Appendix B1

Geotechnical Inspection Reports

Report: *2012 Annual Geotechnical Inspection*

Letter: *Implementation Plan for 2012 Annual Geotechnical Inspection Recommendations*

Report: 2012 *Annual Review of Portage and Goose Pit Slope Performance*

January 15, 2013

REPORT ON

2012 Annual Geotechnical Inspection Meadowbank Gold Mine, Nunavut

Submitted to:
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REPORT

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1.0 INTRODUCTION

Agnico-Eagle Mines Limited (AEM) Meadowbank Division requested Golder Associates Ltd. (Golder) conduct an annual geotechnical inspection, pursuant to the requirement of Water License Permit No. 2AM-MEA0815, Part I, Item 12 (page 23 and 24) for the Meadowbank Gold Project, Nunavut.

Under Part I, Item 12, AEM is required to undertake an annual geotechnical inspection of the following facilities between the months of July and September:

- Dewatering Dikes;
- Stormwater Dike;
- Saddle Dams;
- Pit walls;
- Tailings Storage Facility;
- Shoreline protection at the location of the Wally Lake and Portage Lake Outfall Diffusers;
- Geotechnical instrumentation;
- All-Weather Private Access Road (AWPR) and site roads, in particular water course crossings;
- Quarries;
- Landfill;
- Contaminated Soil Storage and Bioremedial Landfarm Facility;
- Bulk fuel storage facilities at the Meadowbank site and in Baker Lake (marshalling area);
- Attenuation Ponds;
- Reclaim Pond; and
- Sumps.

The mine is currently in operation, however construction of some facilities continues and as a result the inspection of some of the items listed above was not completed.

The inspection was conducted by Yves Boulianne, P.Eng. and Frédérick L. Bolduc Junior Eng. (QC), of Golder, between September 13 and September 19, 2012. The inspection was carried out prior to snowfall at the time of year when the seasonal depth of thaw (active layer) is expected at, or near its maximum. Daily minimum temperatures were approximately between -2°C and 5°C, and daily maximum temperatures were between 4°C and 9°C. Wind speed was variable with no significant precipitation occurring during this period. At this time of year, there is generally low to moderate surface water flow. Peak water flows typically occur during the spring thaw (mid-June through mid-July). The overall precipitation over the summer of 2012 was normal with episodes of heavy rain. At the time of the inspection, water levels were normal and flows observed at water crossings were moderate.

An inspection of the following was conducted:

- Dewatering Dikes: East Dike, South Camp Dike and Bay-Goose Dike;
- Tailings Storage Facility (TSF): Stormwater Dike, Saddle Dam 1, Saddle Dam 2, and the Reclaim Pond. Construction of Central Dike was in progress at the time of the inspection, and therefore was not included in this report;
- Geotechnical instrumentation (Dewatering Dikes and Tailings Storage Facility);
- AWPR and site roads, with particular attention paid to water crossings (bridges and culverts);
- Quarries;
- Landfill;
- Contaminated Soil Storage and Bioremedial Landfarm Facility;
- Bulk fuel storage facilities at Meadowbank and in Baker Lake; and
- Stormwater Management Pond 1.

This report describes the geotechnical aspects of the areas inspected and presents general observations and recommendations.

Figure 1 shows the mine site area. At the time of the inspection, construction of Central Dike was underway. Construction of subsequent portions of the Tailings Storage Facility will occur on an ongoing basis as additional capacity to store tailings is required. Construction of Bay-Goose Dike has been completed as well as the dewatering of the Bay-Goose Basin. South Camp Dike and Bay-Goose Dike were in operation.

Inspection of the Portage Pit and Goose Island Pit was conducted during the same period and is reported under separate cover, "Draft - Annual Review of Portage Pit and Goose Pit Slope Performance (Golder 2012b, Doc. No. 1397)". It should be noted that there is no current activity in the Vault Pit area.

Diffusers were not in place at the Wally Lake and Portage outfalls. Therefore, inspections of these items were not conducted.

This report describes the geotechnical aspects of the areas inspected and presents general observations and recommendations.

It is noted that an external review board, the Meadowbank Dike Review Board (MDRB), has also been established which periodically meets to review dike designs, construction activities, as-built information and other geotechnical aspects for the project. The MDRB members were present on site before the annual geotechnical inspection was performed.

1.1 Scope Limitations

The scope of the inspection was limited to geotechnical aspects for each of the facilities listed above. The inspection did not include structural, mechanical, environmental, or other assessments.

For additional information related to the limitations of this scope, reference should be made to the Study Limitations provided at the beginning of this report.

2.0 DEWATERING DIKES

The dewatering dikes at Meadowbank include: the East Dike, South Camp Dike and Bay-Goose Dike. The locations of the dewatering dikes are shown on Figure 1 and the construction of these dikes has been completed. The East Dike has been in operation since the completion of the dewatering of the northwest arm of Second Portage Lake, in 2009. Dewatering of the Bay-Goose Basin was completed in November 2011; consequently, Bay-Goose Dike and South Camp Dike are operational. The West Channel Dike ceased to operate upon the completion of dewatering of the Bay-Goose Basin and was removed as part of the development of the Portage Pit.

A draft of the Dewatering Dikes Operation, Maintenance and Surveillance (OMS) Manual (AEM, 2012a), including a draft of the Emergency Preparedness Plan (EPP), dated from January 2012, was available for review at the time of the inspection and covered all the structures. The final version of the OMS Manual and EPP is anticipated to be issued at a later time in 2013.

The updated version of the overall Emergency Response Plan (ERP) for the mine (AEM, 2012c) was available for review at the time of the inspection, and included a risk assessment of potential failure mechanisms, consequences, and control and mitigation measures for the East Dike and Bay-Goose Dike. The ERP does not address directly the procedures to be followed in the event of failure of a dewatering dike, but rather refers to the EPP for these structures. Specific failure mechanisms, consequences and control measures for the South Camp Dike are not mentioned. It is recommended that the ERP and risk assessment be reviewed and updated to include South Camp Dike and to incorporate information gained during operation of the East Dike and Bay-Goose Dike.

Detailed visual inspection of the dewatering dikes is performed at a minimum of once a month. Most of the instruments on the East Dike and Bay-Goose Dike are connected to a system that automatically collects and transmits data every 3 hours. Data for all instruments can be visualised on the same software (VDV) and are checked daily by the mine. A review of the instrumentation data obtained from the dewatering dikes is presented in Section 4.0 of this report.

Figure A1 shows a plan view of the East Dike showing where the photos and observations were noted. Figure A2 shows a plan view of the South Camp Dike and Bay-Goose Dike showing where the photos and observations were noted.

2.1 East Dike

East Dike is located on the east side of the Portage Pit, and isolates the northwest arm of Second Portage Lake. Figure 2 shows the location of the East Dike. Dewatering of the northwest arm of Second Portage Lake allowed the development of the Portage Pit and the construction of the Tailings Storage Facility. At the time of the inspection, the East Dike served only as access road to the northern portion of Bay-Goose Dike, and had not been used as a haul road since 2011.

East Dike was constructed in the summer of 2008 and grouting of the foundation and bedrock occurred in 2008 and during the first quarter of 2009. East Dike is approximately 800 m in length, and was constructed within Second Portage Lake prior to dewatering. It consists of a wide rockfill shell, with downstream filters and a soil-bentonite cut-off wall that extends to bedrock up to 8 m below lake level. A final as-built report for the East Dike (Golder 2009e, Doc. No. 900) was available for review during the inspection.

Instrumentation has been installed within the East Dike and includes piezometers, thermistors, inclinometers and survey monuments. The impact of the blast vibration on the dike is being monitored. The location of the instrumentation is indicated on Figure 2. The upper 2 m of the inclinometer at Sta. 60+705 has been damaged by equipment. At the time of the inspection, it was also observed that the inclinometer at Sta. 60+195 that was previously destroyed had not been replaced. Replacement of this instrument is currently not considered necessary; however, monitoring all other existing instrumentation within East Dike should continue and if anomalous conditions are observed, then replacement of this inclinometer should be re-evaluated. Refer to Section 4.1 for the analysis of the East Dike instrumentation data.

A protective berm separates vehicles from the cut-off wall and the geotechnical instrumentation approximately between Sta. 60+440 and 60+500. As vehicle traffic on the East Dike is now limited, the recommendation to create a barrier between traffic and the instrumentation made in previous annual inspection reports is no longer considered necessary.

As discussed in the 2009 annual inspection reports (Golder 2009d, Doc. No.969), during the dewatering of the northwest arm of Second Portage Lake in 2009 an apparent leak of up to 0.5 m^3/s over several days occurred through the East Dike near Sta. 60+490. The leak then appeared to self heal following drilling works for the additional grouting carried out in this sector. A sinkhole cavity of about 18 m^3 in the general vicinity of the leak (Sta. 60+472) also appeared in July 2009. The sinkhole was located immediately upstream of the cut-off wall and extended at least partially through the cut-off wall. A Technical Memorandum entitled, “Meadowbank East Dike Grouting Response Plan – Completed Works” (Golder 2009a, Doc. No. 916) provides additional information regarding these occurrences, as does Golder (2009b, Doc. No. 961) East Dike Sinkhole Summary Report.

Following the appearance of the sinkhole, a cone penetration test (CPT) investigation was conducted, and three diamond drill holes and a surface geophysical survey were advanced in the area to obtain additional information. Details regarding these investigations are provided in East Dike CPT Investigation Report (Golder 2010b, Doc. No. 953) and East Dike Sinkhole Investigation Program October-November 2009 (Golder 2010a, Doc. No. 986). Based on the CPT results, there appeared to be a zone of coarser grained material (area with lower fines content) in the apparent leak area. The drilling investigation indicated that there may be soil between the base of the cut-off wall and underlying bedrock that was not completely excavated and/or grouted.

An additional investigation of the sinkhole and apparent leakage area consisting of the temporary installation of thermistor strings and monitoring of the thermal condition was initially conducted in 2010 and repeated in 2011. Based on the thermal results, it appeared that a pervious zone existed within the cut-off wall and shallow bedrock between approximately Sta. 60+440 and 60+504. In the past, AEM considered potential mitigation options to reduce seepage through the dike and to provide contingency protection for the Portage Pit. Based on the stability of the dike and the seepage rate, remediation or implementation of contingency control measures is not considered necessary at this time. The condition of the dike will continually be monitored and if the condition of the dike is judged to be deteriorating then remediation would be reassessed.

At the time of the 2012 inspection, no sign of cracking was observed in the vicinity of the 2009 sinkhole. A small circular depression was found 5 m downstream of the cut-off wall at the base of the berm near Sta. 60+554. The small circular depression is 450 mm long, 300 mm wide, 300 mm deep and is located in loose material probably pushed there by a grader and is not considered a concern. Due to the proximity of the depression to the 2009 sinkhole, periodic visual monitoring is recommended.

At the time of the inspection 3 zones of seepage were identified near the downstream toe. The zones at about Sta. 60+247 and Sta. 60+498 each had a collection sump with pump connected to a year round pumping and piping system. The pumps were stopped for 3 weeks in the winter of 2012 because the line froze, but a new pumping and piping system was installed on April 4, 2012.

In 2011, the downstream seepage at Sta. 60+498 had been stable at a rate of about 864 m^3/day (10 L/s) with no visual signs of turbidity, which was consistent with rates recorded during previous years. In 2011, the seepage downstream at Sta.60+247 appeared stable at around 345.6 m^3/day (4L/s) with no visual signs of turbidity noted, which was consistent with previous rates. At the time of the inspection, all seepage was being captured within the sumps and no sign of additional seepage on the ground surface or downstream in the Portage Pit was observed. No active monitoring of the seepage rate at these locations occurred in 2012 but AEM has been visually inspecting the flow in the sumps and no turbidity was noted. It is understood that AEM performed a pump test after the installation of the sumps, it was noted that the measured flow were consistent with 2010 and 2011 data. It is recommended to measure the flow and assess the turbidity. It is understood that flow meters are going to be installed at the exit of each pump.

A third zone of seepage at Sta. 60+575 was observed during the inspection. During previous inspections a small seepage in this area was also observed. In 2011, the flow rate measured about 86.4 m^3/day (1 L/s). At the time of the inspection the seepage was being monitored every 3 days and the flow was between 1.2 to 2.5 m^3/day (0.014 to 0.029 L/s). It is recommended to continue monitoring the flow.

Historically, small zones of seepage (estimated to be less than 86.4 m^3/day [1 L/s]) were observed between Sta. 60+700 and 60+750. No zones of seepage were observed during the inspection.

During the site inspection, and based on the instrumentation data collected up to that time, the condition of the East Dike generally appears stable, as:

- No visual signs of slope instability or erosion were observed on the upstream and downstream rockfill slopes;
- Seepage rates, while higher than anticipated in design, are stable and no signs of turbidity have been noted;
- No signs of tension cracks were observed along the cut-off wall alignment;
- Freeboard is adequate; and
- Instrumentation data: piezometric, thermal, seepage, and inclinometer data do not show deteriorating conditions (refer to Section 4.1).

Appendix A1 contains a photographic log and the record of inspection form.

2.2 South Camp Dike

South Camp Dike is located south of the plant site area and is used to connect the mainland to South Camp Island. The South Camp Dike, in conjunction with the Bay-Goose Dike, isolates a portion of Third Portage Lake, the “Bay-Goose Basin”, to permit development of the Goose Island Pit and the southern portion of the Portage Pit. Figure 3 shows the location of the South Camp Dike. It covers a narrow channel, approximately 60 m in width, with shallow water depths ranging from 0.5 to 1.0 m.

The South Camp Dike was primarily constructed between April and June of 2009, prior to ice breakup. During the winter of 2009-2010 additional thermal capping material and rockfill for the haul road was added to the dike. The South Camp Dike has a broad rockfill shell with a bituminous geomembrane liner installed on the upstream side of the shell. Compacted granular material mixed with bentonite was placed above the toe of the liner. The liner was founded on native frozen (permafrost) till material in a trench approximately 3 to 5 m below the lakebed surface. The access road is located on the downstream side of the dike.

At the time of the inspection, the South Camp Dike was used as an access road to connect the southern part of the Bay-Goose Dike, and the contractor's offices and equipment area with the mine facilities. No evidence of erosion or instability of the upstream or downstream slopes was apparent at the time of the inspection. Two thermistor strings exist on the upstream side of the dike, but one stopped functioning mid July 2011 (labelled SD-10 or T38-5). Thermistor string data obtained from the functioning thermistor (SD-09A) indicated that the foundation below elevation 130 m remained frozen throughout the past summers (2009 to 2012). Refer to Section 4.2 for a more detailed analysis of the instrumentation data on South Camp Dike.

No evidence of settlement was observed at the time of the inspection.

At the time of the inspection, presence of water on the downstream toe was observed. This water accumulation is expected to be related to rainfall events and runoff. It is recommended to visually monitor this during the monthly inspections.

A final version of the as-built report for the South Camp Dike had been prepared at the time of the inspection.

Appendix A2 contains a photographic log and record of inspection form for the South Camp Dike.

2.3 Bay-Goose Dike

The Bay-Goose Dike is located within Third Portage Lake on the south side of Portage Pit and encompasses the Goose Island Pit. The Bay-Goose Dike, in conjunction with South Camp Dike, isolates a portion of Third Portage Lake (Bay-Goose Basin). Figure 3 shows the location of the Bay-Goose Dike.

Construction of the Bay-Goose Dike commenced in the summer of 2009. The earthworks component for the northern portion of the dike was principally completed by early October 2009 and for the southern portion by October 2010. Grouting of the foundation and bedrock occurred between March 2010 and July 2011. Jet grouting occurred in selected portions of the dike between October 2010 and May 2011. Dewatering of the Bay-Goose Basin was completed by mid-November 2011.

Bay-Goose Dike is approximately 2,200 m in length and consists of a wide rockfill shell, with downstream filters and a cut-off wall. For the majority of the dike, the cut-off wall extends to bedrock and consists of soil-bentonite (SB) and/or cement-soil bentonite (CSB). For portions of the dike where the cut-off wall was not constructed to bedrock, jet grouting of the soil between the base of the cut-off wall and the bedrock was performed, thereby extending the low permeability element of the dike to the bedrock surface. Grouting of the contact and shallow bedrock was also performed. Water depth beneath the dike is up to 9 m, with a maximum depth to bedrock below lake elevation upwards of 20 m.

It is understood that a downstream seepage collection and monitoring system was planned to be constructed following the completion of dewatering. At the time of the inspection, such a system had not yet been implemented because no evidence of significant seepage had been observed.

Instruments to monitor and assess dike performance have been installed. The instrumentation includes piezometers, thermistor strings, settlement monuments, and inclinometers. Every blast is and will continue to be monitored for blast vibration. Figure 3 shows the location of the instrumentation on Bay-Goose Dike. Thermistor cables T3', T4', and T5' near Sta. 30+300 were installed directly over the dike within PVC tubing to provide protection although they are not buried.

The Bay-Goose Dike is not intended to function as a haul road and, therefore, access to the dike is restricted. Access to the dike has been limited to geotechnical personnel (light vehicles and road maintenance vehicles). Barricades are placed at both ends of the dike to limit entry and were in place during the inspection. At the time of the inspection, access to the cut-off wall alignment and all instrumentation was available.

During the inspection, the dike crest surface, near the cut-off wall centreline, was highly irregular which limits visual observation of potential deformations, settlement, and/or cracking. It is recommended to smooth the existing surface 3 m (one dozer blade width) on either side of the dike centreline. It is understood that the thermal cap is currently not in place to facilitate access to existing casings and instrumentation in the event that remediation work be required in the next year. Once the thermal cap is placed, it is recommended to smooth the surface, 3 m on either side of the thermal cap.

During the inspection four seepage areas were identified with a total of 9 seepage channels. No turbidity was observed in the seepage. The total flow coming from these seepages is 97.2 m^3/day (1.22 L/s). The overall seepage is less than anticipated and is not a concern for now. It is recommended to continue monitoring the evolution of the seepage in that area.

A seepage channel is present downstream near Sta. 30+360 (North Seepage Channel) and was observed during the inspection. The flow is being monitored and is 67 m^3/day (0.88 L/s). During the inspection, a sand boil was also observed at this location on the downstream toe. The sand boil is probably related to the seepage at this location; however the flow reporting into the installed pipe was approximately three times higher than the flow coming from the sand boil observed. The mine reported the presence of two additional sand boils during the summer of 2012 but only one was visible during the inspection. It is recommended to keep monitoring the evolution of the seepage and the sand boil(s).

In 2012, tension cracks were observed within the jet grouting sludge and trench area within the North Seepage Channel from Sta. 30+282 to Sta. 30+400. The tension cracks were equipped with rebars and after two months of monitoring, no change in the opening was recorded. The tension cracks mostly disappeared during the thawing. It is recommended to continue monitoring the evolution of those tension cracks.

The thermal monitoring data indicated in 2011 and 2012 that a potential seepage zone may exist between about Sta. 30+260 and 30+350, which corresponds to the zone where the CSB overlies the SB.

During the inspection, two seepage channels were observed downstream at Sta. 30+626 and Sta. 30+655 (Central Shallows). The flow is being monitored and is 15 m^3/day (0.17 L/s).

At the time of the inspection, depressions were observed on the crest starting 4 m from the centreline in the upstream direction. These depressions were in line with a downstream pond at Sta. 31+130. The settlement was 0.3 m to 0.8 m deep. It is recommended to monitor the evolution of the pond water level and the settlement area. It is also recommended to proceed with a pump test within the pond to determine if it is formed by seepage. The pump test should be performed during dry weather to remove potential influence from precipitation.

Four seepage channels were identified from Sta. 31+560 to Sta. 31+586 (Channel 3). Three channels were flowing at the time of the inspection. The cut-off wall in Channel 3 consists of CSB and jet grouting. A pond was located nearby at Sta. 31+350. No tension cracks or settlement were identified on the crest in that area. The flow is being monitored and is 2 m^3/day (0.02 L/s).

A water pond was located at Sta. 31+765 between Channel 2 and Channel 1. There was no sign of seepage, it is recommended to monitor the evolution of the pond water level downstream and try pumping the pond to determine if it is formed by seepage. The pump test to be performed as recommended above.

On July 10, 2012, two zones of settlement were discovered at Sta. 31+795 located along the centreline, 750 mm downstream and having dimensions 0.35 m by 0.2 m by 1.0 m deep. Test pits by AEM showed that they ended 1.4-1.7 m deep through the capping material into the frozen CSB. During the 2012 inspection, settlements of the upper cut-off wall (coarser materials) were observed at Sta.31+800. These holes were approximately 0.4 m deep and did not extend to the CSB.

Thermal monitoring indicates that a zone of potential seepage may exist near Sta. 32+000 where the CSB overlies jet grouting. Two seepage channels were located downstream at Sta. 32+011 and Sta. 32+014 (Channel 1). The flow was being monitored and is 13.2 m^3/day (0.15 L/s). On the crest, along Channel 1 and 2, there are tension cracks equipped with rebar on the centreline near the cut-off wall. No movement is recorded since the start of monitoring. It is recommended to continue monitoring the rebars. There is a zone of tension cracks (up to 100 mm wide) associated with settlements and holes on the upstream side of the centreline from Channel 2 to Channel 1 (Sta.31+880 to 32+050). According to AEM, those tension cracks and holes are located over a trench dug during the jet grouting activities, which has been backfilled in 2011 prior the annual inspection, and the settlements likely occurs within the jet grout sludge trench only. It is recommended to monitor the area for any sign of adverse conditions.

The final version of the as-built report for the Bay-Goose Dike is currently under preparation and should be available by the end of 2012; however it has been noted that thermistor strings at Sta. 30+260, 30+272, and 30+288.5 (T3, T4, T5) were not installed at the correct elevation in accordance with the design and had since been replaced (T3’, T4’, T5’).

At the time of the site inspection and based on the instrumentation data collected up to that time, the performance of Bay-Goose Dike appears satisfactory, as:

- No visual signs of slope instability or erosion were observed on the upstream and downstream rockfill slopes;
- Freeboard is adequate; and
- Instrumentation data: piezometric, thermal, seepage, and inclinometer data do not show deteriorating conditions (refer to Section 4.3).

Appendix A3 contains a photographic log, a plan view of the dike showing where the photos and observations were noted and the record of inspection form.

3.0 TAILINGS STORAGE FACILITY

The Tailings Storage Facility (TSF) is being progressively constructed within the dewatered portion of the northwest arm of Second Portage Lake as additional capacity to store tailings is required. The general location of the facility is shown on Figure 1 and further details are shown on Figure 4A, 4B and 4C.

The TSF was commissioned in conjunction with the mill start-up in February 2010, with tailings being deposited within the North Cell of the facility. The North Cell was initially formed through the Stage 1 construction of the Stormwater Dike and Saddle Dam 1 in 2009. The first four years of tailings deposition is planned to occur within the North Cell of the facility, after which time deposition will begin in the South Cell, ultimately resulting in the Stormwater Dike becoming encapsulated within tailings (Golder, 2009c). As part of the annual mine plan review for Meadowbank changes to the mine life and therefore quantity of tailings that could be deposited in the South Cell may decrease. In 2012, the construction of Central Dike was initiated, thereby closing the eastern portion of the South Cell. The current crest elevation is 115 m. Saddle Dam 6 (SD6) structure was removed from the TSF design in 2012 by AEM in consultation with Golder. Tailings containment will be provided by the extension of Portage Rock Storage Facility over the planned SD6 footprint. A series of diversion ditches surrounding the catchment basin were added for conveying surface water runoff away from the TSF. A contact water drainage system is required to capture and manage the water in contact with tailings and waste rock.

A bathymetric survey of the tailings pond was conducted by AEM (mid-September) in order to gather data on tailings beach slopes and tailings pond volume. It is understood that this data will be used to track actual versus assumed storage capacity, and to verify the design assumptions. AEM has indicated that these surveys are being performed bi-annually (June and September). At the time of the inspection, the tailings pond elevation was approximately at 141.9 m and the beach was approximately at 142.5 m. According to the latest deposition plan (Golder 2012a, Doc. No. 1344); at the end of September 2012 the planned pond elevation was at El. 143 m and the planned maximum beach El. was at 144 m.

Construction drawings for the Stormwater Dike, Saddle Dam 1 and Saddle Dam 2 provide details for seepage collection trenches and sumps along the downstream toe of the structures in order to collect, monitor, and pump seepage back to the TSF. Saddle Dam 1 permanent system is installed, the collections sump and sump still need to be constructed at Saddle Dam 2.

The as-built reports documenting construction details of Stormwater Dike, Saddle Dam 1 and Saddle Dam 2 are still in draft format and will be finalised in 2013.

A draft of the OMS Manual including the EPP for the TSF Operation was available for review at the time of the inspection (AEM, 2012b). AEM have implemented the draft document and are revising and updating it as required. The OMS Manual and EPP that cover the TSF are anticipated to be issued at a later time.

An overall Emergency Response Plan (ERP) for the mine (AEM, 2012c) has been prepared which includes a risk assessment of potential failures for the Central Dike, Saddle Dams, and Stormwater Dike. The risk assessment should be regularly reviewed and updated, as required, to reflect current designs and understanding about the structures of the TSF. The last review of this document was done March 2012. It is noted that the ERP itself does not address the emergency procedures to be followed in the event of failure of any one or a combination of the tailings perimeter structures, but rather refers to the EPP for these structures. The ERP will also be reviewed in 2013.

During the year, inspection of the TSF is done a minimum of once per month by the mine personnel. The instruments are manually read twice a week during the summer and once a week during the winter. A summary of instrumentation data obtained from the TSF is presented in Sections 4.4, 4.5, 4.6 and 4.7 and Appendix C4 to C7.

Figure B1 is a plan view showing the location of the pictures and observations related to the tailings facility and the reclaim barge. Figure B2 contains a plan view showing the location of the photos and observations noted on Stormwater Dike.

3.1 Reclaim Pond and Tailings Facility

The Reclaim Pond within the North Cell of the TSF has been established and operated since the start-up of the mill. The concept for the operation of the reclaim pond is to maintain the pond generally within the middle of the facility and away from the perimeter structures. Reclaim water is pumped from a floating barge structure at the end of the causeway that extends out into the North Cell. The causeway is constructed of rockfill and is raised on a regular basis to provide access to the barge and for the reclaim pipeline. There are no geotechnical concerns associated with the causeway or the reclaim barge facility.

A waste pile of uncompacted material created from the Saddle Dam 1 foundation stripping exists east of the Saddle Dam 1's north abutment, within the TSF. At the time of the inspection, signs of past slope instability of the waste pile were evident along with the existence of continuous tension cracks (10 to 100 mm open) within the pile suggesting the potential for additional slope instability. At the time of the inspection, pipes were being stored approximately 30 m from the area of concern. It is recommended to restrict circulation of any vehicle within 30 m from the edge of the crest.

Appendix B1 contains a photographic log of the Reclaim Pond and the TSF.

3.2 Saddle Dam 1

Saddle Dam 1 is located at the northwest corner of the TSF (Figure 4B) and forms one of the perimeter structures which are intended to retain tailings and supernatant fluid during the operational and closure/post closure period of the mine. Saddle Dam 1, which crosses a valley (depression) between the northwest arm of Second Portage Lake and Third Portage Lake, is a rockfill embankment with an upstream slope of 3 horizontal to 1 vertical (3H:1V) and a downstream slope of 1.3H:1V. The structure has inverted base filters, upstream graded filters, and a linear low density polyethylene geomembrane liner on the upstream dike face. The geomembrane liner is placed between an upper and lower non-woven geotextile layer for protection, and then is covered by approximately 0.3 m or more of granular material up to an elevation of 140 m. Above elevation 140, no granular layer was placed and the liner remains exposed. There is some liner ballast and tailing deposition is planned to maintain a beach on the face of the structure to reduce the potential for ice damaging the liner. The abutments are founded on bedrock, while the central portion of the dike is founded on ice-poor soil. Till and/or crushed aggregate mixed with dry bentonite powder have been placed above the toe of the liner.

Saddle Dam 1 was progressively constructed. Stage 1 was constructed in the fall of 2009 with a height of 10 m (crest elevation of 141 m) and length of 250 m. Stage 2 was constructed in 2010 to an overall height of 20 m (crest elevation of 150 m) and length of about 400 m.

Four thermistor strings are installed at Saddle Dam 1 and manually read. Three thermistors (T1, T2, T3) are installed to monitor the thermal condition within the structure and its foundation. They were installed in 2009 and early 2010 as part of Stage 1 construction. The fourth thermistor string (T4) was installed in 2009 and extended in 2010 along the upstream face of the dam to monitor the thermal condition of the tailings. The location of the instrumentation is shown in Appendix C4 along with the data. Installation of survey monuments to measure potential displacement of the structure is recommended. Refer to Section 4.4 for the analysis of the instrumentation data.

An adequate beach along the upstream face of Saddle Dam 1 was visible at the time of the inspection. As the LLDPE geomembrane is exposed on Saddle Dam 1 above elevation 140 m, it is essential that a continuous tailings beach be maintained throughout the operational life of the structure and into closure to meet the design requirements (seepage control and to prevent ice loading and ice-induced damage to the geomembrane liner).

Some liner ballast exists on the upstream face of Saddle Dam 1, however over the last two years there have been several occurrences of wind causing liner uplift. Wrinkles that have the potential to fold over may tend to concentrate stress in the liner and become a point of weakness thereby increasing the likelihood for seepage. Some big wrinkles were repaired on Saddle Dam 1 in 2011. The wrinkles observed during the 2012 inspection were longitudinal to the panels and will likely flatten during the deposition of tailings without pinching. The condition of the wrinkles and liner in general should continue to be monitored. The current ballast is considered inadequate. Placement of additional ballast on the liner is strongly recommended to reduce the potential for wind to uplift and cause additional damage to the liner. It is recommended that a formal ballast design be completed in function of existing wind speed and direction conditions to avoid such adverse conditions be repeated again. Following the ballast improvement, the adequacy should continue to be monitored and adjusted as necessary.

In 2011, water was observed ponding at the downstream toe of Saddle Dam 1. Water ponding at the downstream toe and within the foundation of Saddle Dam 1 is due to the natural topography and is not necessarily a result of seepage but rather natural runoff from the surrounding terrain. The ponding of water downstream has the potential to thaw the frozen soils within the dam foundation, thereby increasing the likelihood of settlement and the potential for liner damage. In 2012, a pump was installed in a sump on the downstream side of the dike within a seacan container. The pump and associated piping were used to remove the accumulated water and pump it to the TSF. The pump was actively used for 11 weeks during the freshet and following intense periods of rain during the summer of 2012. No water was observed at the downstream toe of Saddle Dam 1 during the inspection. Monitoring of the water quality should be conducted to assess if there is seepage through Saddle Dam 1. It is understood that the Environment department is monitoring the water quality and the information is shared with the Geotechnical team. This is a good practice as it allows the Geotechnical team to assess if seepage is coming from the TSF. It is noted that in the winter, the backfill foundation of the seacan container may freeze, resulting in improper dewatering of the downstream pond. Provision for additional pump should be made at freshet in case the actual pump is not working properly.

Appendix B2 contains a photographic log, a plan view showing the location of the pictures and observations and the record of inspection form for Saddle Dam 1.

3.3 Saddle Dam 2

Saddle Dam 2 is located along the western side of the TSF and connects to the western corner of Stormwater Dike (Figure 4B). Along with Saddle Dam 1, Saddle Dam 2 forms one of the perimeter structures of the North Cell of the TSF which is intended to retain tailings and supernatant fluid during the operational and closure/post closure period of the mine. Saddle Dam 2 crosses a depression between the northwest arm of Second Portage Lake and Third Portage Lake. Its construction is similar to Saddle Dam 1. The upstream foundation of the dike and abutments are primarily founded on bedrock; however, some portions of the structure, underneath the inverter filter, are founded on ice-poor soil. A thin layer of low permeability till was placed and compacted along the liner connection with bedrock for placing the upstream liner tie-in. In select areas where open factures within the bedrock were noted, a thin layer of crushed aggregate (0-22 mm) mixed with dry bentonite powder was placed under the thin layer of low permeability till. A blanket of till was also placed above the installed liner tie-in at the toe of the structure. Saddle Dam 2 has a maximum height of about 10 m and a crest length of 460 m. The tailings were at a lower elevation than the till plug during the inspection and were thus not resting against the dike.

Three thermistor (T2, T3, T4) strings have been installed at Saddle Dam 2 to monitor the thermal condition within the structure and its foundation. The location of the instrumentation is shown in Appendix C5 along with the data. A fourth thermistor string (T1) is planned to be installed along the upstream face of the dam to monitor the thermal condition of the tailings. Displacement monitoring instrumentation should be installed and regularly monitored. Refer to Section 4.5 for the analysis of the instrumentation data.

There are horizontal joints in the liner at elevation 146 m, resulting from the staged construction of the dike including the liner installation. Water has become trapped beneath these joints in at least 3 locations, applying pressure and causing a ballooning of the liner. It is understood that other areas exhibited similar or worse ballooning and were repaired prior to the inspection. The heights of the balloons varied between 100 mm and 170 mm and were identified between: Sta 20+444 to Sta. 20+476; Sta. 20+250 to Sta. 20+295; and Sta. 20+122 to Sta. 20+130 at an elevation of El.146 m approximately. According to AEM, such water loaded joints were observed in the past on Saddle Dam 1 and Stormwater Dike and were systematically repaired.

Two mechanisms responsible of the water accumulation are identified to produce that issue:

- Water pond on downstream side within the rockfill embankment to an elevation higher than the horizontal joint, and
- Water infiltration from the top of the crest along the upstream slope.

From the information gathered during the inspection, for the actual SD2 case, water infiltration along the upstream slope is identified as the mechanism which has caused the water accumulation and ballooning of the liner. This is based on the following three facts:

- The elevation of the horizontal weld is generally significantly higher than the elevation of the downstream toe and there is currently no water observed at the toe. Therefore, even if the presence of water at downstream, the horizontal joint cannot be loaded by water;
- The foundation of the dam and abutment is frozen based on thermistor data; and

- No important water accumulation was observed during the last year by the mine personnel including the freshet.

For all containment structures built with geosynthetic panels, it is recommended to:

- Avoid downstream ponding by pumping the area, if required, when downstream pond is susceptible to fill the horizontal joint,
- Drain the loaded joints to not over stress the extruded weld, and
- Add ballast materials over the horizontal joints to prevent critical accumulations in the future.

It is noted that dewatering of downstream pond is also important to promote freeze back of the dike foundation and protect the permafrost. To drain the loaded joint, use of localised holes rather than long cuts should be considered to reduce any effect on the horizontal extruded weld (i.e. weld strength reduction).

Design for future structures should be adapted to avoid those conditions from occurring.

Appendix B3 contains a photographic log, a plan view showing the location of the pictures and observations and the record of inspection form for Saddle Dam 2.

3.4 Stormwater Dike

Stormwater Dike (SWD) is an internal structure that subdivides the TSF into two cells (the North Cell and South Cell) within the dewatered northwest arm of Second Portage Lake (Figure 4C). Stormwater Dike is a temporary structure intended to retain tailings and supernatant fluid during the first four years of operation. Upon completion of tailings deposition within the North Cell, the South Cell will commence.

Stormwater Dike is a rockfill embankment structure founded on lakebed soils. The upstream slope is approximately 3H:1V and the downstream slope is about 1.5H:1V. A bituminous geomembrane liner has been installed above the graded filters on the upstream face of the dike. Low permeability till was placed and compacted along the upstream toe of the dike, above the liner. The majority of the dike is founded on till of the former lakebed within the talik. The abutments are generally founded on bedrock; however, some areas have been built on frozen soil with varying quantities of ice.

Stormwater Dike is being progressively constructed. Stage 1 was constructed in 2009 to a height of 10 m (crest elevation of 140 m) and length of 860 m. Stage 2 was primarily constructed in 2010 to an overall height of 18 m (crest elevation of 148 m) and length of about 1060 m. A horizontal bench exists along the upstream face of the structure between the connection of the 2009 and 2010 portions of the structure. While the Stormwater Dike design and current tailings deposition plan are based on a crest elevation of 150 m, it is understood that AEM has elected to construct this structure to an elevation of 148 m at this time. The junction between the bituminous liner of Stormwater Dike and the LLDPE liner of Saddle Dam 2 was completed in 2011.

An adequate beach along the upstream face was visible at the time of the inspection. At the time of the inspection, tailings were about to be discharged through spigot 4 near Sta.10+672. It was noted that protection was added at the end of the spigot to avoid damaging the liner during the deposition of tailings. This is a good technique that should continue to be used.

No tension cracks were observed on the crest during the inspection in 2012. Differential settlement was observed on the upstream slope and crest edge from about Sta.10+700 to Sta.11+000. It is recommended that AEM monitor the observed differential settlement, for any change or rate of change.

During the inspection, a bulge in the liner of about 75 mm above the granular foundation was observed at Sta.10+672. According to AEM this condition was not present at the time of the last inspection (August 2012) but had developed suddenly. Spigot 4 was installed over this area in the past. The liner was in tension (trampoline condition) at this location, less than 20 mm above the surface. This is likely due to circulation of water along the upstream slope beneath the liner and washing of particles resulting in a dense accumulation of materials. The geomembrane around the bulge was in good condition. It is consider that with the upcoming winter conditions the running of water beneath the liner will cease. For this reason and considering that the trampoline is relatively small, it is recommended to monitor only the evolution of this area until the tailings beach covers and ballasts the area.

Three holes were identified through the liner at Sta. 10+240 El. 147 m (1 m below the crest). The holes should be repaired prior to tailings being deposited above this elevation. A damaged panel (# 306) without visible hole was observed at El. 146.2 m. This panel was probably placed in this condition initially; no recommendation is cited because of the temporary nature of Stormwater Dike. If the design basis of Stormwater Dike changes, this panel should be replaced.

The mine inspection report mentioned the presence of a small sand boil discovered in June 2012 and still present in August 2012 at Sta.10+500 located at a fair distance from the downstream toe and evacuating water at a significant rate. During the inspection, no seepage or sand boil was observed along the downstream toe of Stormwater Dike. The elevation of the reported sand boil is approximately 132.5 m which is lower than the elevation of the tailings; therefore, it is possible that the water coming out of the sand boil is exfiltration seepage through the dike foundation. It is recommended to analyse the water coming out of the sand boil to determine if it is seepage from the TSF or from the abutment.

Appendix B4 contains a photographic log and the record of inspection form for Stormwater Dike.

3.5 Central Dike

Central Dike is located along the eastern side of the TSF and connects to the eastern corner of Saddle Dam 5 (see Figure 4A). Along with Saddle Dam 4 and Saddle Dam 5, Central Dike forms one of the perimeter structures of the South Cell of the TSF which is intended to retain tailings and supernatant fluid during the operational and closure/post closure period of the mine. The ultimate design height is 54 m with a crest length of 1,100 m. Central Dike crosses a depression within the Second Portage Lake.

Prior to tailings being deposited, the South Cell will be used as a water management (attenuation) pond. The water balance for years 2013 indicates that the free water will reach a maximum elevation of 104 m which give a freeboard of 6 m to the crest of the cofferdam. At the start of tailings deposition, the South Cell will not be used anymore as an attenuation pond and the tailings beach requirement will be effective.

Construction of Central Dike was underway at the time of the inspection. Rockfill was being placed up to El. 115 m and the Cofferdam was retaining the attenuation pond in the South Cell. No inspection of Central Dike was completed in 2012 as construction was still underway.

The Cofferdam was in good condition and no geotechnical concerns were noted.

The Central Dike section includes a compacted rockfill embankment with upstream seepage barrier, granular filters, and a key trench located along the centreline of the dike. Foundation soils include lakebed sediments and till overlying bedrock. Soft and ice-rich soils are removed from the Central Dike footprint to limit settlement beneath the entire dike footprint. The bedrock surface in the liner key-trench excavation is cleaned, mapped, and a slush grout applied over the entire surface of exposed bedrock. The key-trench was not excavated to bedrock in all places. The slush grout provides a non-erodible material to fill open fractures to reduce the likelihood of piping of the compacted till core. A linear low density polyethylene (LLDPE) geomembrane liner is anchored into the compacted till core of the key-trench. Due to the location of the key-trench along the centreline beneath the rockfill embankment, an upstream LLDPE geomembrane liner is extended beneath the dike embankment and tied-in to the key trench to provide a seepage barrier.

