJ	10: CAMLM118663- DP1-175-147-M V	11: CAMLM118664- DP1-175-147-M V
Sample Date & Time					07-Dec-19	07-Dec-19	07-Dec-19	07-Dec-19	07-Dec-19	07-Dec-19	07-Dec-19
Ag [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	51000	65000	71000	68000	70000	64000	62000
As [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	140	120	110	32	87	68	74
Ba [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	210	760	510	510	570	200	220
Be [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	0.40	1.1	1.0	1.0	1.1	0.50	0.44
Bi [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	< 0.09	0.14	< 0.09	0.25	0.17	0.10	< 0.09
Ca [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	130000	12000	22000	14000	15000	94000	90000
Cd [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	0.23	0.12	0.068	0.11	0.086	0.57	0.44
Co [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	43	13	11	19	23	53	55
Cr [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	120	97	47	110	100	130	130
Cu [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	84	20	20	61	30	160	170
Fe [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	57000	110000	39000	32000	39000	65000	62000
K [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	8000	16000	14000	17000	19000	5700	4800
Li [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	35	24	18	20	24	57	53
Mg [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	23000	13000	8100	11000	12000	20000	20000
Mn [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	2600	250	270	330	350	2600	2400

Online LIMS



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MEL

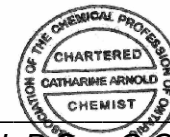
LR Report :

CA15238-DEC19

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: CAMLM118658- FW1-150W-MV	6: CAMLM118659- DP2-375-134-K SC	7: CAMLM118660- DP3-375-146-K SC	8: CAMLM118661- FW2-350-W-KS C/LJ	9: CAMLM118662- DP3-375-138-K SC/LJ	10: CAMLM118663- DP1-175-147-M V	11: CAMLM118664- DP1-175-147-M V
Mo [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	0.66	0.96	0.46	1.3	1.7	0.30	0.25
Na [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	10000	8100	32000	25000	21000	15000	16000
Ni [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	110	48	23	57	60	110	120
P [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	180	490	330	380	420	250	250
Pb [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	10	30	7.4	12	12	9.7	9.1
Sb [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Se [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	0.81	0.71
Sn [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	160	230	400	280	280	160	140
Ti [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	2200	2700	2400	2700	2700	3400	3500
Tl [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	0.33	0.40	0.28	0.37	0.43	0.25	0.22
U [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	0.088	1.6	0.83	1.6	1.5	0.15	0.27
V [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	200	76	47	83	84	230	230
Y [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	7.4	7.3	5.5	5.6	6.4	7.7	6.9
Zn [µg/g]	20-Dec-19	13:44	23-Dec-19	09:25	65	91	59	60	68	160	130

Chromium may not recover completely depending on sample matrix.

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APPENDIX C: CONTAINMENT AND SEDIMENTATION ACID-BASE
ACCOUNTING DATA



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Phone: 705-652-2000 FAX: 705-652-6365

Agnico Eagle Mines Limited

Attn : Meliadine Coordinator

Baker Lake
, Nunavut
X0C 0A0, Canada

Phone: (819) 759-3555 x3928

Fax:(819) 759-3663

MEL

Project : PO#OL-664693

07-June-2019

Date Rec. : 22 May 2019

LR Report: CA15440-MAY19

Reference: PO#

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: CP3-001	6: CP3-002	7: CP3-003	8: CP3-004	9: CP4-001a	10: CP4-001b	11: CP4-003
Sample Date & Time					18-May-19	18-May-19	18-May-19	18-May-19	18-May-19	18-May-19	18-May-19
Paste pH [no unit]	03-Jun-19	09:33	06-Jun-19	15:49	8.82	8.98	9.04	8.96	9.24	9.04	9.00
Fizz Rate [no unit]	03-Jun-19	09:33	06-Jun-19	15:49	3	3	3	3	3	3	3
Sample weight [g]	03-Jun-19	09:33	06-Jun-19	15:49	2.00	2.00	1.99	1.99	2.01	2.01	2.04
HCl_add [mL]	03-Jun-19	09:33	06-Jun-19	15:49	40.80	43.50	42.50	45.00	27.00	46.00	47.00
HCl [Normality]	03-Jun-19	09:33	06-Jun-19	15:49	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	03-Jun-19	09:33	06-Jun-19	15:49	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	03-Jun-19	09:33	06-Jun-19	15:49	26.28	27.19	23.32	23.91	17.01	23.64	20.46
Final pH [no unit]	03-Jun-19	09:33	06-Jun-19	15:49	1.53	1.53	1.74	1.71	1.67	1.65	1.75
NP [t CaCO3/1000 t]	03-Jun-19	09:33	06-Jun-19	15:49	36.3	40.8	48.2	53.0	24.9	55.6	65.0
AP [t CaCO3/1000 t]	06-Jun-19	15:49	06-Jun-19	15:49	2.81	2.19	3.12	4.06	4.38	4.38	5.31
Net NP [t CaCO3/1000 t]	06-Jun-19	15:49	06-Jun-19	15:49	33.5	38.6	45.1	48.9	20.5	51.2	59.7
NP/AP [ratio]	06-Jun-19	15:49	06-Jun-19	15:49	12.9	18.7	15.4	13.0	5.69	12.7	12.2
S [%]	05-Jun-19	09:34	05-Jun-19	13:42	0.157	0.097	0.133	0.162	0.210	0.129	0.198
Acid Leachable SO4-S [%]	05-Jun-19	13:42	05-Jun-19	13:42	0.07	0.03	0.03	0.03	0.07	< 0.02	0.03
Sulphide [%]	05-Jun-19	11:09	05-Jun-19	13:42	0.09	0.07	0.10	0.13	0.14	0.14	0.17
C [%]	05-Jun-19	09:34	05-Jun-19	13:42	0.375	0.562	0.578	0.661	0.206	0.551	0.779



SGS Canada Inc.

P.O. Box 4300 - 185 Concession St.

Lakefield - Ontario - KOL 2H0

Phone: 705-652-2000 FAX: 705-652-6365

MEL

Project : PO#OL-664693

LR Report : CA15440-MAY19

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: CP3-001	6: CP3-002	7: CP3-003	8: CP3-004	9: CP4-001a	10: CP4-001b	11: CP4-003
CO3 [%]	05-Jun-19	13:33	05-Jun-19	13:42	0.914	1.52	1.86	1.99	0.370	2.38	3.03

Analysis	12: CP4-004	13: CP3-005	14: CP3-006	15: CP3-007	16: CP3-008
Sample Date & Time	18-May-19	18-May-19	18-May-19	18-May-19	18-May-19
Paste pH [no unit]	9.03	8.86	8.78	8.88	9.03
Fizz Rate [no unit]	3	3	3	3	3
Sample weight [g]	2.00	2.03	2.04	1.98	2.00
HCl_add [mL]	44.00	29.00	46.50	48.00	46.00
HCl [Normality]	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	0.10	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	23.83	17.08	24.20	26.09	25.45
Final pH [no unit]	1.63	1.72	1.71	1.72	1.63
NP [t CaCO3/1000 t]	50.4	29.4	54.7	55.3	51.4
AP [t CaCO3/1000 t]	3.75	5.00	4.06	4.06	3.75
Net NP [t CaCO3/1000 t]	46.6	24.4	50.6	51.2	47.6
NP/AP [ratio]	13.4	5.88	13.5	13.6	13.7
S [%]	0.152	0.239	0.154	0.181	0.167
Acid Leachable SO4-S [%]	0.03	0.08	0.02	0.05	0.05
Sulphide [%]	0.12	0.16	0.13	0.13	0.12
C [%]	0.604	0.320	0.722	0.726	0.641
CO3 [%]	2.34	0.600	2.08	1.89	2.17

*NP (Neutralization Potential)

= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.



SGS Canada Inc.

P.O. Box 4300 - 185 Concession St.

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MEL

Project : PO#OL-664693

LR Report : CA15440-MAY19

Catharine Arnold
Catharine Arnold, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety



**SGS Canada Inc.**

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Agnico Eagle Mines Limited

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ABA - Modified Sobek

Project : PO#OL-664693

15-January-2019

Date Rec. : 27 December 2018
LR Report: CA15390-DEC18

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: SP2-TH3	6: SP2-TH4	7: SP2-TH7	8: SP2-TH8	9: SP2-TH9	10: SP2-TH10
Sample Date & Time					14-Dec-18	14-Dec-18	14-Dec-18	14-Dec-18	14-Dec-18	14-Dec-18
Paste pH	08-Jan-19	09:22	09-Jan-19	17:24	8.97	9.08	9.00	8.94	8.96	8.85
Fizz Rate [---]	08-Jan-19	09:22	09-Jan-19	17:24	3	3	3	3	3	3
Sample weight [g]	08-Jan-19	09:22	09-Jan-19	17:24	1.99	2.00	2.02	2.01	1.97	1.94
HCl Added [mL]	08-Jan-19	09:22	09-Jan-19	17:24	33.00	28.00	42.00	35.00	31.00	41.00
HCl [Normality]	08-Jan-19	09:22	09-Jan-19	17:24	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	08-Jan-19	09:22	09-Jan-19	17:24	0.10	0.10	0.10	0.10	0.10	0.10
NaOH to pH=8.3 [mL]	08-Jan-19	09:22	09-Jan-19	17:24	15.48	14.14	21.42	17.63	13.99	19.76
Final pH	08-Jan-19	09:22	09-Jan-19	17:24	1.86	1.57	1.60	1.62	1.90	1.57
NP [t CaCO3/1000 t]	08-Jan-19	09:22	09-Jan-19	17:24	44	35	51	43	43	55
AP [t CaCO3/1000 t]	15-Jan-19	12:02	15-Jan-19	12:03	2.81	3.75	2.50	5.94	5.00	8.12
Net NP [t CaCO3/1000 t]	15-Jan-19	12:02	15-Jan-19	12:03	41.2	30.8	48.4	37.3	38.2	46.7
NP/AP [ratio]	15-Jan-19	12:02	15-Jan-19	12:03	15.6	9.23	20.4	7.28	8.64	6.74
Sulphur (total) [%]	08-Jan-19	13:45	11-Jan-19	10:41	0.155	0.241	0.173	0.216	0.218	0.390
Acid Leachable SO4-S [%]	09-Jan-19	16:31	11-Jan-19	10:41	0.06	0.12	0.09	0.03	0.06	0.13
Sulphide [%]	09-Jan-19	15:53	11-Jan-19	10:41	0.09	0.12	0.08	0.19	0.16	0.26
Carbon (total) [%]	08-Jan-19	13:45	09-Jan-19	16:29	0.611	0.450	0.764	0.621	0.623	0.748
Carbonate [%]	09-Jan-19	15:49	09-Jan-19	16:29	2.02	1.65	2.82	2.25	2.14	2.52