The majority of Central Dike is constructed of run-of-mine rockfill placed and compacted in lifts on the dense till overlying bedrock. Rockfill embankment side slopes for the upstream side of the dike are 3H:1V to El. 130 m, and 2H:1V between El. 130 and El. 150 m. Downstream slopes are 1.5 H: 1 V.

A two-zone granular filter is placed between the liner and the rockfill and will limit the movement of tailings through the rockfill if the liner gets damaged. Filters on the downstream side of the cofferdam and on the upstream rockfill act as a bedding for the liner; these zones are compacted. Inverse filters are placed beneath the rockfill across the entire footprint to limit the movement of foundation till into the rockfill.

To prevent damage to the LLDPE geomembrane and to further limit the potential quantity of seepage passing through the structure and its foundation, a tailings beach is to be provided by operations at all times. No cover will be placed over the upstream LLDPE geomembrane, therefore the operations will need to enact extra protection measures to prevent scour due to tailings deposition and spigot installation. Regular visual inspection of the LLDPE geomembrane is required. Any identified damage is to be repaired.

At the end of mine life, the Portage Pit will be allowed to fill with water to the same elevation as Third Portage Lake, which will decrease the head across the Central Dike. Deposition of tailings within the South Cell is planned to start in 2015.

4.0 GEOTECHNICAL INSTRUMENTATION

As part of the 2012 geotechnical inspection, Golder reviewed all the instrumentation data from the dewatering dikes and the TSF. Daily review of the instrumentation on the dewatering dikes is done on VDV by the mine personnel and monthly reports summarising those observations are issued internally by AEM. The compilation of the instrumentation data was not part of the scope of this study and the figures showing the relevant data were provided by AEM. Most of the data were sent as a series of screenshots taken from the instrument database (VDV). It is noted that this method of sharing the instrumentation data results in a loss of resolution in the figures and makes it harder to visualise trends by looking at each instrument separately for the external inspector. It is recommended to present the data under another format to facilitate the external inspector’s work. For example, the method used in the past allowed complete and rapid understanding of the instruments’ configuration in a certain area, while also presenting the results for related instruments, all on the same page. It is considered that the VDV software is a very useful tool for AEM and should continue to be used in the future. Continued monitoring of all instruments is required.

4.1 East Dike

Instrumentation within the East Dike was installed in the spring of 2009 to monitor the dike's performance following construction and during dewatering, operation, and into closure. Additional instrumentation was added in 2009 and 2010 to increase coverage across the dike. Since June 2012, all the piezometers and thermistors on the East Dike have been connected to the automatic data collection and transmission system and data is now visible through the VDV database. A considerable gap in the data exists for some of the piezometers on East Dike. According to AEM, these gaps were due to an error in the temperature reading due to an electrical problem for out of range temperature (range from -50 to 50°C). This error affected the formula and produced gaps. AEM stated that the problem has been fixed. Some of the scales on the graphs provided did not allow the visualisation of both the minimum and maximum value for the whole year. The following subsections present a summary of the data for the period between September 2011 and September 2012, with a few general references to previous monitoring data results. The 2009, 2010 and 2011 Annual Geotechnical Inspection Reports (Golder, 2009d, 2010c, 2011a) contain additional information regarding instrumentation data collected prior to September 2011. Data plots for the 2012 are contained in Appendix C1 along with cross-sections showing the location of the instruments.

4.1.1 Piezometers

Three arrays of multilevel vibrating wire piezometers (VWP) were installed within the East Dike in mid-March 2009 as follows:

- South Channel (Sta. 60+190);
- North Channel (Sta. 60+490); and
- North Shallows (Sta. 60+700).

At each location, multilevel VWP were installed on the:

- Upstream side of the cut-off wall, approximately 2 m from the centreline;
- Immediately downstream of the cut-off wall, approximately 2 m from the centreline; and
- Further downstream of the cut-off wall, approximately 10 m from the centreline.

In addition, single VWP were installed immediately downstream of the cut-off wall near the contact area (base of cut-off wall and top of bedrock surface) at Sta. 60+150, Sta. 60+200, Sta. 60+240, Sta. 60+400, Sta.60+420, Sta.60+440, Sta. 60+450, Sta. 60+460, Sta. 60+472, Sta. 60+480, Sta. 60+500, Sta. 60+510, Sta. 60+550, Sta. 60+600, Sta. 60+650, and Sta. 60+750. The piezometer located at Sta.60+470 is broken.

For the three piezometric arrays located at Sta. 60+190, Sta. 60+490, and Sta. 60+700 the following observations are made:

- At Sta. 60+190, the observed levels are consistent with expectations for a functioning cut-off wall. There is a consistent drop in the hydraulic head across the cut-off wall and within the grouted bedrock in the downstream direction. Further downstream, the hydraulic head continues to decrease. There is a small increase in the hydraulic head that occurred in August 2012 which quickly returned to the previous level, and was likely caused by a heavy rainfall event. The temperature data are consistent with observations noted during previous years.

- At Sta. 60+490 a small decrease in the hydraulic head is apparent within the lower bedrock, but the head remains high in the upper portion of the bedrock and at the contact. Flow through this portion of the dike is apparent within the bedrock and near the contact, and is particularly evident in the thermal instrumentation data associated with this piezometric array. In the summer, the temperature recorded by the instrument goes from 2.5 to 11 degree following the same trend as the lake temperature. This corresponds to the zone of seepage observed at Sta.60+498. A rise in the piezometeric level was observed in March and is attributed to the pump in the downstream sump being inoperational for 3 weeks. The hydraulic head was restored in April once the new pumping collection system was installed.
- At Sta. 60+700, the observed levels are consistent with expectations for a functioning cut-off wall. The temperature data are consistent with observations noted during the previous years.

For the single VWP piezometers no significant change in the hydraulic head was observed during the year. Some of the piezometers on East Dike had considerable gap in the data and therefore interpretation is limited.

The following observations were also made:

Sta. 60+400 to 60+510

Piezometers between these stations show a rise in piezometeric level in March consistent with that recorded at Sta. 60+490 and the rise is attributed to the same conditions. Similarly, the temperature variations recorded by these piezometers during the summer of 2012 show the same trends as Sta. 60+490 and are consistent with previous years.

Sta. 60+750

Irregular changes in the measured piezometric pressure can be observed and have been observed historically at this location as the piezometer fluctuates between frozen and thawed conditions. The observed rise and drop in head does not appear to be real and is not considered a concern.

4.1.2 Thermistors

Five thermistors have been installed on the East Dike at Sta.60+092, 60+185, 60+485, 60+695 and 60+482. Seven additional thermistors (P458, S467, S479, T483, T486, S491 and P494) were also installed in the sinkhole area and in the past have shown the same temperature profile as the lake throughout the majority of the cut-off wall. The data from these seven thermistors was not read in 2012. AEM stated that the reading of those thermistors will resume in 2013. This is recommended by Golder as this is a critical zone within the East Dike where seepage was observed in the past and is still observed in one of the read thermistor this years in 2012 (T60+485). From September 2011 to September 2012 the following observations have been made:

Sta. 60+092 and Sta. 60+842

The two thermistors installed at Sta. 60+092 and Sta. 60+842 are located on the south and north abutments, respectively. Only the upper 0.5 m to 1.2 m of the dike on the abutment thawed during the past summer (active layer). The remaining portion of the cut-off wall and bedrock remained frozen. The temperature within the cut-off wall varied from 2°C to -15°C. Comparatively, less temperature variation was observed with depth at each location. At approximately 10 m into the bedrock, the temperature variation was less than 1°C and was stable at about -4.5°C (Sta. 60+092) and -3.5°C (Sta. 60+842), respectively. Trends observed in 2011-2012 are consistent with what has been observed historically. No signs of seepage are apparent at these locations; nevertheless.

Sta. 60+185

The thermistor string installed in the South Channel at Sta. 60+185 (bedrock about 6 m below water surface at elevation 127 m) recorded the following temperature variations:

- The upper 1 m (El. 135.5 m) of the cap material thawed during the summer of 2012 and was frozen during the winter period this is considered to be the active layer and is normal;
- The cut-off wall remained frozen from El.135 to 133 m;
- The cut-off wall from El.133 m to 132 m has been subject to freeze and thaw cycles. This elevation roughly corresponds to the water level in Second Portage Lake upstream of the dike (133.1 m). The temperature varied from about -1°C to 1°C;
- The remaining portion of the wall (below elevation 132 m to the base of the wall at 127 m) remained thawed with a temperature variation of about 4°C (between 0.5°C and 4.5°C); and
- Recorded temperatures indicate that the bedrock is also thawed. The seasonal variation in the temperature decreased with increasing depth. Near the bedrock surface, the temperature varied by approximately 3.5°C (from 1 to 4.5°C), and 7 m into rock, seasonally varied by about 1°C, with a stable temperature of about 2°C.

Trends observed in 2011-2012 are consistent with that observed historically. Based on the thermal data at this location no signs of seepage are evident.

Sta. 60+485

The thermistor string at Sta. 60+485, installed within the North Channel (bedrock at approximately El. 125 m, 8 m below lake level), indicated the following temperature variations:

- The cap and upper portion of the cut-off wall was initially frozen and then thawed (El. 136.5 to 133.2 m) associated with the active layer;
- The cut-off wall between El.125.4 and 133.2 m remained thawed throughout the year; and
- The bedrock also remained thawed throughout the year.

The thermal variation observed within the cut-off wall below El.133 m and the shallow bedrock down to an elevation of 123 m is significant at this location, with fluctuations between 12°C and slightly above 0°C. There is good correlation between the temperatures monitored within the cut-off wall and the upstream lake temperatures indicating advective flow (i.e., recorded temperature changes are primarily a result of temperature changes in water flowing through this area). The delay between changes in the recorded temperatures within the lake and within the cut-off wall is minimal (less than 4 days). The temperature response recorded in the piezometers at Sta. 60+490 P2-C are also significant, as are the responses recorded within the piezometers at Sta.60+450, Sta.60+460, Sta. 60+472, Sta. 60+480, Sta. 60+490, P1-C, and Sta. 60+500. Seepage occurs downstream and is collected in the sump and removed via the pumping system.

Trends observed in 2011-2012 are consistent with that observed historically.

Sta. 60+695

The thermistor string installed in the North Shallows at Sta. 60+695 (bedrock at approximate elevation 128.5 m, 4 m below upstream lake level) recorded the following temperature variations:

- The cap and upper portion of the cut-off wall from about El. 136.5 to 134.6 m are thawed during the past summer and frozen during the winter (active layer);
- The cut-off wall from about El.134.6 to 132 m remained frozen throughout the monitoring period;
- A portion of the cut-off wall from El.132 to 131 m cycled from frozen to thawed. The temperature varied by about 1°C;
- The remaining portion of the cut-off wall from El.131 to 128.5 m remained thawed throughout the monitoring period. Temperature varied by about 4°C (from 0 to 4°C); and
- The bedrock remained thawed from El. 128.5 to 123 m, with the temperature varying from about 0 to 4°C. Annual temperature variation decreased with depth (below El.123 m), with a stable temperature of about 2°C.

Trends observed in 2011-2012 are consistent with that observed historically. Based on the thermal data at this location no signs of seepage are evident.

4.1.3 Inclinometers

Three inclinometers were installed at East Dike Sta. 60+195, Sta. 60+495, and 60+705. The inclinometer at Sta. 60+195 was destroyed in July 2010 and has not been replaced. The upper 2 m of the inclinometer at Sta. 60+705 has also been damaged by equipment. The inclinometer displacements are referenced along Axis A and Axis B; Axis A is perpendicular to the cut-off wall alignment (positive displacement are towards Pit side), while the Axis B is aligned with the cut-off wall (positive displacements are towards up chainage), perpendicular to the Axis A.

Recorded displacements to the date of the inspection are small. The maximum cumulative displacements at the crest were observed in the inclinometer installed at Sta. 60+495. The cumulative displacement is about 17 mm perpendicular to the cut-off wall (Axis A), and about 12 mm aligned to the cut-off wall (Axis B). Crest displacements recorded in the inclinometer at Sta. 60+705 were slightly less. The recorded displacements are well within the tolerable displacements for the structure and are not a concern.

4.1.4 Survey Monuments

Thirteen survey monuments are installed on casings on the crest of East Dike. AEM had recently revised their approach for the monitoring of the survey monuments to increase the precision of the surveying data. Weekly readings started in September 2012 to establish a baseline. Not enough data was available at the time of the inspection to permit interpretation.

4.1.5 Seismograph

Periodic seismograph monitoring of blast vibrations on the crest of the East Road has occurred at three locations. No monitoring stations were installed directly over the East Dike crest in 2012. AEM is looking at the monitored blast vibrations after each event. The maximum allowable Peak Vectors Sum (PVS) for all dikes is set by AEM at 50 mm/s. The highest recorded PVS for East Road from September 2011 to September 2012 was 25.6 mm/s. The PVS on the crest of East Dike would be lower since the dike is further east. No estimated tensile and shear strains was calculated for the purpose of this geotechnical inspection. The recorded PVS were compared to the Peak Particles Velocity (PPV) values used in previous Meadowbank Blasting Effect Studies which considered the tensile and shear strains, indicating that the recorded blast vibrations are not a concern for the integrity of the dike.

4.2 South Camp Dike

Two thermistor strings were installed on the upstream side of the South Camp Dike. SD-10 was located near the liner toe, however has not functioned since mid-July 2011. SD-09-A is located approximately 20 m further upstream within Third Portage Lake. The following summarizes the observations regarding the thermal regime at these locations:

- Soils located beneath the dike foundation and liner appear to have remained frozen (permafrost) below elevation 130 m; and
- The active layer is frozen from mid-October to late June.

Based on the thermal data at this location, no signs of seepage are evident. It is also recommended to replace the damaged thermistor to provide ongoing thermal monitoring of the structure and its foundation.

Plots of the South Camp Dike thermistor data are provided in Appendix C2.

4.3 Bay-Goose Dike

Instrumentation was installed in the summer of 2011 to monitor the dike's performance following construction, during dewatering, operation, and into closure. At the time of the inspection, all the piezometers and thermistors on Bay-Goose Dike (except three thermistors) had automatic data collection and transmission system to the VDV. The following subsections present a summary of the data for the period between September 2011 and September 2012. Data plots for the instrumentation are presented in Appendix C3 along with profile and cross-sections showing the location of the instruments.

4.3.1 Piezometer

Arrays of multilevel vibrating wire piezometers (VWP) were installed within the Bay-Goose Dike as follows:

- Sta. 30+158
- Sta. 30+276.5
- Sta. 30+378.5
- Sta. 30+453.5
- Sta. 30+645.5
- Sta. 31+165
- Sta. 31+600
- Sta. 31+815
- Sta. 31+885
- Sta. 32+000
- Sta. 32+065
- Sta. 32+105

At each location, multilevel VWP were installed on the:

- Upstream side of the cut-off wall, approximately 2 m from the centreline;
- Immediately downstream of the cut-off wall, approximately 2 m from the centreline; and
- Further downstream of the cut-off wall, approximately 10 m from the centreline.

In addition, single VWP were installed immediately downstream of the cut-off wall near the contact area (base of cut-off wall and top of bedrock surface) at the following stations:

- Sta. 30+167;
- Sta. 30+249
- Sta. 30+306
- Sta. 30+440
- Sta. 30+516
- Sta. 30+684
- Sta. 30+770
- Sta. 30+804
- Sta. 31+052
- Sta. 31+220
- Sta. 31+565
- Sta. 31+615
- Sta. 31+700
- Sta. 31+842
- Sta. 31+928
- Sta. 31+990
- Sta. 32+020

The observed levels are consistent with expectations for a functioning cut-off wall. There is a consistent drop in the hydraulic head across the cut-off wall and within the grouted bedrock in the downstream direction. Small increases in the hydraulic head can be observed in the piezometer located on the downstream side. These small increases may be the result of blasting.

Further observations were also made for the following instruments:

Sta. 30+ 378.5, 30+440 and 30+453.5

There is a sharp decrease in the hydraulic head in May and temperature fluctuation. These events could be associated with ice breakup. This location corresponds to the North Seepage Channel.

Sta. 30+ 645.5, 30+770, 30+804

There is a gap in the data from May to June due to an electronic break. This area corresponds to Central Shallow.

Sta. 31+ 125, 31+220

There is a sharp decrease in the hydraulic head of the instrumentation in July corresponding the pumping of the pond located downstream. The hydraulic head is restored to its original value in August.

Sta. 31+565 to 31+700

In April there is a small decrease in hydraulic head associated with pumping of a pond downstream. In May there is a sharp decrease in hydraulic head associated with ice breakup. In August there is a sharp decrease of the hydraulic head at Sta.31+600 corresponding with the removal of a till layer in the pit. The temperature between Sta.31+565 and 31+700 increases to around 12 degrees in the summer of 2012. This could be caused by advective flow as this area corresponds to seepage Channel 3. AEM thinks that there could be a problem with the piezometers located at Sta.31+565 and 31+615.

Sta. 31+928 and 32+065

The hydraulic head fluctuates constantly between February and July. There is a sharp drop in hydraulic head recorded at Sta.32+020 from February to September. This area corresponds to seepage Channel 1.

4.3.2 Thermistor

Thirty-three thermistors (from T1 to T30 and T3' to T5') have been installed on Bay-Goose Dike. From September 2011 to September 2012 the following observations have been made:

Sta. 30+ 134 (T1), Sta. 30+827 (T14) and 32+140 (T30)

The three thermistors installed at Sta. 30+134 (T1), Sta. 30+827 (T14) and Sta. 32+140 (T30) are located on the North abutment, Goose Island and the west abutments, respectively. The first node of these thermistors is installed about 1 m below the dike crest. From the data collected, thawing was observed on the North (T1) and Southwest (T30) abutment to an elevation of about 134.5 or 134 m. T14 was frozen in its entirety.

Sta. 30+ 185 (T2), Sta. 30+489.5 (T9), Sta. 30+553.25 (T10), Sta. 30+621.5 (T11), Sta. 30+650 (T12), Sta. 30+713 (T13), Sta. 31+080 (T15), Sta. 31+134.5 (T16), Sta. 31+170 (T17), Sta. 31+352 (T18), Sta. 31+752.5 (T21), Sta. 31+820 (T22).

Twelve thermistors were installed in the soil-bentonite (SB) portion of the cut-off wall. The twelve thermistors show a similar trend where the initially frozen upper portion of the cut-off wall thawed during the summer of 2012 (below El. 132 to 131 m), which is comparable to the "active layer" and is an expected trend. The portion ranging from El. 135m to El. 132m stays frozen during the whole year. The rest of the cut-off wall (below El.132-131 m) and down into the bedrock stayed unfrozen during the monitoring period. For example at Sta. 31+553.25 (T10), the upper part of the cut-off wall near the crest stayed frozen during the summer of 2012 with a maximum of about -0.2°C and then the portion of the wall below elevation 132 remained unfrozen throughout the monitoring period.

Punctual warming at Sta. 30+621.5 (T11), near about El. 121 m and Sta.30+650 (T12) near El. 119 m could indicate the presence of a more permeable bedrock mass. These two thermistors are located near the Central Shallow seepage.

Sta. 30+260 (T3), Sta. 30+261.5 (T3'), Sta. 30+272 (T4), Sta. 30+273.5 (T4'), Sta. 30+288.5 (T5), Sta. 30+290 (T5'), Sta. 30+330.5 (T6)

This portion of the dike contains a cut-off wall where cement-soil-bentonite (CSB), a rigid material sits on top of soil-bentonite (SB), a soft material, where settlement could occur. The design thermistor node configuration for T3 (Sta. 30+260), T4 (Sta. 30+272) and T5 (Sta. 30+288.5) were modified to have nodes located at a very close spacing and were to be installed to monitor the interface between the CSB and SB material as noted below. The thermistors T3, T4 and T5 were not installed to the designed depths, but instead have been installed below the interface and monitor the bedrock contact. Based on preliminary concerns over the thermistor data, potentially indicating that a seepage pathway existed, a field investigation was performed at the end of September 2011. The grout injection investigation program targeted the CSB/SB interface; however no large seepage pathway was identified. In 2011, AEM installed three more thermistors at Sta. 30+261.5 (T3'), Sta. 30+273.5 (T4') and

Sta. 30+290 (T5') that now provide readings across the CSB/SB interface, but the spacing between each nodes does not meet the design. No seepage directly downstream of this portion of the dike was observed, however, based on the topography, it is anticipated that seepage from this area could report to a lower point within the North Channel (i.e. 30+360). Small seepages within the North Channel have been observed.

Sta. 30+386 (T7), Sta. 30+417.5 (T8), Sta. 31+595 (T19), Sta. 31+605 (T20), Sta. 31+850 (T23), Sta. 31+880 (T24), Sta. 31+960 (T25), Sta. 31+960 (T25), Sta. 31+995+ (T26), Sta. 32+030 (T27), Sta. 32+060 (T28), Sta. 32+100 (T29)

Twelve thermistors were installed in areas where the bottom of the cut-off wall was jet grouted. As observed in most of the thermistors installed along Bay-Goose Dike centreline, the twelve thermistors show that the top part of the cut-off wall thawed in the summer, and portion of the wall remains frozen beneath the thawed part. In those twelve thermistors, the frozen part is smaller then what was observed elsewhere. In most of these thermistors the temperature increases in the jet grouting portion and then decreases. This trend was also observed in 2011 and was attributed to the curing of the grout. It seems that this hypothesis is correct since the temperature has continued to decrease each month in the jet grouting portion of each thermistor and has gone from 5-8 degree in September 2011 to 2-4 degree in September 2012. No trend indicating seepage can be seen in those thermistors.

4.3.3 Inclinometers

Eight inclinometers were installed at Bay-Goose Dike at Sta. 30+282, Sta. 30+390, 30+640, 31+180, 31+590, 31+815, 31+885 and 32+065. The inclinometer displacements are referenced along Axis A and Axis B; Axis A is perpendicular with the cut-off wall alignment (positive displacement are towards the Pit side), while Axis B is perpendicular to Axis A aligned to the cut-off wall (positive displacements are towards up chainage). The displacement in the A axis varies from 5 mm to 20 mm. In the B axis they vary from 2 to 10 mm. Recorded displacements to date of the inspection are mainly small and seem well within the tolerable displacements for the structure.

4.3.4 Survey Monuments

Fifty-four survey monuments are installed on the dike crest of Bay-Goose Dike. AEM recently revised their approach for the monitoring of the survey monuments to increase the precision of the surveying data. Not enough data are available actually for interpretation.

4.3.5 Seismograph

For every blast at Goose-Pit, seismograph monitoring of blast vibrations on the crest of the Bay-Goose Dike has occurred at seven locations along the dike. AEM is looking at the monitored blast vibrations after each event. The maximum allowable Peak Vectors Sum (PVS) for all dikes is set by AEM at 50 mm/s. The highest recorded PVS for Bay-Goose from September 2011 to September 2012 was 35.2 mm/s. No estimated tensile and shear strains were calculated this years for the purpose of this geotechnical inspection. The recorded PVS were compared to the Peak Particles Velocity (PPV) values used in the previous Meadowbank Pit Blasting Effect Study which considered the tensile and shear strains, indicating that the blast vibrations recorded are not a concern for the integrity of the dike.

4.4 Saddle Dam 1

The SD1-T1 thermistor string was installed in the center of the upstream face of the dike immediately beneath the geomembrane liner to monitor temperatures within the deposited tailings. A thin layer of protective granular material exists above the geomembrane liner at this location. This thermistor records values similar to the ambient air temperature above the tailings. During the winter of 2012 all tailings were frozen. Temperatures above 0 were recorded in the summer of 2012 above El.140 m which correspond to the tailings elevation. It is anticipated that data collected from this location will be useful in monitoring the freezing of the tailings in the coming years.

The SD1-T2 thermistor string was installed vertically through the upstream Stage 1 crest in the center of the dike at El. 140 m. The data shows that the dike foundation remained frozen during the past year. In the summer temperature above 0 were recorded from El. 138 to 140 m. Data observed were consistent with the data from 2010-2011.

The SD1-T3 thermistor string was installed vertically through the upstream Stage 2 crest in the center of the dike at El. 150 m. It shows that the dike foundation remained frozen during the past year. In the summer temperature above 0 were recorded from El. 146 to 148 m. Data observed were consistent with the data from 2010-2011.

The SD1-T4 thermistor string was installed vertically through the upstream toe near the center of the dike. It shows that the dike foundation including the liner tie-in till plug remained frozen during the past year.

Thermistor data from within the structure indicates that the dike foundation remained frozen during the past year. Below the rockfill shell, the foundation soil or bedrock remained in a frozen state with temperatures ranging from about -4°C to about -7°C. At the upstream toe, below elevation 132 m, the compacted till base material below the liner remained frozen. Thermistor data showed that the tailings remained frozen in the summer of 2012. The rockfill shell remained frozen with the exception of the upper 2 m that thawed in August 2012.

No signs of seepage or thawing of the foundation soil were observed. The structure is performing as expected.

Plots of the Saddle Dam 1 thermistor data are provided in Appendix C4.

4.5 Saddle Dam 2

The SD2-T1 thermistor string has been installed since September 8, 2012 in the center of the upstream face of the dike immediately on top of the geomembrane liner to monitor the thermal regime of the tailings in contact with the structure.

The SD2-T2 thermistor string was installed vertically through the upstream crest in the center of the dike at El. 140 m. It shows that the dike foundation remained frozen during the past year and that the upper 2 m of rockfill thawed in August 2012.

The SD2-T3 thermistor string was installed vertically through the upstream key-in trench near the center of the dike at about El. 144 m. It shows that the dike foundation remained frozen during the past year. Less than a meter of the semi-pervious backfill placed on top of the compacted till thawed during the summer of 2012.

The SD2-T4 thermistor string was installed vertically through the upstream toe about mid-way between the center of the dike and the northwest abutment. It shows that the dike foundation remained frozen during the past year along with the compacted till base material below the geomembrane liner in this area. Less than a meter of the semi-pervious backfill placed on top of the compacted till thawed during the summer of 2012.

Thermistor data from within the structure indicates that the dike foundation remained frozen during the past year. Below the rockfill shell the foundation soil or bedrock remained in a frozen state with temperatures ranging from about 0°C to -9°C. At the upstream toe of the dike only the upper 1 m of the semi-pervious backfill thawed during the summer of 2012. Most of the rockfill stayed frozen with the exception of the upper 2 m that thawed in August 2012.

No sign of seepage or thawing of the foundation soil was observed. The structure is performing as expected. Note that no tailings are resting against any portion of SD2 actually.

Plots of the Saddle Dam 2 thermistors data are provided in Appendix C5.

4.6 Stormwater Dike

It is noted that no instrumentation currently exists within the Stormwater Dike to monitor its performance. A single deep thermistor (T147-1) and piezometer string (VWP 13265) does exist at the downstream toe of Stormwater Dike and is being utilized to monitor freeze back of the talik, and in future, will be used to monitor the thermal regime beneath the tailings in the South Cell.

Thermistor (T147-1) shows the existence of a frozen crust of material from El. 120 m to El. 115 m that stayed frozen during the summer of 2012. Below El. 115 m the temperature varied between 0.5°C and 0.1°C from the beginning of March 2012 to the end of August 2012 indicating the beginning of freeze back of the talik.

Plots of the Stormwater Dike thermistor and piezometer data are provided in Appendix C6.

4.7 Other Tailings Facility

Other thermistors were installed in 2012 in the tailings facility to monitor the temperature in the tailings as well as the temperature of RF1 and RF2 which delimits the northeast side of the TSF’s North Cell. Plots of these thermistors data are provided in Appendix C7.

Two thermistors were installed on RF1 (T121-1 and T73-6). Thermistor T121-1 shows temperature varying from 0°C to -7°C below El. 132 m. Thermistor T73-6 shows a wide range of temperature above El. 139 m but below El. 139 m the temperature is 0°C.

One thermistor is installed on RF2 (T122-1) and shows temperature varying from 0°C to -7°C, indicating that the RF2 foundation is in a frozen state.

One thermistor (T90-2) was installed within the talik of the former lakebed inside the North Cell of the TSF. Temperatures below 0 degrees Celsius are recorded below El.140 m which seems to indicate that the tailings are continually frozen at this location, although an annual cycle of temperatures have not yet been recorded.

5.0 ALL WEATHER PRIVATE ROAD (AWPR)

The All Weather Private Road (AWPR) formerly referred to as the All Weather Private Access Road (AWPAR) was built in 2007-2008 to connect the hamlet of Baker Lake to the Meadowbank Mine site (Figure 5A, 5B, 5C). The road is approximately 107 km in length with nine bridge crossings and culverts installed at a total of thirty-eight locations. Table 1 lists each structure along the AWPR, the designated name, approximate location and observations noted during the inspection.

The road design is based on a general rockfill sub-base and crushed granular rockfill surfacing with a combined minimum thickness of 1 m over thaw stable soil and 1.2 m over thaw susceptible soil.

A few upgrades to road were made in 2012. The bridge at km 22 was widened, the bridge at km 82 was repaired and the curve at km 84 was reworked. No evidence of thermal degradation of the permafrost was observed on the road during the inspection. It should be noted that visual evidence may not necessarily be observed due to the regular road maintenance performed by AEM. The summer of 2012 was within the normal ranges in terms of precipitation. As a result, during the inspection water levels and flow velocities at the crossings were considered to be normal for the time of the year.

During previous inspections, water was observed flowing through the rockfill in several locations. Water was not observed flowing through the rockfill near the culverts during this inspection. Water was observed seeping under the northwest abutment of bridge R19 (83+150). In general, the fill material that comprises the majority of the road provides no significant barrier to low gradient water flow due to its coarse nature. During higher flow and runoff periods, water may flow through portions of the road fill.

AEM has been conducting regular and event-based visual inspections of the fish-bearing water crossing locations along the access road. A draft copy of the “AWPR Water Quality Monitoring Results” document (AEM, 2012d), including results from AEM’s visual inspections and water monitoring was provided to Golder for review at the time of the inspection. This data should continue to be reviewed, to confirm the hydraulic function of the crossings, the adequacy of crossing locations with respect to the watercourses, and minimal impact to fish habitat.

It is understood that AEM’s monitoring program includes an assessment of sedimentation and potential erosion issues at the major bridge crossings. Consideration should be given to expanding AEM’s monitoring program to include all culverts and bridges along the road to assess whether they are providing adequate capacity during the freshet and following large precipitation events.

5.1 Culverts

In general, the culverts were in good condition at the time of the inspection. No degradation of culvert conditions has been observed compared to the inspection of 2011. Most were unobstructed with no signs of erosion and no signs of damages to the culverts. No repair work has been performed and no new culverts for water where installed in 2012.

A photographic log of the inspected culverts is provided in Appendix D1. Culverts in the following discussion, and in the photographic log, have been identified by name (e.g., R-24) consistent with those indicated on the as-built drawings provided by AEM and as shown on Figures 5A to 5C. Some of the new culverts installed in 2010 and 2011 are not shown on these figures. Each culvert is also identified by its approximate kilometer location (e.g., km 98+250) along the road alignment.

Signs indicating that a minor of erosion might have occurred were observed at the inlet of PC-5 (km 18+280) and the outlet of PC-7a (km 20+240), R14 (km 67+840) and R24 (km 98+100). For the moment, this erosion is not a concern and no action is required. If the erosion at these culverts locations becomes a concern, coarser material could be placed on top of the existing fine crushed material or the capacity to drain water could be increased through the installation of additional culverts.

Potential culverts obstructions were observed at some locations during the inspection. Some culverts that were described as obstructed following the 2011 inspection were clear at the time of the 2012 inspection. No repair works have been performed on the culverts in 2012 which mean that the flow of water during the freshet probably cleared the small obstruction noted during the 2011 inspection. In many cases, the obstructions are related to inlets and/or outlets becoming partially or completely obstructed by accumulated rockfill and road bed material. There was no increase in the number of significantly damaged culverts observed during the 2012 inspection compared to 2011.

The following describes the conditions observed during the inspection:

- PRC-1, km 0+430, consisting of a single 600-mm diameter culvert. Rockfill material was observed obstructing the culvert outlet, but flow was still occurring. Minor damage to the outlet, but still in good condition. No immediate action required;
- R-00A, km 2+550, consisting of a single 600-mm diameter culvert. Inlet partially collapsed, outlet entirely collapsed with signs of obstruction from road material. There is one hole in the culvert visible from the crest of the road. If flow occurs at this location it is recommended to replace the culvert and provide adequate backfill around the culvert to protect it;
- PC-14, km 4+260, consisting of two 600-mm diameter culverts. Inlet of one culvert is collapsed, no sign of obstruction for the other culvert. AEM should monitor to see if the functioning culvert provides adequate capacity. The damaged culvert should be replaced if the capacity is insufficient;
- PC-13, km 12+745, consisting of a single 600-mm diameter culvert. The inlet is partially collapsed but very functional. No follow-up required;
- PC-2, km 13+405, consisting of a single 600-mm diameter culvert. Minor obstruction due to rocks observed near the inlet and outlet. No immediate action required;
- PC-5, km 18+280, consisting of a single 600-mm diameter culvert. The inlet of the culvert is slightly twisted and there are small signs of erosion. No follow-up required;
- PC-7A, km 20+240, consisting of two 600-mm diameter culvert. The outlet of the north culvert is slightly twisted. At the outlet of the south culvert, small signs of erosion are evident. No follow-up required;
- PC-11, km 39+552, consisting of a single 600-mm diameter culvert. Minor obstruction of the outlet due to crushed rock. Flow still occurring, no immediate action required as there is no deterioration since last years. It is recommended to visually monitor to determine if adequate drainage is provided and clean if necessary.
- PC-16, km 55+048, consisting of a single 600-mm diameter culvert. Inlet was substantially blocked by road fill material and outlet was entirely buried. It is recommended to monitor if water accumulates in this area and if a culvert is required. If water accumulates the culvert should be cleaned or replaced;

- R-14, km 67+840, consisting of three 1200-mm diameter culverts. Signs of crushing and dents were observed within the middle culvert, along with a puncture of the culvert wall through which a rock was protruding. A joint within the middle culvert has become separated at its base and there were small signs of erosion. This culvert should be replaced or observed to monitor its condition and detect if further deterioration is occurring, such that it could be replaced before flow is impeded. Adjacent culverts are in good condition with only minor dents observed;
- R18-A, km 81+045, consisting of three 1200-mm diameter culverts. Minor obstruction (cobble) in front of one outlet. No immediate action required;
- R-20, km 85+490, consisting on one 1200-mm diameter culvert. Outlet of the culvert is slightly twisted, but is not impacting its capacity to provide drainage. No follow-up required; and
- R-23, km 93+600, consisting of a single 1200-mm diameter culvert. The outlet is partially crushed near the haunch, but not impeding flow and therefore no immediate action required.

It is recommended to monitor the water level upstream and the flow through the culvert during high flow events (e.g., freshet) for the culverts locations listed above that have this recommendation. It is recommended to clear the obstructions (when safe to do so) or repair the culvert if insufficient capacity to handle the flows is observed.

The single 600-mm diameter culvert PC-3, km 13+865 was installed below the stream bed. High velocity flow through the culvert was observed during the 2009 inspection and no evidence of erosion was noted. No change has been observed during subsequent inspection between 2010 and 2012; however, this location should continue to be monitored, especially during the freshet. The inlet of the 1200-mm diameter culvert at km 15+645, R-05A, was installed above the stream bed and/or erosion has occurred below the base of the culvert. No change in this culvert's condition or evidence of further erosion has been observed at the inlet during the subsequent inspections conducted between 2010 and 2012; however, the potential for further erosion exists, and therefore this location should continue to be monitored.

5.2 Bridges

Nine bridges are located along the AWPR: 4 Acrow Panel bridges; and 5 Rapid Span bridges. All bridges in general were in good geotechnical condition. All embankments also appeared to be in good geotechnical condition. A structural and/or mechanical assessment of the bridges was not conducted and is beyond the scope of this geotechnical inspection. A photographic log of the bridges is included in Appendix D2.

The bridges have been identified in sequence, increasing in number along the road from Baker Lake to Meadowbank, (e.g., from Bridge 1 to Bridge 9) and name (e.g., R02), consistent with the as-built drawings of the AWPR provided by AEM. Each bridge is also identified by their approximate kilometer location (e.g., km 8+750).

Due to the general low lying terrain between Baker Lake and Meadowbank, water flow typically occurs in broad areas and not in well-defined channels. The majority of water crossings spanned by bridges have increased channelization of flow as embankment fill has encroached on the crossing. No significant visual signs of erosion of the embankments were observed at the time of the inspection. Embankments have generally been constructed with coarse rockfill and, therefore, no sediment from the embankments was observed to be entering the water course.

The following observations were made at the bridge locations during the inspection:

- Bridge 1, R02 at about km 8+750; normal flow was observed at the time of the inspection, no signs of erosion or turbidity were notes. In 2011, two additional culverts of 1,800 mm in diameter were installed to increase drainage capacity during high flow events and prevent washout of the road or bridge. AEM indicated that snow and ice accumulation in the vicinity of the bridge contributed to the high water levels observed during the freshet. It is understood that AEM removes snow and ice at this location and other bridges in advance of the freshet and will continue this practice in the future. It is recommended to monitor those culverts at the freshet flow to see if they suffice for the quantity of water;
- Bridge 2, R05 at about km 17+600; some damage to bin wall on both abutments has been observed, and is likely as a result of snow removal activity. Cracks or voids were observed in 2011 but not during the 2012 inspection. No evidence of erosion was observed and the foundation was in good condition. The stream bed consists primarily of cobbles some gravel and a few boulders and grasses towards the perimeter of the channel;
- Bridge 3, R06 at about km 23+100; Construction of the bridge has concentrated flow in this area. No signs of erosion or turbidity were observed at the time of the inspection. The bridge was in good condition at the time of the inspection;
- Bridge 4, R09 at approximately km 48+500; construction of initial road on upstream side of bridge has assisted in concentrating the flow from two channels into a single channel prior to reaching the bridge. The right abutment appears to have been constructed of a mixture of gravel to boulder size particles. No signs of turbidity or erosion were observed at the time of the inspection and the bridge was in good condition;
- Bridge 5, R13 at about km 62+060; the south abutment of the 12-m rapid span bridge was damaged and settled during the 2011 freshet. At the time of the inspection the abutment had been repaired and the bridge was in good condition. All flow was observed to be passing beneath the bridge at the time of the inspection and there were no signs of turbidity or erosion;
- Bridge 6, R15 at about km 69+200; no evidence of erosion or turbidity was observed at the time of the inspection. Minor damage to the bin wall on both abutments was observed, and is likely a result of snow removal activities. The damage is minor and does not impact the geotechnical integrity of the bridge or embankments;
- Bridge 7, R16 at about km 73+800; woven geotextile was observed to be hanging on each embankment, but it is not considered a concern. No signs of erosion or turbidity noted. Construction of the bridge has served to concentrate flow in this area;
- Bridge 8, R18 at about km 79+500; the bridge spans a boulder field and was in good condition. No flow was observed passing beneath the bridge at the time of the inspection; and
- Bridge 9, R19 at about km 83+150; steel plates with pipe anchors are installed along both embankments of this bridge. Some damage (bending) of the steel containment plates and of one pile was observed, which may be associated with snow removal activities. The damage is minor and currently does not impact the geotechnical integrity of the bridge or embankment as the surrounding piles seem to hold the metal sheet in place (protecting the abutment backfill). Some water was observed seeping under the northwest abutment. AEM should monitor the water quality and assess if this seepage shows signs of turbidity. No turbidity or erosion was observed at the time of the inspection.

6.0 QUARRIES

Twenty-two quarries were developed along the AWPR to provide material for its construction. An additional quarry was developed near the airstrip at Meadowbank to provide further construction materials. All quarries were inspected and a photographic log is contained in Appendix E. Quarries have been numbered sequentially from 1 to 22 starting near Baker Lake and increasing towards Meadowbank, in accordance with the as-built drawings and signage along the AWPR. The airstrip quarry is also referred to as Quarry 23.

At the time of the inspection, the majority of quarries were dry with some containing small stockpiles of material for future use in maintaining the AWPR. No blasting or aggregate crushing production has occurred since the summer of 2010. Aggregate used in 2012 for road maintenance activities was generate at the mine. A temporary crushing facility was set up in Quarry 3 at the time of the inspection but was not in operation. Some quarries are also being used for storage of other materials as follows:

- Quarry 5 – contaminated soil from accidental spill that occurred on the road nearby, some had been removed at the time of the inspection. AEM confirmed that the contaminated soil had been totally removed after the inspection;
- Quarry 22 – contaminated soil temporary stored inside the quarry (planned to be removed in 2013); and
- Quarry 23 – drill core on racks, diamond drill contractor drill rigs and equipment, and miscellaneous items including: seacan containers, pipes, and culverts.

It is understood that AEM plans to transport portions of the contaminated soil with concentrations less than the industrial limit to the Portage Rock Storage Facility at Meadowbank for disposal, where it will be covered by at least 1.5 m of waste rock. Soil exceeding these criteria will be taken to the Contaminated Soil Storage/Treatment facility at Meadowbank.

Additional observations were made for the following:

- Quarry 4 and Quarry 14 are flooded;
- Presence of unstable blocks in quarry 7 due to high abrupt walls (5 m); and
- Quarry 15 and Quarry 23 (Airstrip Quarry) contained some ponded water. Pools were approximately 30 cm deep.

It is understood that the Closure and Reclamation Plan prepared in accordance with water licenses 2AM-MEA0815 and 8BC-TEH0809 requires that all quarries and borrow sources developed during the construction of the AWPR be reclaimed following use. The closure plan further requires that all quarry slopes be left at an angle of 45 to 50 degrees. All twenty-three quarries will require some work to re-slope existing walls. As road maintenance is required on an ongoing basis throughout the operational life of the mine, some quarries will remain active. It is understood that AEM is currently evaluating which quarries will be required and which can be progressively closed.

Quarry 4 and Quarry 14 are flooded and it is understood that AEM is evaluating how to eliminate the ponding of water within these quarries as much as possible. Other quarries that contain some ponded water should be monitored to assess if ponding persists and, if necessary, ditches should be developed to facilitate the drainage of this water.

7.0 BULK FUEL STORAGE FACILITIES

This section contains the observation made during the 2012 Annual Inspection for the Baker Lake and Meadowbank Tank Farm facilities.

7.1 Baker Lake Tank Farm

The Baker Lake Tank Farm consists of six large capacity tanks (10 million litres each) that have been constructed within three bermed areas or “containment cells”. The first two tanks constructed, Tank 1 and Tank 2, are within the first containment area, which is located on the east side of the fuelling area. The second two tanks constructed, Tank 3 and Tank 4, are within a second containment area located adjacent to the first. A central berm is located between the two containment areas. Tank 5 and Tank 6, are within the third containment area which is located north and upslope of Tanks 3 and 4. Tank 5 and Tank 6 are situated within an entirely separate containment cell.

Each containment area has been lined with a 1.5-mm high density polyethylene (HDPE) geomembrane to provide secondary containment. Visual inspection of the majority of the liner was not possible as it is covered with granular fill material to provide protection. Access ramps into the cells were observed. Exposed folded geomembrane was observed in two areas over 5 m in length: the geomembrane was folded and no longer protected by granular material. These two areas were observed north of Tank 2 and between Tank 1 and 2 on the internal slope separating the containment cell. It is recommended to cut and repair the folded portion of geomembrane and then to cover the area with geotextile and fill material to re-establish the liner protection. During the 2011 inspection, this problem was reported on the internal slope on the west side of Tank 1.

Ponded fluid, likely rainwater, was observed in the southwest corner of the second and third containment areas. Presence of water in that location was reported in the 2011 inspection. There are signs that water reached a very high elevation in the past (about 3/5 of the berm height) which probably submerged the tank foundation fill. No sump or pump was visible in this area during the site visit. It is recommended to keep the water level low.

The embankments around the tank farm containment areas appeared stable. Tension cracks were reported in 2010 and 2011 and observed during the 2012 inspection (10 mm open) on the upper bench north of Tanks 3 and 4 and south of Tanks 5 and 6. This may be a result of the steep side slopes of these benches. No mitigation work is required but it is recommended that regular inspection be performed. Any changes to the cracks (e.g., lengthening, deepening, widening) should be noted and repairs performed if necessary. The slope instability observed seems superficial and does not appear to pose a threat to the lower tanks as bedrock is close to the ground surface.

The containment area for Tank 5 and Tank 6 has been sub excavated into the hill slope above the initial tank farm area. Water diversion berms exist around the north and east sides. An access road exists around the perimeter of the upper slopes. The slopes into the containment area, especially on the north side, are relatively high and steep, but appear stable. Given the relative steep slope, the sand and gravel cover may be prone to erosion, but during the inspection, no sign of erosion was observed. AEM should continue to monitor for signs of erosion and make repairs, if necessary.

On the west side of the tank farm is a fuelling station that consists of two containers and a pumping system. The fuelling area is covered by granular road base material.

There is an aboveground pipeline between the barge dock located South of the tank farm. It is understood that the pipeline is used for the transport of fuel from barges to the tanks. The pipeline is located immediately adjacent to the access road that connects the dock and the tank farm. There are small orange flags adjacent to the pipeline, but no physical protection, such as a berm, exists between the road and the pipeline. AEM has stated that the pipeline is only seasonally used to unload fuel from the barges. Each year prior to use, it is understood that AEM tests the pipeline for leaks, and they also visually inspect the line throughout the unloading process. Nevertheless, consideration should also be given to constructing a berm or similar structure to provide some physical protection/separation between the pipeline and road.

The capacity of the three secondary containment areas was not verified as part of this inspection.

A photographic log of the Baker Lake Tank Farm and a plan view showing the location of the photos and observations is included in Appendix F1.

7.2 Meadowbank Tank Farm

The Meadowbank Tank Farm consists of a single large capacity tank (5.6 million litres) constructed within an area that has been sub excavated to provide secondary containment. The area has been lined with a 1.5-mm HDPE geomembrane. The majority of the liner could not be visually inspected as it was covered with granular fill material for protection. Unprotected liner was exposed in the southwest corner and should be covered to re-establish the protection.

The side slopes of the tank platform started to deteriorate in 2011. At the time of the inspection the tank backfill foundation pad had been repaired and was in good condition.

Ponded fluid, likely rainwater, was observed within the tank farm covering approximately one fifth of the area, primarily in the northeast corner. Signs of high water levels being present in this area in the past were noted during the inspection. Water was being pumped out during the inspection. Pumping of ponded water is considered a good practice and should continue.

Minor erosion was noted on the tank foundation side. This is considered not significant at this stage but should be monitored to avoid unstable tank foundation conditions, especially after heavy rainfall.

A fuelling station is located on the north side of the tank farm. The fuelling area is covered by granular road base material. AEM indicated that a geomembrane liner was installed below the refuelling area, although this could not be observed at the time of the inspection due to the presence of the cover.

As the tank farm area has been subexcavated, runoff from the tank farm is not anticipated to occur. The side slopes into the tank area are shallow and all appear stable.

The capacity of the secondary containment was not verified as part of this inspection.

Appendix F2 contains a photographic log and a plan view showing the location of the photos and observations noted at the Meadowbank Tank Farm.

8.0 OTHER MEADOWBANK FACILITIES

This section contains the observation made during the 2012 Annual Inspection for the site roads, Landfill and the Contaminated Soil Storage and Bioremedial Landfarm Facility.

8.1 Site Roads

The following roads were observed at the time of the inspection:

- East Road – Former haul road between North Portage Pit and East Dike;
- West Road – Haul road between North Portage Pit and the plant;
- Vault Road – Haul road between North Portage Pit and Vault deposit;
- RF1 – Starts near the north abutment of Stormwater Dike and follows the eastern perimeter of the TSF North Cell and the south west side of the Portage Rock Storage Facility; and
- RF2 – Starts at the end of RF1 and follows the west side of the Portage Rock Storage Facility.

These roads appeared to be of adequate width and had appropriate berms at the time of the inspection. The haul road from Goose Pit to the plant was not inspected during this 2012 investigation. No geotechnical concerns were identified with the East Road and RF2. Further observations regarding the other roads are provided below.

It was observed that the excavation of soft sediments associated with the extension of Central Dike footprint toward the east could create instability in the West Road due to its proximity. It is recommended to excavate the soft sediments during winter in the area near the West Road to benefit from the strength of a frozen ground.

Three culverts were installed beneath Vault Road at coordinate 640964E / 7217466N. The three culverts were slightly collapsed in the middle and showed signs of erosion at the inlet. This is presently not a significant issue but their condition will need to be monitored during the next freshet to ensure that they provide sufficient capacity and that erosion is not occurring. Two other culverts were located at 639214E/7216189N on Vault Road but presented no geotechnical concerns.

During the inspection of RF1, the presence of longitudinal tension cracks (50 mm open and 5 m in length) were observed on the crest of the berm and on the road near the berm. These cracks were located near a rusted container at coordinate 638132E/7215710N. It is recommended to restrict vehicle access in the area of these cracks and monitor their evolution. Light vehicles can continue using this road.

Temporary roads developed for construction purposes were not inspected.

Appendix G1 contains photographs of select site roads.

8.2 Landfill

The Meadowbank landfill is located on the northeast side of the TSF, within the Portage Rock Storage Facility area. It is progressively being constructed and filled. Waste material is being dumped within a bermed area on a pad constructed using waste rock from the open pit. The waste is then covered with a thin layer of rockfill to reduce windblown debris. No geotechnical concerns were identified with the landfill. Appendix G2 contains photographs of the landfill.

8.3 Contaminated Soil Storage and Bioremedial Landfarm Facility

The Meadowbank Contaminated Soil Storage and Bioremedial Landfarm Facility is presently located on the downstream side of Stormwater Dike in the South Cell of the TSF close to the Water Treatment Plant (WTP). It is understood that this location could change in the future. The as-built report was not shared with Golder while on site but it is understood that the current layout has a 2.7 m thick base layer of compacted till to prevent vertical migration of fluid. A berm having a minimum of 1.2 m height surrounds the Landfarm to contain the fluid/runoff and stop it from moving laterally. It should be noted that the actual location of this containment structure is within the TSF South Cell. Appendix G3 contains photographs of the Contaminated Soil Storage and Bioremedial Landfarm Facility.

8.4 Stormwater Management Pond 1

Stormwater Pond 1 (formerly Teardrop Lake) is located near the main camp and is being used for storage of various site waters and sewage. No runoff from the pond was observed at the time of the inspection. If the banks of the pond were to overflow, or there was a breach in the embankments, the water would remain within the mine area and would not be released into either Second Portage Lake or Third Portage Lake. No geotechnical concerns were identified for Stormwater Management Pond 1 and the nearby crusher ramp. Due to the proximity of the crusher ramp to the pond, it is recommended that regular geotechnical inspections of the crusher ramp be conducted by AEM. Appendix G4 contains a photographic log of Stormwater Pond 1.

8.5 Airstrip

There are several small channels dug adjacent to the airstrip to divert water into small excavations or “ponds”. The channels and ponds are unlined, and the ponds have no designed outlet structure. In general, these ponds would serve to collect water and allow some suspended sediments to settle out before the water would overflow into other vegetated areas and/or infiltrate depending on the thermal state of the soils. No geotechnical concerns were identified. Appendix G5 contains a photographic log of the airstrip channels.

9.0 SUMMARY AND RECOMMENDATIONS

The following presents a summary of the key findings and recommendations of the geotechnical inspection.

9.1 Dewatering Dikes

- It is understood that AEM is preparing a final version of an Operation, Maintenance and Surveillance (OMS) Manual and Emergency Preparedness Plan (EPP) to cover the dewatering dikes.
- The condition of the Dewatering Dikes is regularly visually inspected and this should continue.
- The compilation of the instrumentation data was not part of the scope of this study and the figures showing the relevant data were provided by AEM. Most of the data were sent as a series of screenshots taken from the instrument database (VDV). It is noted that this method of sharing the instrumentation data results in a loss of resolution in the figures and makes it harder to visualise trends by looking at each instrument separately for the external inspector. It is recommended to present the data under another format to facilitate the external inspector’s work. For example, the method used in the past allowed complete and rapid understanding of the instruments’ configuration in a certain area, while also presenting the results for

related instruments, all on the same page. It is considered that the VDV software is a very useful tool for AEM and should continue to be used in the future.

East Dike

- No visual signs of slope instability or erosion were observed on the upstream or downstream rockfill slopes.
- No signs of tension cracks were observed along the cut-off wall alignment.
- Settlement at the base of the road berm should be monitored due to its proximity with the 2009 sinkhole event but is not considered a concern.
- It is recommended to measure the flow of water pumped by the two seepage collection sumps and to periodically visually assess the clarity of the water removed. It is understood that AEM plan to install flow meters and is observing the clarity of the water. Monitoring of the third seepage channel should continue.
- Regular monitoring and assessment of the monitoring data: piezometric, thermal, inclinometer, and seismograph (associated with blasting) data should continue.
- At the time of the site inspection, and based on the instrumentation data collected up to that time, the condition of the East Dike generally appears stable.

South Camp Dike

- No geotechnical concerns related to the integrity of the South Camp Dikes were identified.
- The presence of water at the downstream toe needs to be monitored to see if this water is associated with runoff or seepage and to detect if any changes occurs.
- Instrumentation monitoring at the South Camp Dike should continue on a regular basis and the damaged thermistor should be replaced.

Bay-Goose Dike

- No visual signs of slope instability or erosion were observed on the exposed upstream or the downstream rockfill slopes.
- Currently the dike crest surface, near the cut-off wall centreline, is highly irregular which limits visual observation of potential deformations, settlement, and/or cracking. To assist in the quality of the regular visual inspections, it is recommended to smooth the existing surface 3 m (one dozer blade width) on either side of the dike centreline, once the thermal cap is in place.
- Rebars installed to monitor tension cracks on the centreline at some locations should continue to be monitored.

- There is a zone of tension cracks associated with settlements of the jet grouting spoils and holes on the upstream side of the centreline near Channel 2 and Channel 1. AEM stated that these events are happening over a trench dug during the jet grout activities and settlement likely occurs within the jet grout sludge only.
- Regular monitoring and assessment of the monitoring data (piezometric, thermal, inclinometer, seismograph associated with blasting and seepage) occurs and should continue. Displacement monitoring of the dike crest should be conducted.
- Water ponds were observed at the downstream toe during the inspection. It is recommended to monitor the elevation of these ponds and to pump them dry to determine if they are formed by seepage or runoff.
- The seepage downstream of Bay-Goose Dike should continue to be visually monitored. The seepage is currently too small to require a year round collection system but if conditions change such a system might be required.
- At the time of the site inspection, and based on the instrumentation data collected up to that time, the condition of the Bay-Goose Dike generally appears stable.
- It is understood that the final version of the as-built report for the Bay-Goose Dike is in preparation.

9.2 Tailings Storage Facility

- At the time of the inspection, the North Cell was performing as intended; namely, containing tailings and water. The tailings beach on Saddle Dam 1 and Stormwater Dike are adequate and the pond elevation is below the toe of Saddle Dam 2. The tailings beach elevation against Stomwater Dike and Saddle Dam 1 is at 142.5 m and the pond elevation in the cell is at 141.9 m. The pond and beach levels are currently below their planned level according to the deposition plan. The water collected on Saddle Dam 1 downstream side show no sign of turbidity.
- AEM is preparing the final version of an Operations, Maintenance and Surveillance (OMS) Manual and Emergency Response Plan (EPP) for the TSF.
- It is understood that AEM will construct a permanent seepage collection and pump back system on the downstream side of all permanent dikes and dams around the TSF following completion of construction activities at each facility. Saddle Dam 1 is currently storing tailings and supernatant water and a pump back system. Such a system should be installed at Saddle Dam 2.
- Regular visual inspection as well as collection and regular review of instrument data should continue for all structure within the TSF.
- No geotechnical concerns were identified with respect to the rockfill causeway or reclaim barge facility.
- It is recommended to restrict vehicle access on the pad of uncompacted material near the north abutment of Saddle Dam 1 at around 30 m from the crest as signs of past failure and presence of continuous tension cracks suggest that more failures will occur.

Saddle Dam 1

- At the time of the inspection, the tailings beach at Saddle 1 was adequate.
- Significant wrinkles were observed in the liner. Wrinkles on LLDPE geomembrane are considered normal due to the high degree of expansion during the mild season, but the geomembrane conditions need to be monitored in case some bad wrinkles are caused by wind uplift to ensure no geomembrane pinching will occur while buried by the tailings. No visual signs of slope instability or erosion were observed on the downstream or upstream rockfill slopes.
- No tension cracks were observed.
- Placement of additional ballast on the liner is strongly recommended to reduce the potential for wind to uplift and cause additional damage to the liner. It is recommended that a formal ballast design be completed in function of existing wind speed and direction conditions to avoid such adverse conditions be repeated again. Following the ballast improvement, the adequacy should continue to be monitored and adjusted as necessary.
- The backfill foundation of the downstream pump that recirculates water need to be checked in the winter as it could freeze and restrict pumping efficiency and/or potentially damage the pump.
- Displacement monitoring locations should be established and regularly monitored.

Saddle Dam 2

- No geotechnical concerns have been identified;
- Water caught in between the liner at El.146 m has created water pockets which are loading horizontal liner joints in multiple locations. It is recommended to drain the water to prevent critical accumulations. Two mechanisms responsible of the water accumulation are identified to produce that issue:
  - Water pond on downstream side within the rockfill embankment to an elevation higher than the horizontal joint, and
  - Water infiltration from the top of the crest along the upstream slope.

  From the information gathered during the inspection, for the actual SD2 case, water infiltration along the upstream slope is identified as the mechanism which has caused the water accumulation and ballooning of the liner. This is based on the following three facts:

  - The elevation of the horizontal weld is generally significantly higher than the elevation of the downstream toe and there is currently no water observed at the toe. Therefore, even if the presence of water at downstream, the horizontal joint cannot be loaded by water;
  - The foundation of the dam and abutment is frozen based on thermistor data; and
  - No important water accumulation was observed during the last year by the mine personnel including the freshet.

For all containment structures built with geosynthetic panels, it is recommended to:

- Avoid downstream ponding by pumping the area, if required, when downstream pond is susceptible to fill the horizontal joint,
- Drain the loaded joints to not over stress the extruded weld, and
- Add ballast materials over the horizontal joints to prevent critical accumulations in the future.

It is noted that dewatering of downstream pond is also important to promote freeze back of the dike foundation and protect the permafrost. To drain the loaded joint, use of localised holes rather than long cuts should be considered to reduce any effect on the horizontal extruded weld (i.e. weld strength reduction). Design for future structures should be adapted to avoid those conditions from occurring.

- Displacement monitoring locations should be established and regularly monitored.
- No visual signs of slope instability or erosion were observed on the downstream or upstream rockfill slopes.
- No tension cracks were observed.

Stormwater Dike

- No tension cracks were observed during the 2012 inspection.
- Differential settlement was observed between Sta. 10+700 and Sta. 11+000 on upstream edge and slope. AEM should monitor the differential settlement.
- The bulge in the liner near spigot 4 due to migration of foundation sub-grade should be monitored until the area is buried by tailings; existing conditions are not a concern for the liner integrity.
- The three holes identified in the liner about 1 m below the crest should be repaired before the tailings reach this elevation.

9.3 AWPR

- No geotechnical issues were identified with the AWPR at the time of the inspection related to thermal degradation of the permafrost, thaw settlement, erosion of the road materials, or sediment migration from the road into adjacent watercourses.
- Regular inspections and maintenance of the road by AEM should continue. Consideration should be given to expanding AEM's monitoring program to include all culverts and bridges along the road to assess whether they are providing adequate capacity during the freshet and following large precipitation events.
- AEM has been conducting regular and event-based inspections of the fish-bearing water crossing locations along the road and these should continue in order to confirm the hydraulic function of the crossings, adequacy of crossing locations with respect to the watercourses, and minimal impact to fish habitat. Consideration should be given to expanding the AEM inspections to include cursory monitoring of flow and high water marks at all crossings during freshet and peak flow events.

- For some culvert locations, it is recommended that AEM monitor to see if flow is actually occurring, i.e., during the freshet. If insufficient capacity to handle the flows is observed, then it is recommended to clear the obstructions or repair the culverts; particular attention should be paid to R-00A (km 2+550), PC-3 (km 13+865), PC-14 (km 4+260), PC-16 (km 54+950), R-14 (km 67+840) and R-05A (15+745).
- There was no increase in the number of damaged culverts observed during the 2012 inspection compared to 2011. However, the condition of the culverts should continue to be monitored.
- Some water was observed seeping under the northwest abutment of Bridge 9, R19 at about km 83+150. The water quality of this seepage should be monitored for signs of turbidity.
- The inspected bridges and their embankments were in good geotechnical condition.

9.4 Quarries

- It is understood that AEM is developing a plan for progressively closing some of the quarries along the AWPR while maintaining others for storage of materials and for provision of materials supply for ongoing road maintenance.
- Quarry 4 and Quarry 14 are flooded and it is understood that AEM is evaluating how best to eliminate the ponding of water within these quarries, if possible.

9.5 Bulk Fuel Storage Facilities

- Ongoing removal of fluids that accumulate within the secondary containment facilities should be managed appropriately. At the Baker Lake fuel tank farm, there were signs that water had accumulated to a very high level in the past, submerging the tank foundation fill.
- At the Baker Lake fuel tank farm, the geomembrane was folded and exposed in two areas over a 5 m length on the internal slope, north of Tanks 1 and 2. To minimize potential damage to the liner, it is recommended to cut and repair the fold and to re-cover the area with fill material.
- At the Baker Lake fuel tank farm, tension cracks were observed on the upper bench, north of Tanks 3 and 4 and south of the Tanks 5 and 6. These may be a result of the steep side slopes. No mitigation work is required, but regular inspection should be performed to monitor the cracks. Any changes to the cracks (e.g., lengthening, deepening, widening) should be noted and provided to the design engineer. At the time of the inspection, the slope instability observed appeared superficial due to the presence of shallow bedrock and was not considered a threat to the lower tanks.
- At the Meadowbank fuel tank farm small signs of erosion were noted on the tank foundation. This is considered not to be significant at this stage but it should be monitored to avoid unstable tank foundation conditions.

9.6 Other Meadowbank Facilities

Meadowbank Site Roads

- Haul roads currently in operation appear to be of adequate width and have appropriate berms.
- It was observed that the excavation of soft sediments associated with the extension of the Central Dike footprint toward the east could produce instability in the West Road due to its proximity. It is recommended to excavate the soft sediments during winter in the area near the West Road to benefit from the strength of a frozen ground.
- Three culverts were installed on Vault Road. These three culverts were partially collapsed in the middle and showed signs of erosion at the inlet. This is presently not a significant issue but it is recommended to monitor these culverts during the next freshet to ensure that they provide sufficient capacity and that erosion is not occurring.

Tension cracks were observed on the crest of the berm and on the road near the berm at one location on RF1. It is recommended to restrict vehicle access in the area of these cracks and monitor their evolution. Light vehicles can continue using this road.

Landfill and Contaminated Soil Storage and Bioremedial Landfarm Facility

- No geotechnical concerns related to the landfill were identified at the time of the inspection.
- It is understood that the inspected Contaminated Soil Storage and Bioremedial Landfarm Facility location is temporary and may change.

Stormwater Management Ponds

- No geotechnical concerns were identified regarding Stormwater Pond 1, or the crusher ramp located nearby.
- The crusher ramp is in close proximity to Stormwater Pond 1 and, therefore, the geotechnical stability of the crusher ramp should be inspected regularly by AEM.

Airstrip Channels

- No geotechnical concerns were identified regarding the airstrip channels.

10.0 CLOSURE

This report was prepared to summarize the findings from the 2012 geotechnical inspection conducted between September 13 and September 19, 2012 to comply with the requirements of AEM's Type A Water License Permit No. 2AM-MEA0815, Part I, Item 12. An inspection of the pit walls is reported under separate cover (Golder, 2012b, Doc. No. 1394).

We trust the above information is sufficient for your current needs. Should you require additional information or further clarification, please contact us.

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REFERENCES

Agnico-Eagle Mines Ltd., Meadowbank Division, 2011b. “Drawing Site Plan Meadowbank Gold Project”. September 2011.

Agnico-Eagle Mines Ltd., Meadowbank Division, 2012a. “Draft – Dewatering Dikes Operation, Maintenance And Surveillance Manual”. Version B. January 2012.

Agnico-Eagle Mines Ltd., Meadowbank Division, 2012b. “Draft –Tailings Storage Facility Operation, Maintenance And Surveillance Manual”. Version B. February 2012.

Agnico-Eagle Mines Ltd., Meadowbank Division, 2012c. “Emergency Response Plan, Meadowbank Gold Project”. Version 3. March 2012.

Agnico-Eagle Mines Ltd., Meadowbank Division, 2012d. “Draft – AWPR Water Quality Monitoring Results: 2012 Summary”. September 2012.

Golder Associates Ltd., 2009a. “Technical Memorandum, Meadowbank East Dike Grouting Response Plan – Completed Works”. Doc. No. 916 Ver. 0. Prepared for Agnico-Eagle Mines Limited, Meadowbank Division. July 2009.

Golder Associates Ltd., 2009b. “East Dike Additional Details for Work Carried Out Between Stations 60+452 and 60+500”. Doc. No. 961 Ver. 0. Prepared for Agnico-Eagle Mines Limited, Meadowbank Division. November, 2009.

Golder Associates Ltd., 2009c. “Tailings Deposition Plan, Meadowbank Gold Project”. Doc. No. 956 Ver. 0. Prepared for Agnico-Eagle Mines Limited, Meadowbank Division. Ottober 29, 2009

Golder Associates Ltd., 2009d. “2009 Annual Geotechnical Inspection – Meadowbank Gold Project”. Doc. No. 969 Ver. 0. Prepared for Agnico-Eagle Mines Limited, Meadowbank Division. November 30, 2009.

Golder Associates Ltd., 2009e. “East Dike Construction As-Built Report”. Doc. No. 900 Ver. 0. Rev. 1. Prepared for Agnico-Eagle Mines Limited, Meadowbank Division. December 15, 2009.

Golder Associates Ltd., 2010a. “East Dike Sinkhole Investigation Program, October-November 2009, Meadowbank Gold Project”. Doc. No. 986 Ver. 0. Prepared for Agnico-Eagle Mines Limited, Meadowbank Division. March 5, 2010.

Golder Associates Ltd., 2010b. “East Dike CPT Investigation - Meadowbank Gold Project”. Doc. No. 953 Ver. 0. Prepared for Agnico-Eagle Mines Limited, Meadowbank Division. July 22, 2010.

Golder Associates Ltd., 2010c. “2010 Annual Geotechnical Inspection – Meadowbank Gold Project”. Doc. No. 1216 Ver. 0. Prepared for Agnico-Eagle Mines Limited, Meadowbank Division. December 3, 2010.

Golder Associates Ltd., 2011a. “2011 Annual Geotechnical Inspection – Meadowbank Gold Project”. Doc. No. 1305 Ver. 0. Prepared for Agnico-Eagle Mines Limited, Meadowbank Division. February 17, 2012.

Golder Associates Ltd., 2011b. “East Dike Thermal Cap”. Doc. No. 1271 Ver. 0. Prepared for Agnico-Eagle Mines Limited, Meadowbank Division. June 16, 2012.

Golder Associated Ltd., 2012a. “Tailings Deposition Plan 2012 Update”. Doc. No 1344 Ver. 0. Prepared for Agnico-Eagle Mines Limited, Meadowbank Division. April, 2012.

Golder Associated Ltd., 2012b. “Draft-Annual Review of Portage and Goose Pit Slope Pit Performance”. Doc. No 1394 Ver. B. Prepared for Agnico-Eagle Mines Limited, Meadowbank Division. November, 2012.

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Table 1. Facilities along the All-Weather Private Road

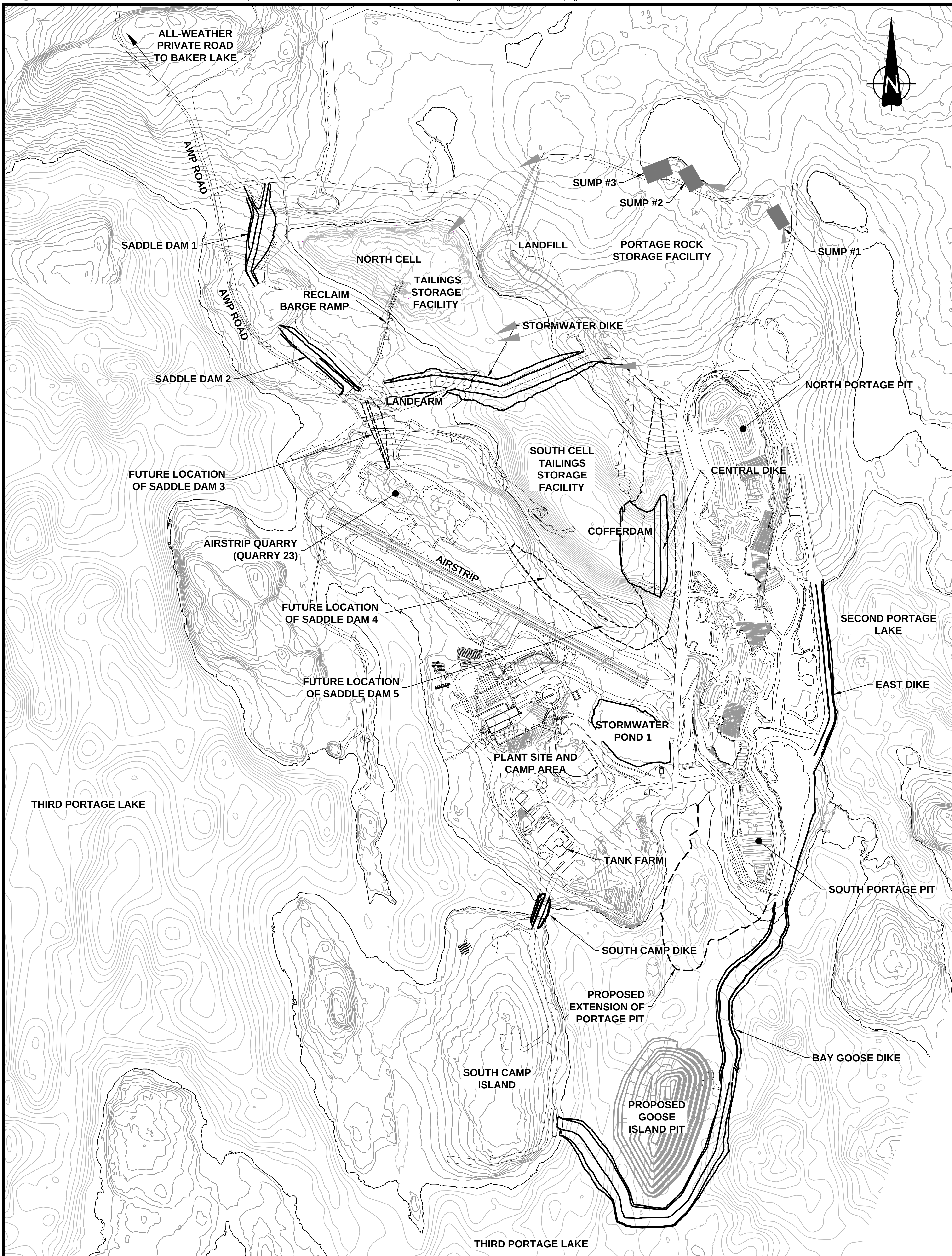
Station	Name	Structure Description	Comments
0+430	PRC1	1x600 mm CSP	Minor damage to outlet. Minor obstruction of the outlet. Still in good condition. No action required.
0+470	PRC2	2x600 mm CSP	
1+380	PRC3	1x600 mm CSP	
2+550	R-00A	1x600 mm CSP	Inlet partially collapsed, outlet entirely collapsed with signs of obstruction from road materials, one hole in the culvert visible from the crest of the road. AEM should monitor if the culvert receives some flow during the freshet. If no flow, then it is recommended to remove the culvert. If monitoring indicates that a culvert is necessary at this location, then it is recommended that AEM replace the culvert and provide adequate backfill around the culvert to protect it.
4+260	PC-14	2x600 mm CSP	Inlet of one culvert is collapsed, no sign of obstruction. AEM should monitor water levels upstream and flow through the damaged culvert during the freshet. If there is no flow through the damaged culvert during the freshet, no work is required. If the other culverts (currently in acceptable condition) do not support the level of water flowing in this area, it is recommended to replace the damaged culvert.
5+200	Quarry 1		
5+700	unnamed	1x600 mm CSP	
8+750	R02 Center Bridge	30m Panel Bridge	
8+830	PC-17A		
8+850	PC-17	2x1200 mm CSP	
9+952	PC-1	1x600 mm CSP	
10+580	R-03	1x600 mm CSP	
12+050	R-04	1x1200 mm CSP	
12+745	PC-13	1x600 mm CSP	Inlet partially collapsed, but still functional. No follow-up required.
13+250	Quarry 2		
13+405	PC-2	1x600 mm CSP	Minor obstruction at the inlet and outlet. No follow-up required.
13+685	PC-3	1x600 mm CSP	
13+950	unnamed	1x600 mm CSP	
14+910	PC-4	1x600 mm CSP	

Station	Name	Structure Description	Comments
15+745	R-05A	1x1200 mm CSP	
17+600	R05 Center Bridge	30m Acrow Panel Bridge	Bin wall of both abutments were observed to be slightly damaged. No cracks or voids were observed. The foundation was in good condition.
18+280	PC-5	1x600 mm CSP	The inlet culvert is slightly twisted with small signs of erosion. No follow-up currently required.
18+900	PC-6	1x600 mm CSP	
20+240	PC-7A	2x600 mm CSP	Minor erosion at the outlet of the south culvert. The outlet of the north culvert is slightly twisted. No follow-up currently required.
20+250	PC-7	1x600 mm CSP	
23+100	R06 Center Bridge	30 m Acrow Panel Bridge	
23+700	Quarry 3		
25+900	R-07	1x1200 mm CSP	
29+420	PC-8	1x600 mm CSP	
31+300	Quarry 4		Quarry flooded
34+650	Quarry 5		Storage of contaminated soil, some had been removed
35+690	PC-9	1x600 mm CSP	
36+470	Quarry 6		
36+865	PC-10	1x600 mm CSP	
39+552	PC-11	1x600 mm CSP	Minor obstruction of the outlet. No action required.
39+800	Quarry 7		Presence of unstable blocks in quarry 7 due to high abrupt walls. No action necessary.
41+300	PC-12	1x600 mm CSP	
42+950	Quarry 8		
44+600	Quarry 9		
48+500	R09 Center Bridge	12m Rapid Span Bridge	
48+900	Quarry 10		
53+500	Quarry 11		

Station	Name	Structure Description	Comments
54+950	PC-16	1x600 mm CSP	Inlet partially obstructed, outlet entirely obstructed. AEM should monitor if water accumulates in this area and if a culvert is required. If water accumulates, then the culvert should be cleaned to make it operational or replaced with another culvert.
58+300	Quarry 12		
62+060	R13 Center Bridge	12 m Rapid Span Bridge	
62+350	Quarry 13		
65+700	Quarry 14		Quarry flooded
67+600	Quarry 15		Contained ponded water
67+840	R-14	3x1200 mm CSP	Middle and northern culverts show minor erosion and have been damaged (collapsed) inside, below the road, but are anticipated to sufficiently perform. The outlet of the southern culvert is slightly damaged without any consequence. No action required.
69+200	R15 Center Bridge	30 m Acrow Panel Bridge	Bin wall of both abutments were observed to be damaged.
70+400	Quarry 16		
72+800	Quarry 17		
73+800	R16 Center Bridge	12m Rapid Span Bridge	
77+440	R-17	1x1200 mm CSP	
79+500	R18 Center Bridge	12 m Rapid Span Bridge	
80+200	Quarry 18		
80+950	R-18A	3x1200 mm CSP	Minor obstruction of the southern culvert (cobbles) due to road backfill. If the culvert does not function well during the freshet, it is recommended to clean the inlet.
83+150	R19 Center Bridge	12m Rapid Span Bridge	One pile of the upstream abutment protection is damaged, but surrounding piles appear to hold the metal sheet in place (protecting the abutment backfill). Some water was observed seeping under the right (north west) abutment.
84+300	Quarry 19		
85+490	R-20	1x1200 mm CSP	Outlet of the culvert is slightly twisted. No action required.
87+300	R-21	2x1200 mm CSP	

Station	Name	Structure Description	Comments
89+550	Quarry 20		
93+400	Quarry 21		
93+600	R-23	1x1200 mm CSP	Minor damage near the top, but still in good condition.
98+100	R-24	2x1200 mm CSP	The outlet of the southern culvert shows minor erosion.
99+200	Quarry 22		
101+950	R-25	2x600 mm CSP	
104+400	R-26	3x1200 mm CSP	

Drawing File: N:\Actif\2012\1221\12-1221-0073 AEM-AnnualGeotechnicalInspection-Meadowbank\4 CAD-GIS\3000\1212210073-3000-02.dwg 7 novembre 2012 16:38:02 By: rgravel



NOTES

1) TOPOGRAPHIC CONTOUR INTERVAL 2M.
2) GRID REFERENCE: NAD 83, UTM ZONE 14

0 150 300 450 600 750

SCALE IN METRES

REFERENCES

1) DRAWING BASE PROVIDED BY AEM LTD., MEADOWBANK DIVISION IN "MEADOWBANK.DWG" DATED SEPTEMBER 14, 2011.
2) GOOSE ISLAND PIT DESIGN BY AEM, NOVEMBER, 2011.