Chris Sullivan

Chris Sullivan, B.Sc., C.Chem
Project Specialist
Environmental Services, Analytical





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ABA - Modified Sobek

Project : PO#OL-664693

LR Report : CA15390-DEC18

*NP (Neutralization Potential)
= $50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})$

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur $\times 31.25$

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

**SGS Canada Inc.**

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ABA - Modified Sobek**Project : PO#OL-664693****06-May-2019****Agnico Eagle Mines Limited****Attn : Meliadine Coordinator**

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Date Rec. : 24 April 2019
LR Report: CA15414-APR19

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	5: SP2-BH554	6: SP2-BH339	7: SP2-BH259	8: SP2-BH806	9: SP2-BH711	10: SP2-BH257	11: SP2-BH457	12: SP2-BH326
Sample Date & Time	15-Feb-19	09-Mar-19	06-Mar-19	09-Feb-19	09-Feb-19	14-Dec-18	09-Mar-19	06-Mar-19
Paste pH [no unit]	8.70	8.91	9.32	9.14	9.14	9.40	9.28	9.28
Fizz Rate [no unit]	1	3	2	2	2	2	2	2
Sample weight [g]	1.96	2.00	1.97	2.02	2.00	2.02	1.99	1.99
HCl_add [mL]	38.20	56.20	30.50	37.50	35.90	28.40	28.00	28.20
HCl [Normality]	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	18.14	17.64	11.66	15.81	16.23	9.18	10.80	10.00
Final pH [no unit]	1.62	1.75	1.87	1.56	1.57	1.83	1.83	1.91
NP [t CaCO3/1000 t]	51.2	96.4	47.8	53.7	49.2	47.6	43.2	45.7
AP [t CaCO3/1000 t]	5.31	4.06	3.75	4.06	4.06	3.44	4.38	3.12
Net NP [t CaCO3/1000 t]	45.9	92.3	44.0	49.6	45.1	44.2	38.8	42.6
NP/AP [ratio]	9.64	23.7	12.7	13.2	12.1	13.8	9.87	14.6
S [%]	0.246	0.232	0.278	0.212	0.216	0.204	0.215	0.209
Acid Leachable SO4-S [%]	0.08	0.10	0.16	0.08	0.09	0.09	0.08	0.11
Sulphide [%]	0.17	0.13	0.12	0.13	0.13	0.11	0.14	0.10
C [%]	0.687	1.25	0.648	0.725	0.681	0.658	0.574	0.637
CO3 [%]	2.44	5.42	2.36	2.84	2.61	2.86	2.11	2.54
Weight [g]	---	6310	7796	642	531	664	554	627
Split	---	1	1	1	1	1	1	1
Pulv200M [250g]	---	1	1	1	1	1	1	1

*NP (Neutralization Potential)
= $50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})$

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

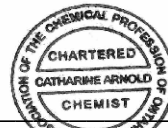
*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

SGS Canada Inc.

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ABA - Modified Sobek**Project :** PO#OL-664693**LR Report :** CA15414-APR19

Catharine Arnold
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Project Specialist,
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MEL

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06-May-2019

Agnico Eagle Mines Limited

Attn : Meliadine Coordinator

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Date Rec. : 17 April 2019
LR Report: CA15315-APR19
Reference: ABA - Modified Sobek

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: WR-SP2-Grab 1	6: WR-SP2-Grab 2
Sample Date & Time					13-Apr-19	13-Apr-19
Paste pH [no unit]	02-May-19	16:33	03-May-19	15:28	9.32	9.25
Fizz Rate [no unit]	02-May-19	10:30	03-May-19	15:28	2	2
Sample weight [g]	02-May-19	10:30	03-May-19	15:28	1.97	1.98
HCl_add [mL]	03-May-19	08:02	03-May-19	15:28	40.20	43.30
HCl [Normality]	02-May-19	10:30	03-May-19	15:28	0.10	0.10
NaOH [Normality]	02-May-19	10:30	03-May-19	15:28	0.10	0.10
Vol NaOH to pH=8.3 [mL]	03-May-19	08:02	03-May-19	15:28	19.78	17.71
Final pH [no unit]	03-May-19	08:02	03-May-19	15:28	1.83	1.92
NP [t CaCO ₃ /1000 t]	03-May-19	08:02	03-May-19	15:28	51.8	64.6
AP [t CaCO ₃ /1000 t]	06-May-19	14:41	06-May-19	14:32	5.00	3.44
Net NP [t CaCO ₃ /1000 t]	06-May-19	14:41	06-May-19	14:32	46.8	61.2
NP/AP [ratio]	06-May-19	14:41	06-May-19	14:32	10.4	18.8
S [%]	02-May-19	14:58	06-May-19	14:32	0.230	0.222
Acid Leachable SO ₄ -S [%]	06-May-19	14:41	06-May-19	14:32	0.07	0.11
Sulphide [%]	06-May-19	14:14	06-May-19	14:32	0.16	0.11
C [%]	02-May-19	14:58	06-May-19	14:17	0.644	0.883
CO ₃ [%]	06-May-19	13:35	06-May-19	14:17	2.27	3.40

*NP (Neutralization Potential)
= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

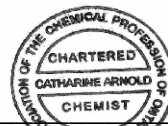
No dates samples were provided so the date received has been entered as the date sampled as per the client.

SGS Canada Inc.

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Phone: 705-652-2000 FAX: 705-652-6365

LR Report : CA15315-APR19

Catharine Arnold
Catharine Arnold, B.Sc., C.Chem
Project Specialist,
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APPENDIX D: CONTAINMENT AND SEDIMENTATION POND ROCK
COMPOSITION DATA



SGS Canada Inc.

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MEL

07-June-2019

Date Rec. : 22 May 2019

LR Report: CA15441-MAY19

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Approval Date	4: Approval Time	5: CP3-001	6: CP3-002	7: CP3-003	8: CP3-004	9: CP4-001a	10: CP4-001b	11: CP4-003	12: CP4-004	13: CP3-005
Sample Date & Time					18-May-19	18-May-19	18-May-19	18-May-19	18-May-19	18-May-19	18-May-19	18-May-19	18-May-19
Ag [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	80000	73000	76000	82000	76000	84000	82000	76000	73000
As [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	60	45	80	120	13	33	12	34	280
Ba [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	550	580	410	500	520	570	610	610	400
Be [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	1.1	1.1	1.1	1.2	1.1	1.2	1.2	1.1	1.1
Bi [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	0.15	0.18	0.17	0.25	0.15	0.17	0.20	0.25	0.53
Ca [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	14000	17000	16000	26000	13000	19000	23000	14000	13000
Cd [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	0.087	0.086	0.089	0.12	0.043	0.090	0.15	0.095	0.14
Co [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	27	22	22	32	21	25	23	21	23
Cr [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	170	160	120	130	120	120	110	120	140
Cu [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	46	50	43	64	36	60	62	51	51
Fe [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	52000	44000	43000	57000	37000	47000	38000	34000	41000
K [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	18000	18000	15000	18000	12000	20000	18000	21000	13000
Li [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	42	32	30	35	37	48	40	28	33
Mg [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	19000	16000	15000	19000	15000	19000	17000	13000	15000
Mn [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	550	640	510	750	320	520	490	380	440
Mo [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	1.3	2.7	1.9	2.1	1.3	2.1	1.0	2.1	1.6
Na [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	24000	21000	27000	23000	35000	21000	25000	21000	29000
Ni [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	80	68	65	75	74	79	69	67	70
P [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	600	510	510	580	430	540	530	470	470
Pb [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	9.3	9.9	10	15	7.4	10	11	9.9	17



SGS Canada Inc.

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MEL

LR Report :

CA15441-MAY19

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Approval Date	4: Analysis Approval Time	5: CP3-001	6: CP3-002	7: CP3-003	8: CP3-004	9: CP4-001a	10: CP4-001b	11: CP4-003	12: CP4-004	13: CP3-005
Sb [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Se [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Sn [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	290	280	320	310	280	410	440	300	270
Ti [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	3700	3300	2700	3600	3000	1600	980	2000	2700
Tl [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	0.39	0.31	0.34	0.39	0.25	0.39	0.40	0.40	0.23
U [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	1.5	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.5
V [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	160	130	120	180	110	140	110	94	120
Y [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	12	10	10	15	11	9.2	9.9	7.3	10
Zn [µg/g]	03-Jun-19	14:39	04-Jun-19	09:08	110	75	84	94	53	91	82	64	86

Analysis	14: CP3-006	15: CP3-007	16: CP3-008
Sample Date & Time	18-May-19	18-May-19	18-May-19
Ag [µg/g]	< 1	< 1	< 1
Al [µg/g]	74000	87000	81000
As [µg/g]	57	61	370
Ba [µg/g]	550	640	520
Be [µg/g]	1.1	1.3	1.2
Bi [µg/g]	0.19	0.27	0.28
Ca [µg/g]	17000	17000	14000
Cd [µg/g]	0.11	0.090	0.071
Co [µg/g]	23	22	21
Cr [µg/g]	110	120	120
Cu [µg/g]	45	58	53
Fe [µg/g]	43000	42000	40000
K [µg/g]	16000	23000	19000
Li [µg/g]	35	40	36
Mg [µg/g]	15000	17000	16000
Mn [µg/g]	500	470	420
Mo [µg/g]	2.1	1.3	2.5
Na [µg/g]	22000	21000	23000
Ni [µg/g]	63	76	72
P [µg/g]	490	570	480
Pb [µg/g]	11	14	14



SGS Canada Inc.