PROJECT

AEM

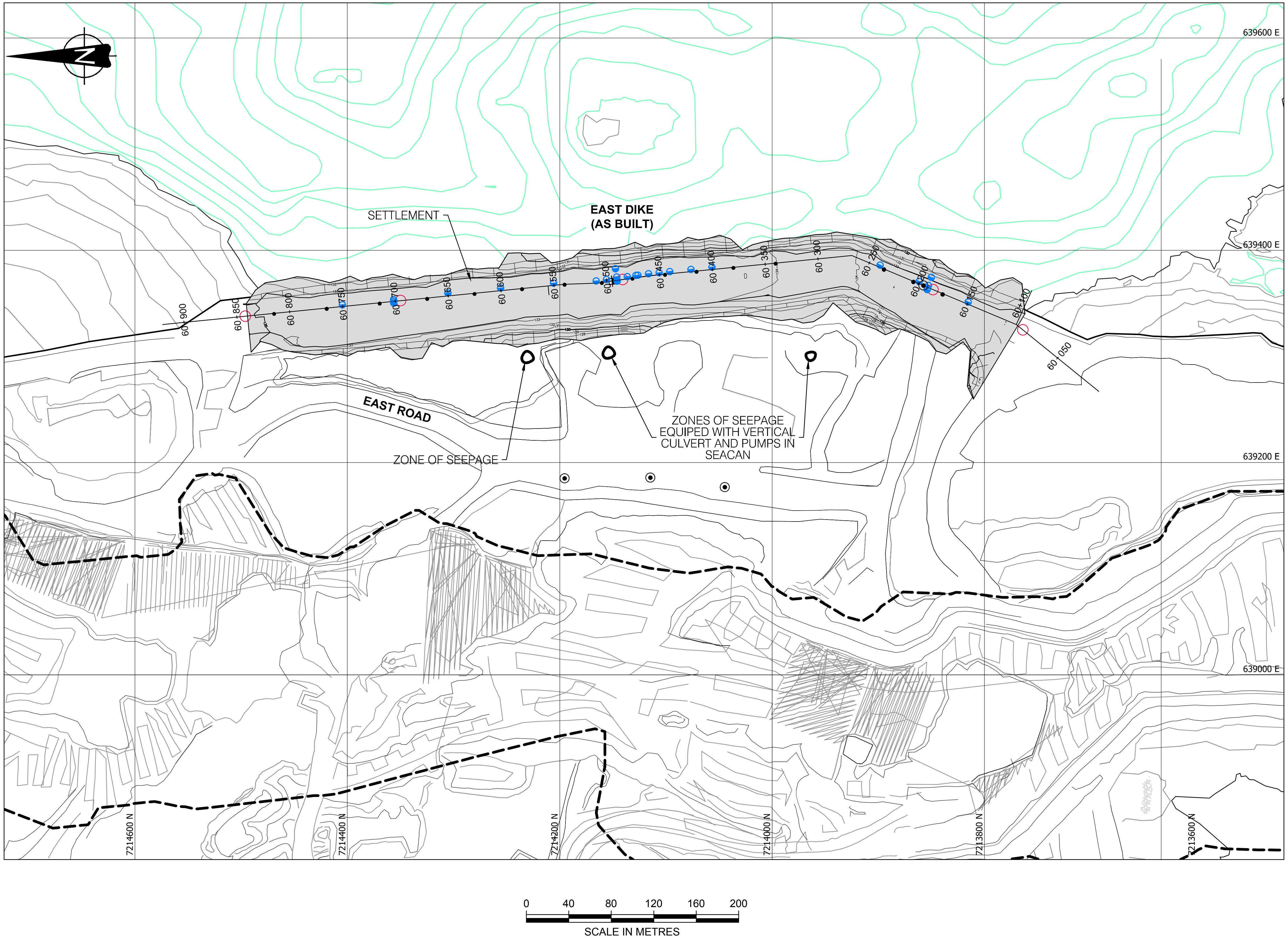
AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

MEADOWBANK MINE SITE
2012 ANNUAL
GEOTECHNICAL INSPECTION

Golder Associates
Montréal, Québec

PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	FB	22OCT12	SCALE 1 : 15 000	REV. -
CADD	SB	22OCT12		
CHECK	YB	05NOV12	**FIGURE 1**	
REVIEW	FE	05NOV12		



LEGEND

- BATHYMETRIC MAJOR CONTOURS
- LAND - BASED TOPOGRAPHY AS PER SEPTEMBER 2011
- SHORE LINE
- PORTAGE PIT RIM (FUTURE DEVELOPMENT - APPROXIMATE)
- EXISTING THERMISTOR
- SURVEY MONUMENT LOCATION
- PIEZOMETER
- INCLINOMETER
- BLAST MONITORING POINT

NOTES

1) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2) ALL ELEVATIONS ARE IN METRES ABOVE SEA LEVEL (MASL) UNLESS OTHERWISE NOTED.
3) GRID REFERENCE: NAD 83, UTM ZONE 14.
4) CONTOUR INFORMATION ON LAND SUPPLIED BY AGNICO-EAGLE MINES LIMITED (AEM), MEADOWBANK DIVISION.
5) LAKEBED SURFACE INTERPOLATED FROM 2006 BATHYMETRY DATA. DETAILED BATHYMETRY (0.5m INTERVAL) BASED ON 2008 SURVEY.
6) LAKE CONTOURS ARE BASED ON SURVEYED LAKE SURFACE ELEVATION: SECOND PORTAGE LAKE = 133.1m.

REFERENCES

1) DRAWING BASE PROVIDED BY AEM LTD., MEADOWBANK DIVISION IN "MEADOWBANK.DWG" DATED SEPTEMBER 14 2011.

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

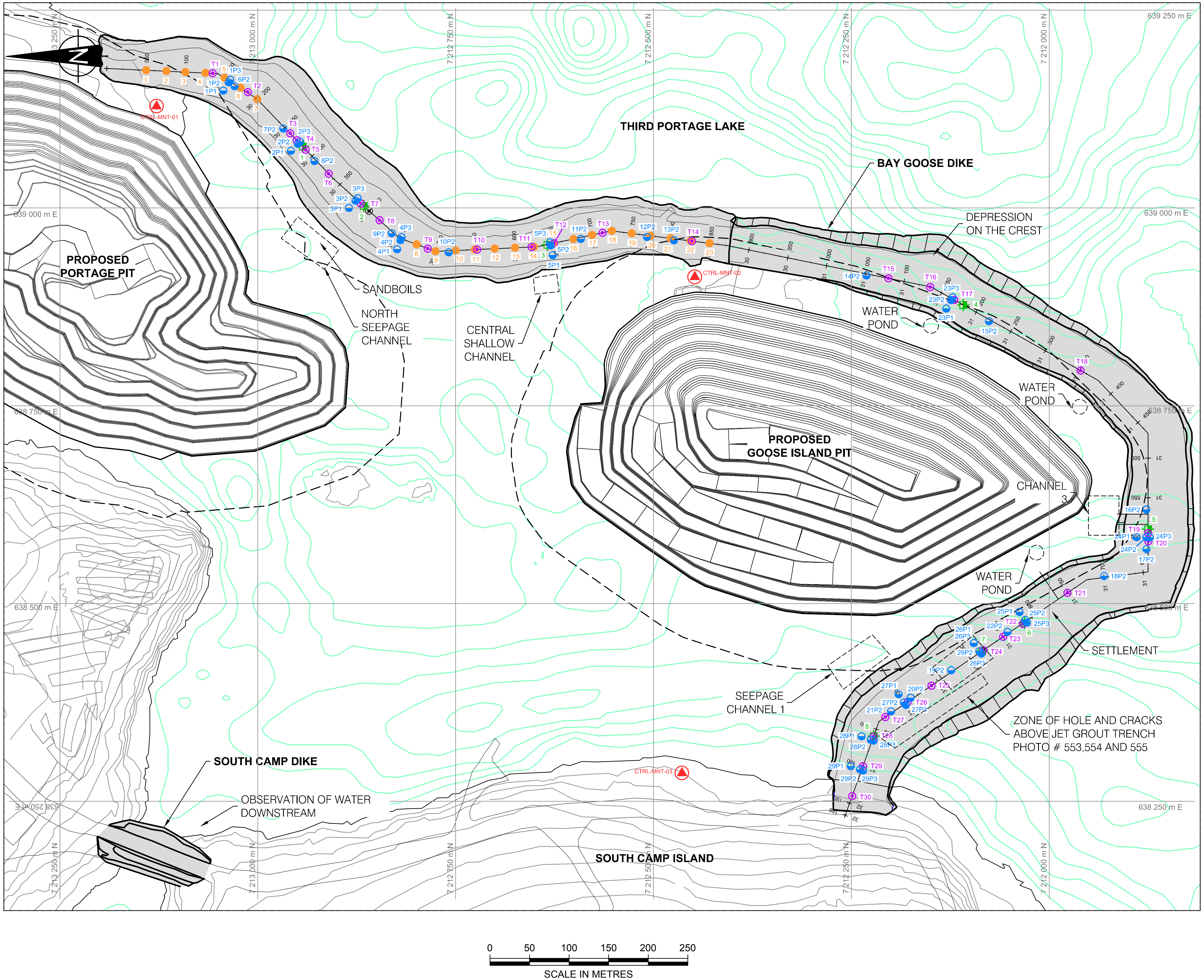
TITLE

EAST DIKE
2012 ANNUAL GEOTECHNICAL INSPECTION

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	FB	22OCT12	SCALE 1 : 4 000	REV. -
CADD	SB	22OCT12		
CHECK	YB	5NOV12		
REVIEW	FE	5NOV12		

Golder Associates
Montréal, Québec

FIGURE 2



NOTES

1) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2) ALL ELEVATIONS ARE IN METRES ABOVE SEA LEVEL (MASL), UNLESS OTHERWISE NOTED.
3) GRID REFERENCE: NAD 83, UTM ZONE 14.
4) CONTOUR INFORMATION ON LAND SUPPLIED BY AEM.
5) LAKEBED SURFACE BASED ON BATHYMETRIC SURVEYS BY GOLDER ASSOCIATES LTD., 2006 AND DETAILED (0.5m CONTOUR INTERVAL) 2008.
6) SURVEY LAKE SURFACE ELEVATION: THIRD PORTAGE LAKE = 134.1m (2008).

LEGEND

- PIT RIM
- BATHYMETRY CONTOUR
- LAND - BASED TOPOGRAPHY AS PER SEPTEMBER 2011
- SHORELINE
- 70m OFFSET FROM PIT RIM
- BLAST MONITORING POINT
- SURVEY MONUMENT
- THERMISTOR
- SURVEY CONTROL MONUMENT
- PIEZOMETER
- INCLINOMETER

REFERENCE

1) PORTAGE PIT DESIGN BY AEM, MARCH, 2009.
2) GOOSE ISLAND PIT DESIGN BY AEM, NOVEMBER, 2011.
3) DRAWING BASE PROVIDED BY AEM LTD., MEADOWBANK DIVISION IN "MEADOWBANK.DWG" DATED SEPTEMBER 14 2011.

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
AEM
AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

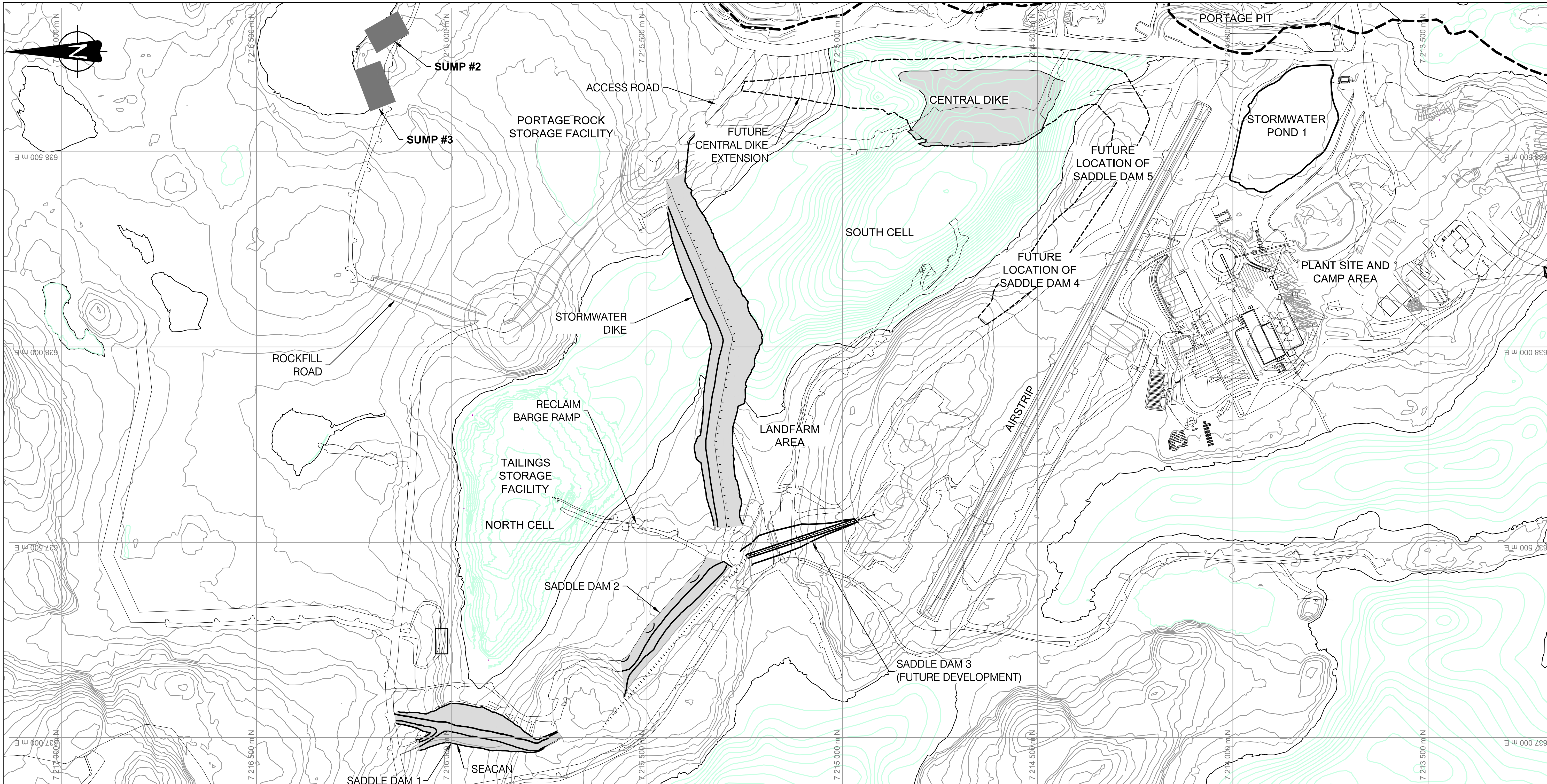
TITLE
BAY-GOOSE DIKE AND SOUTH CAMP DIKE LOCATION 2012 ANNUAL GEOTECHNICAL INSPECTION

Golder Associates
Montréal, Québec

PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	FB	22OCT12	SCALE 1 : 5 000	REV. -
CADD	SB	22OCT12		
CHECK	YB	05NOV12		
REVIEW	FE	05NOV12		

FIGURE 3

Drawing File: N:\Actif\2012\1221\12-1221-0073 AEM-AnnualGeotechnicalInspection-Meadowbank\4 CAD-GIS\3000\1\12210073-3000-01.dwg 15 novembre 2012 16:00:23 By: rgravel



LEGEND

- PIT RIM
- BATHYMETRY CONTOUR
- SHORELINE
- LAND - BASED TOPOGRAPHY AS PER SEPTEMBER 2011

REFERENCES

1) DRAWING BASE PROVIDED BY AEM LTD., MEADOWBANK DIVISION IN "MEADOWBANK.DWG" DATED SEPTEMBER 14 2011.

0 100 200 300 400 500

SCALE IN METRES

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

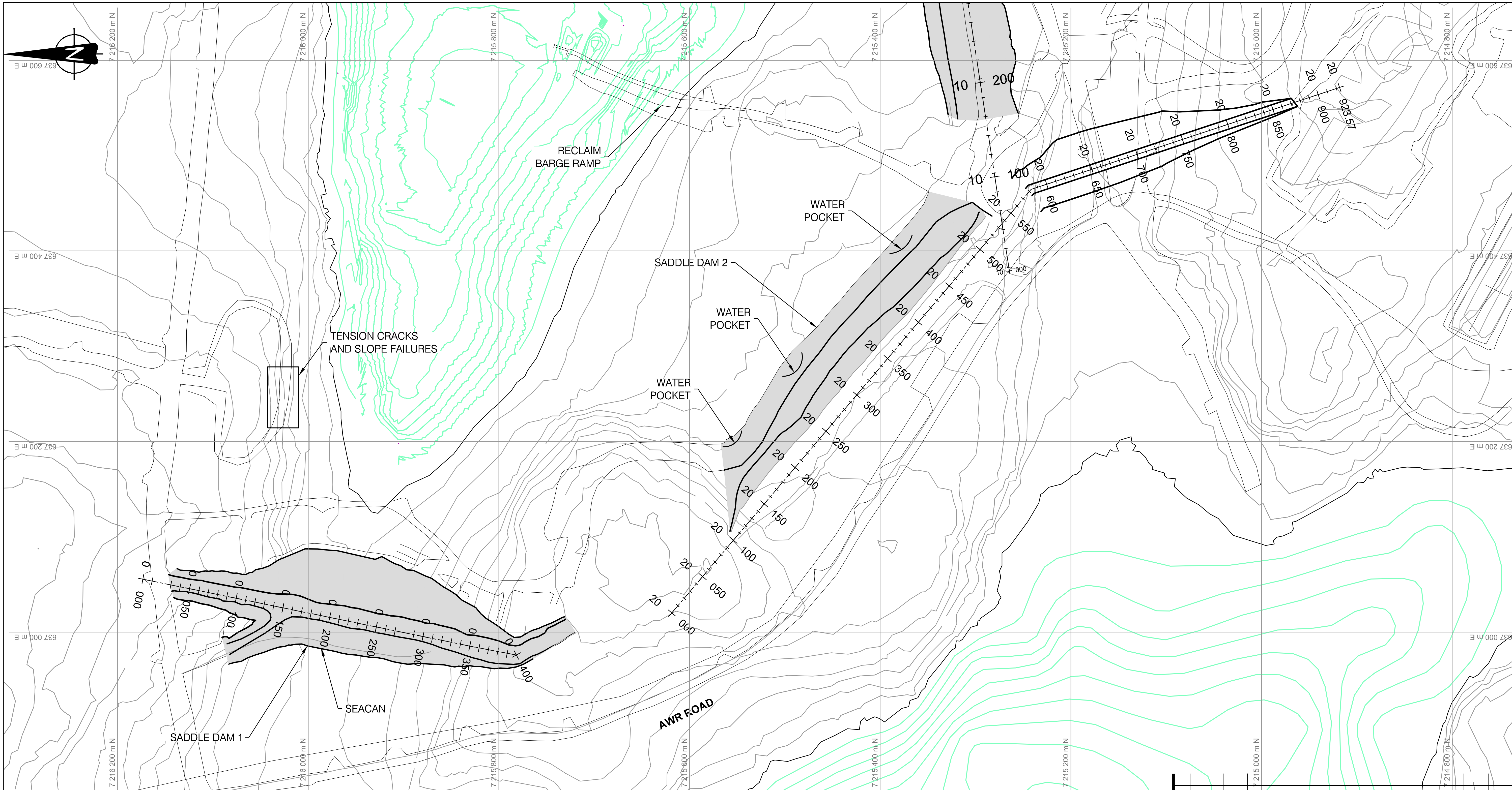
AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

TAILINGS STORAGE FACILITY
2012 ANNUAL GEOTECHNICAL INSPECTION

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	FB	22OCT12	SCALE 1 : 10 000	REV. -
CADD	SB	22OCT12		
CHECK	YB	05NOV12	**FIGURE 4A**	
REVIEW	FE	05NOV12		



LEGEND

- PIT RIM
- BATHYMETRY CONTOUR
- SHORELINE
- LAND - BASED TOPOGRAPHY AS PER SEPTEMBER 2011

REFERENCES

1) DRAWING BASE PROVIDED BY AEM LTD., MEADOWBANK DIVISION IN "MEADOWBANK.DWG" DATED SEPTEMBER 14 2011.

0 40 80 120 160 200

SCALE IN METRES

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

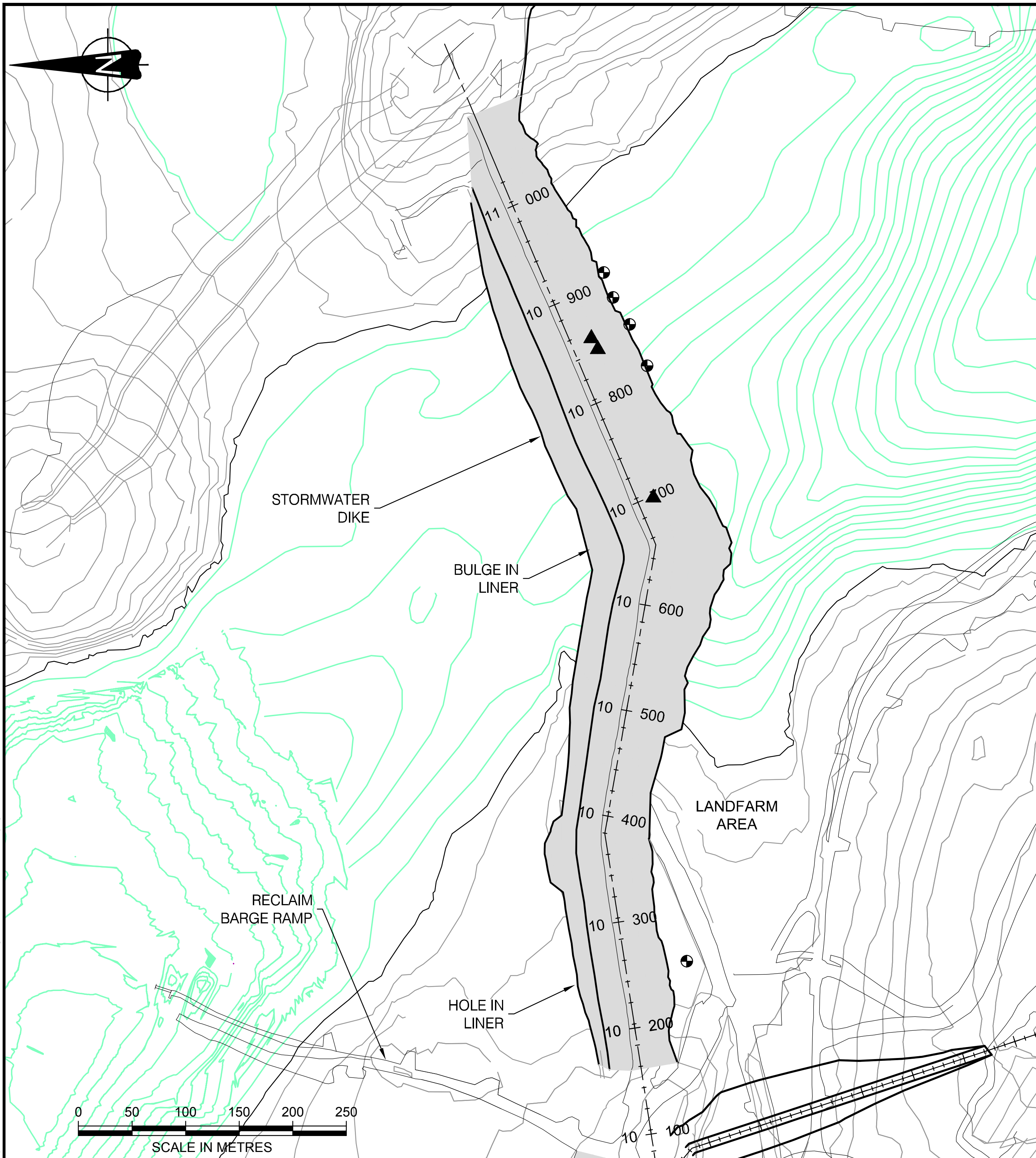
TITLE

TAILINGS STORAGE FACILITY
SADDLE DAM 1 AND SADDLE DAM 2
2012 ANNUAL GEOTECHNICAL INSPECTION

Golder Associates
Montréal, Québec

PROJECT No.	12-1221-0073	PHASE No.	3000
DESIGN	FB	22OCT12	SCALE 1 : 4 000 REV. -
CADD	SB	22OCT12	
CHECK	YB	05NOV12	**FIGURE 4B**
REVIEW	FE	05NOV12	

Drawing File: N:\Actif\2012\1221\12-1221-0073 AEM-AnnualGeotechnicalInspection-Meadowbank\4 CAD-GIS\3000\1212210073-3000-01.dwg 15 novembre 2012 16:00:23 By: rgravel



LEGEND

PIT RIM

BATHYMETRY CONTOUR

SHORELINE

LAND - BASED TOPOGRAPHY AS PER SEPTEMBER 2011

REFERENCES

1) DRAWING BASE PROVIDED BY AEM LTD., MEADOWBANK DIVISION IN “MEADOWBANK.DWG” DATED SEPTEMBER 14 2011.

PROJECT

AEM

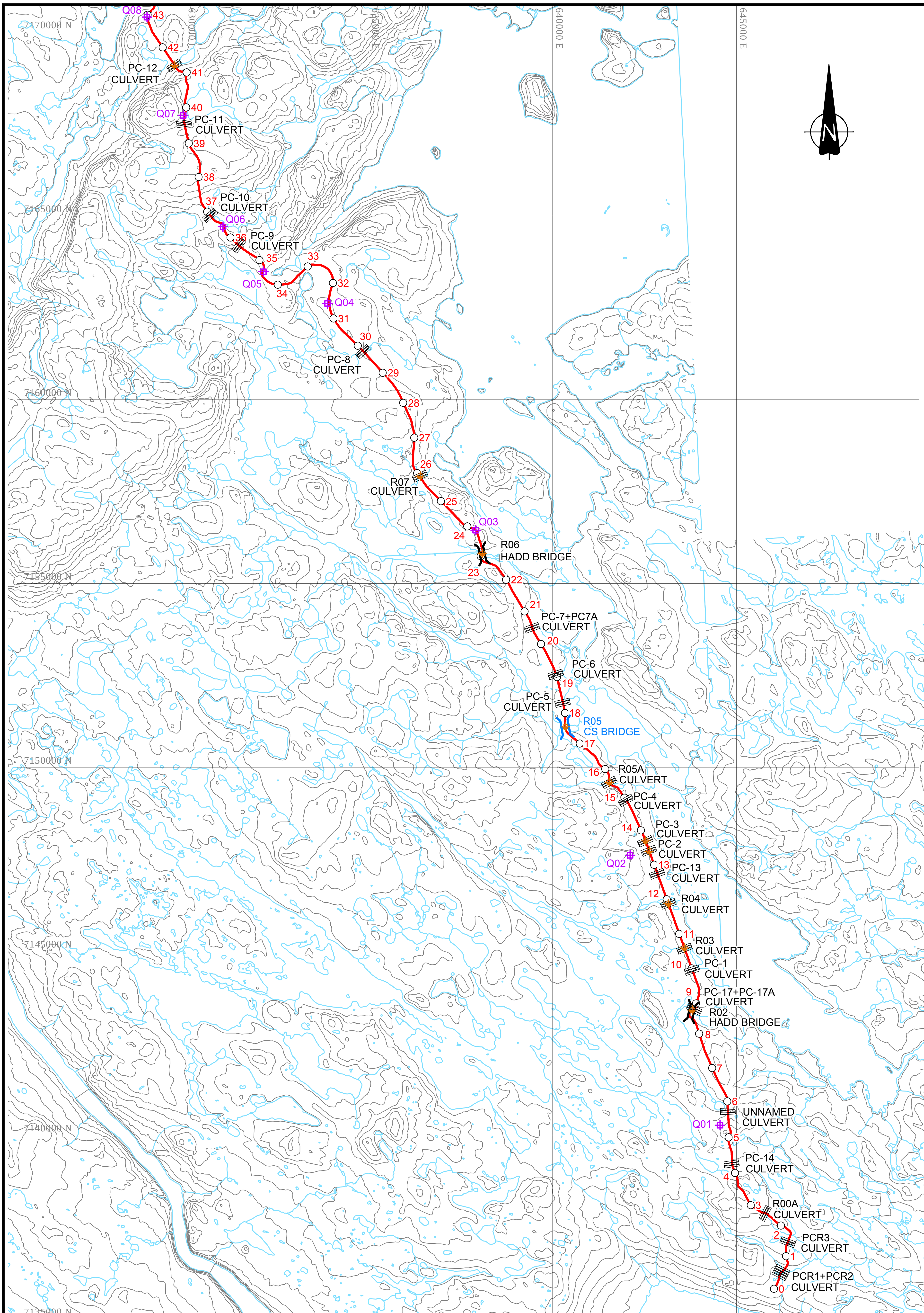
AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

STORMWATER DIKE
2012 ANNUAL GEOTECHNICAL INSPECTION

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	FB	22OCT12	SCALE 1 : 5 000	REV. -
CADD	SB	22OCT12		
CHECK	YB	05NOV12	**FIGURE 4C**	
REVIEW	FE	05NOV12		



LEGEND

(culvert symbol)	CULVERT
(Hadd bridge symbol)	HADD BRIDGE
(clear-span bridge symbol)	CLEAR-SPAN BRIDGE
(quarry symbol)	EXISTING QUARRY
C10	KILOMETER MARKER

REFERENCES

1) ROAD ALIGNMENT, BRIDGE, CULVERT AND QUARRY LOCATIONS FROM NUNA M&T SERVICES LTD.
2) BASE DRAWING FROM GOLDER ASSOCIATES LTD.

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

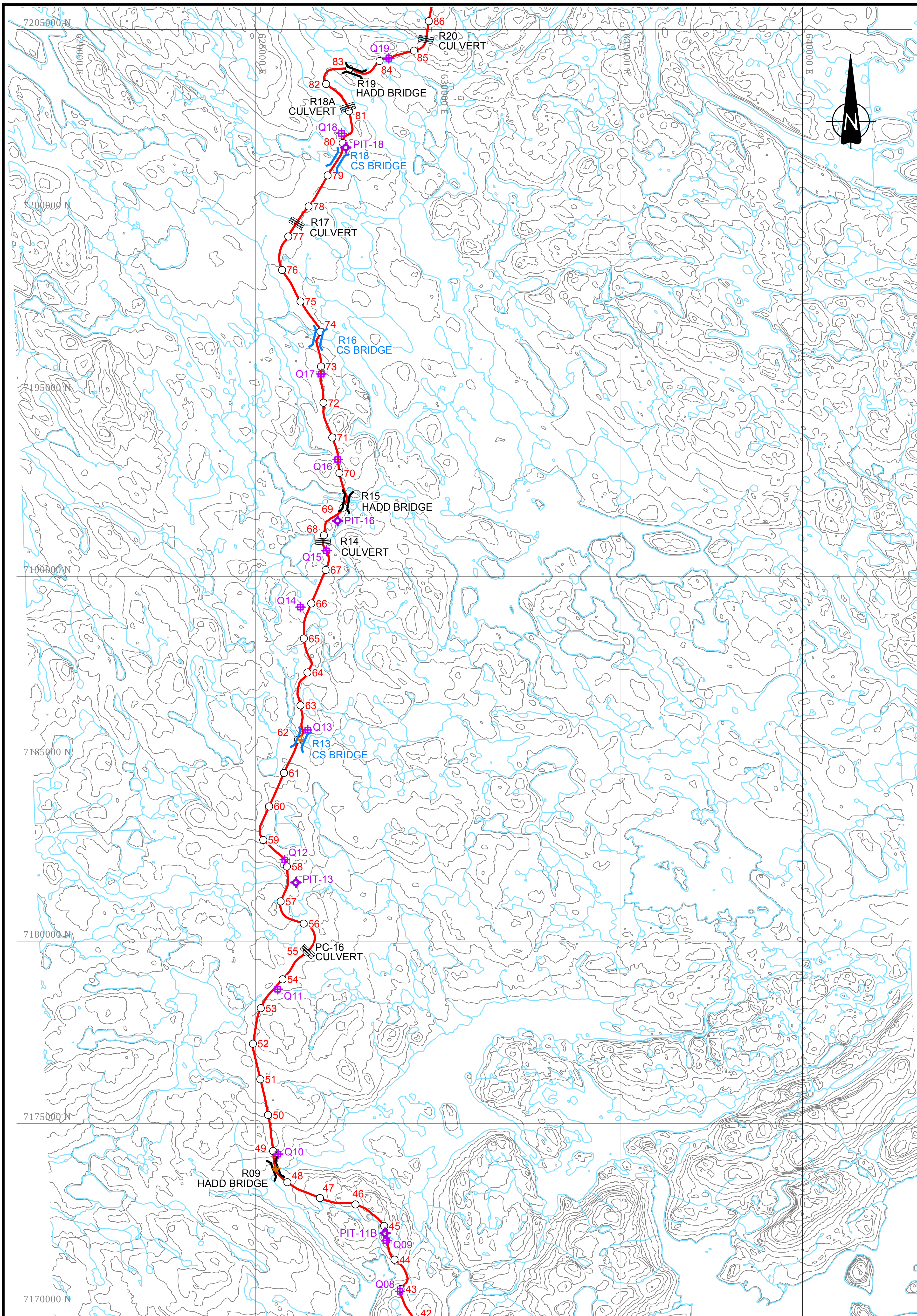
TITLE

ALL-WEATHER PRIVATE ROAD
2012 ANNUAL GEOTECHNICAL INSPECTION

Golder Associates

PROJECT No.	12-1221-0073		PHASE No.	2100
DESIGN	FB	22OCT12	SCALE 1 : 100 000	REV. -
CADD	SB	22OCT12		
CHECK	YB	07NOV12	**FIGURE 5A**	
REVIEW	FE	07NOV12		

Drawing File: N:\Actif\2012\1221\12-1221-0073 AEM-Annual Geotechnical Inspection-Meadowbank\4 CAD-GIS\3000\1212210073-3000-03.dwg 7 novembre 2012 16:00:47 By: rgravel



LEGEND

- CULVERT
- HADD BRIDGE
- CLEAR-SPAN BRIDGE
- EXISTING QUARRY
- C10 KILOMETER MARKER
- PIT INVESTIGATED

REFERENCES

1) ROAD ALIGNMENT, BRIDGE, CULVERT AND QUARRY LOCATIONS FROM NUNA M&T SERVICES LTD.
2) BASE DRAWING FROM GOLDER ASSOCIATES LTD.

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

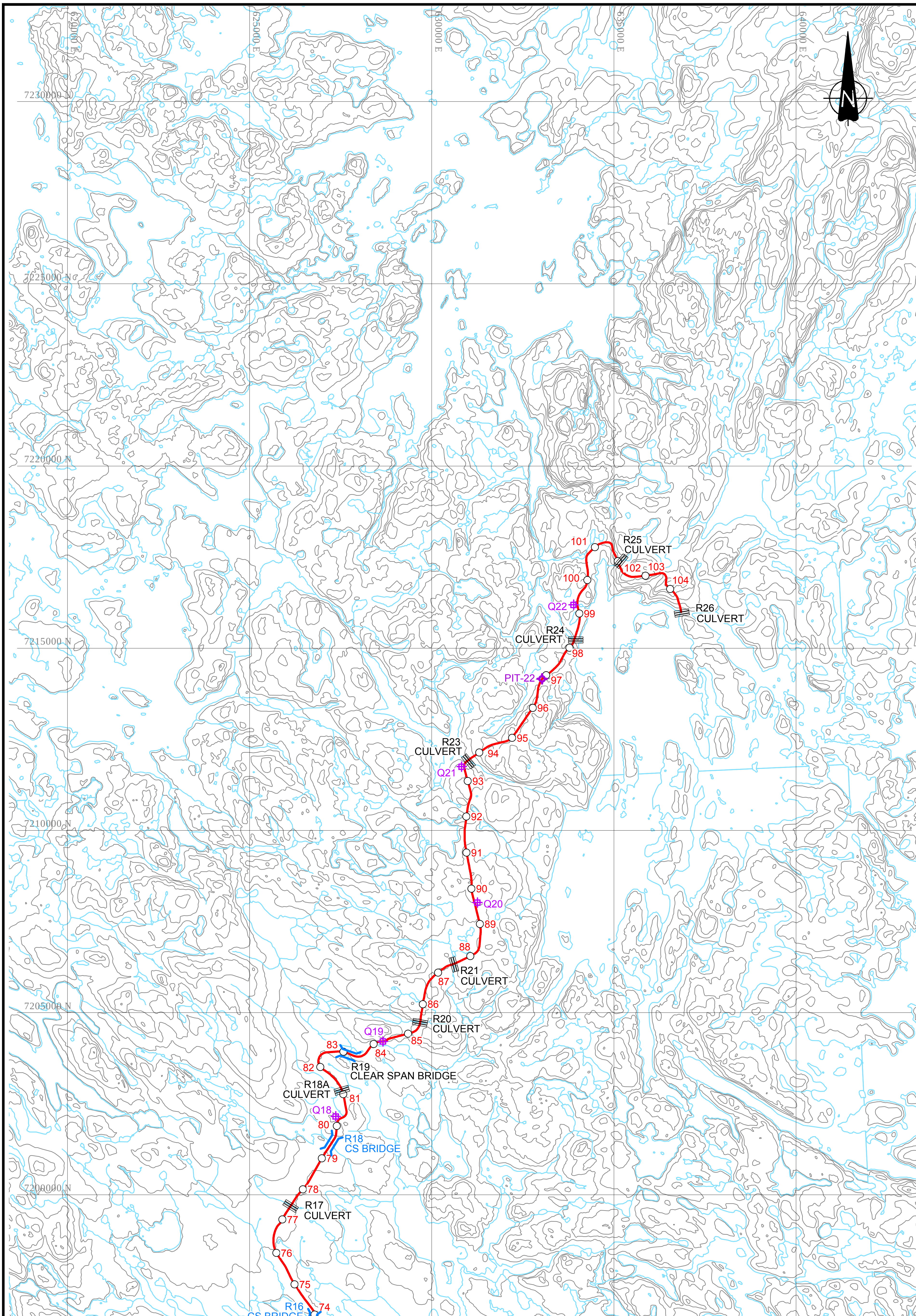
TITLE

ALL-WEATHER PRIVATE ROAD
2012 ANNUAL GEOTECHNICAL INSPECTION

Golder Associates

PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	FB	22OCT12	SCALE 1 : 100 000	REV. -
CADD	SB	22OCT12		
CHECK	YB	07NOV12	**FIGURE 5B**	
REVIEW	FE	07NOV12		

Drawing File: N:\Actif\2012\1221\12-1221-0073 AEM-Annual\Geotechnical\Inspection-Meadowbank\4 CAD-GIS\3000\12122110073-3000-04.dwg 7 novembre 2012 16:02:29 By: rgravel



LEGEND

- CULVERT
- HADD BRIDGE
- CLEAR-SPAN BRIDGE
- EXISTING QUARRY
- C10 KILOMETER MARKER

REFERENCES

1) ROAD ALIGNMENT, BRIDGE, CULVERT AND QUARRY LOCATIONS FROM NUNA M&T SERVICES LTD.
2) BASE DRAWING FROM GOLDER ASSOCIATES LTD.

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

ALL-WEATHER PRIVATE ROAD
2012 ANNUAL GEOTECHNICAL INSPECTION

Golder Associates

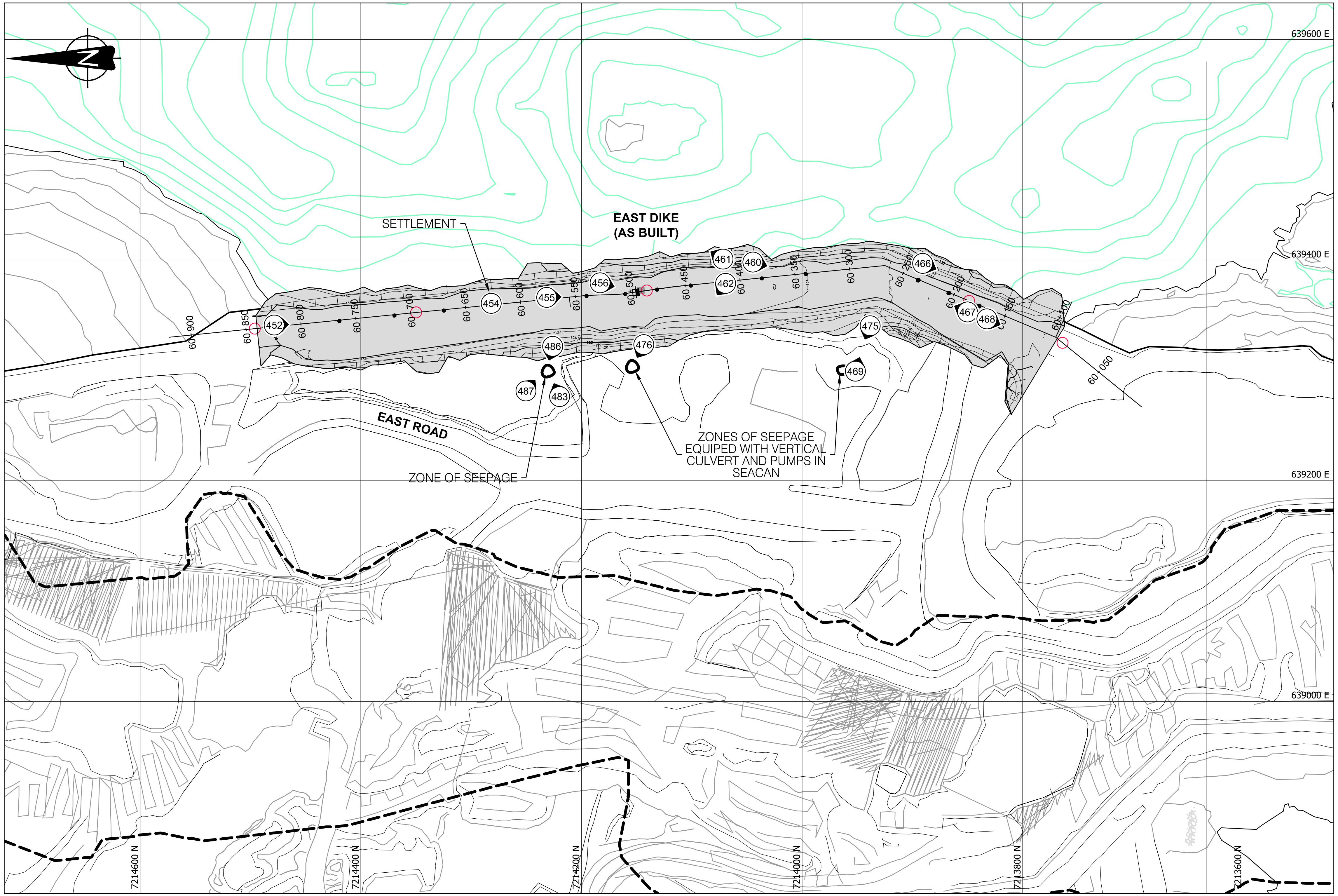
PROJECT No.	12-1221-0073	
DESIGN	FB	22OCT12
CADD	SB	22OCT12
CHECK	YB	07NOV12
REVIEW	FE	07NOV12

PHASE No. 300
SCALE 1 : 100 000 REV. -

FIGURE 5C

APPENDIX A

Dewatering Dikes



0 40 80 120 160 200

SCALE IN METRES

LEGEND

- BATHYMETRIC MAJOR CONTOURS
- LAND - BASED TOPOGRAPHY AS PER SEPTEMBER 2011
- SHORE LINE
- PORTAGE PIT RIM (FUTURE DEVELOPMENT - APPROXIMATE)
- SURVEY MONUMENT LOCATION
- 1 IDENTIFICATION AND DIRECTION OF PHOTOGRAPHY TOOK DURING THE ANNUAL INSPECTION OF 2012

NOTES

1) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2) ALL ELEVATIONS ARE IN METRES ABOVE SEA LEVEL (MASL) UNLESS OTHERWISE NOTED.
3) GRID REFERENCE: NAD 83, UTM ZONE 14.
4) CONTOUR INFORMATION ON LAND SUPPLIED BY AGNICO-EAGLE MINES LIMITED (AEM), MEADOWBANK DIVISION.
5) LAKEBED SURFACE INTERPOLATED FROM 2006 BATHYMETRY DATA. DETAILED BATHYMETRY (0.5m INTERVAL) BASED ON 2008 SURVEY.
6) LAKE CONTOURS ARE BASED ON SURVEYED LAKE SURFACE ELEVATION: SECOND PORTAGE LAKE = 133.1m.

REFERENCES

1) DRAWING BASE PROVIDED BY AEM LTD., MEADOWBANK DIVISION IN "MEADOWBANK.DWG" DATED SEPTEMBER 14 2011.

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

EAST DIKE
2012 ANNUAL GEOTECHNICAL INSPECTION

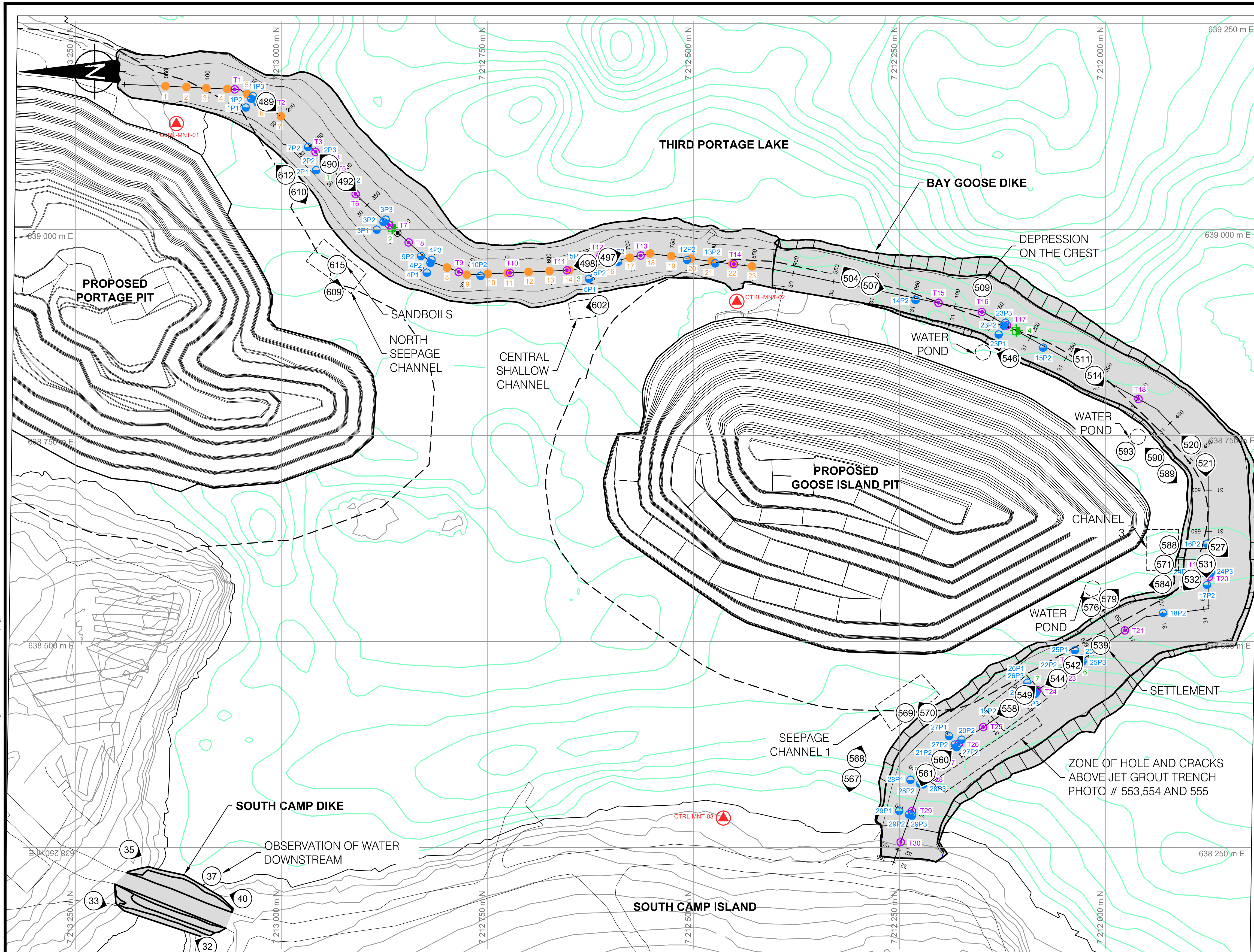
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	
DESIGN	FB	22OCT12	
CADD	SB	22OCT12	
CHECK	YB	5NOV12	
REVIEW	FE	5NOV12	

PHASE No. 3000
SCALE 1 : 4 000 REV. -

FIGURE A1

Drawing File: N:\Actif\2012\1221\12-1221-0073 AEM-Annual\Geotechnical\Inspection Meadowbank\4 CAD-GIS\3000\12\1221\0073-3000-01.dwg 15 novembre 2012 16:00:23 By: cgravel



0 50 100 150 200 250

SCALE IN METRES

NOTES

1) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2) ALL ELEVATIONS ARE IN METRES ABOVE SEA LEVEL (MASL), UNLESS OTHERWISE NOTED.
3) GRID REFERENCE: NAD 83, UTM ZONE 14.
4) CONTOUR INFORMATION ON LAND SUPPLIED BY AEM.
5) LAKEBED SURFACE BASED ON BATHYMETRIC SURVEYS BY GOLDER ASSOCIATES LTD., 2006 AND DETAILED (0.5m CONTOUR INTERVAL) 2008.
6) SURVEY LAKE SURFACE ELEVATION: THIRD PORTAGE LAKE = 134.1m (2008).

LEGEND

- PIT RIM
- BATHYMETRY CONTOUR
- LAND - BASED TOPOGRAPHY AS PER SEPTEMBER 2011
- SHORELINE
- 70m OFFSET FROM PIT RIM
- BLAST MONITORING POINT
- SURVEY MONUMENT
- THERMISTOR
- SURVEY CONTROL MONUMENT
- PIEZOMETER
- INCLINOMETER
- IDENTIFICATION AND DIRECTION OF PHOTOGRAPHY TOOK DURING THE ANNUAL INSPECTION OF 2012

REFERENCE

1) PORTAGE PIT DESIGN BY AEM, MARCH, 2009.
2) GOOSE ISLAND PIT DESIGN BY AEM, NOVEMBER, 2011.
3) DRAWING BASE PROVIDED BY AEM LTD., MEADOWBANK DIVISION IN "MEADOWBANK.DWG" DATED SEPTEMBER 14 2011.

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

BAY-GOOSE DIKE AND SOUTH CAMP DIKE LOCATION 2012 ANNUAL GEOTECHNICAL INSPECTION

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	FB	22OCT12	SCALE 1 : 5 000	REV. -
CADD	SB	22OCT12		
CHECK	YB	05NOV12	FIGURE A2	
REVIEW	FE	05NOV12		

Golder Associates
Montréal, Québec

APPENDIX A1

East Dike Photographic Log and Record of Inspection

Photograph A1-1 East Dike

Date: September 17, 2012 **Photo Number**: 452

Description: Looking south from about Sta. 60+800 at centreline.

Photograph A1-2 East Dike

Date: September 17, 2012 **Photo Number**: 454

Description: Looking at the settlement at the base of the road berm at Sta. 60+555, 5 m downstream of cut-off wall.

Photograph A1-3 East Dike

Date: September 17, 2012 **Photo Number**: 455

Description: Looking south from about Sta. 60+550 at centreline. Note the presence of instrumentation located in the old sinkhole area. The shack (on the left of the picture) contains the system automatically collecting and transmitting the instrumentation data.

Photograph A1-4 East Dike

Date: September 17, 2012 **Photo Number**: 456

Description: Looking south from about Sta. 60+506 at centreline of the cut-off wall where the sinkhole event of 2009 took place. Instrumentation installed over the area.

Photograph A1-5 East Dike

Date: September 17, 2012 **Photo Number**: 460

Description: From about Sta. 60+400, looking south at upstream slope. Notice the presence of containers on dike crest.

Photograph A1-6 East Dike

Date: September 17, 2012 **Photo Number**: 461

Description: From about Sta. 60+400, looking north at upstream slope.

Photograph A1-7 East Dike

Date: September 17, 2012 **Photo Number**: 462

Description: From about Sta. 60+400, looking north-west at the instrumentation on the centreline.

Photograph A1-8 East Dike

Date: September 17, 2012 **Photo Number**: 466

Description: From about Sta. 60+250, looking south from top of the upstream berm.

Photograph A1-9 East Dike

Date: September 17, 2012 **Photo Number**: 467

Description: From about Sta. 60+200, looking north along centreline. Notice the survey monument and the presence of containers.

Photograph A1-10 East Dike

Date: September 17, 2012 **Photo Number**: 468

Description: From about Sta. 60+200, looking south along centreline toward the south abutment.

Photograph A1-11 East Dike

Date: September 17, 2012 **Photo Number**: 469

Description: Downstream toe water seepage at Sta. 60+247, looking east toward the dike. The pump is in the blue seacan container. No seepage was observed on the surface at this location during the inspection (all water captured in sump).

Photograph A1-12 East Dike

Date: September 17, 2012 **Photo Number**: 475

Description: Looking west to the downstream toe water seepage at Sta. 60+247 from the crest of the dike. The pump and sump is in the blue seacan container. No seepage was observed on the surface at this location during the inspection (all water captured in sump).

Photograph A1-13 East Dike

Date: September 17, 2012 **Photo Number**: 476

Description: Looking west to the downstream toe water seepage at Sta. 60+498 from the crest of the dike. The sump and pump is in the seacan container. No seepage was observed on the surface at this location during the inspection (all water captured in sump). Notice the ponded water (on the left).

Photograph A1-14 East Dike

Date: September 17, 2012 **Photo Number**: 483

Description: Looking east toward the downstream face of the dike to the water seepage at Sta. 60+563.

Photograph A1-15 East Dike

Date: September 17, 2012 **Photo Number**: 486

Description: Looking west to the downstream toe water seepage and ponding at Sta. 60+575 from the dike crest.

Photograph A1-16 East Dike

Date: September 17, 2012 **Photo Number**: 487

Description: Close up of the downstream toe water seepage at Sta. 60+585. Notice the white pipe used to monitor the flow of water.

APPENDIX A1
RECORD OF DAM INSPECTION

Client:	AEM	**By:**	Yves Boulianne / Frédérick L. Bolduc
Project:	Meadowbank	**Date:**	September 17, 2012
Location:	East Dike	**Reviewed:**	Fiona Esford

GENERAL INFORMATION			
Dam Type:	Rockfill embankment with a soil bentonite cutoff wall and downstream filters		
Weather Conditions:	Mostly overcast	**Temperature:**	5°C approximately

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		452, 455, 456, 462	
1.1 Crest elevation	136.5 m cutoff 136.1m		Design thermal cap crest revised in 2011 to El. 136.5 m (Golder 2011a)
1.2 Reservoir Level	133.1 m U/S		
Current Freeboard	3.4 m		Design 4 m.
1.3 Distance To Tailings Pond (if applicable)	Not applicable		
1.4 Surface Cracking	None at time of inspection		At time of inspection, no surface cracking was observed. In 2009, cracking was observed in sinkhole area near Sta. 60+472 upstream of the cutoff wall, parallel and perpendicular.
1.5 Unexpected Settlement	Settlement at the base of the road berm	454	Small circular depression found 5m downstream of cut-off wall near Sta. 60+554 at the base of the berm in berm materials that was probably placed there by a grader.
1.6 Lateral Movement	Not apparent		
1.7 Other Unusual Conditions	None	456	The 2009 sinkhole near Sta. 60+506 has been filled. No sign of sinkhole detected on the crest at time of inspection.
2. UPSTREAM SLOPE		460, 461, 466	
2.1 Slope angle	Approx. 1.6H:1V		
2.2 Signs of Erosion	Stable		
2.3 Signs of Movement (Deformation)	None observed		
2.4 Cracks	None observed		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
2.5 Face liner condition (if applicable)	Not applicable		
2.6 Other Unusual Conditions	None		
3. DOWNSTREAM SLOPE			
3.1 Slope angle	Approx.1.6H:1V		Rockfill. Fine grained material from cleaning of the road has been pushed over the embankment slope on to surface of rockfill at periodic locations. Fill has been placed on downstream side slope of the south and north abutment.
3.2 Signs of Erosion	None observed		
3.3 Signs of Movement (Deformation)	None observed		
3.4 Cracks	None observed		
3.5 Seepage or Wet Areas	Not apparent		
3.6 Vegetation Growth	None observed		
3.7 Other Unusual Conditions	None		
4. DOWNSTREAM TOE AREA			
4.1 Seepage from Dam	Yes, presence of 3 zones	469, 475	Zone of seepage downstream near Sta. 60+247 where a sump is installed (pumping system located in container on the photo). No additional seepage observed on the surface of the ground. Pumping collection system started on April 4' 2012. Flow is not currently being monitored (a system will be installed).
		476	Zone of seepage downstream near Sta. 60+498 where a sump is installed (pumping system located in container on the photo). Ponded water nearby. No additional seepage observed on the surface of the ground during the inspection. Pumping collection system started on April 4, 2012. Flow is not currently being monitored (a system will be installed).
		483, 486, 487	Seepage observed downstream near Sta. 60+575. Flow measured by the mine every 3 days (mean flow of 2.3 m^3/days. In 2011 and 2010 small defined seepage was observed in the same area and the flow rate is consistent.
4.2 Signs of Erosion	Not observed		
4.3 Signs of Turbidity in Seepage Water	No. Clear flow.		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
4.4 Discoloration/staining	No		
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other Unusual Conditions	None		
5. ABUTMENTS			
5.1 Seepage at contact zone (abutment/embankment)	None observed		
5.2 Signs of Erosion	None observed		
5.3 Excessive Vegetation	No		
5.4 Presence of Rodent Burrows	None observed		
5.5 Other Unusual Conditions	None		
6. RESERVOIR			
6.1 Stability of Slopes	Stable		Low relief region, stable upstream and downstream of dike. Portage Pit is on the downstream side of the dike.
6.2 Distance to Nearest Slide (if applicable)	None observed		
6.3 Estimate of Slide Volume (if applicable)	Not applicable		
6.4 Floating debris	None observed		
6.5 Other Unusual Conditions	None		
7. EMERGENCY SPILLWAY/ OUTLET STRUCTURE			
7.1 Surface Condition	No spillway or outlet structure exists, only dewatering pump.		
7.2 Signs of Erosion			
7.3 Signs of Movement (Deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of Debris or Blockage			
7.7 Closure mechanism operational			
7.8 Slope Protection			
7.9 Instability of Side Slopes			

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
7.10 Other Unusual Conditions			
8. Instrumentation			
8.1 Piezometers	Yes		See Section 4.0 Of The Report
8.2 Settlement Cells	No		
8.3 Thermistors	Yes		See Section 4.0 of the report
8.4 Settlement Monuments	Survey monuments		See Section 4.0 of the report
8.5 Seismograph	Periodic		See Section 4.0 of the report
8.6 Inclinometer	Yes		See Section 4.0 of the report
8.7 Weirs and Flow Monitors	No		Flow meters to be installed for the two pumping systems downstream. Flow measured using a pipe for the seepage zone at Sta. 60+575.
8.8 Data logger(s)	Yes		The piezometers and thermistors on East dike have automatic data collection since June 2012 (data transmitted every 3 hrs).
8.9 Other			
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			
9.1.1 OMS Plan exists	Draft		Final version to be issued
9.1.2 OMS Plan reflects current dam conditions	Yes		
9.1.3 Date of last revision	January 2012 Draft		
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Draft		Final version to be issued. An Emergency Response Plan (ERP) is currently implemented.
9.2.2 EPP reflects current conditions	Yes		
9.2.3 Date of last revision	Feb 2012 Draft		

10. NOTES

Inspector's Signature		**Date:**	

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APPENDIX A2

South Camp Dike Photographic Log and Record of Inspection

Photograph A2-1 South Camp Dike

Date: September 13, 2012 **Photo Number**: 32

Description: From south abutment, looking north at upstream slope and thermistor instrumentation set-up.

Photograph A2-2 South Camp Dike

Date: September 13, 2012 **Photo Number**: 33

Description: From north abutment, looking south at upstream slope and thermistor instrumentation set-up.

Photograph A2-3 South Camp Dike

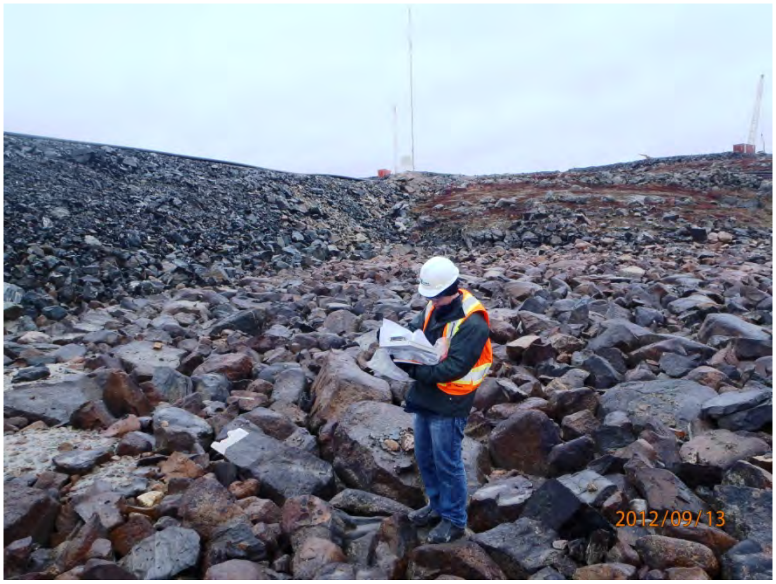
Date: September 13, 2012 **Photo Number**: 35

Description: From north abutment, looking south at downstream slope.

Photograph A2-4 South Camp Dike

Date: September 13, 2012 **Photo Number**: 37

Description: Observation of water between boulders at the downstream toe.



Photograph A2-5 South Camp Dike

Date: September 13, 2012 **Photo Number**: 40

Description: Looking north at the downstream toe where water can be seen between boulders.

Client:	AEM	**By:**	Yves Boulianne / Frédérick L. Bolduc
Project:	Meadowbank	**Date:**	September 13, 2012
Location:	South Camp Dike	**Reviewed:**	Fiona Esford

GENERAL INFORMATION			
Dam Type:	Rockfill shell with upstream filter, a bituminous geomembrane liner and protective cover.		
Weather Conditions:	Overcast	**Temperature:**	5°C approximately

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		32, 33	
1.1 Crest elevation	El. 136.6 m (rockfill) El 134.7 m (liner)		
1.2 Reservoir Level	U/S El.133.1 m D/S 127.7 m		
Current Freeboard	3.5 m (rockfill crest) 1.6 m (liner crest)		Design: 4.0 m. Current rockfill crest elevation is adequate.
1.3 Distance to Tailings Pond (if applicable)	Not applicable		
1.4 Surface Cracking	None at the time of inspection		
1.5 Unexpected Settlement	None at the time of inspection		
1.6 Lateral Movement	Not apparent		
1.7 Other Unusual Conditions	None		
2. UPSTREAM SLOPE		32, 33	
2.1 Slope Angle	Approx. 1.3V: 1H		
2.2 Signs of Erosion	None observed		
2.3 Signs of Movement (Deformation)	None observed		
2.4 Cracks	None observed		
2.5 Face Liner Condition (if applicable)	Liner not visible at the time of the inspection		Bituminous geomembrane liner. Compacted granular material mixed with bentonite was placed above the liner, followed by a thermal cap layer covering the entire liner face.

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
2.6 Other Unusual Conditions	None		
3. DOWNSTREAM SLOPE		35	
3.1 Slope angle	Approx. 1.4V: 1H		
3.2 Signs of Erosion	None observed		
3.3 Signs of Movement (Deformation)	None observed		
3.4 Cracks	None observed		
3.5 Seepage or Wet Areas	Not apparent		
3.6 Vegetation Growth	No		
3.7 Other Unusual Conditions	None		
4. DOWNSTREAM TOE AREA		40	
4.1 Seepage from Dam	Water observed	37	Presence of water downstream. This water accumulation is most likely from rain flowing through the boulders and is probably not from seepage.
4.2 Signs of Erosion	None observed		
4.3 Signs of Turbidity in Seepage Water	None		
4.4 Discoloration/staining	No		
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other Unusual Conditions	None		
5. ABUTMENTS			
5.1 Seepage at contact zone (abutment/embankment)	None observed		
5.2 Signs of Erosion	None observed		
5.3 Excessive Vegetation	No		
5.4 Presence of Rodent Burrows	None observed		
5.5 Other Unusual Conditions	None		
6. RESERVOIR			
6.1 Stability of Slopes	Stable		
6.2 Distance to Nearest Slide (if applicable)	Not applicable		
6.3 Estimate of Slide Volume (if applicable)	None observed		
6.4 Floating debris	None		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
6.5 Other Unusual Conditions			
7. EMERGENCY SPILLWAY/ OUTLET STRUCTURE			
7.1 Surface Condition	No spillway or outlet structure exists, only dewatering pump.		
7.2 Signs of Erosion			
7.3 Signs of Movement (Deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of Debris or Blockage			
7.7 Closure mechanism operational			
7.8 Slope Protection			
7.9 Instability of Side Slopes			
7.10 Other Unusual Conditions			
8. INSTRUMENTATION			
8.1 Piezometers	No		
8.2 Settlement Cells	No		
8.3 Thermistors	Yes		See Section 4.0 of the report, one broken since July 2011
8.4 Settlement Monuments	No		
8.5 Seismograph	No		
8.6 Inclinometer	No		
8.7 Weirs and Flow Monitors	No		
8.8 Data logger(s)	No		
8.9 Other	No		
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			
9.1.1 OMS Plan exists	Draft		Final version to be issued
9.1.2 OMS Plan reflects current dam conditions	Yes		
9.1.3 Date of last revision	January 2012 Draft		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Draft		
9.2.2 EPP reflects current conditions	Yes		Final version to be issued. An ERP exists that only contains general information for South Camp Dike and should be reviewed to include more specific details such as consequence and control of a failure.
9.2.3 Date of last revision	February 2012 Draft		

10. NOTES

Inspector's Signature		Date:	

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APPENDIX A3

Bay-Goose Dike Photographic Log and Record of Inspection

Photograph A3-1 Bay Goose Dike

Date: September 17, 2012 **Photo Number**: 489

Description: From Sta.30+197 (north channel), looking southwest along crest centreline. Note seacan container present near centreline.

Photograph A3-2 Bay Goose Dike

Date: September 17, 2012 **Photo Number**: 490

Description: From Sta.30+285 (north channel), looking north east along crest centreline. Note the thermistor wired installed directly over the dike without protection.

Photograph A3-3 Bay Goose Dike

Date: September 17, 2012 **Photo Number**: 492

Description: From Sta.30+338 to 30+370 (north channel), looking southwest along crest centreline at a zone of tension cracks on the crest. The cracks are receding and are hard to see. Note the rebars used to monitor the evolution of the cracks.

Photograph A3-4 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 612

Description: From crest at north channel, looking northeast at the downstream slope and north abutment.

Photograph A3-5 Bay Goose Dike

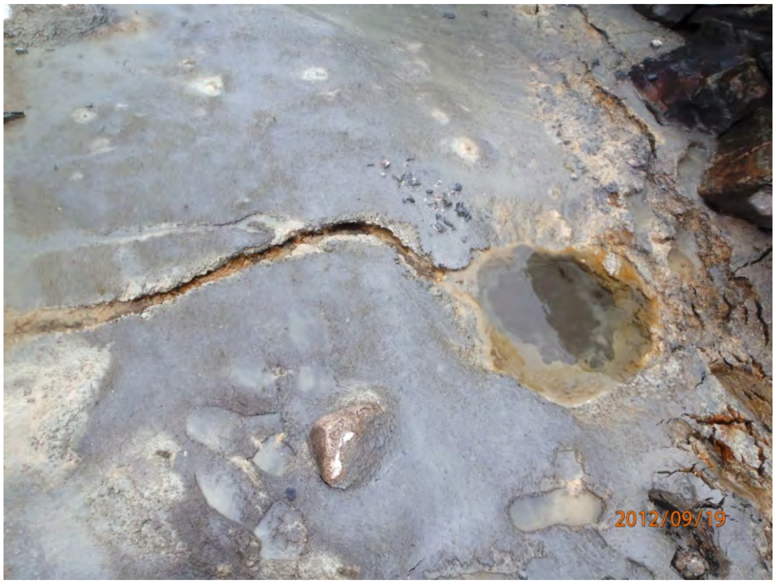
Date: September 19, 2012 **Photo Number**: 610

Description: From crest looking southwest at the north channel seepage located at Sta. 30+378 from sand boils.

Photograph A3-6 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 609

Description: Close-up on the north channel seepage at Sta. 30+378. Notice the pipe used to monitor the flow.



Photograph A3-7 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 615

Description: Close-up of the sand boil near Sta. 30+378.

Photograph A3-8 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 602

Description: Looking north, downstream at the seepage channels at Sta. 30+655 and 30+626. Notice the pipes used to monitor the flow.

Photograph A3-9 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 497

Description: Looking south from Sta. 30+650, along the crest centreline.

Photograph A3-10 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 498

Description: Looking north from Sta. 30+650, along the crest centreline.

Photograph A3-11 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 504

Description: Looking northeast from Sta. 30+960, along the crest centreline.

Photograph A3-12 Bay Goose Dike

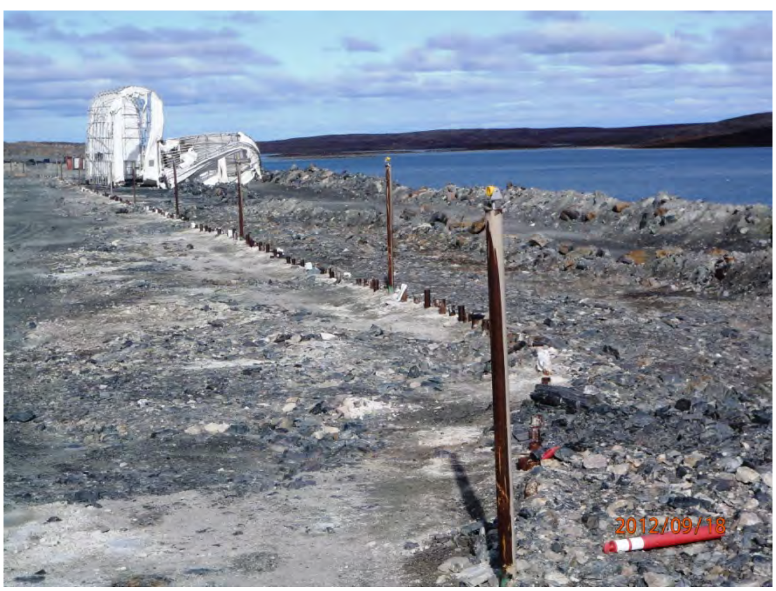
Date: September 18, 2012 **Photo Number**: 507

Description: Looking southwest from Sta. 30+960, along the crest centreline.

Photograph A3-13 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 509

Description: Depression on the crest 4 m from centreline at Sta. 31+130.



Photograph A3-14 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 511

Description: From Sta. 30+225, looking northeast along the crest centreline.

Photograph A3-15 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 514

Description: From Sta. 30+225, looking southwest along the crest centreline.

Photograph A3-16 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 596

Description: From the crest, looking at water pond at Sta. 31+125.

Photograph A3-17 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 589

Description: From Sta. 31+425 downstream, looking southwest.

Photograph A3-18 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 590

Description: From Sta. 31+425 downstream, looking northeast at the water pond at Sta. 31+350. Notice the water at the toe, see A3-19 for a close up.

Photograph A3-19 Bay Goose Dike

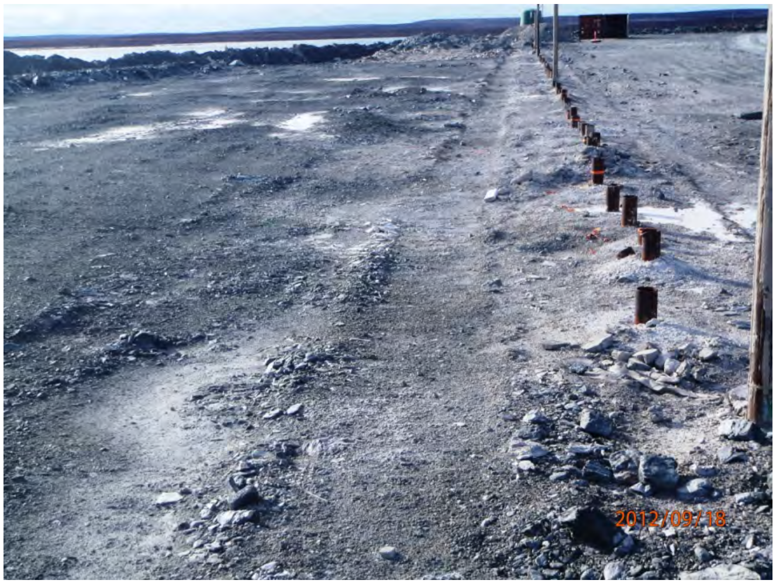
Date: September 19, 2012 **Photo Number**: 593

Description: Close up on water pond between the boulders at Sta. 31+350.

Photograph A3-20 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 520

Description: From Sta. 31+450, looking northeast along the crest centreline.



Photograph A3-21 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 521

Description: From Sta. 31+450, looking west along the crest centreline.

Photograph A3-22 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 527

Description: From Sta. 31+600, looking southwest along the crest centreline.

Photograph A3-23 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 531

Description: From Sta. 31+600, looking west along the crest centreline.

Photograph A3-24 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 532

Description: From Sta. 31+600, looking northwest along the crest centreline.

Photograph A3-25 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 587

Description: Close up of the zone of seepage at Channel 3 at Sta. 31+583. Notice the 3 pipes with no flow.

Photograph A3-26 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 588

Description: Close up of the zone of seepage at Channel 3 at Sta. 31+571. Notice the white pipe with flow.

Photograph A3-27 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 584

Description: From the crest at Sta. 31+650 looking north downstream at the Channel 3 zone of seepage and the resulting water pond.

Photograph A3-28 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 576

Description: From the crest, looking downstream at the water pond at Sta. 31+765.

Photograph A3-29 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 579

Description: From the crest at Sta.31+760, looking east downstream.

Photograph A3-30 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 542

Description: Looking east along the crest centreline. Notice the settlement at Sta. 31+806.

Photograph A3-31 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 539

Description: Close up of the settlement of upper cut-off wall at Sta. 31+806.

Photograph A3-32 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 544

Description: Looking northwest from Sta. 31+806 along the crest centreline.

Photograph A3-33 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 545

Description: From Sta. 31+850 looking northwest along the crest centreline. Notice the tension cracks and the rebars.

Photograph A3-34 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 549

Description: From Sta. 31+900 looking northwest along the crest centreline. Notice the hole near the cut-off wall.

Photograph A3-35 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 553

Description: Presence of tension cracks up to 150 mm wide associated with settlement in the zone between Sta. 31+880 and 31+930. This area contained the trench used to collect wastage from the jet grouting.

Photograph A3-36 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 554

Description: Presence of tension cracks up to 150 mm wide associated with settlement in the zone between Sta. 31+880 and 31+930. This area overlay a backfilled jet grouting trench.

Photograph A3-37 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 555

Description: Close up of one of the holes in the zone between Sta. 31+880 and 31+930. This area overlay a backfilled jet grouting trench.

Photograph A3-38 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 558

Description: From Sta. 31+925 looking northwest along the crest centreline. Notice the tension cracks and the rebars.

Photograph A3-39 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 560

Description: From Sta. 32+000 looking southeast along the crest centreline.

Photograph A3-40 Bay Goose Dike

Date: September 18, 2012 **Photo Number**: 561

Description: From Sta. 32+000 looking northwest along the crest centreline.

Photograph A3-41 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 569

Description: Looking at seepage Channel 1 located at Sta. 32+011 and 32+014. Notice that only one pipe is flowing.

Photograph A3-42 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 570

Description: Looking at seepage Channel 1 located at Sta. 32+011 from the top of the crest. Notice the sign showing the presence of a third channel.

Photograph A3-43 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 568

Description: From Sta. 32+050 looking southeast on the downstream face toward Channel 1.

Photograph A3-44 Bay Goose Dike

Date: September 19, 2012 **Photo Number**: 567

Description: From Sta. 32+050 looking northwest on the downstream face toward the abutment. The pond water is from the access road and not the dike.

APPENDIX A3
RECORD OF DAM INSPECTION

Client:	AEM	**By:**	Yves Boulianne/Frédérick L.Bolduc
Project:	Meadowbank	**Date:**	September 19, 2012
Location:	Bay-Goose Dike	**Reviewed:**	Fiona Esford

GENERAL INFORMATION

Dam Type:	Rockfill embankment with a cut-off wall (soil-bentonite, cement-soil-bentonite and jet grouting columns) and downstream filters		
Weather Conditions:	Overcast	**Temperature:**	4°C approximately

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		489, 498, 511, 531	
1.1 Crest elevation	+/-137.1 cut-off 136.1m		Design 138.1m. Thermal cap to be added.
1.2 Reservoir Level	133.7 m upstream 125.3 m downstream		
Current Freeboard	3.4 m		Design 4.0 m
1.3 Distance To Tailings Pond (if applicable)	Not applicable		
1.4 Surface Cracking	Yes		
	North channel crest	492	Zone of tension cracks likely within the jet grouting sludge on top crest from Sta. 30+282 to 30+400. The tension cracks are monitored by rebars and have mostly disappeared since the thawing.
	Channel 1 and 2	553, 554, 545, 558	From Sta. 31+880 to 32+050, newly observed tension crack and holes above an old trench dug for jet grout activities and backfilled prior to the 2011 annual inspection where none of the actual movement signs were observed. Small tension crack monitor by rebars on the crest centerline associated to jet grout sludge crust from Sta.31+900 to 32+050. Should continue to be monitored.
1.5 Unexpected Settlement	Yes		
		509	Depression on the crest 4 m downstream from Centreline in line with pond at Sta. 31+130.

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
		539, 542	Settlement of upper cut-off wall (coarser materials) at Sta. 31+806. No extension of hole to CSB (0.3 to 0.4 m depth). Two others were present before at 31+795. Test pits by AEM show that they end 1.4-1.7 m depth into frozen CSB.
	Channel 1 and 2	549, 555	From Sta. 31+880 to 31+930, newly observed tension cracks and holes above an old trench dug for jet grout activities and backfilled prior to the 2011 annual inspection where none of the actual movement signs were observed.
1.6 Lateral Movement	Not apparent.		
1.7 Other Unusual Conditions	None	489	In many areas the dike crest conditions do not allow a good visual inspection due to unequal ground and accumulation of material.
2. UPSTREAM SLOPE			
2.1 Slope angle	Approx. 1.6H:1.0V		Rockfill
2.2 Signs of Erosion	Stable		
2.3 Signs of Movement (Deformation)	None observed		
2.4 Cracks	None observed		
2.5 Face liner condition (if applicable)	Not applicable		
2.6 Other Unusual Conditions	None		
3. DOWNSTREAM SLOPE		612, 589, 590 568	
3.1 Slope angle	Approx.1.6H:1V		
3.2 Signs of Erosion	None observed		
3.3 Signs of Movement (Deformation)	None observed		
3.4 Cracks	None observed		
3.5 Seepage or Wet Areas	Not apparent		
3.6 Vegetation Growth	None observed		
3.7 Other Unusual Conditions	None		
4. DOWNSTREAM TOE AREA		612, 589, 590 568	
4.1 Seepage from Dam	Yes		Zone of seepage and water ponding. Seepage monitored by the mine. Total flow of 97.2 m^3/day.

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
	North Channel	610, 609, 615	Presence of a seepage channel at 30+360 and sand boil responsible for seepage at this location. Flowing at the time of the inspection (67 m^3/day [0.88 L/s]).
	Central Shallow	602	Presence of 2 seepage channels at 30+655 and 30+626.Flowing during the inspection (15 m^3/day [0.17 L/s]). No turbidity noted.
	Channel 3	587, 588, 584	4 seepage channels from 31+560 to 31+586 channels were flowing during the inspection (2m^3 /day [0.02 L/s]. No turbidity noted. Pond located nearby at 31+350.
	Chanel 1	569 and 570	2 seepage channels located at 32+011 and 32+014. One of them was flowing during the inspection (13.2 m^3/day [0.15 L/s]). No turbidity noted.
	Water Pond	590, 593, 576 567	Presence of 4 water ponds with no sign of seepage. Located at 31+125, 31+350 and 31+765. The water pond at 32+100 is fed by the runoff and rainwater and not the dike.
4.2 Signs of Erosion	None observed		
4.3 Signs of Turbidity in Seepage Water	No.		
4.4 Discoloration/staining	No		
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other Unusual Conditions	Sand boil	615	Sand boils located at Sta. 30+360 potentially related to the north channel seepage. One sand boil was visible during the inspection; two others were observed by AEM during 2012 summer.
5. ABUTMENTS			
5.1 Seepage at contact zone (abutment/embankment)	None observed		
5.2 Signs of Erosion	None observed		
5.3 Excessive Vegetation	No		
5.4 Presence of Rodent Burrows	None observed		
5.5 Other Unusual Conditions	None		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
6. RESERVOIR			
6.1 Stability of Slopes	Stable		
6.2 Distance to Nearest Slide (if applicable)	None observed		
6.3 Estimate of Slide Volume (if applicable)	Not applicable		
6.4 Floating debris	None observed		
6.5 Other Unusual Conditions	None		
7. EMERGENCY SPILLWAY/ OUTLET STRUCTURE			
7.1 Surface Condition	No spillway or outlet structure exists, only dewatering pump.		
7.2 Signs of Erosion			
7.3 Signs of Movement (Deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of Debris or Blockage			
7.7 Closure mechanism operational			
7.8 Slope Protection			
7.9 Instability of Side Slopes			
7.10 Other Unusual Conditions			
8. INSTRUMENTATION			
8.1 Piezometers	Yes		See Section 4.0 of the report
8.2 Settlement Cells	No		
8.3 Thermistors	Yes		See Section 4.0 of the report. Thermistor wire installed directly over the dike without protection.
8.4 Settlement Monuments	Survey monuments		See Section 4.0 of the report.
8.5 Seismograph	Periodic		See Section 4.0 of the report.
8.6 Inclinometer	Yes		See Section 4.0 of the report.
8.7 Weirs and Flow Monitors	Yes		White pipe installed at seepage channel to monitor flow.