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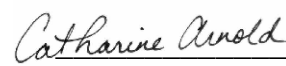
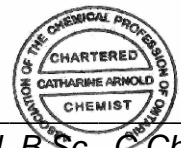
Phone: 705-652-2000 FAX: 705-652-6365

MEL

LR Report :

CA15441-MAY19

Analysis	14: CP3-006	15: CP3-007	16: CP3-008
Sb [µg/g]	< 0.8	< 0.8	< 0.8
Se [µg/g]	< 0.7	< 0.7	< 0.7
Sn [µg/g]	< 6	< 6	< 6
Sr [µg/g]	300	360	330
Ti [µg/g]	2300	1800	1400
Tl [µg/g]	0.35	0.44	0.38
U [µg/g]	1.4	1.6	1.5
V [µg/g]	120	120	110
Y [µg/g]	9.3	12	8.6
Zn [µg/g]	77	81	79



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Project Specialist,
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Agnico Eagle Mines Limited

Attn : Meliadine Coordinator

Baker Lake,

Canada, X0C 0A0

Phone: (819) 759-3555 x3928, Fax:(819) 759-3663

11-January-2019

Date Rec. : 27 December 2018

LR Report: CA15391-DEC18

Reference: PO#OL-664693

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: SP2-TH3	6: SP2-TH4	7: SP2-TH7	8: SP2-TH8	9: SP2-TH9	10: SP2-TH10
Sample Date & Time					14-Dec-18	14-Dec-18	14-Dec-18	14-Dec-18	14-Dec-18	14-Dec-18
Silver [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	< 1	< 1	< 1	< 1	< 1	< 1
Aluminum [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	80000	78000	76000	84000	77000	72000
Arsenic [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	68	21	140	140	100	62
Barium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	720	710	500	560	480	530
Beryllium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	1.0	1.0	1.0	1.1	1.0	0.92
Bismuth [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	0.25	0.33	0.34	0.35	0.35	0.39
Calcium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	13000	14000	13000	13000	13000	19000
Cadmium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	0.13	0.13	0.11	0.12	0.15	0.20
Cobalt [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	20	21	24	26	20	20
Chromium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	76	88	82	85	80	78
Copper [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	42	53	49	52	46	49
Iron [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	38000	36000	40000	44000	37000	35000
Potassium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	17000	16000	18000	20000	17000	13000
Lithium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	34	34	30	37	30	28
Magnesium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	14000	13000	14000	16000	13000	11000
Manganese [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	380	360	370	420	380	400

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: SP2-TH3	6: SP2-TH4	7: SP2-TH7	8: SP2-TH8	9: SP2-TH9	10: SP2-TH10
Molybdenum [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	2.4	2.9	2.5	2.9	2.4	1.8
Sodium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	22000	25000	23000	21000	24000	26000
Nickel [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	66	64	69	76	65	55
Phosphorus [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	440	470	490	500	440	440
Lead [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	12	12	11	12	13	14
Antimony [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Tin [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	< 6	< 6	< 6	< 6	< 6	< 6
Strontium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	390	370	310	320	340	410
Titanium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	950	1300	2200	1400	1300	850
Thallium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	0.40	0.34	0.40	0.41	0.36	0.30
Uranium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	1.5	1.5	1.5	1.7	1.6	1.9
Vanadium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	96	89	100	110	93	78
Yttrium [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	7.1	8.9	6.8	8.0	7.1	8.6
Zinc [µg/g]	09-Jan-19	13:24	10-Jan-19	10:15	78	79	76	82	79	77

Chris Sullivan

Chris Sullivan, B.Sc., C.Chem
Project Specialist
Environmental Services, Analytical





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MEL

Project : PO#OL-664693

13-May-2019

Date Rec. : 24 April 2019
LR Report: CA15415-APR19

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Time	3: Analysis Completed Date	4: Analysis Completed Time	5: SP2-BH554	6: SP2-BH339	7: SP2-BH259	8: SP2-BH806	9: SP2-BH711	10: SP2-BH257	11: SP2-BH457	12: SP2-BH326
Sample Date & Time					15-Feb-19	09-Mar-19	06-Mar-19	09-Feb-19	09-Feb-19	14-Dec-18	09-Mar-19	06-Mar-19
Ag [µg/g]	08-May-19	15:40	13-May-19	11:19	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Al [µg/g]	08-May-19	15:40	13-May-19	11:19	67000	62000	68000	70000	71000	66000	73000	74000
As [µg/g]	08-May-19	15:40	13-May-19	11:19	81	20	40	160	53	54	51	76
Ba [µg/g]	08-May-19	15:40	13-May-19	11:19	500	250	500	510	490	510	530	540
Be [µg/g]	08-May-19	15:40	13-May-19	11:19	0.99	0.72	0.89	0.94	0.94	0.93	0.98	0.96
Bi [µg/g]	08-May-19	15:40	13-May-19	11:19	0.16	0.26	0.20	0.22	0.21	0.20	0.24	0.49
Ca [µg/g]	08-May-19	15:40	13-May-19	11:19	14000	29000	14000	15000	14000	13000	14000	12000
Cd [µg/g]	08-May-19	15:40	13-May-19	11:19	0.082	0.22	0.091	0.078	0.073	0.092	0.088	0.062
Co [µg/g]	08-May-19	15:40	13-May-19	11:19	22	29	22	22	21	23	21	25
Cr [µg/g]	08-May-19	15:40	13-May-19	11:19	80	140	80	79	76	72	63	160
Cu [µg/g]	08-May-19	15:40	13-May-19	11:19	45	97	61	44	47	40	43	49
Fe [µg/g]	08-May-19	15:40	13-May-19	11:19	42000	53000	38000	39000	39000	38000	40000	38000
K [µg/g]	08-May-19	15:40	13-May-19	11:19	18000	8000	17000	20000	19000	18000	19000	21000
Li [µg/g]	08-May-19	15:40	13-May-19	11:19	27	36	27	27	27	27	31	31
Mg [µg/g]	08-May-19	15:40	13-May-19	11:19	13000	16000	13000	13000	12000	13000	14000	14000
Mn [µg/g]	08-May-19	15:40	13-May-19	11:19	330	790	390	340	290	410	370	280
Mo [µg/g]	08-May-19	15:40	13-May-19	11:19	1.2	5.6	1.7	1.3	2.2	1.2	3.1	2.8
Na [µg/g]	08-May-19	15:40	13-May-19	11:19	20000	20000	23000	20000	19000	20000	21000	15000
Ni [µg/g]	08-May-19	15:40	13-May-19	11:19	72	62	72	75	73	75	72	84
P [µg/g]	08-May-19	15:40	13-May-19	11:19	510	410	450	450	440	440	450	440



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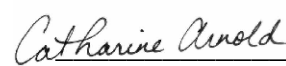
MEL

Project : PO#OL-664693

LR Report : CA15415-APR19

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: SP2-BH554	6: SP2-BH339	7: SP2-BH259	8: SP2-BH806	9: SP2-BH711	10: SP2-BH257	11: SP2-BH457	12: SP2-BH326
Pb [µg/g]	08-May-19	15:40	13-May-19	11:19	10	27	8.4	16	7.5	8.4	11	8.6
Sb [µg/g]	08-May-19	15:40	13-May-19	11:19	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Se [µg/g]	08-May-19	15:40	13-May-19	11:19	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Sn [µg/g]	08-May-19	15:40	13-May-19	11:19	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	08-May-19	15:40	13-May-19	11:19	290	360	320	280	280	290	310	270
Ti [µg/g]	08-May-19	15:40	13-May-19	11:19	2100	4400	1500	1700	1900	1700	1100	2600
Tl [µg/g]	08-May-19	15:40	13-May-19	11:19	0.42	0.18	0.37	0.43	0.41	0.38	0.41	0.45
U [µg/g]	08-May-19	15:40	13-May-19	11:19	1.7	1.2	1.8	1.7	1.7	1.6	1.6	1.7
V [µg/g]	08-May-19	15:40	13-May-19	11:19	99	180	92	100	100	98	100	120
Y [µg/g]	08-May-19	15:40	13-May-19	11:19	6.3	8.2	6.2	6.0	6.1	5.7	6.8	7.2
Zn [µg/g]	08-May-19	15:40	13-May-19	11:19	74	100	81	68	66	75	79	70

Chromium may not recover completely depending on sample matrix.

Catharine Arnold

Catharine Arnold, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety



MEL

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09-May-2019

Agnico Eagle Mines Limited

Attn : Meliadine Coordinator

Date Rec. : 17 April 2019

LR Report: CA15316-APR19

Baker Lake,
Canada, X0C 0A0
Phone: (819) 759-3555 x3928, Fax:(819) 759-3663

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: WR-SP2-Grab 1	6: WR-SP2-Grab 2
Sample Date & Time					13-Apr-19	13-Apr-19
Ag [µg/g]	08-May-19	15:40	09-May-19	09:41	< 1	< 1
Al [µg/g]	08-May-19	15:40	09-May-19	09:41	76000	69000
As [µg/g]	08-May-19	15:40	09-May-19	09:41	40	48
Ba [µg/g]	08-May-19	15:40	09-May-19	09:41	600	490
Be [µg/g]	08-May-19	15:40	09-May-19	09:41	1.1	0.90
Bi [µg/g]	08-May-19	15:40	09-May-19	09:41	0.21	0.20
Ca [µg/g]	08-May-19	15:40	09-May-19	09:41	14000	17000
Cd [µg/g]	08-May-19	15:40	09-May-19	09:41	0.082	0.075
Co [µg/g]	08-May-19	15:40	09-May-19	09:41	23	19
Cr [µg/g]	08-May-19	15:40	09-May-19	09:41	95	76
Cu [µg/g]	08-May-19	15:40	09-May-19	09:41	53	62
Fe [µg/g]	08-May-19	15:40	09-May-19	09:41	40000	39000
K [µg/g]	08-May-19	15:40	09-May-19	09:41	22000	18000
Li [µg/g]	08-May-19	15:40	09-May-19	09:41	29	25
Mg [µg/g]	08-May-19	15:40	09-May-19	09:41	14000	14000
Mn [µg/g]	08-May-19	15:40	09-May-19	09:41	400	480
Mo [µg/g]	08-May-19	15:40	09-May-19	09:41	1.4	1.2
Na [µg/g]	08-May-19	15:40	09-May-19	09:41	20000	20000
Ni [µg/g]	08-May-19	15:40	09-May-19	09:41	82	68
P [µg/g]	08-May-19	15:40	09-May-19	09:41	450	380
Pb [µg/g]	08-May-19	15:40	09-May-19	09:41	9.8	7.4
Sb [µg/g]	08-May-19	15:40	09-May-19	09:41	< 0.8	< 0.8
Se [µg/g]	08-May-19	15:40	09-May-19	09:41	< 0.7	< 0.7
Sn [µg/g]	08-May-19	15:40	09-May-19	09:41	< 6	< 6
Sr [µg/g]	08-May-19	15:40	09-May-19	09:41	310	290
Ti [µg/g]	08-May-19	15:40	09-May-19	09:41	2000	1900
Tl [µg/g]	08-May-19	15:40	09-May-19	09:41	0.47	0.39
U [µg/g]	08-May-19	15:40	09-May-19	09:41	1.7	1.6

SGS Canada Inc.

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LR Report : CA15316-APR19

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: WR-SP2-Grab 1	6: WR-SP2-Grab 2
V [µg/g]	08-May-19	15:40	09-May-19	09:41	120	98
Y [µg/g]	08-May-19	15:40	09-May-19	09:41	6.8	6.8
Zn [µg/g]	08-May-19	15:40	09-May-19	09:41	80	68

Chromium may not recover completely depending on sample matrix.

Catharine Arnold
Catharine Arnold, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety



APPENDIX E: FILTERED TAILINGS ACID-BASE ACCOUNTING DATA

**SGS Canada Inc.**

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Agnico Eagle Mines Limited

Attn : Dan Gorton/Jennifer Brown

Meliadine,
 Canada, X0C 0A0
 Phone: (819) 759-3555, Fax:(819) 759-3663

MEL**Project :** ABA - Modified Sobek

13-August-2019

Date Rec. : 05 July 2019
LR Report: CA15081-JUL19
Reference: PO# 770080

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Tailings-Solid 6/02/19	6: Tailings-Solid 6/05/19
Sample Date & Time					02-Jun-19 14:30	05-Jun-19 07:45
Paste pH [no unit]	08-Aug-19	10:30	09-Aug-19	16:27	8.25	8.23
Fizz Rate [no unit]	08-Aug-19	10:30	09-Aug-19	16:27	4	4
Sample weight [g]	08-Aug-19	10:30	09-Aug-19	16:27	2.04	2.01
HCl_add [mL]	09-Aug-19	08:30	09-Aug-19	16:27	90.00	85.00
HCl [Normality]	08-Aug-19	10:30	09-Aug-19	16:27	0.10	0.10
NaOH [Normality]	08-Aug-19	10:30	09-Aug-19	16:27	0.10	0.10
Vol NaOH to pH=8.3 [mL]	09-Aug-19	10:50	09-Aug-19	16:27	53.54	49.97
Final pH [no unit]	09-Aug-19	10:50	09-Aug-19	16:27	1.66	1.55
NP [t CaCO3/1000 t]	09-Aug-19	10:50	09-Aug-19	16:27	89.4	87.1
AP [t CaCO3/1000 t]	09-Aug-19	16:51	09-Aug-19	16:27	45.6	38.8
Net NP [t CaCO3/1000 t]	09-Aug-19	16:51	09-Aug-19	16:27	43.8	48.4
NP/AP [ratio]	09-Aug-19	16:51	09-Aug-19	16:27	1.96	2.25
S [%]	08-Aug-19	10:31	08-Aug-19	14:53	1.53	1.40
Acid Leachable SO4-S [%]	09-Aug-19	16:11	08-Aug-19	14:53	0.07	0.16
Sulphide [%]	09-Aug-19	15:57	08-Aug-19	14:53	1.46	1.24
C [%]	08-Aug-19	10:30	08-Aug-19	14:25	1.41	1.34
CO3 [%]	08-Aug-19	14:03	08-Aug-19	14:25	2.82	3.42

Analysis	7: Tailings-Solid 6/10/19	8: Tailings-Solid 6/16/19	9: Tailings-Solid 6/30/19
Sample Date & Time	10-Jun-19 10:00	16-Jun-19 11:00	30-Jun-19 10:40
Paste pH [no unit]	8.21	8.16	8.25
Fizz Rate [no unit]	4	4	4
Sample weight [g]	2.03	1.98	2.03
HCl_add [mL]	90.00	85.00	81.00

SGS Canada Inc.

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MEL
Project : ABA - Modified Sobek

LR Report : CA15081-JUL19

Analysis	7: Tailings-Solid 6/10/19	8: Tailings-Solid 6/16/19	9: Tailings-Solid 6/30/19
HCl [Normality]	0.10	0.10	0.10
NaOH [Normality]	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	55.49	52.78	48.48
Final pH [no unit]	1.65	1.55	1.58
NP [t CaCO3/1000 t]	85.0	81.4	80.1
AP [t CaCO3/1000 t]	53.4	66.6	47.2
Net NP [t CaCO3/1000 t]	31.6	14.8	32.9
NP/AP [ratio]	1.59	1.22	1.70
S [%]	1.91	2.16	1.69
Acid Leachable SO4-S [%]	0.20	0.03	0.18
Sulphide [%]	1.71	2.13	1.51
C [%]	1.38	1.48	1.25
CO3 [%]	1.74	2.93	2.30

*NP (Neutralization Potential)

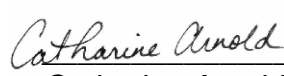
$$= \frac{50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

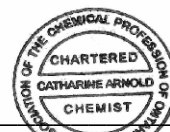
*AP (Acid Potential) = % Sulphide Sulphur x 31.25

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
 Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.


 Catharine Arnold, B.Sc., C.Chem
 Project Specialist,
 Environment, Health & Safety





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MEL

12-September-2019

Date Rec. : 09 August 2019
LR Report: CA14331-AUG19
Reference: PO# 770080

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time Completed	3: Analysis DateCompleted	4: Analysis Time Completed	5: Talings-Solid (sys_loc_code=Tai lings-solid) Jul 7	6: Talings-Solid (sys_loc_code=Tai lings-solid) Jul 14	7: Talings-Solid (sys_loc_code=Tai lings-solid) Jul 21	8: Talings-Solid (sys_loc_code=Tai lings-solid) Jul 24
Sample Date & Time					07-Jul-19 14:30	14-Jul-19 07:45	21-Jul-19 10:00	24-Jul-19 11:00
Paste pH [no unit]	22-Aug-19	08:33	23-Aug-19	14:26	8.25	8.32	8.19	8.32
Fizz Rate [no unit]	22-Aug-19	08:33	23-Aug-19	14:26	2	3	3	3
Sample weight [g]	22-Aug-19	08:33	23-Aug-19	14:26	2.02	1.98	2.00	1.98
HCl_add [mL]	23-Aug-19	06:30	23-Aug-19	14:26	60.00	60.00	81.70	76.00
HCl [Normality]	22-Aug-19	08:33	23-Aug-19	14:26	0.10	0.10	0.10	0.10
NaOH [Normality]	22-Aug-19	08:33	23-Aug-19	14:26	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	23-Aug-19	10:02	23-Aug-19	14:26	27.17	26.97	50.23	43.33
Final pH [no unit]	23-Aug-19	10:02	23-Aug-19	14:26	1.89	1.82	1.55	1.57
NP [t CaCO3/1000 t]	23-Aug-19	10:02	23-Aug-19	14:26	81.3	83.4	78.7	82.5
AP [t CaCO3/1000 t]	28-Aug-19	11:09	28-Aug-19	11:07	39.7	37.5	75.6	52.2
Net NP [t CaCO3/1000 t]	28-Aug-19	11:09	28-Aug-19	11:07	41.6	45.9	3.08	30.3
NP/AP [ratio]	28-Aug-19	11:09	28-Aug-19	11:07	2.05	2.22	1.04	1.58
S [%]	26-Aug-19	11:24	28-Aug-19	11:07	1.46	1.38	2.51	1.88
Acid Leachable SO4-S [%]	28-Aug-19	11:09	28-Aug-19	11:07	0.19	0.18	0.09	0.21
Sulphide [%]	28-Aug-19	11:06	28-Aug-19	11:07	1.27	1.20	2.42	1.67
C [%]	26-Aug-19	11:24	26-Aug-19	14:07	1.27	1.34	1.50	1.46
CO3 [%]	26-Aug-19	14:06	26-Aug-19	14:07	2.68	3.45	3.07	3.65

*NP (Neutralization Potential)

= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)



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LR Report :

CA14331-AUG19

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

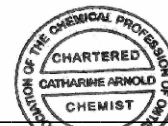
*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Catharine Arnold



Catharine Arnold, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety



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MEL

12-September-2019

Date Rec. : 30 August 2019

LR Report: CA15533-AUG19

Reference: PO# 770080- ABA - Modified Sobek

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug4	6: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug11	7: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug19	8: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug25
Sample Date & Time					04-Aug-19 07:55	11-Aug-19 11:42	19-Aug-19 08:56	25-Aug-19 14:00
Paste pH [no unit]	10-Sep-19	12:38	10-Sep-19	13:24	8.24	8.21	8.29	8.35
Fizz Rate [no unit]	09-Sep-19	10:13	10-Sep-19	13:24	2	2	2	2
Sample weight [g]	09-Sep-19	10:13	10-Sep-19	13:24	1.98	2.03	2.01	2.00
HCl_add [mL]	10-Sep-19	08:12	10-Sep-19	13:24	69.80	68.40	69.30	67.90
HCl [Normality]	09-Sep-19	10:13	10-Sep-19	13:24	0.10	0.10	0.10	0.10
NaOH [Normality]	09-Sep-19	10:13	10-Sep-19	13:24	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	10-Sep-19	08:12	10-Sep-19	13:24	36.82	34.85	36.16	32.04
Final pH [no unit]	10-Sep-19	08:12	10-Sep-19	13:24	1.69	1.89	1.77	1.77
NP [t CaCO3/1000 t]	10-Sep-19	08:12	10-Sep-19	13:24	83.3	82.6	82.4	89.6
AP [t CaCO3/1000 t]	11-Sep-19	09:18	11-Sep-19	09:18	43.8	65.9	52.5	37.5
Net NP [t CaCO3/1000 t]	11-Sep-19	09:18	11-Sep-19	09:18	39.6	16.7	29.9	52.1
NP/AP [ratio]	11-Sep-19	09:18	11-Sep-19	09:18	1.90	1.25	1.57	2.39
S [%]	10-Sep-19	09:02	11-Sep-19	09:18	1.70	2.27	1.89	1.44
Acid Leachable SO4-S [%]	11-Sep-19	09:18	11-Sep-19	09:18	0.30	0.16	0.21	0.24
Sulphide [%]	11-Sep-19	08:40	11-Sep-19	09:18	1.40	2.11	1.68	1.20
C [%]	10-Sep-19	09:02	10-Sep-19	14:47	1.59	1.75	1.51	1.42