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
8.8 Data logger(s)	Yes		The piezometers and the thermistors have automatic data transmission (every 3 hrs).
8.9 Other			
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			
9.1.1 OMS Plan exists	Draft		Final version to be issued
9.1.2 OMS Plan reflects current dam conditions	Yes		
9.1.3 Date of last revision	January 2012 Draft		
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Draft		Final version to be issued. An emergency response plan (ERP) exists and is currently implemented.
9.2.2 EPP reflects current conditions	Yes		
9.2.3 Date of last revision	Feb. 2012 Draft		

10. NOTES

Inspector's Signature		Date:	

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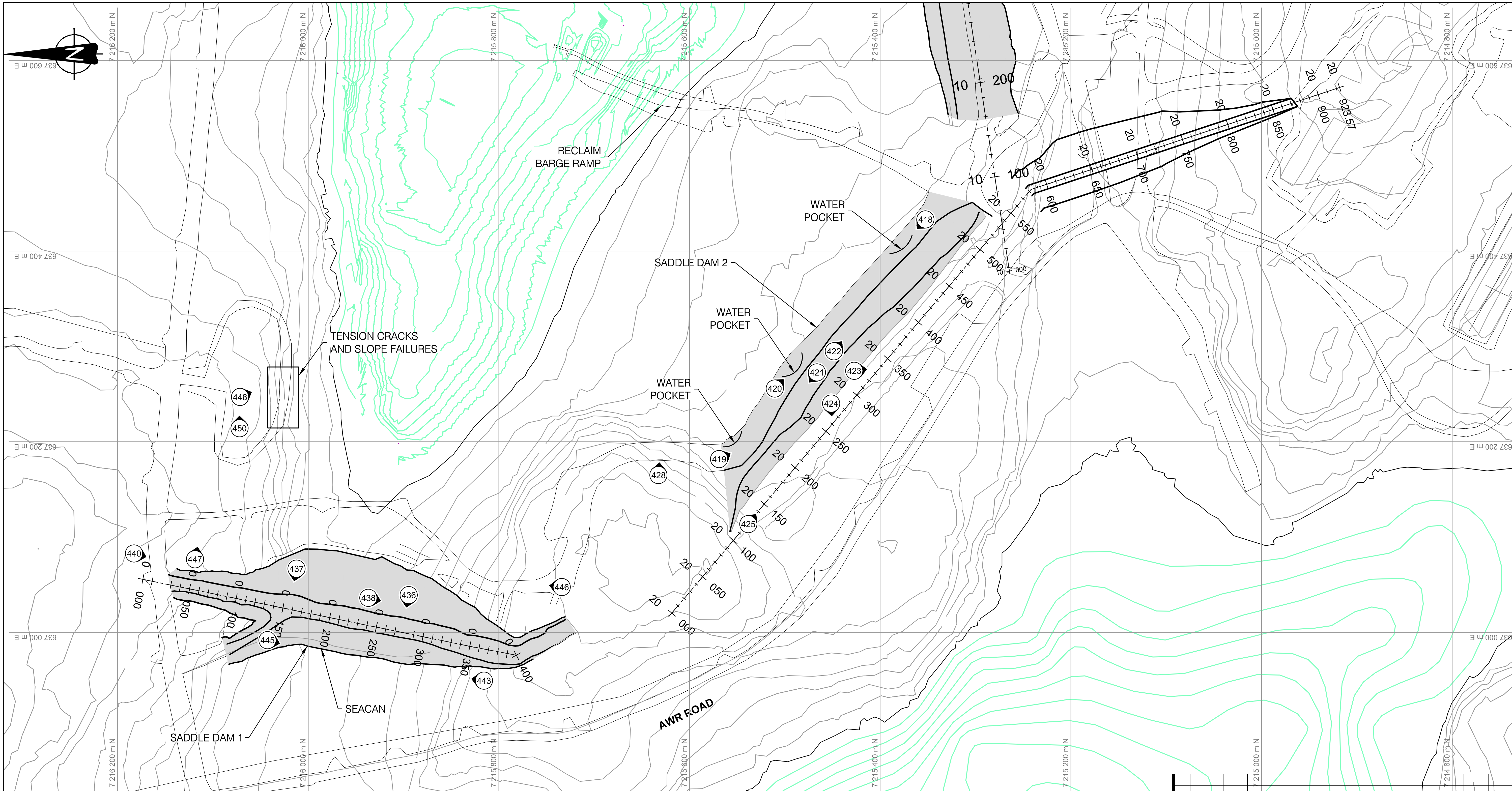
APPENDIX B

Tailings Storage Facility



Drawing File: N:\Actif\2012\1221\12-1221-0073 AEM-Annual\Geotechnical\Inspection-Meadowbank\4 CAD-GIS\3000\1212210073-3000-01.dwg 15 novembre 2012 16:00:23 By: rgravel

LEGEND

- PIT RIM
- BATHYMETRY CONTOUR
- SHORELINE
- LAND - BASED TOPOGRAPHY AS PER SEPTEMBER 2011
- (1) IDENTIFICATION AND DIRECTION OF PHOTOGRAPHY TOOK DURIG THE ANNUAL INSPECTION OF 2012

REFERENCES

1) DRAWING BASE PROVIDED BY AEM LTD., MEADOWBANK DIVISION IN "MEADOWBANK.DWG" DATED SEPTEMBER 14 2011.

0 40 80 120 160 200

SCALE IN METRES

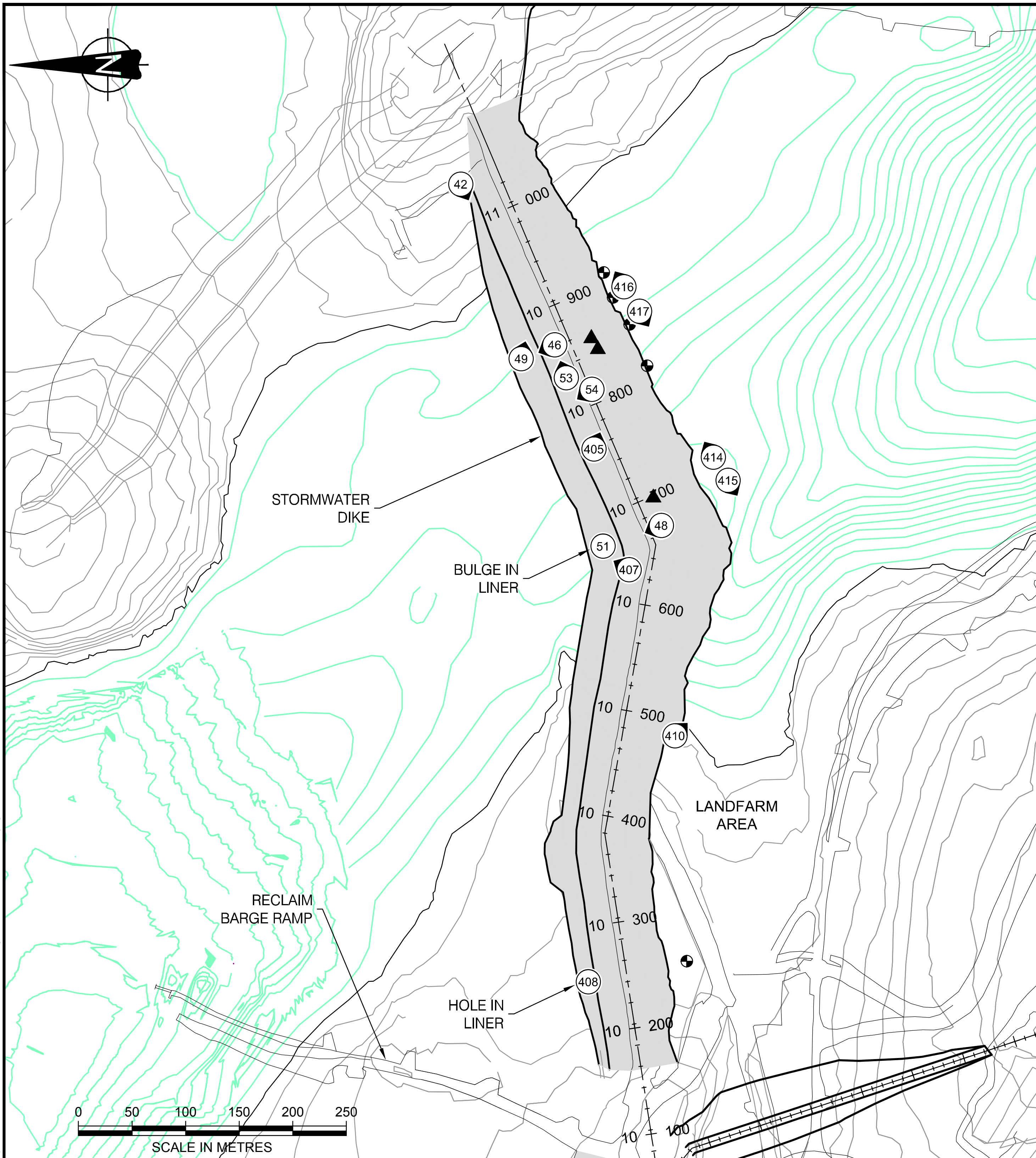
REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT: AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE: TAILINGS STORAGE FACILITY
SADDLE DAM 1 AND SADDLE DAM 2
2012 ANNUAL GEOTECHNICAL INSPECTION

Golder Associates
Montréal, Québec

PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	FB	22OCT12	SCALE 1 : 4 000	REV. -
CADD	SB	22OCT12		
CHECK	YB	05NOV12	FIGURE B1	
REVIEW	FE	05NOV12		



LEGEND

- PIT RIM
- BATHYMETRY CONTOUR
- SHORELINE
- LAND - BASED TOPOGRAPHY AS PER SEPTEMBER 2011
- (1) IDENTIFICATION AND DIRECTION OF PHOTOGRAPHY TOOK DURIN THE ANNUAL INSPECTION OF 2012

REFERENCES

1) DRAWING BASE PROVIDED BY AEM LTD., MEADOWBANK DIVISION IN "MEADOWBANK.DWG" DATED SEPTEMBER 14 2011.

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

STORMWATER DIKE
2012 ANNUAL GEOTECHNICAL INSPECTION

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	FB	22OCT12	SCALE 1 : 5 000	REV. -
CADD	SB	22OCT12	**FIGURE B2**	
CHECK	YB	05NOV12		
REVIEW	FE	05NOV12		

APPENDIX B1

Tailings Facility Photographic Log

Photograph B1-1 Tailings Storage Facility

Date: September 16, 2012 **Photo Number**: 447

Description: From Saddle Dam 1 looking east toward the North Cell of the Tailings Storage Facility. Notice the unstable pad from SD1 foundation striping having slope failure at coordinate 637205E/7216044N.

Photograph B1-2 Tailings Storage Facility

Date: September 16, 2012 **Photo Number**: 448

Description: From unstable pad, looking southeast toward the North Cell of the Tailings Storage Facility. Notice the slope failure at coordinate 637205E/7216044N.

Photograph B1-3 Tailings Storage Facility

Date: September 16, 2012 **Photo Number**: 450

Description: From unstable pad at coordinate 637205E/7216044N looking east toward the North Cell of the Tailings Storage Facility. Notice the slope failure and the presence of tension cracks (10 to 15 mm opening).

Photograph B1-4 Tailings Storage Facility

Date: September 16, 2012 **Photo Number**: 428

Description: Overview of the reclaim access ramp and North Cell, looking northeast.

Photograph B1-5 Tailings Storage Facility

Date: September 16, 2012 **Photo Number**: 431

Description: Looking at the reclaim access ramp from its crest.

Photograph B1-6 Tailings Storage Facility

Date: September 16, 2012 **Photo Number**: 432

Description: Overview of the reclaim access ramp and North Cell, looking northwest.

APPENDIX B2

Saddle Dam 1 Photographic Log and Record of Inspection

Photograph B2-1 Saddle Dam 1

Date: September 16, 2012 **Photo Number**: 446

Description: From the south abutment looking north at the upstream face. Notice the adequate beach against the liner.

Photograph B2-2 Saddle Dam 1

Date: September 16, 2012 **Photo Number**: 440

Description: From the north abutment looking south at the upstream face. Notice the wrinkles in the liner due to thermal expansion and contraction of the liner. Wind uplift also occurred.

Photograph B2-3 Saddle Dam 1

Date: September 16, 2012 **Photo Number**: 438

Description: Looking south at the crest and the upstream side.

Photograph B2-4 Saddle Dam 1

Date: September 16, 2012 **Photo Number**: 436

Description: Longitudinal ballast put on the liner at each two panels joint to try to prevent uplift of the liner by the wind. Ballast should still be increased. Photo at Sta. 0+293.

Photograph B2-5 Saddle Dam 1

Date: September 16, 2012 **Photo Number**: 437

Description: Presence of longitudinal wrinkles in the liner due to thermal expansion and contraction of the liner and material movement. Notice the sand bag ballast on the right that had been moved by the wind.

Photograph B2-6 Saddle Dam 1

Date: September 16, 2012 **Photo Number**: 443

Description: From the south abutment looking north at the downstream face. Notice the seacan container where a pump is recirculating water in the TSF.

Photograph B2-7 Saddle Dam 1

Date: September 16, 2012 **Photo Number**: 445

Description: From the north abutment looking south at the downstream face. Notice the seacan container with the pump recirculating water in the TSF.

APPENDIX B2
RECORD OF DAM INSPECTION

Client:	AEM	**By:**	Yves Boulianne / Frédérick L. Bolduc
Project:	Meadowbank	**Date:**	September 16, 2012
Location:	Saddle Dam 1	**Reviewed:**	Fiona Esford

GENERAL INFORMATION			
Dam Type:	Rockfill embankment with inverted filter on base, upstream filters, a geomembrane liner and protective cover.		
Weather Conditions:	Overcast	**Temperature:**	3°C approximately

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		438	
1.1 Crest elevation	150 m		Design 150 m
1.2 Reservoir Level	142.5 m		
Current Freeboard	7.5 m		Design 2 m
1.3 Distance To Tailings Pond (if applicable)	Between 10 and 20 m	446, 440	Adequate beach. Pond was approximately 10-20 m away.
1.4 Surface Cracking	None at time of inspection		
1.5 Unexpected Settlement	None observed		
1.6 Lateral Movement	Not apparent		
1.7 Other Unusual Conditions			
2. UPSTREAM SLOPE		446, 440	
2.1 Slope angle	Approx. 3H:1V		Rockfill
2.2 Signs of Erosion	None observed		
2.3 Signs of Movement (Deformation)	None observed		
2.4 Cracks	None observed		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
2.5 Face liner condition (if applicable)	Presence of wrinkles	440, 437, 436	Presence of wrinkles in the liner. Most of the wrinkles were longitudinal to the panel seam and will likely flatten during the deposition of tailings without pinching. The condition of the wrinkles and liner in general should continue to be monitored. Inadequate ballast exists. Placement of additional ballast to the liner is strongly recommended.
2.6 Other Unusual Conditions	None		
3. DOWNSTREAM SLOPE		443, 445	
3.1 Slope angle	Approx.1.2H or 1.3 H:1V variable		Rockfill
3.2 Signs of Erosion	None observed		
3.3 Signs of Movement (Deformation)	None observed		
3.4 Cracks	None observed		
3.5 Seepage or Wet Areas	None observed		
3.6 Vegetation Growth	None observed		
3.7 Other Unusual Conditions	None		
4. DOWNSTREAM TOE AREA		443, 445	
4.1 Seepage from Dam	Uncertain		No water observed during inspection. A pump is installed to dewater the downstream toe to avoid uplifting of geomembrane and promotion of frozen condition of dike foundation.
4.2 Signs of Erosion	None observed		
4.3 Signs of Turbidity in Seepage Water	Not applicable		
4.4 Discoloration/staining	No		
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other Unusual Conditions	Pump installed downstream	445	There is a pump downstream in a seacan container recirculating water in the TSF. The backfill foundation of the seacan pump may freeze during winter. Provision for additional pump should be made at freshet in case the actual pump is not working properly.
5. ABUTMENTS			

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
5.1 Seepage at contact zone (abutment/embankment)	None observed		
5.2 Signs of Erosion	None observed		
5.3 Excessive Vegetation	No		
5.4 Presence of Rodent Burrows	None observed		
5.5 Other Unusual Conditions	None		
6. RESERVOIR			
6.1 Stability of Slopes	Stable		
6.2 Distance to Nearest Slide	None observed		
6.3 Estimate of Slide Volume (if applicable)	Not applicable		
6.4 Floating debris	None observed		
6.5 Other Unusual Conditions	No		
7. EMERGENCY SPILLWAY/ OUTLET STRUCTURE			
7.1 Surface Condition	No spillway or outlet structure exists, only dewatering pump.		
7.2 Signs of Erosion			
7.3 Signs of Movement (Deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of Debris or Blockage			
7.7 Closure mechanism operational			
7.8 Slope Protection			
7.9 Instability of Side Slopes			
7.10 Other Unusual Conditions			
8. INSTRUMENTATION			
8.1 Piezometers	No		
8.2 Settlement Cells	No		
8.3 Thermistors	Yes		See Section 4.0 of the report

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
8.4 Settlement Monuments	No		Construction drawings show settlement monuments to be installed on Stage 2 crest.
8.5 Seismograph	No		
8.6 Inclinometer	No		
8.7 Weirs and Flow Monitors	No		Construction drawings indicate a seepage collection system is to be constructed. AEM has indicated they plan to construct a seepage collection and pumpback system. It is anticipated that a weir or other device will be installed to measure flow.
8.8 Data logger(s)	No		
8.9 Other			
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			
9.1.1 OMS Plan exists	Draft		Final version to be issued
9.1.2 OMS Plan reflects current dam conditions	Yes		
9.1.3 Date of last revision	Feb 2012 Draft		
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Draft		Final version to be issued. An emergency response plan (ERP) is currently implemented.
9.2.2 EPP reflects current conditions	Yes		
9.2.3 Date of last revision	Feb 2012 Draft		

10. NOTES :

Tailings beach at elevation EL. 141.9 m.

Inspector's Signature		Date:	

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APPENDIX B3

Saddle Dam 2 Photographic Log and Record of Inspection

Photograph B3-1 Saddle Dam 2

Date: September 16, 2012 **Photo Number**: 421

Description: From Sta. 20+295 looking northwest at the crest.

Photograph B3-2 Saddle Dam 2

Date: September 16, 2012 **Photo Number**: 422

Description: From Sta. 20+295 looking southeast at the crest. Notice the thermistor station.

Photograph B3-3 Saddle Dam 2

Date: September 16, 2012 **Photo Number**: 418

Description: Looking northwest at water caught between liner horizontal joint at El. 146 m from Sta. 20+444 to Sta. 20+476. Balloon height of 100 mm.

Photograph B3-4 Saddle Dam 2

Date: September 16, 2012 **Photo Number**: 420

Description: Looking southeast at water caught between liner horizontal joint at El. 146 m from Sta. 20+250 to Sta. 20+295. Balloon height of 170 mm.

Photograph B3-5 Saddle Dam 2

Date: September 16, 2012 **Photo Number**: 419

Description: From Sta. 20+130, looking southeast at water caught between liner horizontal joint at El. 146 m on a distance of 8 m approximately. Balloon height of 100 mm.

Photograph B3-6 Saddle Dam 2

Date: September 16, 2012 **Photo Number**: 423

Description: From Sta. 20+295 on the crest, looking southeast at the downstream face.

Photograph B3-7 Saddle Dam 2

Date: September 16, 2012 **Photo Number**: 424

Description: From Sta. 20+295 on the crest, looking northwest at the downstream face.

Photograph B3-8 Saddle Dam 2

Date: September 16, 2012 **Photo Number**: 425

Description: From northwest abutment, looking southeast at the downstream face.

Client:	AEM	**By:**	Yves Boulianne / Frédérick L. Bolduc
Project:	Meadowbank	**Date:**	September 16, 2012
Location:	Saddle Dam 2	**Reviewed:**	Fiona Esford

GENERAL INFORMATION

Dam Type:	Rockfill embankment with inverted filter on base, upstream filters, a geomembrane liner and upstream till blanket.		
Weather Conditions:	Overcast	**Temperature:**	4°C approximately

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		421, 422	
1.1 Crest elevation	150 m		Design 150 m
1.2 Reservoir Level	142.5 m		
Current Freeboard	7.5 m		Design 2 m
1.3 Distance To Tailings Pond (if applicable)	More than 50 m away		Tailings are lower than the till plug at downstream toe.
1.4 Surface Cracking	None at time of inspection		
1.5 Unexpected Settlement	None observed		
1.6 Lateral Movement	Not apparent		
1.7 Other Unusual Conditions	None		
2. UPSTREAM SLOPE		419, 420	
2.1 Slope angle	Approx. 3H:1V		Rockfill
2.2 Signs of Erosion	None observed		
2.3 Signs of Movement (Deformation)	None observed		
2.4 Cracks	None observed		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
2.5 Face liner condition (if applicable)	Balloons in the liner	418, 419, 420	Water is caught in between the liner horizontal joint at El. 146 m in 3 locations "zones". Zone 1 from Sta. 20+444 to Sta. 20+476. Zone 2 from Sta. 20+250 to Sta. 20+295. Zone 3 from Sta. 20+122 to Sta. 20+130. Water balloons height varies from 100 mm to 170 mm. Other areas with the same condition were repaired in 2012 prior to the inspection, areas not know by Golder.
2.6 Other Unusual Conditions	None		
3. DOWNSTREAM SLOPE		423,424, 425	
3.1 Slope angle	Approx.1.2H or 1.3 H:1V variable		Rockfill
3.2 Signs of Erosion	None observed		
3.3 Signs of Movement (Deformation)	None observed		
3.4 Cracks	None observed		
3.5 Seepage or Wet Areas	None observed on slope		
3.6 Vegetation Growth	None observed		
3.7 Other Unusual Conditions	None		
4. DOWNSTREAM TOE AREA		423,424, 425	
4.1 Seepage from Dam	No		
4.2 Signs of Erosion	None observed		
4.3 Signs of Turbidity in Seepage Water	Not applicable		
4.4 Discoloration/staining	No		
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other Unusual Conditions			
5. ABUTMENTS			
5.1 Seepage at contact zone (abutment/embankment)	None observed		
5.2 Signs of Erosion	None observed		
5.3 Excessive Vegetation	No		
5.4 Presence of Rodent Burrows	None observed		
5.5 Other Unusual Conditions	None		
6. RESERVOIR			

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
6.1 Stability of Slopes	Stable		
6.2 Distance to Nearest Slide (if applicable)	None observed		
6.3 Estimate of Slide Volume (if applicable)	Not applicable		
6.4 Floating debris	None observed		
6.5 Other Unusual Conditions	No		
7. EMERGENCY SPILLWAY/ OUTLET STRUCTURE			
7.1 Surface Condition	No spillway or outlet structure exists, only dewatering pump.		
7.2 Signs of Erosion			
7.3 Signs of Movement (Deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of Debris or Blockage			
7.7 Closure mechanism operational			
7.8 Slope Protection			
7.9 Instability of Side Slopes			
7.10 Other Unusual Conditions			
8. INSTRUMENTATION			
8.1 Piezometers	No		
8.2 Settlement Cells	No		
8.3 Thermistors	Yes		See Section 4.0 of the report
8.4 Settlement Monuments	No		Construction drawings show settlement monuments to be installed on Stage 2 crest.
8.5 Seismograph	No		
8.6 Inclinometer	No		
8.7 Weirs and Flow Monitors	No		Construction drawings indicate a seepage collection system is to be constructed. AEM has indicated they plan to construct a seepage collection and pumpback system.

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
8.8 Data logger(s)	No		
8.9 Other			
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			
9.1.1 OMS Plan exists	Draft		Final version to be issued
9.1.2 OMS Plan reflects current dam conditions	Yes		
9.1.3 Date of last revision	Feb 2012 Draft		Final version to be issued. Emergency response plan (ERP) currently implemented.
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Draft		
9.2.2 EPP reflects current conditions	Yes		
9.2.3 Date of last revision	Feb 2012 Draft		

10. NOTES :

Tailings beach at elevation EL. 141.9 m.

Inspector's Signature		**Date:**	

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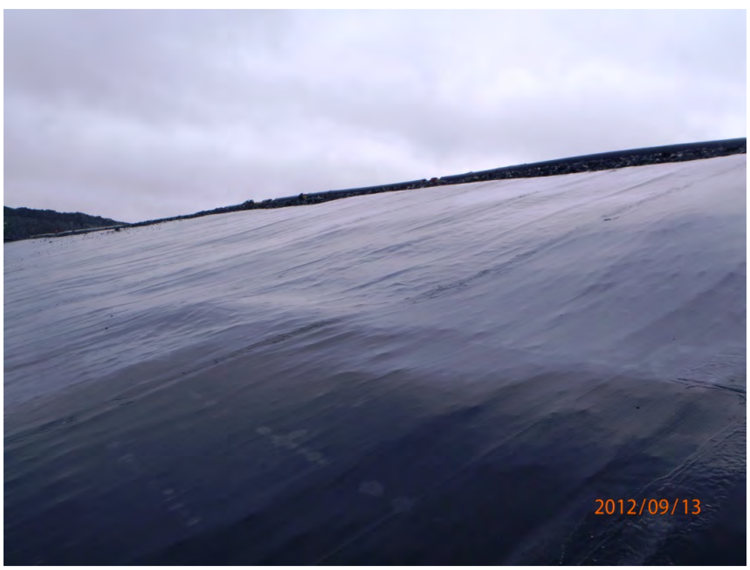
APPENDIX B4

Stormwater Dike Photographic Log, Record of Inspection

Photograph B4-1 Stormwater Dike

Date: September 13, 2012 **Photo Number**: 42

Description: From Sta. 11+074 near the east access ramp, looking southwest at the upstream face.



Photograph B4-2 Stormwater Dike

Date: September 13, 2012 **Photo Number**: 44

Description: From Sta.10+949, looking southeast at the zone of differential settlement in the liner foundation between Sta. 11+045 and 10+735.

Photograph B4-3 Stormwater Dike

Date: September 13, 2012 **Photo Number**: 46

Description: From Sta.10+949, looking northwest at the zone of differential settlement in the liner between Sta. 11+045 and 10+735, from actual beach elevation to crest edge. Notice the appropriate tailings beach against the upstream face.

Photograph B4-4 Stormwater Dike

Date: September 13, 2012 **Photo Number**: 48

Description: From Sta.10+672, looking northwest at the upstream face. Notice spigot 4 and the bulge at the bottom of the liner.

Photograph B4-5 Stormwater Dike

Date: September 13, 2012 **Photo Number**: 51

Description: Looking at the bulge in the liner about 75 mm above the granular foundation at Sta. 10+672.

Photograph B4-6 Stormwater Dike

Date: September 16, 2012 **Photo Number**: 407

Description: Close up of spigot 4 near Sta. 10+672. Notice the protection added at the end of spigot 4 to avoid damaging the liner during the deposition of tailings.

Photograph B4-7 Stormwater Dike

Date: September 13, 2012 **Photo Number**: 53

Description: From Sta.10+821, looking northeast at the crest.

Photograph B4-8 Stormwater Dike

Date: September 13, 2012 **Photo Number**: 54

Description: From Sta.10+821, looking southwest at the crest.

Photograph B4-9 Stormwater Dike

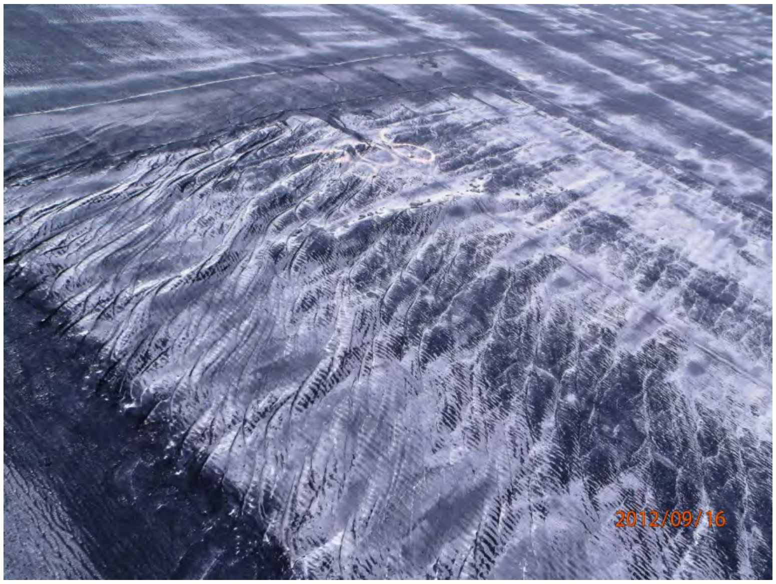
Date: September 16, 2012 **Photo Number**: 405

Description: From Sta.10+778 on the crest, looking south east from toward the downstream face berm.

Photograph B4-10 Stormwater Dike

Date: September 16, 2012 **Photo Number**: 408

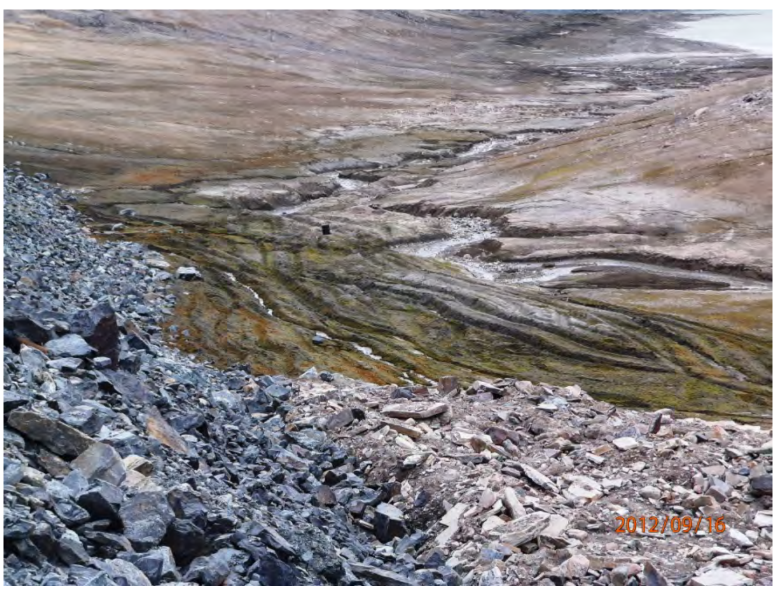
Description: Looking at three holes identified in the liner at Sta.10+242 at El. 147m.



Photograph B4-11 Stormwater Dike

Date: September 16, 2012 **Photo Number**: 409

Description: Damaged panel (#306) at El. 146.2 m (probably installed in this condition initially).



Photograph B4-12 Stormwater Dike

Date: September 16, 2012 **Photo Number**: 410

Description: From Sta.10+490, looking southeast at the downstream face.

Photograph B4-13 Stormwater Dike

Date: September 16, 2012 **Photo Number**: 414

Description: From Sta.10+709, looking northeast at the downstream face.

Photograph B4-14 Stormwater Dike

Date: September 16, 2012 **Photo Number**: 415

Description: From Sta.10+709, looking southwest at the downstream face.

Photograph B4-15 Stormwater Dike

Date: September 16, 2012 **Photo Number**: 416

Description: From Sta.10+880, looking northeast at the downstream face.

Photograph B4-16 Stormwater Dike

Date: September 16, 2012 **Photo Number**: 417

Description: From Sta.10+880, looking southwest at the downstream face.

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Client:	AEM	**By:**	Yves Boulianne / Frédérick L. Bolduc
Project:	Meadowbank	**Date:**	September 16, 2012
Location:	Stormwater Dike	**Reviewed:**	Fiona Esford

GENERAL INFORMATION

Dam Type:	Rockfill embankment, upstream filters and a bituminous geomembrane liner. Compacted till placed above liner at toe, prior to tailings deposition.		
Weather Conditions:	Overcast	**Temperature:**	4°C approximately

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		53, 54	
1.1 Crest elevation	148 m		Design 150 m
1.2 Reservoir Level	142.5		
Current Freeboard	5.5 m		Design 2 m
1.3 Distance To Tailings Pond (if applicable)	10 to 20 m		Adequate beach. Pond was approximately 10-20 m away.
1.4 Surface Cracking	None at time of inspection		
1.5 Unexpected Settlement	None observed		
1.6 Lateral Movement	Not apparent		
1.7 Other Unusual Conditions			
2. UPSTREAM SLOPE		42	
2.1 Slope angle	Approx. 3H:1V		Rockfill
2.2 Signs of Erosion	None observed		
2.3 Signs of Movement (Deformation)	Differential settlement Bulge in the liner	44, 46 48, 51	Differential settlement between Sta. 11+045 and 10+735. Bulge in the liner of about 75 mm above the granular foundation at Sta. 10+672. Liner in tension (trampoline condition of about 20 mm height). Spigot 4 was installed over this area in the past. Likely due to circulation of water along the upstream slope and washing of particle from the liner foundation.
2.4 Cracks	None observed		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
2.5 Face liner condition (if applicable)	Folds Holes	42 408	Small folds near access ramp near Sta.11+074. Three holes were identified in the liner at Sta. 10+242, 1 m below the crest.
2.6 Other Unusual Conditions	Damaged panel	409	Damaged panel (#306) at El. 146.2. Probably placed in this condition initially.
3. DOWNSTREAM SLOPE		410, 414	
3.1 Slope angle	Approx.1.2H or 1.5 H:1V variable		Rockfill
3.2 Signs of Erosion	None observed		
3.3 Signs of Movement (Deformation)	None observed		
3.4 Cracks	None observed		
3.5 Seepage or Wet Areas	None observed on slope		
3.6 Vegetation Growth	None observed		
3.7 Other Unusual Conditions	None		
4. DOWNSTREAM TOE AREA		415, 416	
4.1 Seepage from Dam	No		
4.2 Signs of Erosion	None observed		
4.3 Signs of Turbidity in Seepage Water	Not applicable		
4.4 Discoloration/staining	No		
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other Unusual Conditions			
5. ABUTMENTS			
5.1 Seepage at contact zone (abutment/embankment)	None observed		
5.2 Signs of Erosion	None observed		
5.3 Excessive Vegetation	No		
5.4 Presence of Rodent Burrows	None observed		
5.5 Other Unusual Conditions	None		.
6. RESERVOIR			
6.1 Stability of Slopes	Stable		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
6.2 Distance to Nearest Slide (if applicable)	None observed		
6.3 Estimate of Slide Volume (if applicable)	Not applicable		
6.4 Floating debris	None observed		
6.5 Other Unusual Conditions	No		
7. EMERGENCY SPILLWAY/ OUTLET STRUCTURE			
7.1 Surface Condition	No spillway or outlet structure exists, only dewatering pump.		
7.2 Signs of Erosion			
7.3 Signs of Movement (Deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of Debris or Blockage			
7.7 Closure mechanism operational			
7.8 Slope Protection			
7.9 Instability of Side Slopes			
7.10 Other Unusual Conditions			
8. INSTRUMENTATION			
8.1 Piezometers	Yes		See Section 4.0
8.2 Settlement Cells	No		
8.3 Thermistors	Yes		See Section 4.0
8.4 Settlement Monuments	No		
8.5 Seismograph	No		
8.6 Inclinometer	No		
8.7 Weirs and Flow Monitors	No		
8.8 Data logger(s)	No		
8.9 Other	None		
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
9.1.1 OMS Plan exists	Draft		Final version to be issued
9.1.2 OMS Plan reflects current dam conditions	Yes		
9.1.3 Date of last revision	Feb. 2012 Draft		
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Draft		Final version to be issued. Emergency response plan (ERP) currently implemented.
9.2.2 EPP reflects current conditions	Yes		
9.2.3 Date of last revision	Feb. 2012 Draft		

10. NOTES :

Tailings beach at elevation EL. 141.9 m.