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug4	6: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug11	7: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug19	8: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug25
CO3 [%]	10-Sep-19	13:46	10-Sep-19	14:47	3.65	3.38	3.71	4.33

*NP (Neutralization Potential)

= $50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})$

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

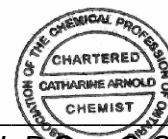
*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Catharine Arnold



Catharine Arnold, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety



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MEL

24-October-2019

Date Rec. : 04 October 2019

LR Report: CA14140-OCT19

Reference: P.O#770080

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time Completed	3: Analysis DateCompleted	4: Analysis Time(sys_loc_cod=Tailin gs-solid) Sept 1	5: Tailings-solid Tailings-solid gs-solid) Sept 15	6: Tailings-solid Tailings-solid gs-solid) Sept 22	7: Tailings-solid Tailings-solid gs-solid) Sept 30	8: Tailings-solid Tailings-solid gs-solid) Sept 30
Sample Date & Time				01-Sep-19 13:00	15-Sep-19 13:00	22-Sep-19 13:00	30-Sep-19 13:00	
Paste pH [no unit]	22-Oct-19	10:42	24-Oct-19	09:20	8.43	8.52	8.52	8.47
Fizz Rate [no unit]	22-Oct-19	10:42	24-Oct-19	09:20	4	4	4	4
Sample weight [g]	22-Oct-19	10:42	24-Oct-19	09:20	1.97	2.03	1.96	2.00
HCl_add [mL]	23-Oct-19	08:49	24-Oct-19	09:20	80.20	78.30	60.70	82.10
HCl [Normality]	22-Oct-19	10:42	24-Oct-19	09:20	0.10	0.10	0.10	0.10
NaOH [Normality]	22-Oct-19	10:42	24-Oct-19	09:20	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	23-Oct-19	08:49	24-Oct-19	09:20	42.13	42.04	27.80	46.60
Final pH [no unit]	23-Oct-19	08:49	24-Oct-19	09:20	1.61	1.75	1.88	1.52
NP [t CaCO3/1000 t]	23-Oct-19	08:49	24-Oct-19	09:20	96.6	89.3	83.9	88.8
AP [t CaCO3/1000 t]	24-Oct-19	14:07	24-Oct-19	14:07	39.4	59.1	39.1	43.4
Net NP [t CaCO3/1000 t]	24-Oct-19	14:07	24-Oct-19	14:07	57.2	30.2	44.8	45.4
NP/AP [ratio]	24-Oct-19	14:07	24-Oct-19	14:07	2.45	1.51	2.15	2.04
S [%]	22-Oct-19	11:38	24-Oct-19	14:07	1.54	2.40	1.60	1.69
Acid Leachable SO4-S [%]	24-Oct-19	14:07	24-Oct-19	14:07	0.28	0.50	0.36	0.30
Sulphide [%]	24-Oct-19	13:54	24-Oct-19	14:07	1.26	1.89	1.25	1.39
C [%]	22-Oct-19	11:38	23-Oct-19	13:43	1.52	1.51	1.35	1.51
CO3 [%]	22-Oct-19	13:46	23-Oct-19	13:43	3.94	3.64	3.36	4.07

*NP (Neutralization Potential)

= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)



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MEL

LR Report :

CA14140-OCT19

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

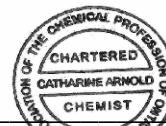
*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Catharine Arnold



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Project Specialist,
Environment, Health & Safety



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MEL

Project : ABA - Modified Sobek

11-November-2019

Date Rec. : 31 October 2019

LR Report: CA19196-OCT19

Reference: P.O#770080

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Tailings-solid(sys_ Completedloc_cod=Tailings-sloc_cod=Tailings-s olid)Oct6	6: Tailings-solid(sys_ Completedloc_cod=Tailings-sloc_cod=Tailings-s olid)Oct14	7: Tailings-solid(sys_ Completedloc_cod=Tailings-sloc_cod=Tailings-s olid)Oct20	8: Tailings-solid(sys_ Completedloc_cod=Tailings-sloc_cod=Tailings-s olid)Oct27
Sample Date & Time					06-Oct-19 12:00	14-Oct-19 12:00	20-Oct-19 11:33	27-Oct-19 10:00
Paste pH [no unit]	07-Nov-19	09:49	08-Nov-19	16:19	8.52	8.49	8.50	8.55
Fizz Rate [no unit]	07-Nov-19	09:49	08-Nov-19	16:19	4	4	4	4
Sample weight [g]	07-Nov-19	09:49	08-Nov-19	16:19	1.96	1.99	1.96	2.03
HCl_add [mL]	08-Nov-19	08:03	08-Nov-19	16:19	59.00	59.20	58.00	73.00
HCl [Normality]	07-Nov-19	09:49	08-Nov-19	16:19	0.10	0.10	0.10	0.10
NaOH [Normality]	07-Nov-19	09:49	08-Nov-19	16:19	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	08-Nov-19	09:49	08-Nov-19	16:19	26.39	26.74	24.20	36.43
Final pH [no unit]	08-Nov-19	09:49	08-Nov-19	16:19	1.84	1.85	1.86	1.61
NP [t CaCO3/1000 t]	08-Nov-19	09:49	08-Nov-19	16:19	83.2	81.6	86.2	90.1
AP [t CaCO3/1000 t]	08-Nov-19	16:19	08-Nov-19	16:19	42.8	47.5	46.2	49.4
Net NP [t CaCO3/1000 t]	08-Nov-19	16:19	08-Nov-19	16:19	40.4	34.1	40.0	40.7
NP/AP [ratio]	08-Nov-19	16:19	08-Nov-19	16:19	1.94	1.72	1.86	1.82
S [%]	07-Nov-19	11:43	08-Nov-19	13:45	1.63	1.77	1.73	1.91
Acid Leachable SO4-S [%]	08-Nov-19	13:45	08-Nov-19	13:45	0.26	0.25	0.25	0.33

[illegible]
$$*NP \text{ (Neutralization Potential)} = 50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})$$

Weight of Sample

$$*AP \text{ (Acid Potential)} = \% \text{ Sulphide Sulphur} \times 31.25$$

*Net NP (Net Neutralization Potential) = NP-AP

$$\text{NP/AP Ratio} = \frac{\text{NP}}{\text{AP}}$$

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Catharine Arnold
Catharine Arnold, B.Sc., C.Chem
Project Specialist,
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MEL

Project : ABA - Modified Sobek

23-December-2019

Date Rec. : 02 December 2019

LR Report: CA15007-DEC19

Reference: P.O#770080

Copy: #2

CERTIFICATE OF ANALYSIS

Final Report - Revised

Analysis	1:	2:	3:	4:	5:	6:	7:	8:
	Analysis Start Date	Analysis Start Time Completed	Analysis DateCompleted	AnalysisTime_completed	Tailings-solid(sys_loTailings-solid(sys_loTailings-solid(sys_loTailings-solid(sys_loTailings-solid(sys_loTailings-solid(sys_lo d) Nov 3	d) Nov 11	d) Nov 17	d) Nov 23
Sample Date & Time					03-Nov-19 11:45	11-Nov-19 12:00	17-Nov-19 16:08	23-Nov-19 15:00
Paste pH [no unit]	05-Dec-19	09:20	06-Dec-19	14:28	8.16	8.28	8.17	8.27
Fizz Rate [no unit]	05-Dec-19	09:20	06-Dec-19	14:28	3	3	3	3
Sample weight [g]	05-Dec-19	09:20	06-Dec-19	14:28	2.02	2.01	2.00	2.01
HCl_add [mL]	06-Dec-19	08:30	06-Dec-19	14:28	78.50	79.50	78.00	83.00
HCl [Normality]	05-Dec-19	09:20	06-Dec-19	14:28	0.10	0.10	0.10	0.10
NaOH [Normality]	05-Dec-19	09:20	06-Dec-19	14:28	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3 [mL]	06-Dec-19	09:41	06-Dec-19	14:28	42.40	44.10	42.08	42.08
Final pH [no unit]	06-Dec-19	09:41	06-Dec-19	14:28	1.78	1.77	1.74	1.58
NP [t CaCO3/1000 t]	06-Dec-19	09:41	06-Dec-19	14:28	89.3	88.1	89.8	102
AP [t CaCO3/1000 t]	12-Dec-19	11:46	12-Dec-19	11:46	54.7	59.4	56.9	47.8
Net NP [t CaCO3/1000 t]	12-Dec-19	11:46	12-Dec-19	11:46	34.6	28.7	32.9	54.0
NP/AP [ratio]	12-Dec-19	11:46	12-Dec-19	11:46	1.63	1.48	1.58	2.13
S [%]	05-Dec-19	11:59	12-Dec-19	11:46	1.71	1.83	1.75	1.53
Acid Leachable SO4-S [%]	12-Dec-19	11:45	12-Dec-19	11:46	< 0.02	< 0.02	< 0.02	< 0.02
Sulphide [%]	12-Dec-19	10:31	12-Dec-19	11:46	1.75	1.90	1.82	1.53
C [%]	05-Dec-19	11:59	05-Dec-19	15:13	1.38	1.28	1.32	1.22
CO3 [%]	05-Dec-19	14:53	05-Dec-19	15:13	3.87	3.63	4.07	4.03