Inspector's Signature		Date:	

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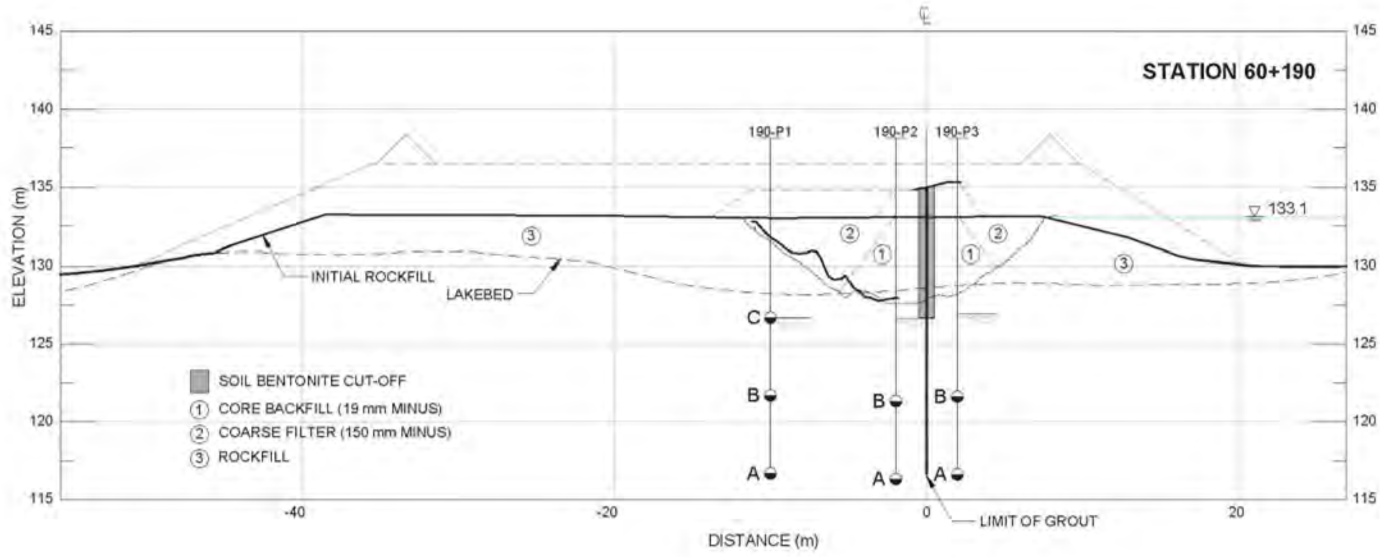
APPENDIX C

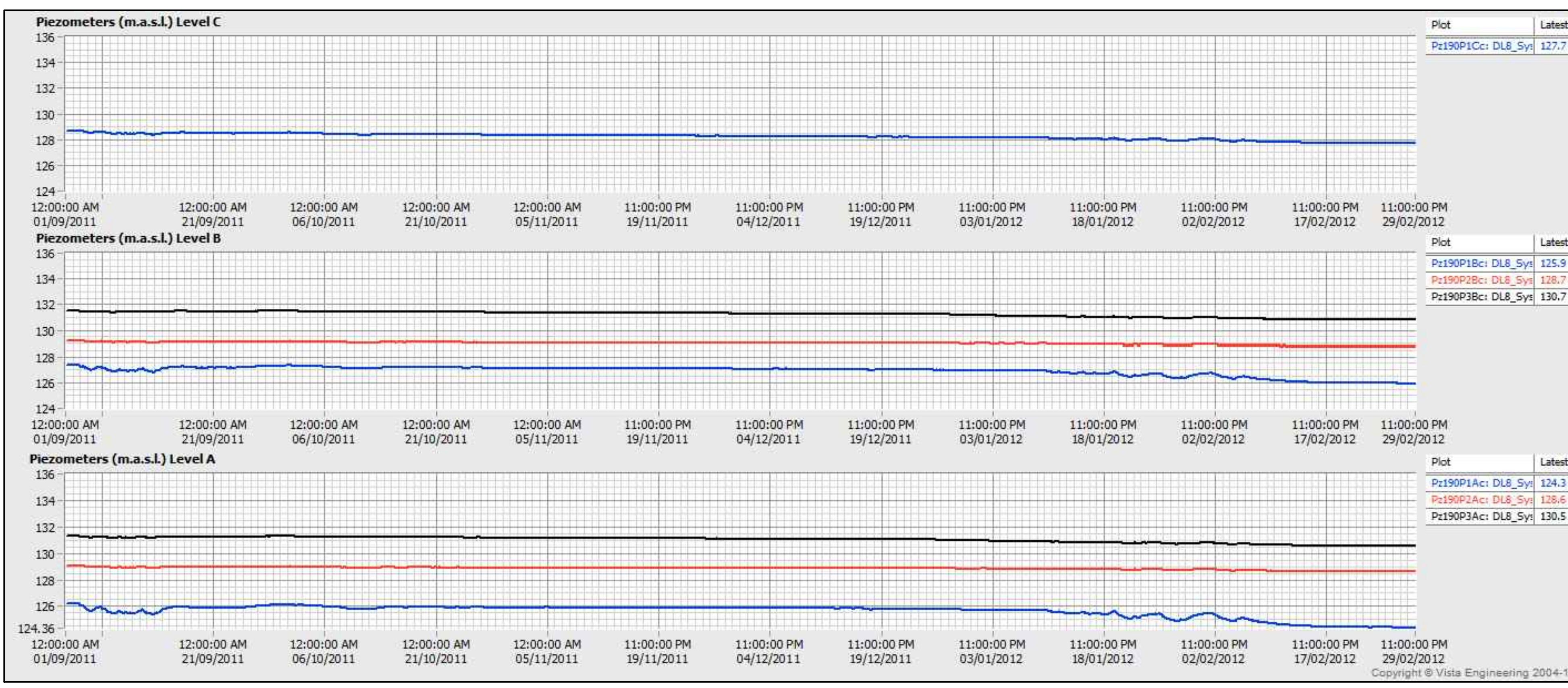
Geotechnical Instrumentation Data

APPENDIX C1

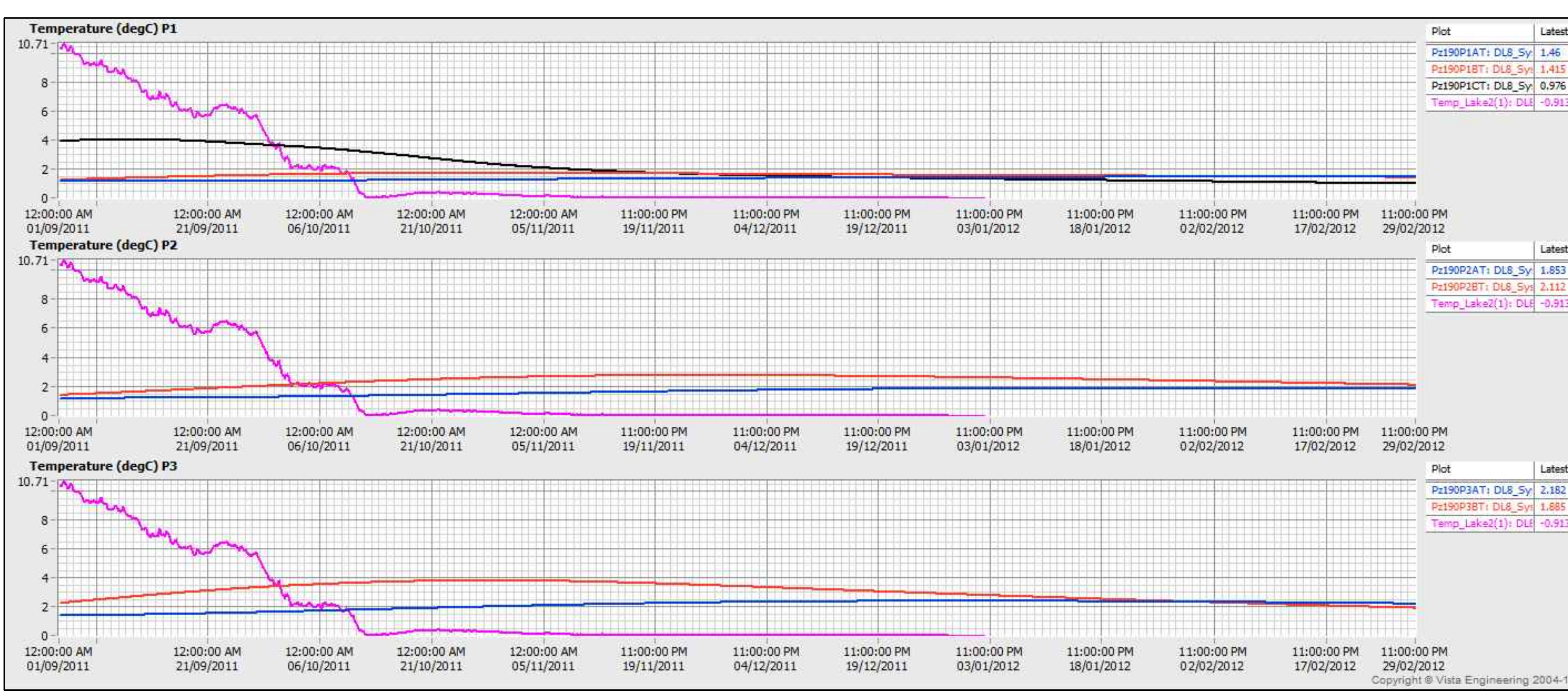
East Dike Piezometric, Thermistor and Inclinometer Data



VW Piezometer - Total Head (Sep.11 - Mar.12)



VW Piezometer - Temperature (Sep.11 - Mar.12)



PROJECT

AEM

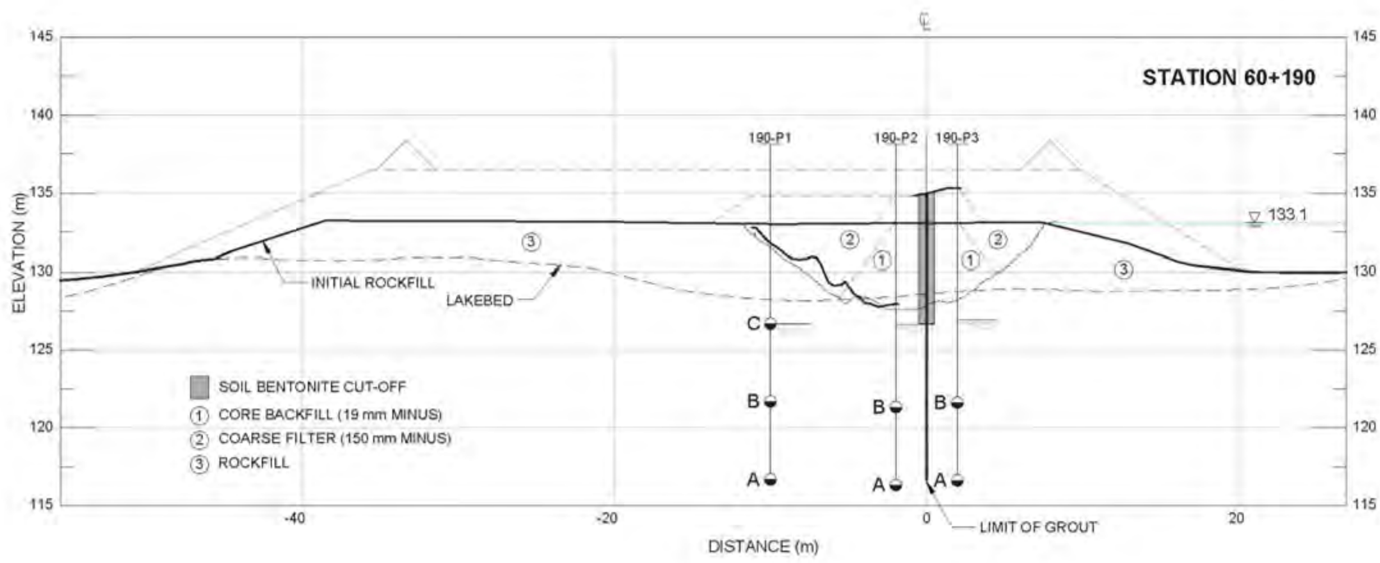
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

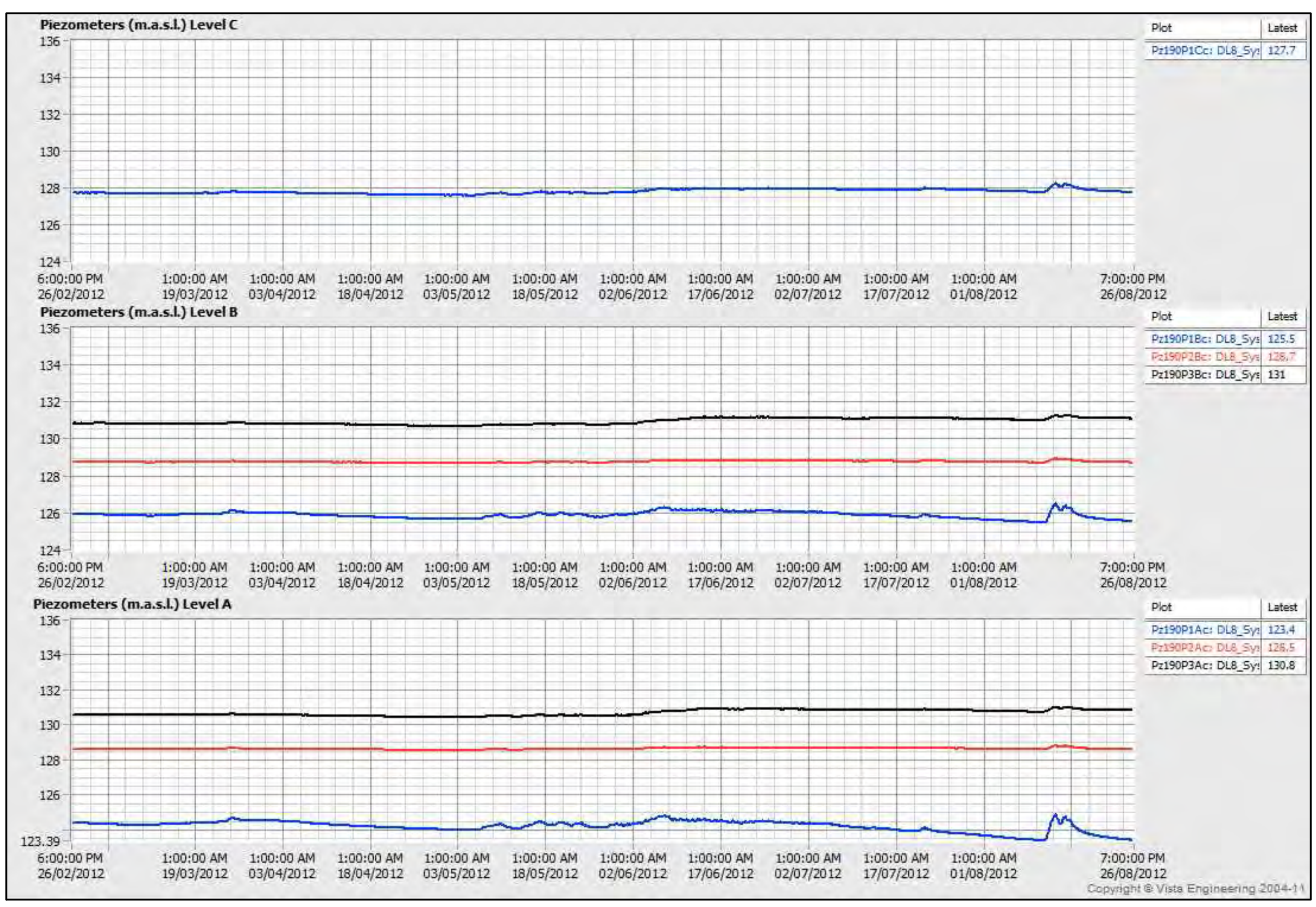
EAST DIKE - SECTION 60+190
PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

Golder Associates
Montréal, Québec

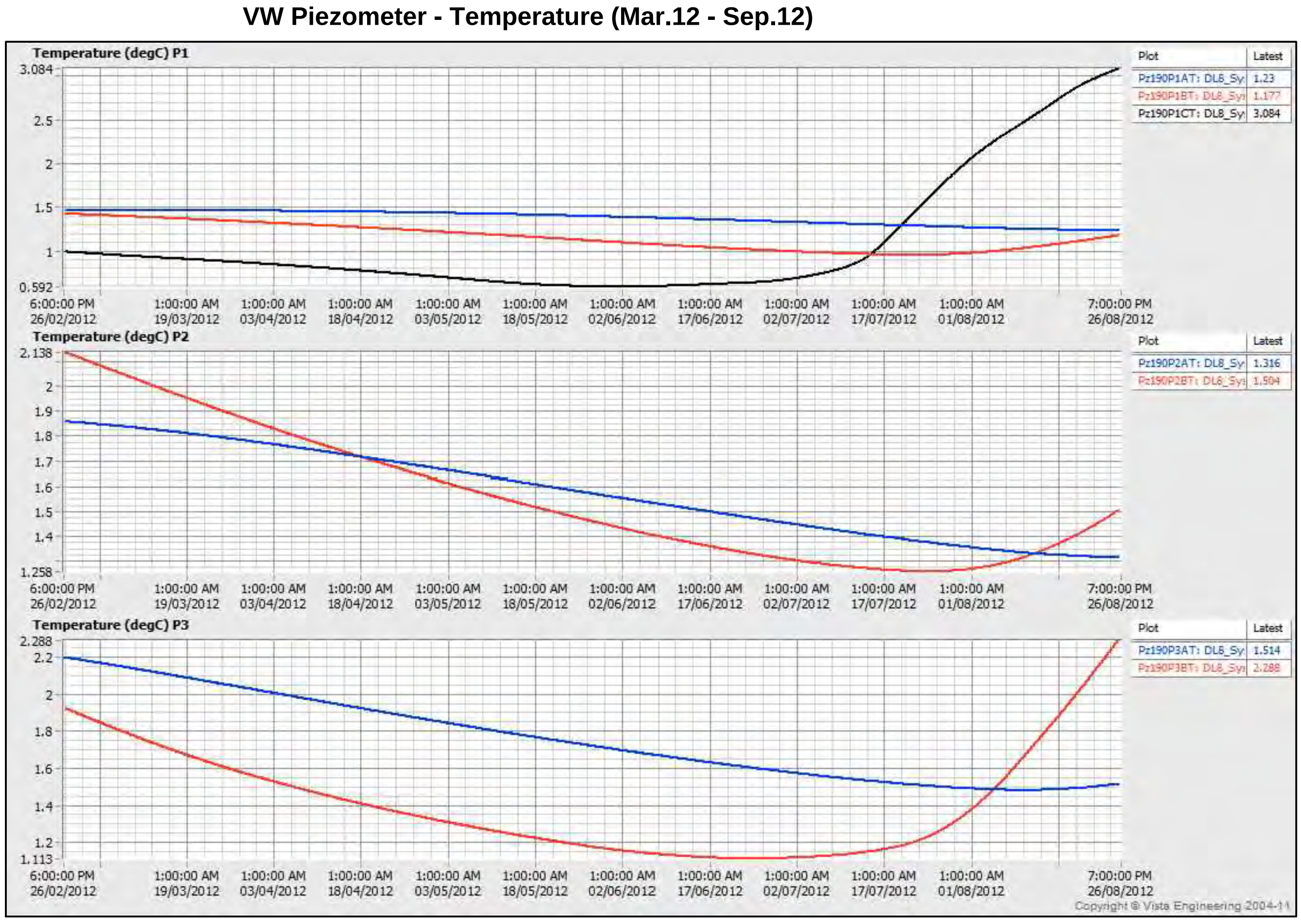
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/12	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C1-1**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



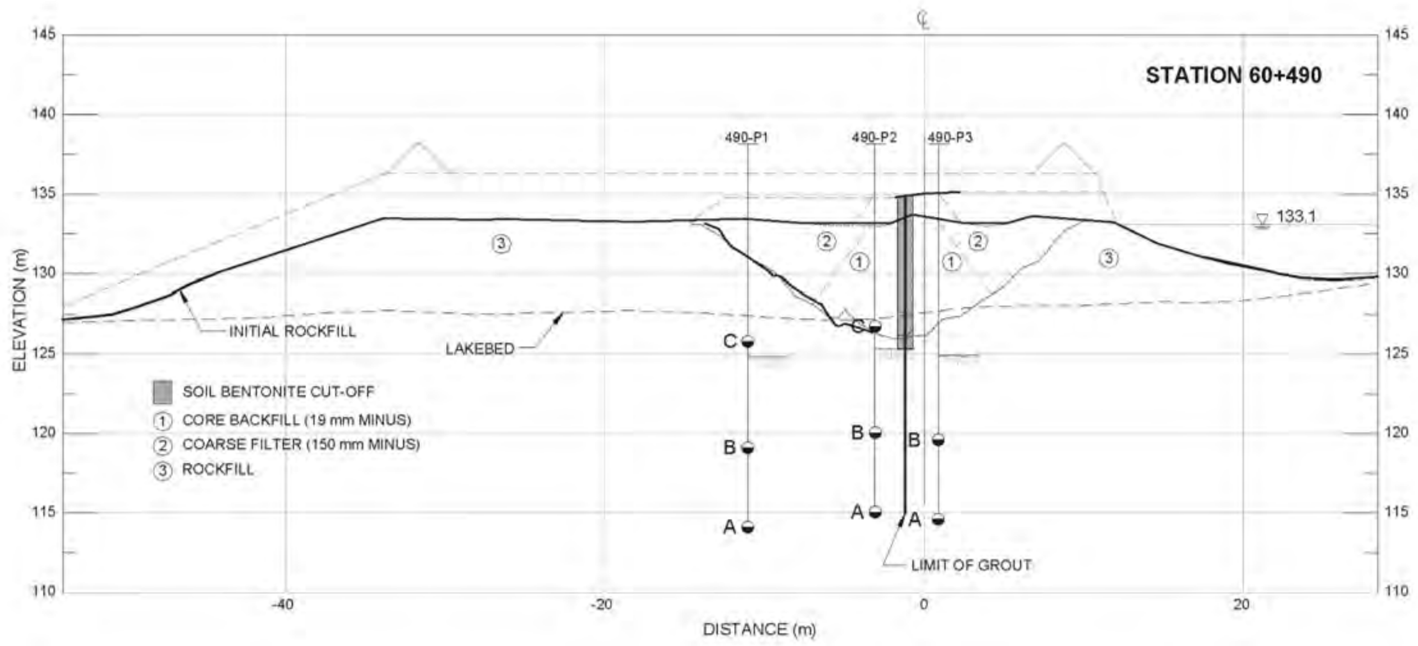
VW Piezometer - Total Head (Mar.12 - Sep.12)



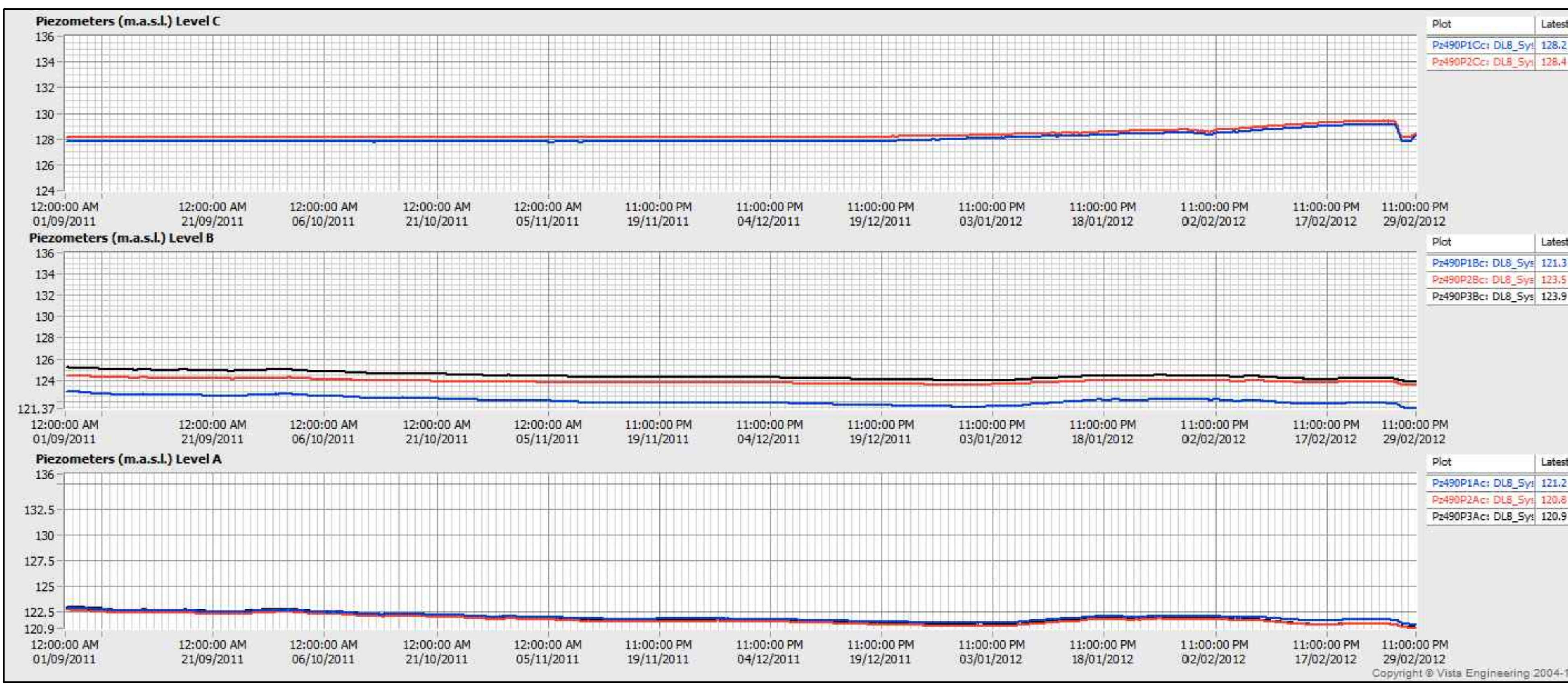
VW Piezometer - Temperature (Mar.12 - Sep.12)



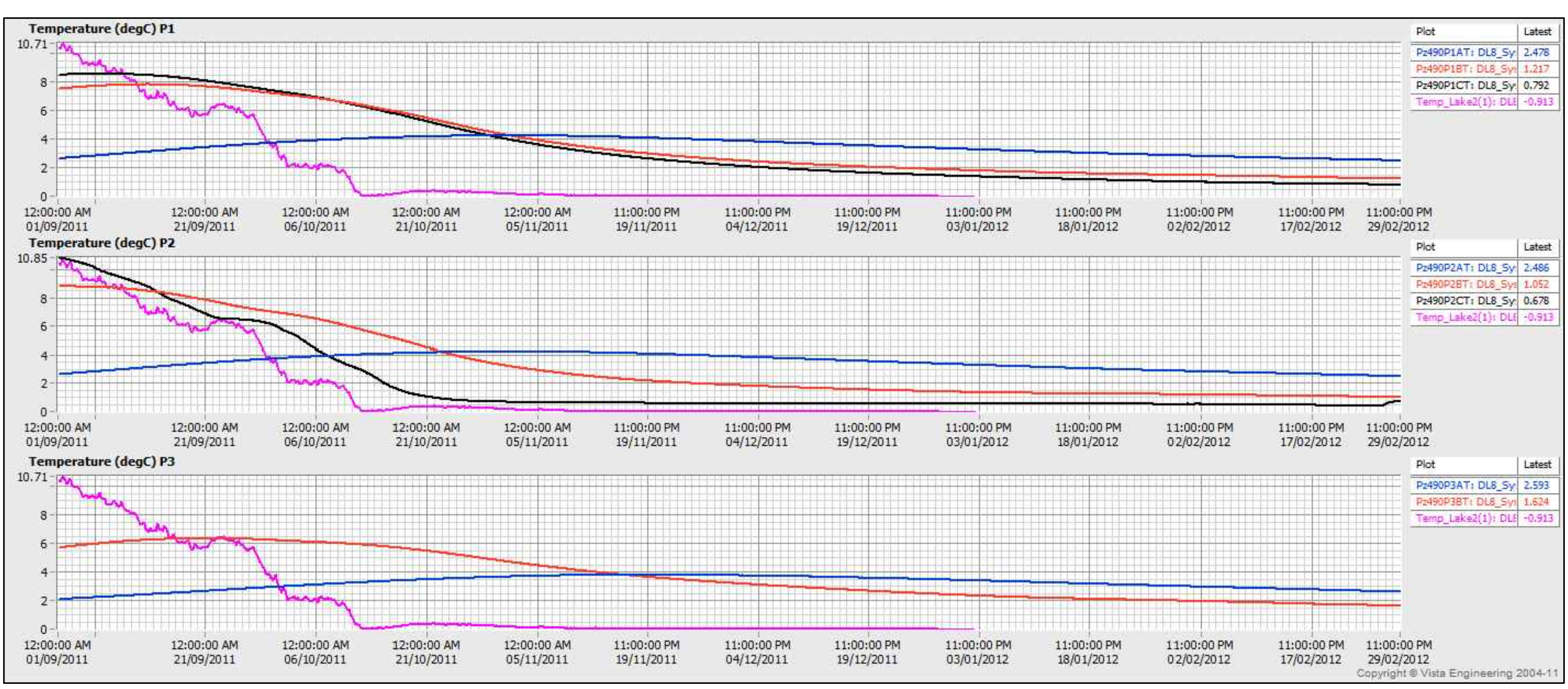
PROJECT	AEM	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT			
TITLE	EAST DIKE - SECTION 60+190 PIEZOMETRIC DATA (MAR.2012 - SEP.2012)				
Golder Associates Montréal, Québec	PROJECT No.		12-1221-0073	PHASE No.	3000
	DESIGN	AEM	09/19/2012	SCALE	REV. -
	CADD	FLB	10/19/2012	FIGURE C1-2	
	CHECK	YB	11/08/2012		
	REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Sep.11 - Mar.12)



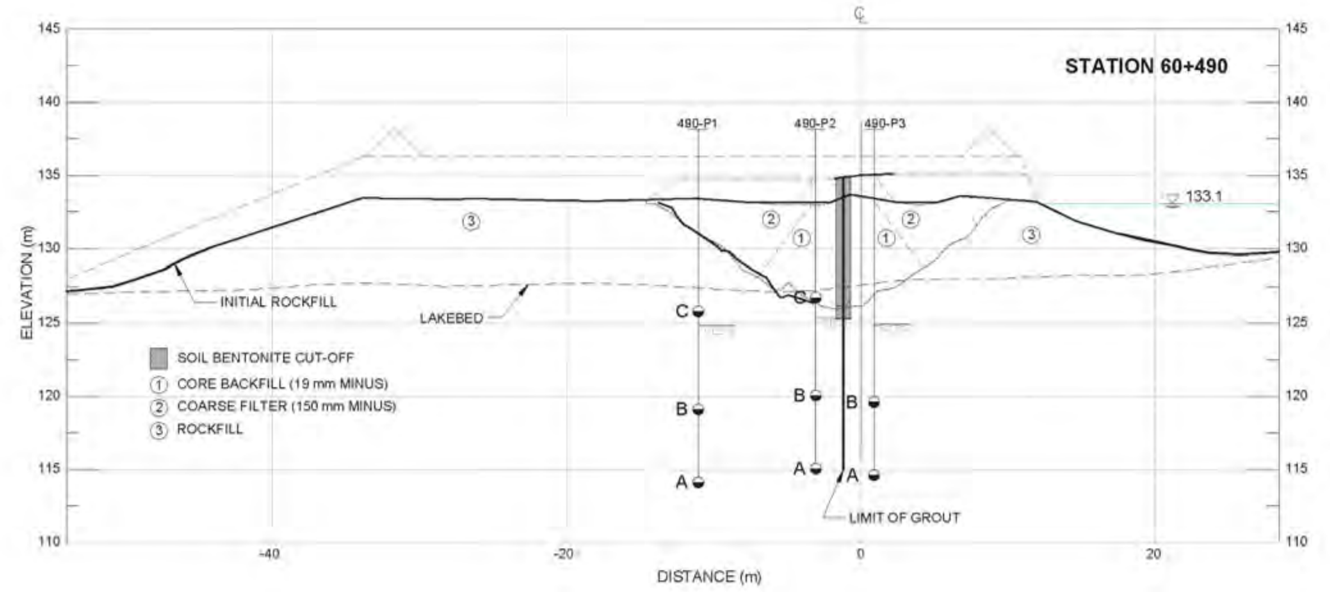
VW Piezometer - Temperature (Sep.11 - Mar.12)



PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	EAST DIKE - SECTION 60+490 PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

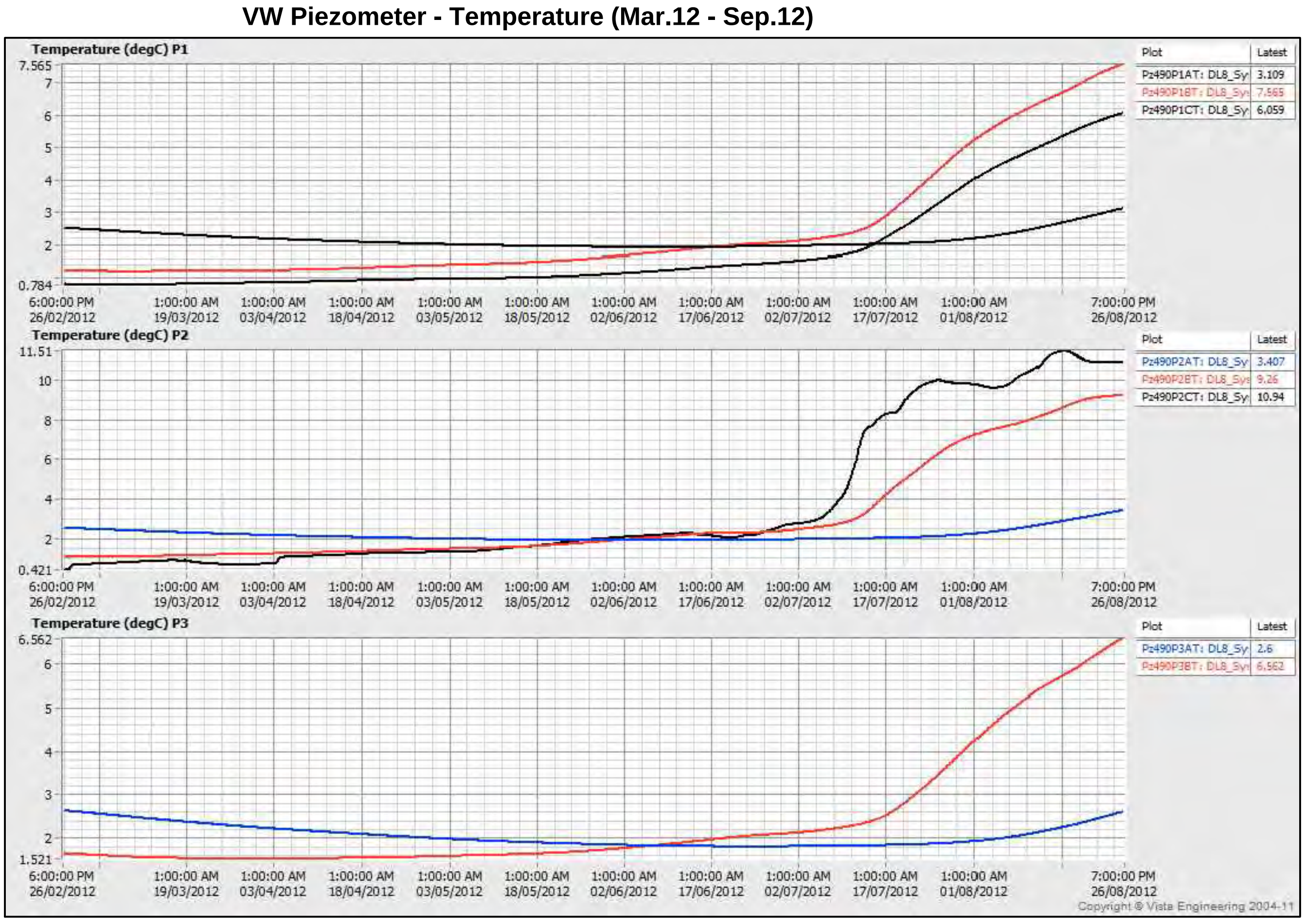
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C1-3	
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Mar.12 - Sep.12)

VW Piezometer - Temperature (Mar.12 - Sep.12)



PROJECT

AEM

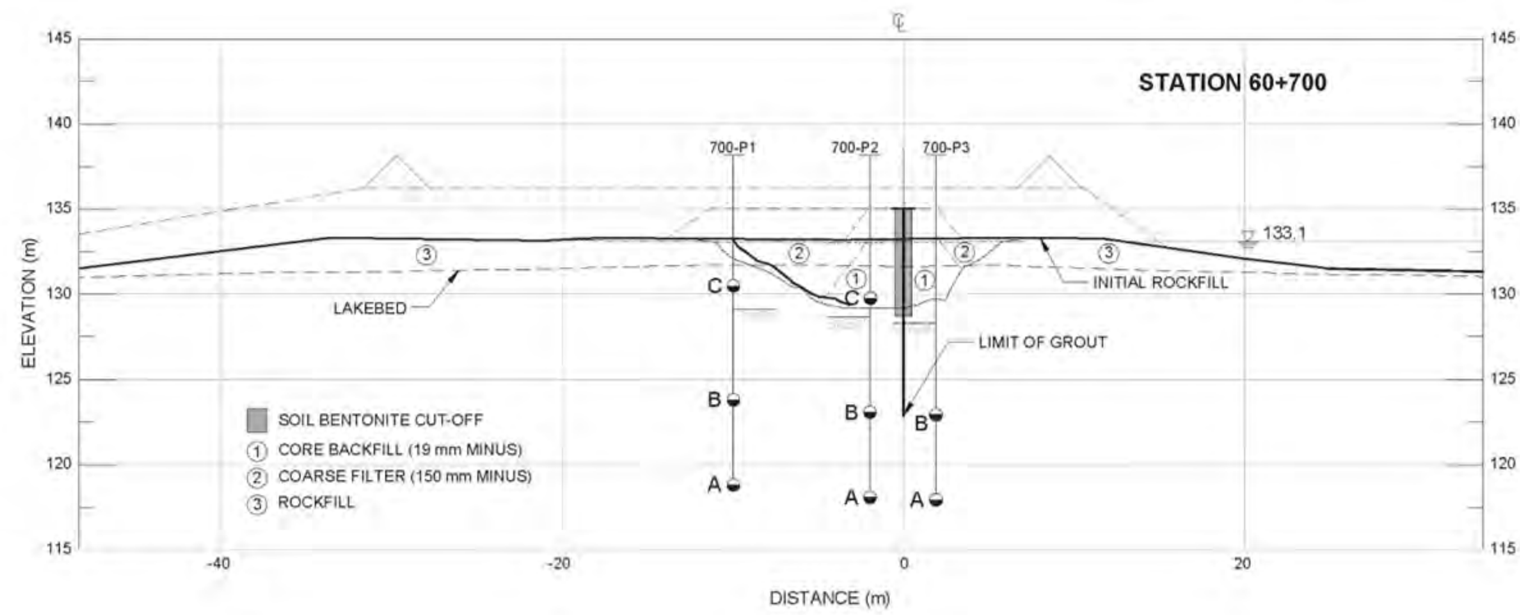
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

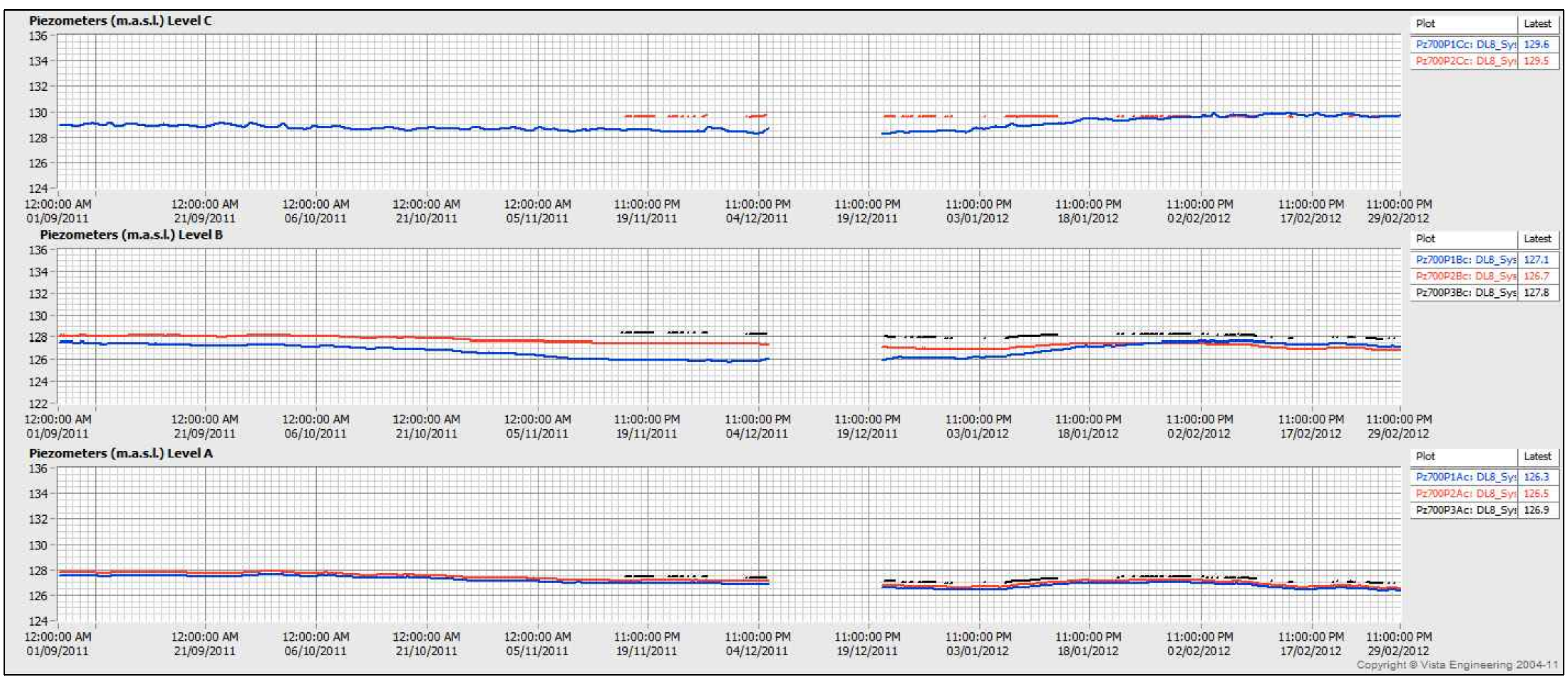
EAST DIKE - SECTION 60+490
PIEZOMETRIC DATA (MAR.2012 - SEP.2012)