*NP (Neutralization Potential)

$$= 50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})$$



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MEL

Project : ABA - Modified Sobek

LR Report : CA15007-DEC19

Weight of Sample

*AP (Acid Potential) = % Sulphide Sulphur x 31.25

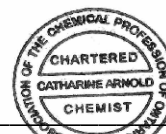
*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO₃ equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Catharine Arnold



Catharine Arnold, B.Sc., C.Chem
Project Specialist,
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MEL

Project : ABA - Modified Sobek

22-January-2020

Date Rec. : 06 January 2020

LR Report: CA14045-JAN20

Reference: P.O# 770080

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Tailings-solid(sys_ oc_code=Tailings-s olid) Dec 01	6: Tailings-solid(sys_ oc_code=Tailings-s olid) Dec 19
Sample Date & Time					01-Dec-19 10:00	19-Dec-19 10:00
Paste pH [no unit]	13-Jan-20	09:42	17-Jan-20	12:37	8.33	8.44
Fizz Rate [no unit]	13-Jan-20	09:42	17-Jan-20	12:37	4	4
Sample weight [g]	13-Jan-20	09:42	17-Jan-20	12:37	1.99	2.03
HCl_add [mL]	14-Jan-20	07:17	17-Jan-20	12:37	66.00	70.00
HCl [Normality]	13-Jan-20	09:42	17-Jan-20	12:37	0.10	0.10
NaOH [Normality]	13-Jan-20	09:42	17-Jan-20	12:37	0.10	0.10
Vol NaOH to pH=8.3 [mL]	14-Jan-20	09:36	17-Jan-20	12:37	34.81	35.54
Final pH [no unit]	14-Jan-20	09:36	17-Jan-20	12:37	1.52	1.54
NP [t CaCO3/1000 t]	14-Jan-20	09:36	17-Jan-20	12:37	78.4	84.9
AP [t CaCO3/1000 t]	22-Jan-20	09:23	22-Jan-20	09:24	49.4	50.0
Net NP [t CaCO3/1000 t]	22-Jan-20	09:23	22-Jan-20	09:24	29.0	34.9
NP/AP [ratio]	22-Jan-20	09:23	22-Jan-20	09:24	1.59	1.70
S [%]	09-Jan-20	17:09	22-Jan-20	09:23	1.58	1.76
Acid Leachable SO4-S [%]	22-Jan-20	07:12	22-Jan-20	09:23	< 0.02	0.16

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Tailings-solid(sys_ oc_code=Tailings-s olid) Dec 01	6: Tailings-solid(sys_ oc_code=Tailings-s olid) Dec 19
Sulphide [%]	22-Jan-20	07:10	22-Jan-20	09:23	1.58	1.60
C [%]	09-Jan-20	17:09	14-Jan-20	08:53	1.20	1.29
CO3 [%]	14-Jan-20	08:08	14-Jan-20	08:53	4.12	4.39

*NP (Neutralization Potential)

= 50 x (N of HCL x Total HCL added - N NaOH x NaOH added)

Weight of Sample

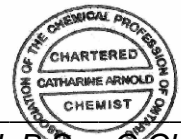
*AP (Acid Potential) = % Sulphide Sulphur x 31.25

*Net NP (Net Neutralization Potential) = NP-AP

NP/AP Ratio = NP/AP

*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material

Samples with a % Sulphide value of <0.02 will be calculated using a 0.02 value.

Catharine Arnold

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APPENDIX F: FILTERED TAILINGS COMPOSITION DATA



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MEL

19-July-2019

Date Rec. : 05 July 2019
LR Report: CA15082-JUL19
Reference: PO# 770080

Copy: #1

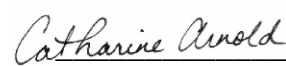

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: Tailings-Solid 6/02/19	6: Tailings-Solid 6/05/19	7: Tailings-Solid 6/10/19	8: Tailings-Solid 6/16/19	9: Tailings-Solid 6/30/19
Sample Date & Time					02-Jun-19 14:30	05-Jun-19 07:45	10-Jun-19 10:00	16-Jun-19 11:00	30-Jun-19 10:40
Ag [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	< 1	< 1	1	< 1	< 1
Al [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	47000	45000	44000	43000	48000
As [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	9100	9400	9600	12000	9900
Ba [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	590	520	410	480	520
Be [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	1.0	1.0	0.85	0.94	0.91
Bi [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	1.0	0.73	1.3	1.1	1.2
Ca [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	30000	31000	28000	29000	27000
Cd [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	0.23	0.19	0.22	0.23	0.21
Co [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	13	11	12	12	13
Cr [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	160	140	200	160	200
Cu [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	120	75	160	120	140
Fe [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	120000	120000	110000	120000	100000
K [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	12000	12000	12000	13000	13000
Li [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	18	16	15	15	15
Mg [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	11000	10000	9500	10000	9900
Mn [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	490	490	430	460	460

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: Tailings-Solid 6/02/19	6: Tailings-Solid 6/05/19	7: Tailings-Solid 6/10/19	8: Tailings-Solid 6/16/19	9: Tailings-Solid 6/30/19
Mo [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	9.8	8.2	12	7.8	9.9
Na [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	12000	11000	15000	11000	16000
Ni [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	33	29	31	31	35
P [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	610	610	500	590	500
Pb [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	500	350	770	410	660
Sb [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	2.7	2.9	2.8	3.1	2.8
Se [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	0.96	0.84	1.1	1.1	1.0
Sn [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	< 6	< 6	< 6	< 6	< 6
Sr [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	240	220	190	210	190
Ti [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	1900	1700	1800	1700	1800
Tl [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	0.33	0.30	0.29	0.33	0.36
U [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	1.1	0.99	0.98	1.0	1.1
V [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	64	62	61	61	68
Y [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	7.3	6.8	7.4	6.5	6.5
Zn [µg/g]	16-Jul-19	18:35	17-Jul-19	15:06	82	74	67	71	79

Sample IDs taken from bags. List was not provided.
Chromium may not recover completely depending on sample matrix.



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MEL

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26-August-2019

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Date Rec. : 09 August 2019
LR Report: CA14332-AUG19
Reference: PO# 770080

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

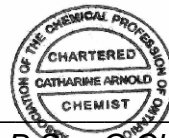
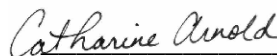
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Sample Date & Time					07-Jul-19 14:30	14-Jul-19 07:45	21-Jul-19 10:00	24-Jul-19 11:00
Ag [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	< 1	< 1	< 1	< 1
Al [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	53000	47000	39000	44000
As [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	8400	7900	14000	10000
Ba [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	450	540	280	350
Be [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	1.0	1.1	1.0	1.2
Bi [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	1.4	1.3	1.0	0.94
Ca [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	30000	30000	27000	29000
Cd [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	0.35	0.70	0.30	0.65
Co [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	15	16	9.4	14
Cr [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	50	45	33	38
Cu [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	180	150	140	170
Fe [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	95000	120000	160000	140000
K [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	12000	11000	9200	11000
Li [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	17	16	16	16
Mg [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	9700	9400	8900	9100
Mn [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	500	470	420	450
Mo [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	10	8.7	7.0	6.4
Na [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	16000	8800	7100	7500
Ni [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	37	35	23	29
P [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	460	580	680	680
Pb [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	600	600	520	560
Sb [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	2.5	2.3	3.6	2.8
Se [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	0.97	0.97	1.4	1.1
Sn [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	< 6	< 6	< 6	< 6
Sr [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	230	240	260	270
Ti [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	1800	1300	1200	1300
Tl [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	0.40	0.43	0.33	0.42
U [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	1.1	1.0	0.95	1.1
V [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	73	64	48	57
Y [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	6.5	6.9	6.0	6.9
Zn [µg/g]	21-Aug-19	16:42	22-Aug-19	10:08	100	180	99	180

Sample IDs taken from bags. List was not provided.
Chromium may not recover completely depending on sample matrix.

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LR Report : CA14332-AUG19



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MEL

12-September-2019

Date Rec. : 30 August 2019
LR Report: CA15534-AUG19
Reference: PO#770080

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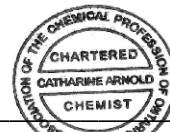
CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug4	6: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug11	7: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug19	8: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug25
Sample Date & Time					04-Aug-19 07:55	11-Aug-19 11:42	19-Aug-19 08:56	25-Aug-19 14:00
Ag [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	< 1	< 1	< 1	< 1
Al [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	43000	39000	47000	48000
As [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	9900	12000	12000	8200
Ba [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	390	300	350	470
Be [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	0.96	0.86	0.92	0.94
Bi [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	1.1	1.1	0.91	1.0
Ca [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	18000	18000	19000	19000
Cd [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	0.42	0.31	0.45	0.46
Co [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	13	11	11	15
Cr [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	42	34	45	50
Cu [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	110	170	130	90
Fe [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	130000	150000	140000	110000
K [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	14000	11000	13000	14000
Li [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	16	15	18	18
Mg [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	9200	9200	10000	10000
Mn [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	440	440	440	500

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug4	6: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug11	7: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug19	8: Tailings-Solid (sys_loc_code=Taili ngs-solid) Aug25
Mo [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	7.0	6.0	6.6	10
Na [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	7200	7600	9100	10000
Ni [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	30	24	28	34
P [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	570	640	620	510
Pb [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	330	380	430	450
Sb [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	3.1	3.2	3.2	2.6
Se [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	0.92	1.2	1.1	0.99
Sn [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	< 6	< 6	< 6	< 6
Sr [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	250	250	270	250
Ti [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	1600	1500	1800	1800
Tl [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	0.41	0.30	0.35	0.39
U [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	1.1	0.96	1.0	1.0
V [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	56	52	59	70
Y [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	7.0	6.2	6.8	6.7
Zn [µg/g]	09-Sep-19	19:09	10-Sep-19	10:36	130	92	71	98

Sample IDs taken from bags. List was not provided.
Chromium may not recover completely depending on sample matrix.

Catharine Arnold

 Catharine Arnold, B.Sc., C.Chem
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MEL

24-October-2019

Date Rec. : 04 October 2019

LR Report: CA14141-OCT19

Reference: P.O#770080

Copy: #1

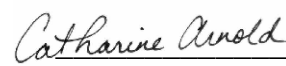
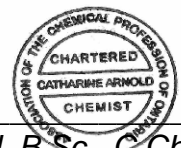
CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: Tailings-solid (sys_loc_cod=Taili ngs-solid) Sept 1	6: Tailings-solid (sys_loc_cod=Taili ngs-solid) Sept 15	7: Tailings-solid (sys_loc_cod=Taili ngs-solid) Sept 22	8: Tailings-solid (sys_loc_cod=Taili ngs-solid) Sept 30
Sample Date & Time					01-Sep-19 13:00	15-Sep-19 13:00	22-Sep-19 13:00	30-Sep-19 13:00
Ag [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	< 1	< 1	< 1	< 1
Al [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	50000	46000	48000	43000
As [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	11000	14000	8600	11000
Ba [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	570	620	550	570
Be [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	1.2	1.1	1.1	1.1
Bi [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	1.0	1.2	1.1	1.1
Ca [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	30000	29000	27000	29000
Cd [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	0.43	0.51	0.55	0.73
Co [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	15	12	13	14
Cr [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	57	46	46	55
Cu [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	110	120	120	150
Fe [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	110000	140000	110000	130000
K [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	14000	13000	12000	13000
Li [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	21	20	19	18

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: Tailings-solid (sys_loc_cod=Taili ngs-solid) Sept 1	6: Tailings-solid (sys_loc_cod=Taili ngs-solid) Sept 15	7: Tailings-solid (sys_loc_cod=Taili ngs-solid) Sept 22	8: Tailings-solid (sys_loc_cod=Taili ngs-solid) Sept 30
Mg [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	11000	10000	9200	10000
Mn [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	470	440	390	490
Mo [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	7.4	11	12	7.7
Na [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	10000	9300	12000	7100
Ni [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	38	32	32	34
P [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	590	700	530	630
Pb [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	310	400	490	330
Sb [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	3.1	3.3	2.5	2.8
Se [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	1.0	1.4	1.2	1.3
Sn [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	< 6	< 6	< 6	< 6
Sr [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	270	300	260	270
Ti [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	1700	1600	1600	1400
Tl [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	0.41	0.36	0.37	0.42
U [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	1.1	1.1	1.1	1.1
V [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	78	65	63	68
Y [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	7.2	7.1	6.8	7.0
Zn [µg/g]	22-Oct-19	17:00	23-Oct-19	15:19	120	87	88	120

Chromium may not recover completely depending on sample matrix.



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MEL

28-January-2020

Date Rec. : 31 October 2019

LR Report: CA19197-OCT19

Reference: P.O#770080

Copy: #2

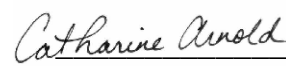
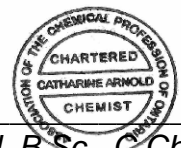
CERTIFICATE OF ANALYSIS

Final Report - Reissue

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: Tailings-solid(sys Tailings_loc_cod=Tailings -solid)Oct6	6: Tailings-solid(sys Tailings_loc_cod=Tailings -solid)Oct14	7: Tailings-solid(sys Tailings_loc_cod=Tailings -solid)Oct20	8: Tailings-solid(sys Tailings_loc_cod=Tailings -solid)Oct27
Sample Date & Time					06-Oct-19 12:00	14-Oct-19 12:00	20-Oct-19 11:33	27-Oct-19 10:00
Ag [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	< 1	< 1	< 1	< 1
Al [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	44000	43000	47000	49000
As [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	9500	10000	9400	12000
Ba [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	580	520	500	530
Be [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	1.0	0.96	0.92	0.97
Bi [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	0.79	0.95	0.83	1.0
Ca [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	28000	27000	27000	30000
Cd [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	0.54	0.49	0.91	0.73
Co [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	14	14	17	18
Cr [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	70	79	78	89
Cu [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	130	120	130	160
Fe [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	130000	120000	100000	110000
K [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	14000	14000	14000	15000
Li [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	17	16	16	17

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: Tailings-solid(sys Tailings_loc_cod=Tailings -solid)Oct6	6: Tailings-solid(sys Tailings_loc_cod=Tailings -solid)Oct14	7: Tailings-solid(sys Tailings_loc_cod=Tailings -solid)Oct20	8: Tailings-solid(sys Tailings_loc_cod=Tailings -solid)Oct27
Mg [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	10000	10000	9900	11000
Mn [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	490	470	490	540
Mo [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	5.5	5.7	5.4	6.7
Na [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	7600	7500	10000	9900
Ni [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	35	34	38	41
P [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	620	570	520	540
Pb [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	290	400	260	240
Sb [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	2.8	2.8	2.6	3.2
Se [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	0.92	1.0	1.1	1.2
Sn [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	< 6	< 6	< 6	< 6
Sr [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	270	250	240	250
Ti [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	1700	1600	1700	1900
Tl [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	0.41	0.39	0.44	0.49
U [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	1.1	1.1	1.1	1.1
V [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	64	61	73	81
Y [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	6.7	6.5	6.8	7.3
Zn [µg/g]	06-Nov-19	14:38	18-Nov-19	10:22	99	100	200	210

Chromium may not recover completely depending on sample matrix.



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MEL

24-December-2019

Date Rec. : 02 December 2019

LR Report: CA15008-DEC19

Reference: P.O#770080

Copy: #2

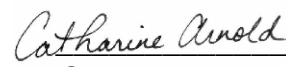

CERTIFICATE OF ANALYSIS

Final Report - Revised

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: Tailings-solid(sys_I oc_code=Tailings-s olid) Nov 3	6: Tailings-solid(sys_I oc_code=Tailings-s olid) Nov 11	7: Tailings-solid(sys_I oc_code=Tailings-s olid) Nov 17	8: Tailings-solid(sys_I oc_code=Tailings-s olid) Nov 23
Sample Date & Time					03-Nov-19 11:45	11-Nov-19 12:00	17-Nov-19 16:08	23-Nov-19 15:00
Ag [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	< 1	< 1	< 1	< 1
Al [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	47000	44000	41000	44000
As [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	11000	12000	9800	10000
Ba [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	420	400	320	470
Be [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	1.0	1.1	1.0	1.1
Bi [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	0.82	0.86	0.88	0.89
Ca [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	27000	26000	28000	27000
Cd [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	0.39	0.29	0.27	0.34
Co [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	14	11	9.7	10
Cr [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	81	72	73	76
Cu [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	100	100	110	96
Fe [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	120000	130000	130000	130000
K [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	14000	13000	12000	14000
Li [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	19	18	17	19
Mg [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	11000	9900	9700	9500
Mn [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	440	410	420	400

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Tailings-solid(sys_ Approval oc_code=Tailings-s Time	5: Tailings-solid(sys_ oc_code=Tailings-s olid) Nov 3	6: Tailings-solid(sys_ oc_code=Tailings-s olid) Nov 11	7: Tailings-solid(sys_ oc_code=Tailings-s olid) Nov 17	8: Tailings-solid(sys_ oc_code=Tailings-s olid) Nov 23
Mo [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	7.5	6.8	8.2	7.7
Na [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	8600	8200	7800	7100
Ni [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	31	27	25	26
P [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	600	600	620	590
Pb [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	310	380	380	280
Sb [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	2.8	3.2	2.9	3.2
Se [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	0.95	0.84	0.77	< 0.7
Sn [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	< 6	< 6	< 6	< 6
Sr [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	250	250	250	240
Ti [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	1700	1600	1500	1500
Tl [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	0.38	0.35	0.35	0.38
U [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	1.0	1.0	1.0	1.1
V [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	61	52	49	51
Y [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	6.5	7.5	6.3	6.3
Zn [µg/g]	20-Dec-19	13:44	24-Dec-19	09:20	99	73	72	80

Chromium may not recover completely depending on sample matrix.



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MEL

22-January-2020

Date Rec. : 06 January 2020

LR Report: CA14046-JAN20

Reference: P.O#770080

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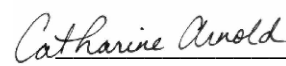
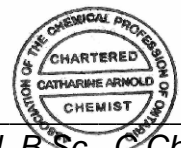
CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Approval Time	5: Tailings-solid(sys_ oc_code=Tailings-s olid) Dec 01	6: Tailings-solid(sys_ oc_code=Tailings-s olid) Dec 19
Sample Date & Time					01-Dec-19 10:00	19-Dec-19 10:00
Ag [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	< 1	< 1
Al [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	44000	45000
As [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	12000	13000
Ba [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	490	500
Be [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	1.9	1.3
Bi [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	1.2	1.7
Ca [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	26000	28000
Cd [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	0.22	0.45
Co [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	10	14
Cr [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	50	60
Cu [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	95	100
Fe [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	130000	110000
K [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	13000	14000
Li [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	17	17

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Approval Date	4: Analysis Tailings-solid(sys_ Approval oc_code=Tailings-s Time olid) Dec 01	5: Tailings-solid(sys_ oc_code=Tailings-s olid) Dec 01	6: Tailings-solid(sys_ oc_code=Tailings-s olid) Dec 19
Mg [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	9600	10000
Mn [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	400	470
Mo [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	9.3	9.8
Na [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	8300	9900
Ni [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	26	35
P [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	600	590
Pb [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	390	420
Sb [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	3.2	3.3
Se [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	0.86	1.1
Sn [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	< 6	< 6
Sr [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	230	240
Ti [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	1400	1300
Tl [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	0.40	0.41
U [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	1.1	1.1
V [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	53	66
Y [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	8.4	6.2
Zn [µg/g]	17-Jan-20	18:30	21-Jan-20	15:30	81	99

Chromium may not recover completely depending on sample matrix.



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Appendix C-2

2019 Results of the Tailings Supernatant

Table 4.4 Tailings Supernatant

Tailings - Liquid		Sample Date	6/6/2019	6/10/2019	6/16/2019	6/23/2019	6/30/2019	7/7/2019	7/14/2019	7/21/2019	7/24/2019	8/4/2019	8/11/2019	8/19/2019	8/25/2019	9/1/2019	9/9/2019	9/15/2019	9/22/2019	9/30/2019	10/6/2019	10/14/2019	10/20/2019	10/27/2019	11/3/2019	11/10/2019	11/17/2019	11/23/2019	12/1/2019
Parameter		FIELD SDG	89F7636	89G3896	89G8629	89H6678	89I2698	89J8781	89J9441	89K5185	89K9223	89L8803	89M6033	89N3272	89N9372	89O6811	89P6316	89Q2360	89Q9614	89R7279	89S3563	89T3060	89T7508	89U8740	89V3428	89W0850	89W7031	89X4432	89Y1280
Conventional Parameters		Unit																											
pH	-		8.65	8.99	8.9	10.4	9.24	8.63	9.4	8.72	8.91	9.24	8.35	8.69	9.23	9.21	9.14	9.39	9.07	8.58	9.13	9.44	9.18	9.08	9.22	9.4	9.08	8.84	9.37
Hardness, as CaCO3 (D)	mg/L		2940	3490	3340	2000	2550	2950	2030	2580	2740	2780	2420	2730	2740	1790	1580	2690	3030	2540	2640	3160	2550	2020	2420	2830	2520	2220	2840
Hardness, as CaCO3 (T)	mg/L		2780	3160	3460	2030	2660	2700	2170	2800	3310	2970	7900	2970	2710	2540	1740	4410	3790	2700	3040	5790	2670	2250	2460	2630	5180	3540	2910
Total alkalinity, as CaCO3	mg/L		160	170	170	330	180	140	180	170	170	180	140	150	210	150	120	200	190	140	180	230	240	220	220	220	210	190	240
Total dissolved solids	mg/L		24100	24600	27200	30200	25300	28800	25800	24200	22700	18800	21300	20000	13200	10800	18500	19900	13200	18800	16200	18100	15800	15900	16400	15000	14900	16500	
Total suspended solids	mg/L		870	450	340	370	8500	130	6400	1500	49000	370	43000	440	3600	6500	160	59000	1200	8300	1700	100000	17000	5800	170	180	1200	2900	140
Turbidity	NTU		280	190	540	48	970	66	180	280	540	38	570	150	1300	860	99	840	160	1500	250	870	780	440	52	98	750	950	280
Major Ions																													
Calcium	mg/L		1150	1380	1320	799	1020	1170	812	1030	1100	1110	969	1090	1100	715	629	1080	1210	1010	1060	1260	1020	810	967	1130	1000	881	1140
Chloride	mg/L		6600	7600	9300	9700	7900	8100	7300	7500	6800	5300	5200	4800	4400	3100	2300	5000	4800	4400	3700	3300	3400	2900	2900	3100	3100	2800	3300
Cyanide Total	mg/L		92	98	370	910	620	380	250	240	210	120	25	25	5.4	10	14	54	31	21	9.6	15	24	13	12	23	22	17	16
Cyanide WAD	mg/L		< 0.10	< 0.10	9.5	< 0.10	1.3	0.36	1.1	1.5	3.4	< 1.5	0.82	2.4	< 0.50	10	0.18	< 0.50	< 0.50	< 0.50	< 0.10	< 0.50	0.21	< 0.10	< 0.20	0.98	< 0.50	< 0.30	
Cyanide Free	ug/L		0.11	0.13	1.1	0.52	0.18	0.38	0.095	1	0.082	0.032	0.015	0.048	0.032	0.026	0.03	0.033	0.053	0.036	0.032	7.8	18	14	28	36	86	32	46
Fluoride	mg/L		0.15	0.11	0.15	0.12	0.13	0.14	< 0.10	0.11	< 0.10	0.12	0.11	0.11	< 0.10	0.13	< 0.10	0.1	0.15	0.16	0.11	0.16	0.18	0.27	0.15	0.19	0.21	0.12	
Magnesium	mg/L		14.5	12.4	10.3	< 2.5	1.6	6.1	< 2.5	< 2.5	< 1.0	3.5	< 5.0	1.2	< 5.0	1.3	3.2	1.5	1.5	3.5	2.2	2.5	1.7	< 2.5	2.2	2.2	3.1	4.6	2.4
Potassium	mg/L		410	406	449	489	373	415	390	387	402	391	349	397	397	267	227	350	349	326	342	348	361	352	384	383	386	336	381
Sodium	mg/L		5400	5700	6200	8300	6260	7330	5870	5940	5770	5050	4880	5110	4730	3150	2630	4280	4390	4180	4280	4300	4080	3730	3670	3930	3990	3400	3910
Sulphate	mg/L		6700	6000	6000	5300	6100	7700	6700	6700	7000	6200	5400	6500	5600	3700	3300	5800	5500	5600	6900	6100	5800	4900	5200	5500	5100	5100	5500
Nutrients and Chlorophyll a																													
Nitrate	mg-N/L		304	180	198	217	270	308	316	346	342	313	235	284	220	207	154	224	193	222	224	275	222	202	243	222	208	189	
Nitrite	mg-N/L		0.84	0.284	< 1.0	0.197	0.56	0.106	0.315	0.302	0.257	1.03	0.79	0.327	1.12	1.01	0.7	1.11	0.513	1.04	0.672	0.783	0.618	0.645	0.73	0.553	0.553	0.59	
Nitrate + nitrite	mg-N/L		305	180	198	217	270	308	317	346	342	314	265	284	221	208	154	225	214	222	224	275	222	203	244	222	208	190	
Total ammonia	mg-N/L		200	180	74	120	100	170	160	23	200	190	190	260	320	190	210	270	300	260	340	250	370	340	250	240	310	380	
Total phosphorus	mg-P/L		1.5	1.4	-	0.19	1.5	0.63	0.5	4.5	51	< 1.0	48	1.2	2.8	10	< 0.40	21	1.2	1.1	2.6	85	31	13	0.4	1.6	86	7.5	0.49
Dissolved phosphorus	mg-P/L		-	-	-	-	< 0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate	mg/L		0.87	0.98	2.4	< 4	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Total Metals																													
Aluminum	µg/L		13900	11900	17700	8850	13400	7110	5650	22200	42500	11300	344000	10400	28500	111000	3790	99500	103000	9910	15300	224000	11500	22700	4560	4620	217000	57100	8910
Antimony	µg/L		< 10	< 10	< 25	< 50	< 10	< 10	< 25	< 25	< 25	< 10	< 50	< 10	< 50	< 50	< 50	< 25	11	< 10	< 50	< 25	< 25	< 10	< 10	< 50	< 25	13	
Arsenic	µg/L		6960	9570	7740	5210	7990	7620	5480	12800	16600	8650	97000	11500	19500	48200	5490	49500	42500	13200	12700	78200	13600	24500	9110	9350	51200	26200	14200
Barium	µg/L		323	272	378	214	348	311	436	414	412	329	1100	333	452	732	183	342	739	325	264	876	260	293	283	235	607	267	254
Beryllium	µg/L		< 2.0	< 2.0	< 5.0	< 10	< 2.0	< 2.0	< 5.0	< 5.0	< 5.0	< 2.0	< 10	< 2.0	< 10	< 10	< 10	< 5.0	< 2.0	< 2.0	< 10	< 5.0	< 5.0	< 5.0	< 2.0	< 2.0	< 10	< 5.0	< 2.0
Bismuth	µg/L		< 20	< 20	< 50	< 100	< 20	< 20	< 50	< 50	< 50	< 20	< 100	< 20	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 50	< 50	< 20	< 20	< 100	< 50	< 20	
Boron	µg/L		< 1000	< 1000	< 2500	< 5000	< 1000	< 1000	< 2500	< 2500	< 2500	< 1000	< 5000	< 1000	< 5000	< 5000	< 5000	< 5000	< 5000	< 1000	< 1000	< 5000	< 2500	< 1000	< 1000	< 1000	< 5000	< 2500	< 1000
Cadmium	µg/L		< 0.20	< 0.20	< 0.50	3.4	< 0.20	< 0.20	< 0.50	< 0.50	0.89	< 0.20	10.3	0.37	< 1.0	3.8	0.21	13.2	7.16	0.36	0.58	32.1	< 0.50	0.62	< 0.20	< 0.20	9.1	2.06	< 0.20
Calcium	µg/L		1090000	1240000	1360000	801000	1050000	1070000	868000	1100000	1260000	1170000	2540000	1180000	1060000	914000	688000	1530000	1400000	1070000	1200000	1860000	1060000	874000	977000	1030000	1780000	1310000	1160000
Chromium	µg/L		< 20	< 20	< 50	< 100	< 20	< 20	< 50	< 50	< 50	< 20	512	< 20	142	< 100	142	181	141	< 20	21	409	< 50	< 50	< 20	< 20	330	124	< 20
Cobalt	µg/L		381	337	429	368	429	485	266	374	379	382	210	68.1	174	146	272	165	168	328	419	264	406	318	149	269	152	163	236
Copper	µg/L		16700	5650	4710	1300	871	2130	6870	6630	7160	5200	1230	9460	3540	2290	2380	915	11300	10500	121	3230	1260	548	615	736	902	177	1020
Iron	µg/L		53500	31700	42200	25000	34600	23300	28200	61100	244000	26500	3180000	41900	87000	463000	16100	915000	519000	31700	81200	1530000	28100	92900	12000	9110	1140000	334000	23100
Lead	µg/L		491	388	686	463	1540	197	340	1620	5700	721	27700	455	681	3990	108	11000	6060	226	666	18900	282	521	90.2	211	12700	5070	345
Lithium	µg/L		< 40	< 40	< 100	< 200	< 40	< 40	< 100	< 100	< 100	< 40	226	< 40	< 200	< 200	< 40	< 200	< 100	< 40	< 40	< 200	< 100	< 100	< 40	< 200	< 100	< 40	
Magnesium	µg/L		14100	14400	18700	6080	11200	5380	< 2500	15200	38000	11800	377000	5690	13000	62800	4670	144000	69000	6330	11200	280000	5580	15100	3780	3160	176000	66000	5410
Manganese	µg/L		203	93	119	< 100	< 20	25	< 50	163	2280	113	25400	251	314	3020	60	11400	4000	160	552	21200	140	679	88	75	13600	4980	142
Mercury	µg/L		< 0.5	&																									