Golder Associates
Montréal, Québec

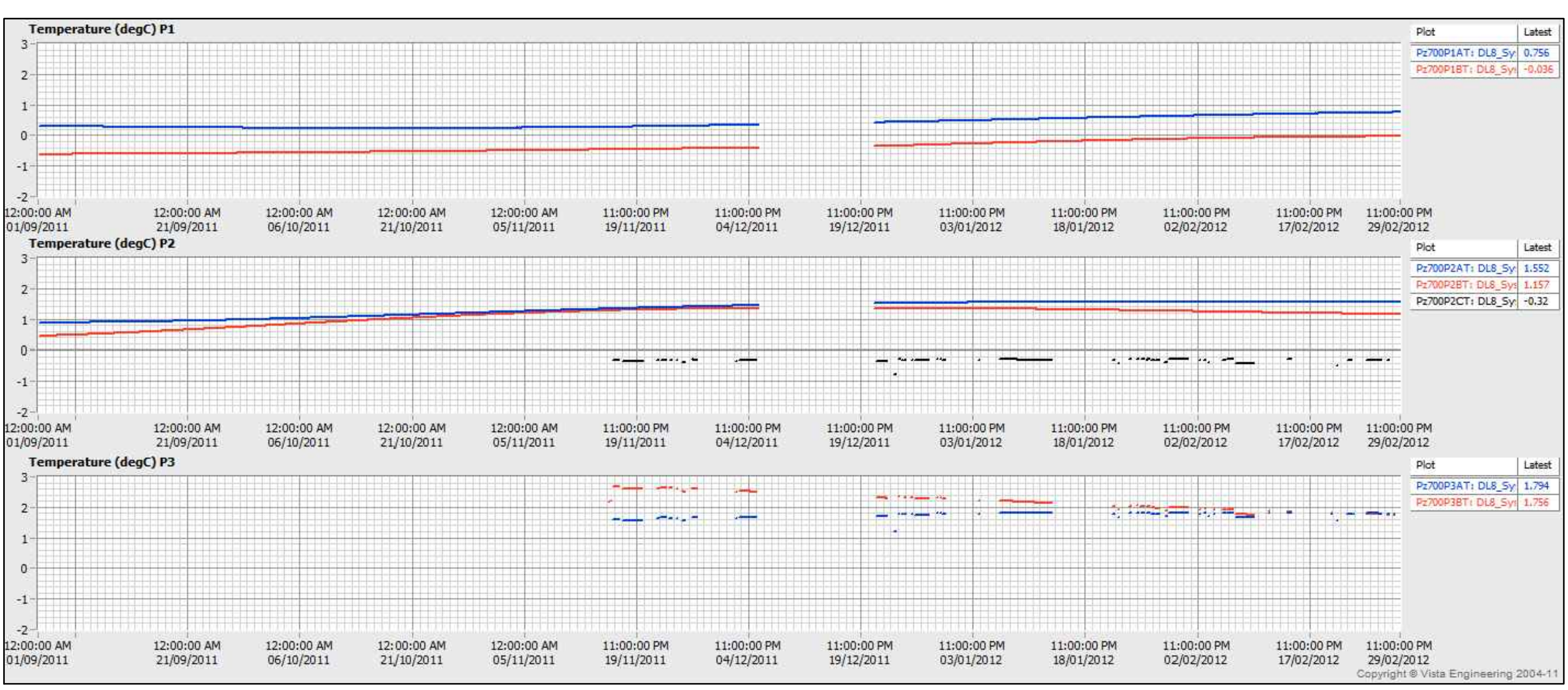
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE 1 : 5 000	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C1-4**	
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Sep.11 - Mar.12)



VW Piezometer - Temperature (Sep.11 - Mar.12)



PROJECT

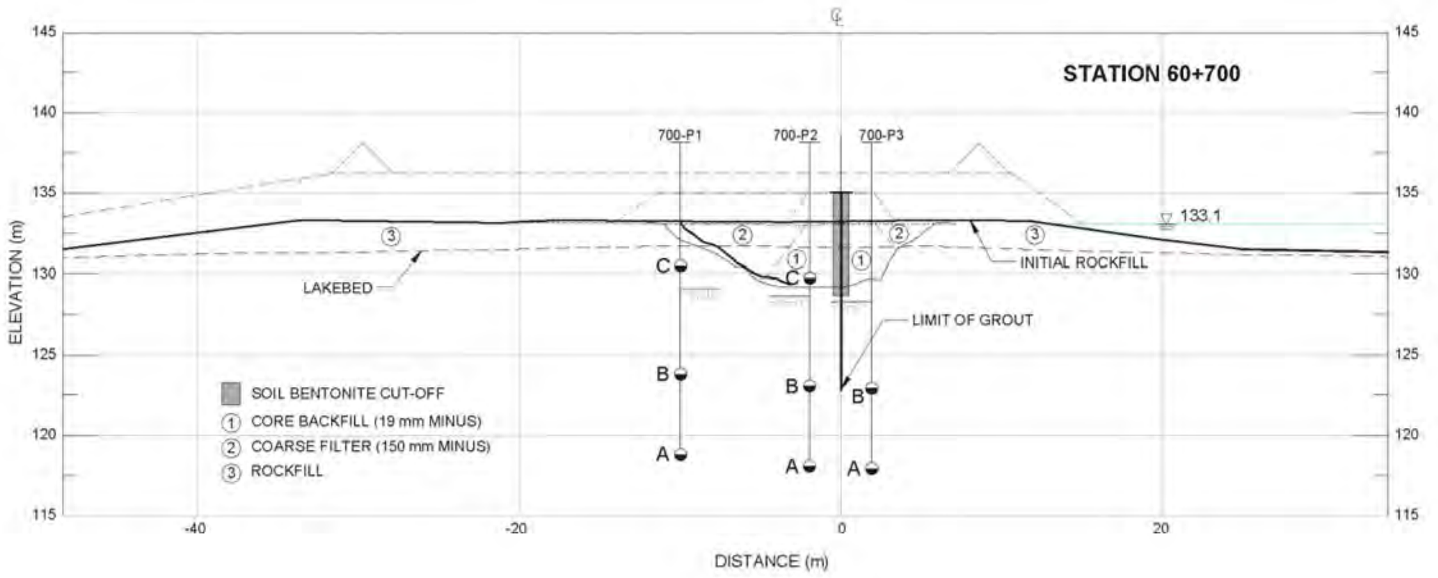
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

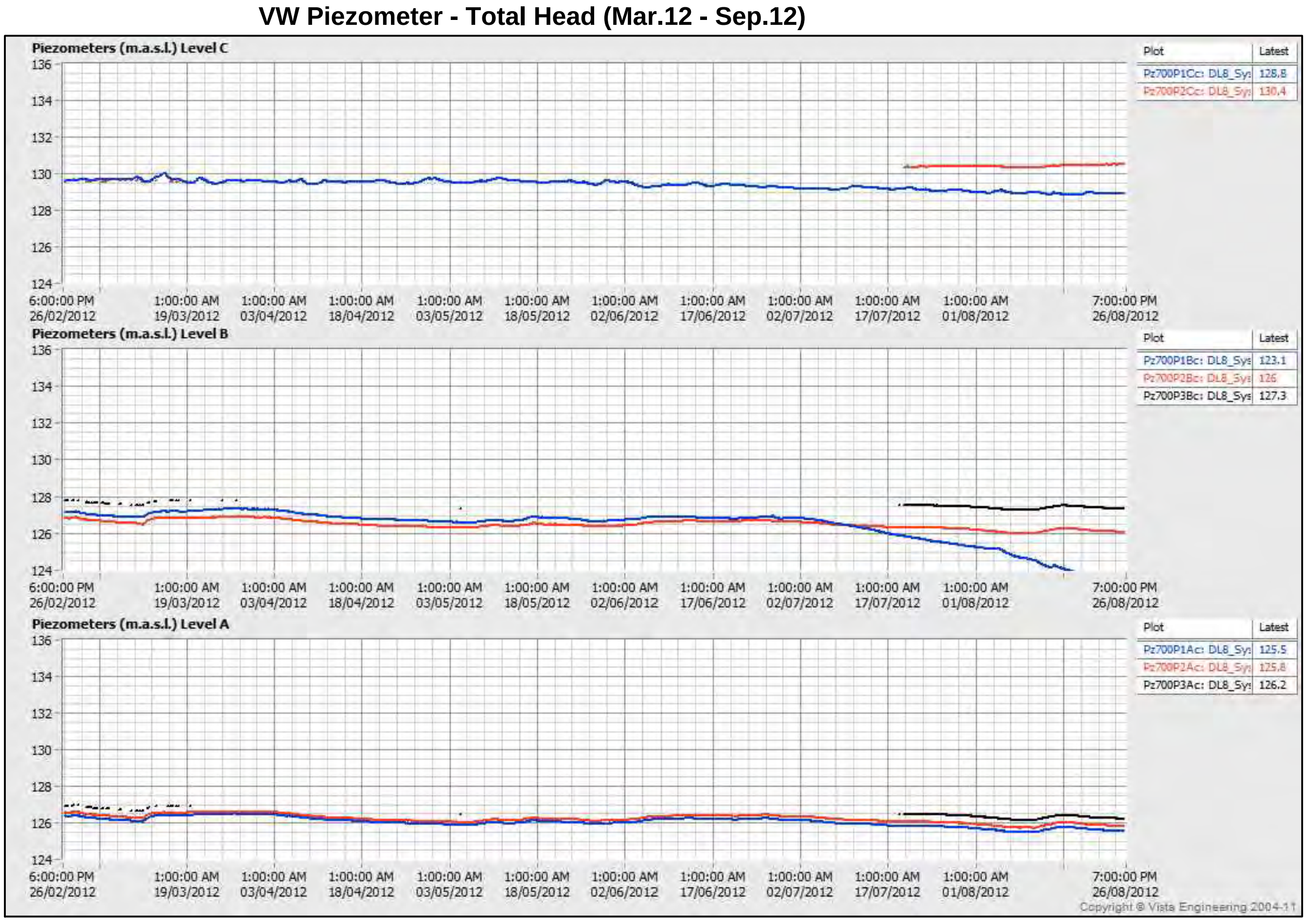
EAST DIKE - SECTION 60+700
PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

Golder Associates
Montréal, Québec

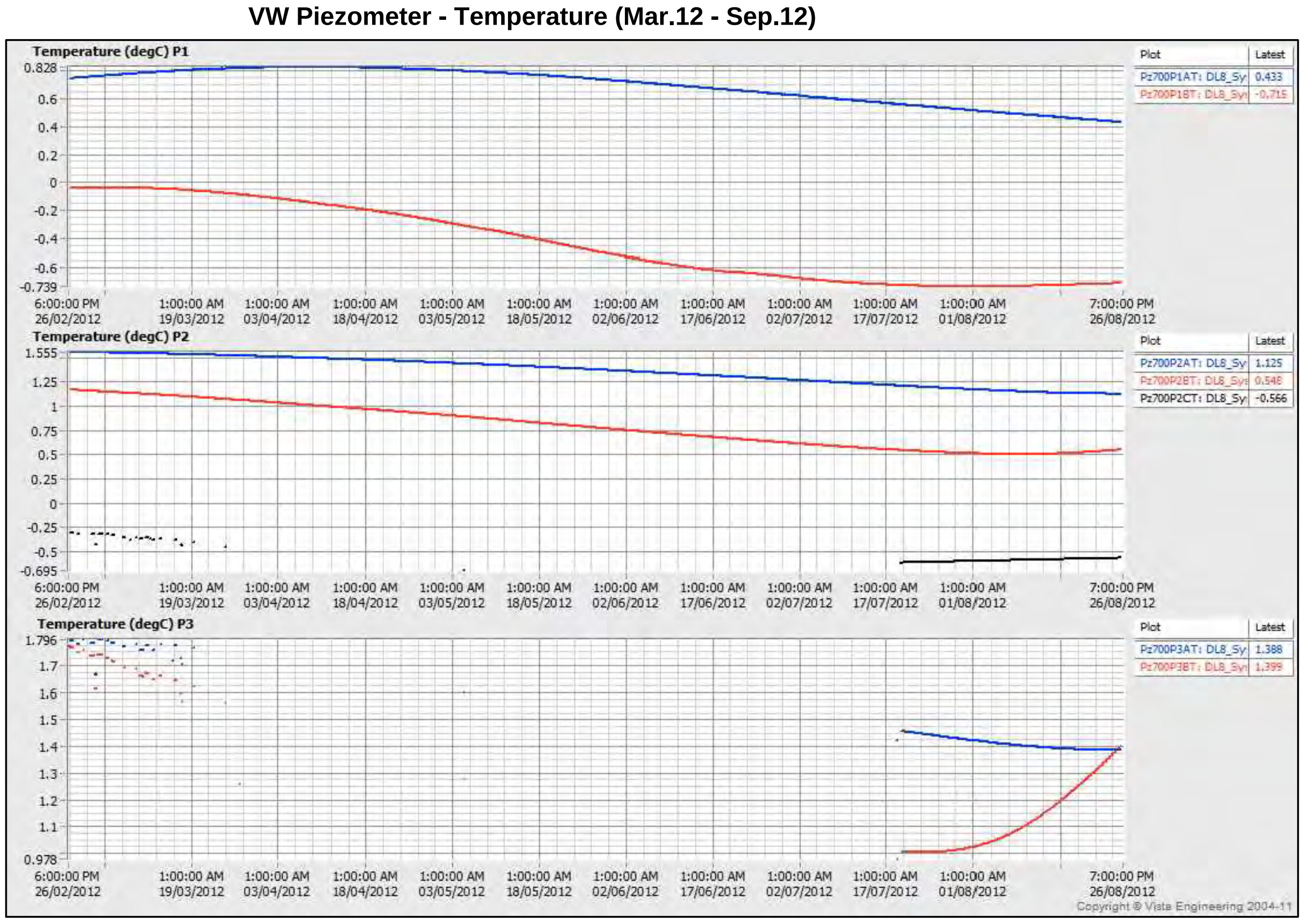
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C1-5**	
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Mar.12 - Sep.12)



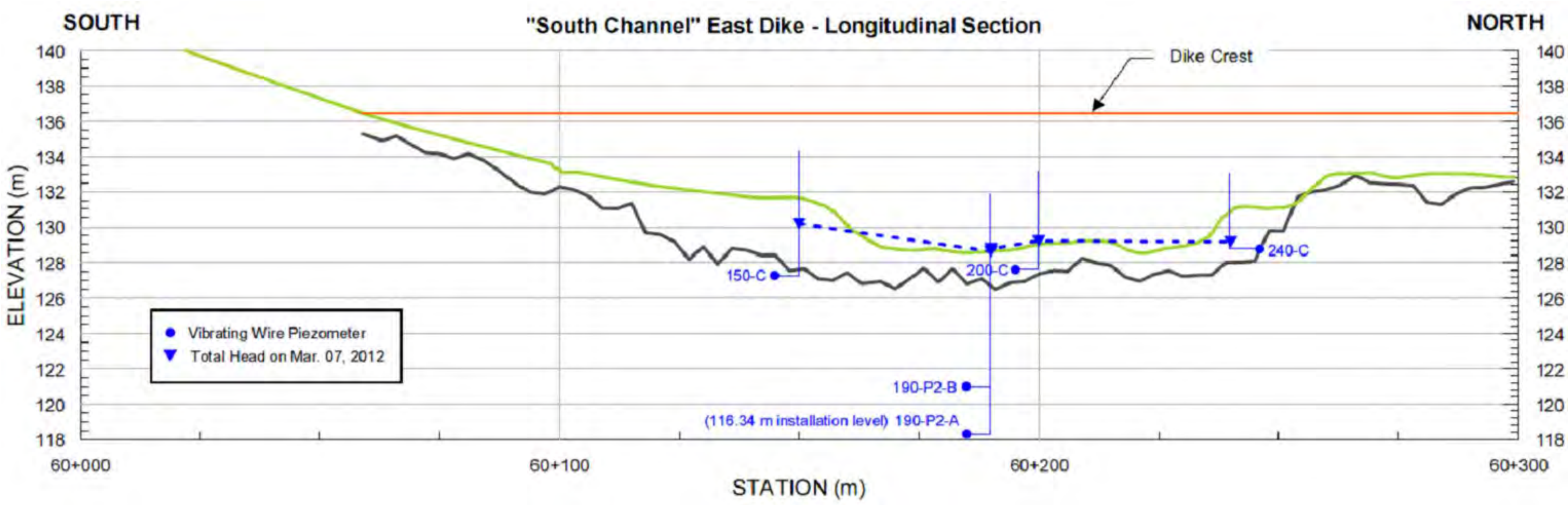
VW Piezometer - Temperature (Mar.12 - Sep.12)



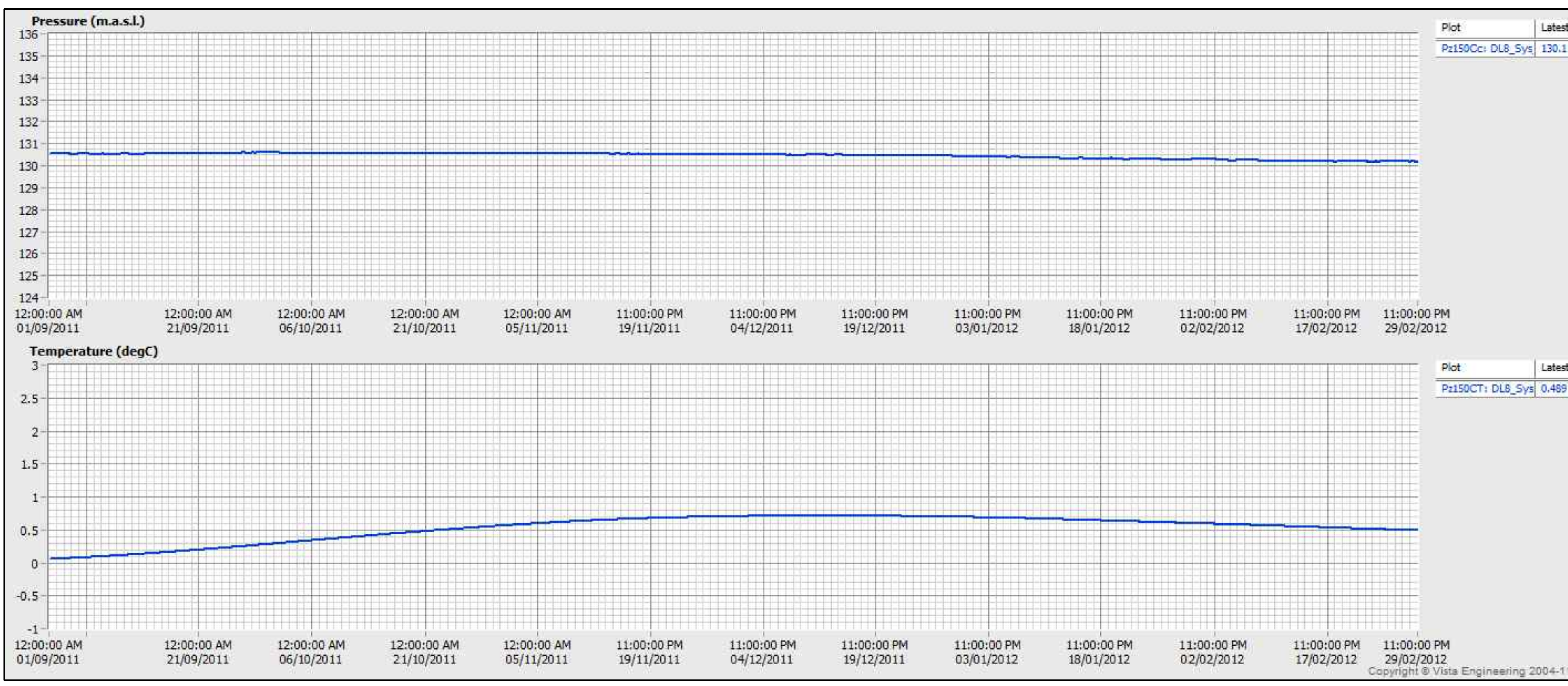
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**EAST DIKE - SECTION 60+700 PIEZOMETRIC DATA (MAR.2012 - SEP.2012)**

Golder Associates
Montréal, Québec

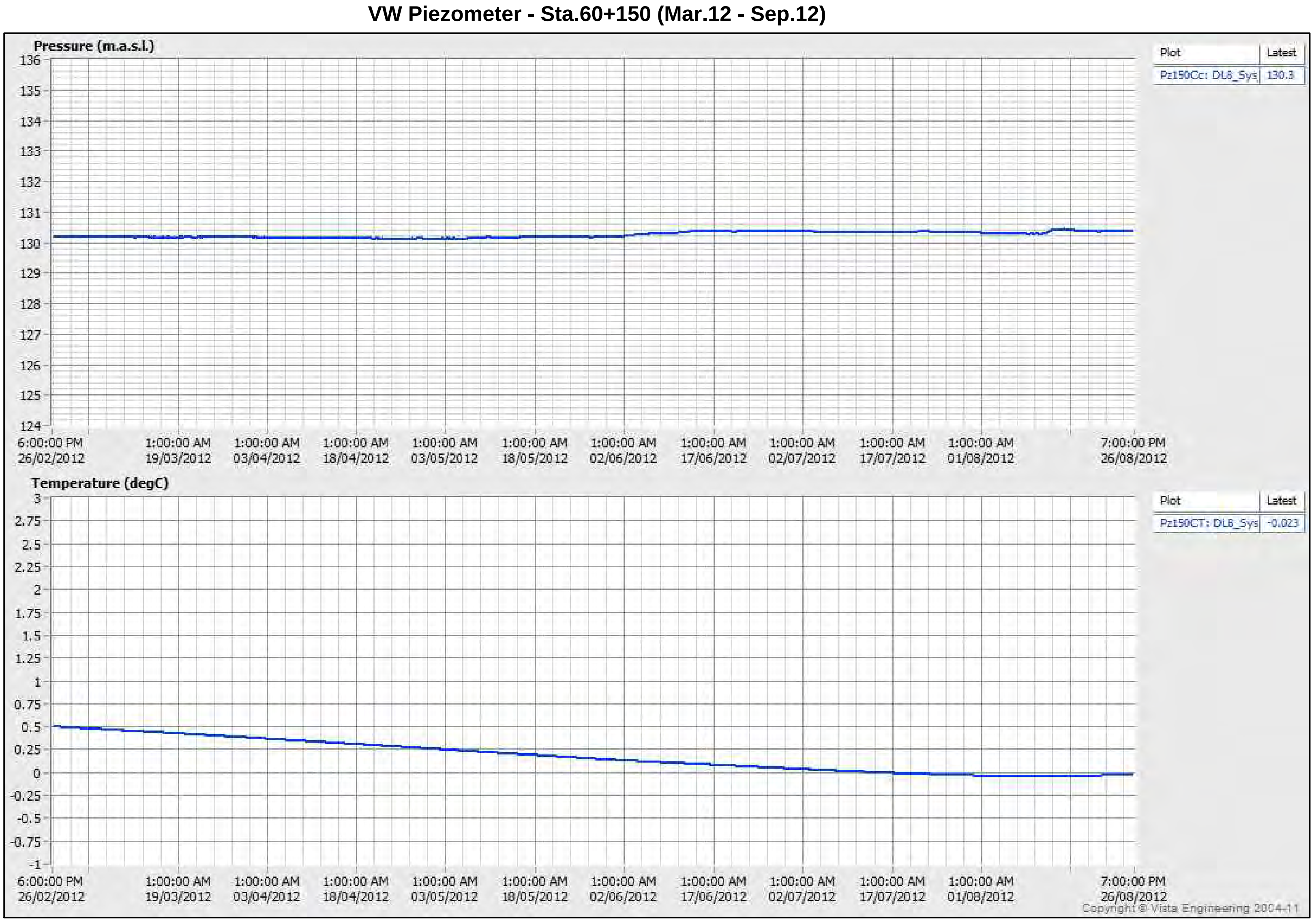
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C1-6**	
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.60+150 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+150 (Mar.12 - Sep.12)



PROJECT

AEM

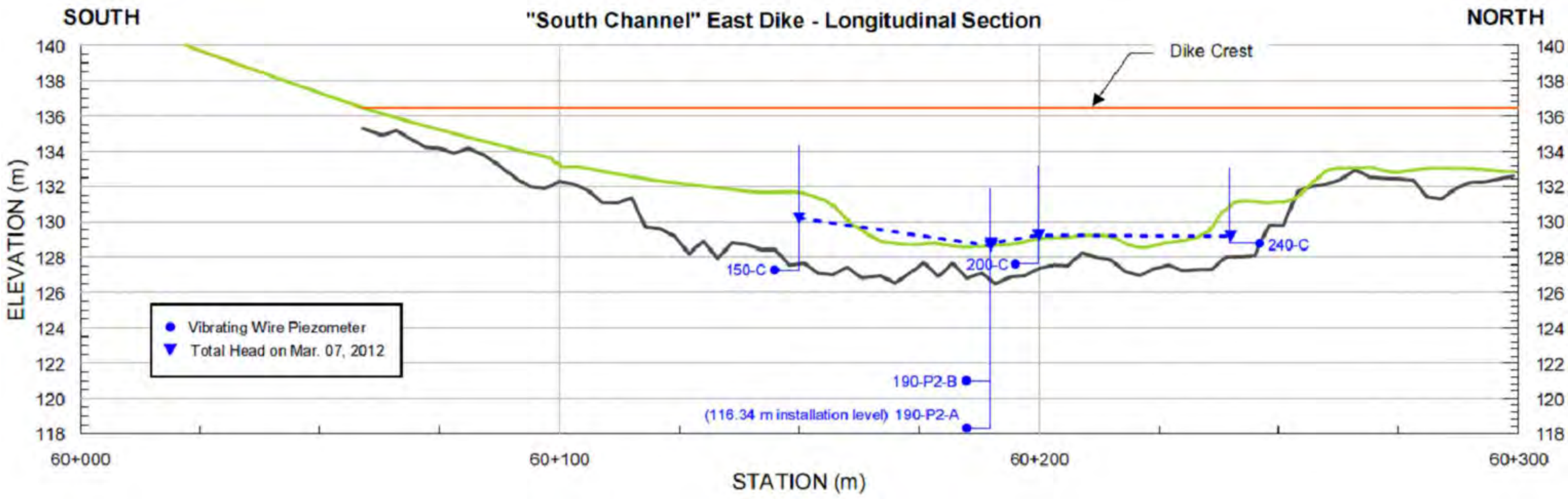
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

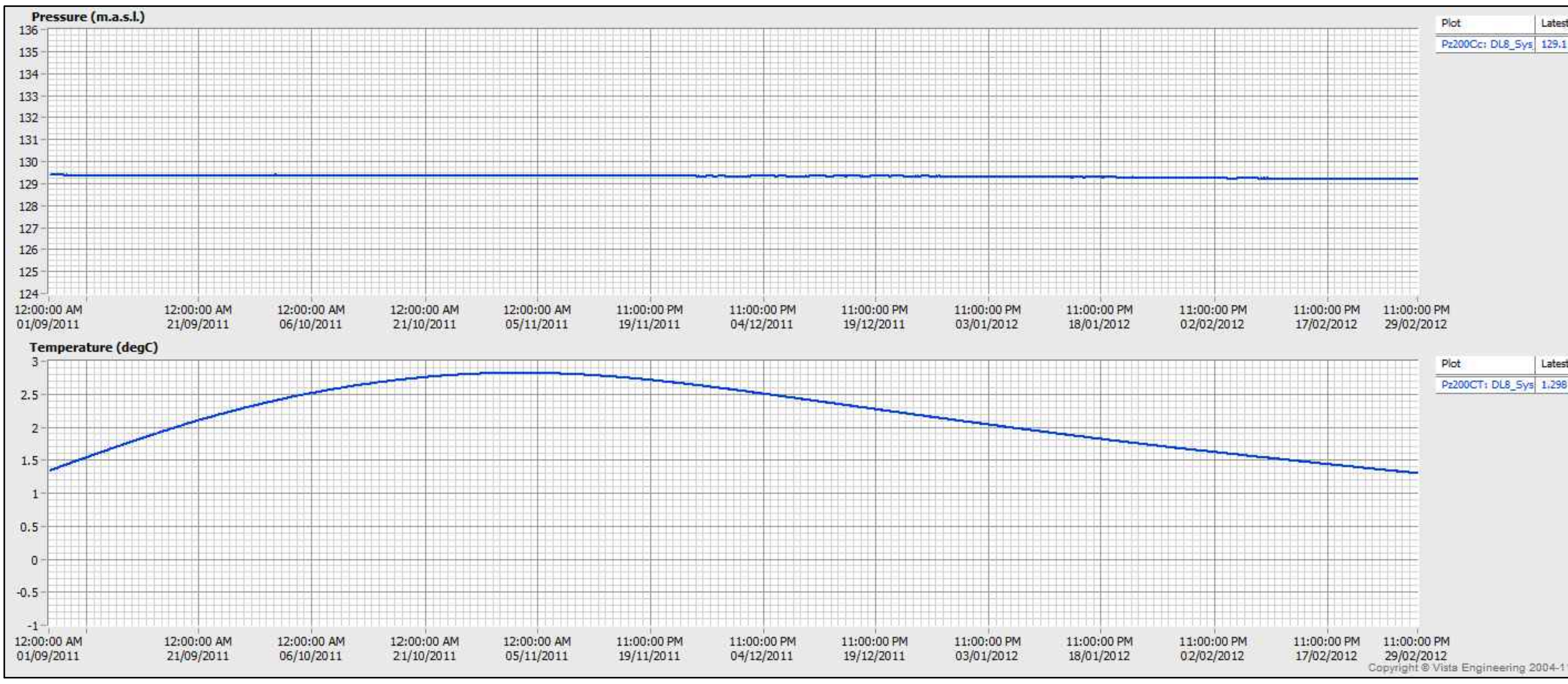
EAST DIKE - SOUTH CHANNEL 60+150
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

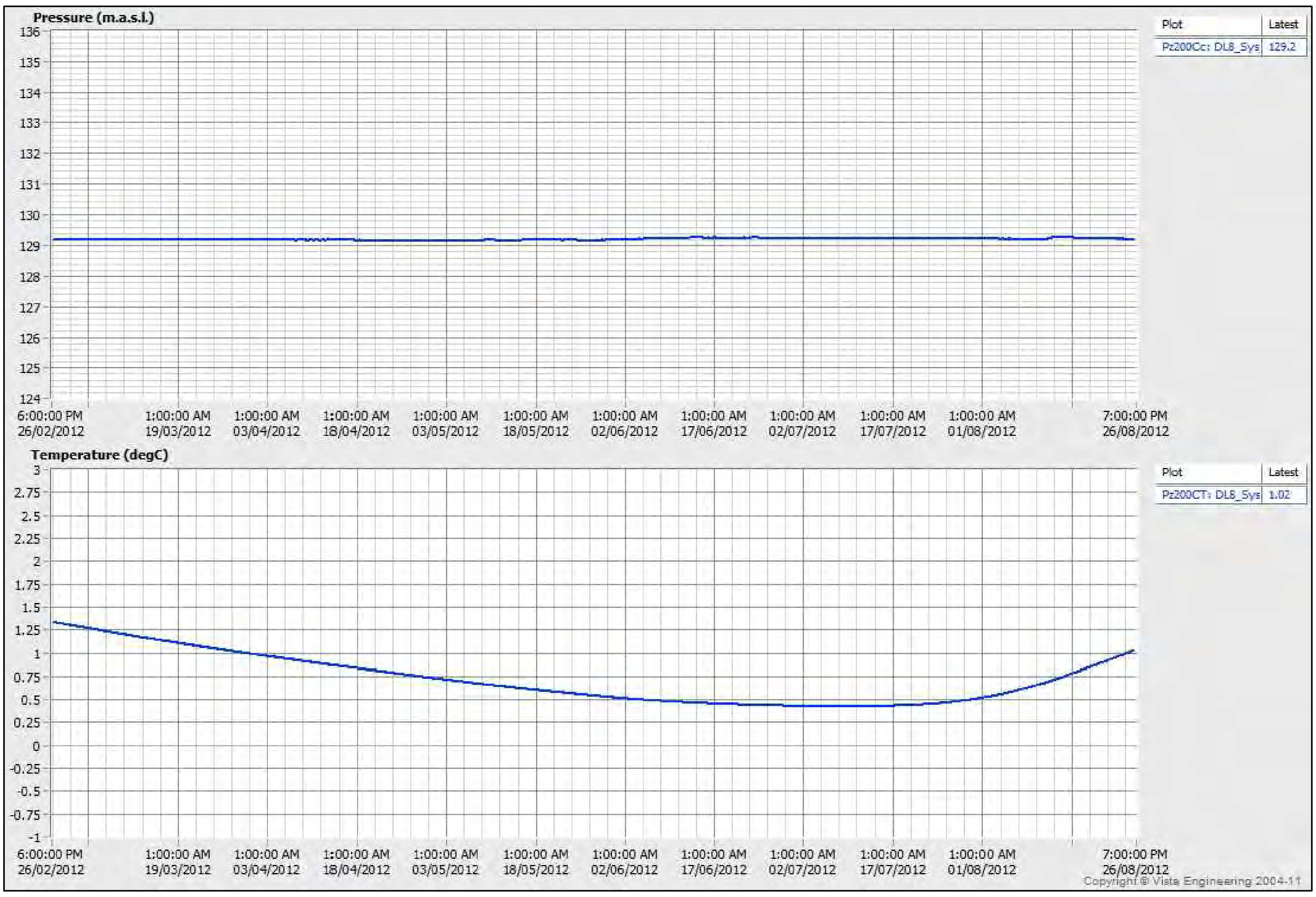
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C1-7**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.60+200 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+200 (Mar.12 - Sep.12)



PROJECT

AEM

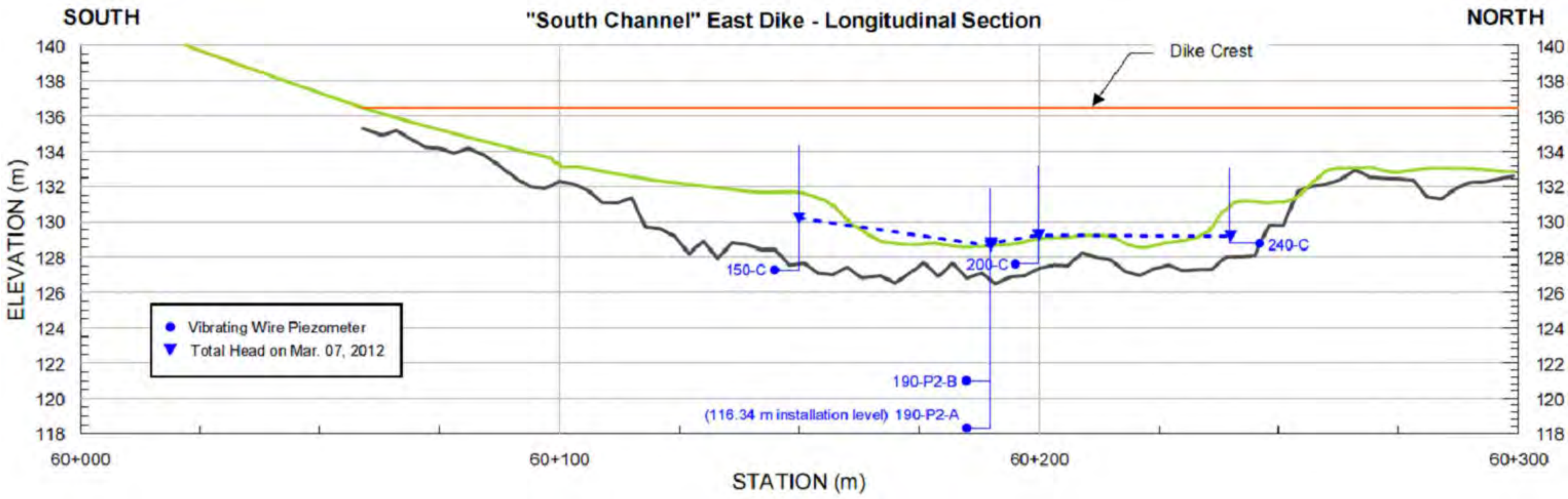
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

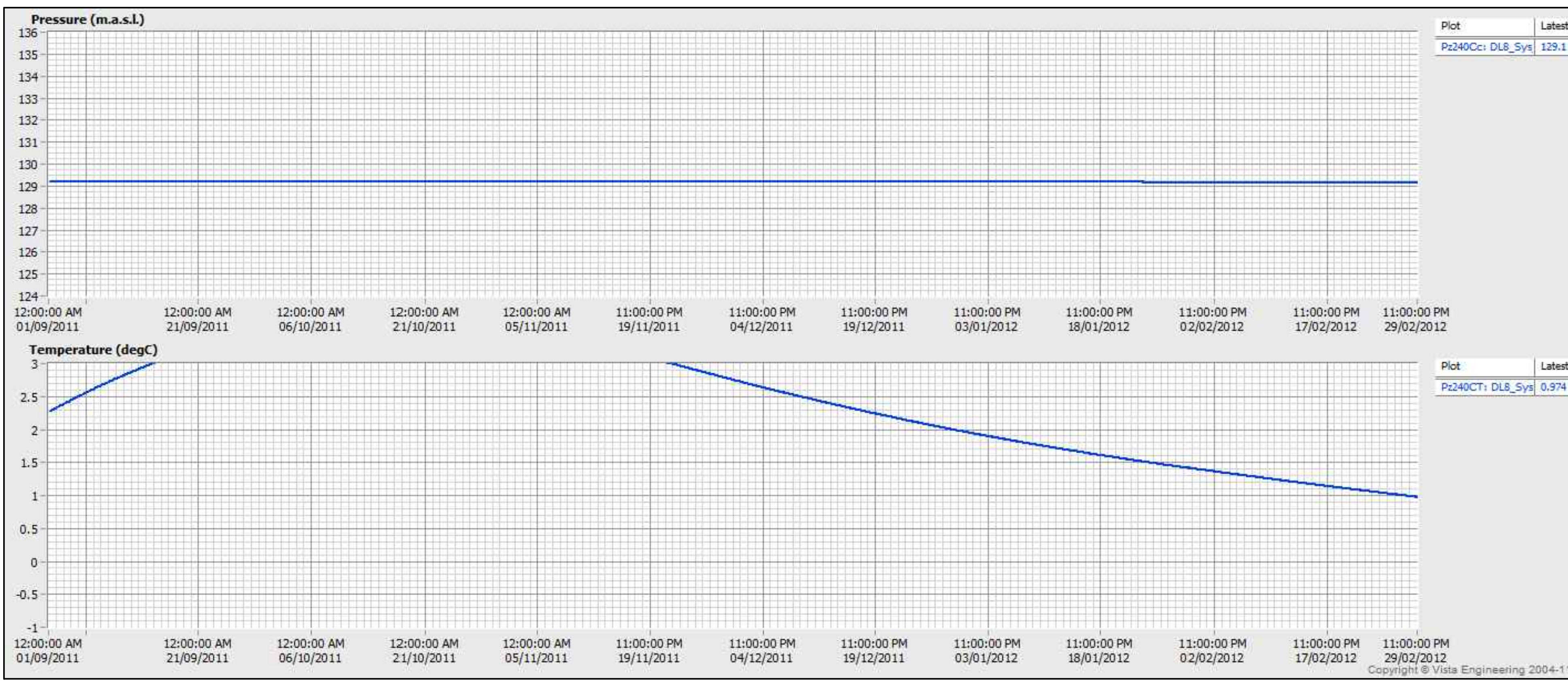
EAST DIKE - SOUTH CHANNEL 60+200
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

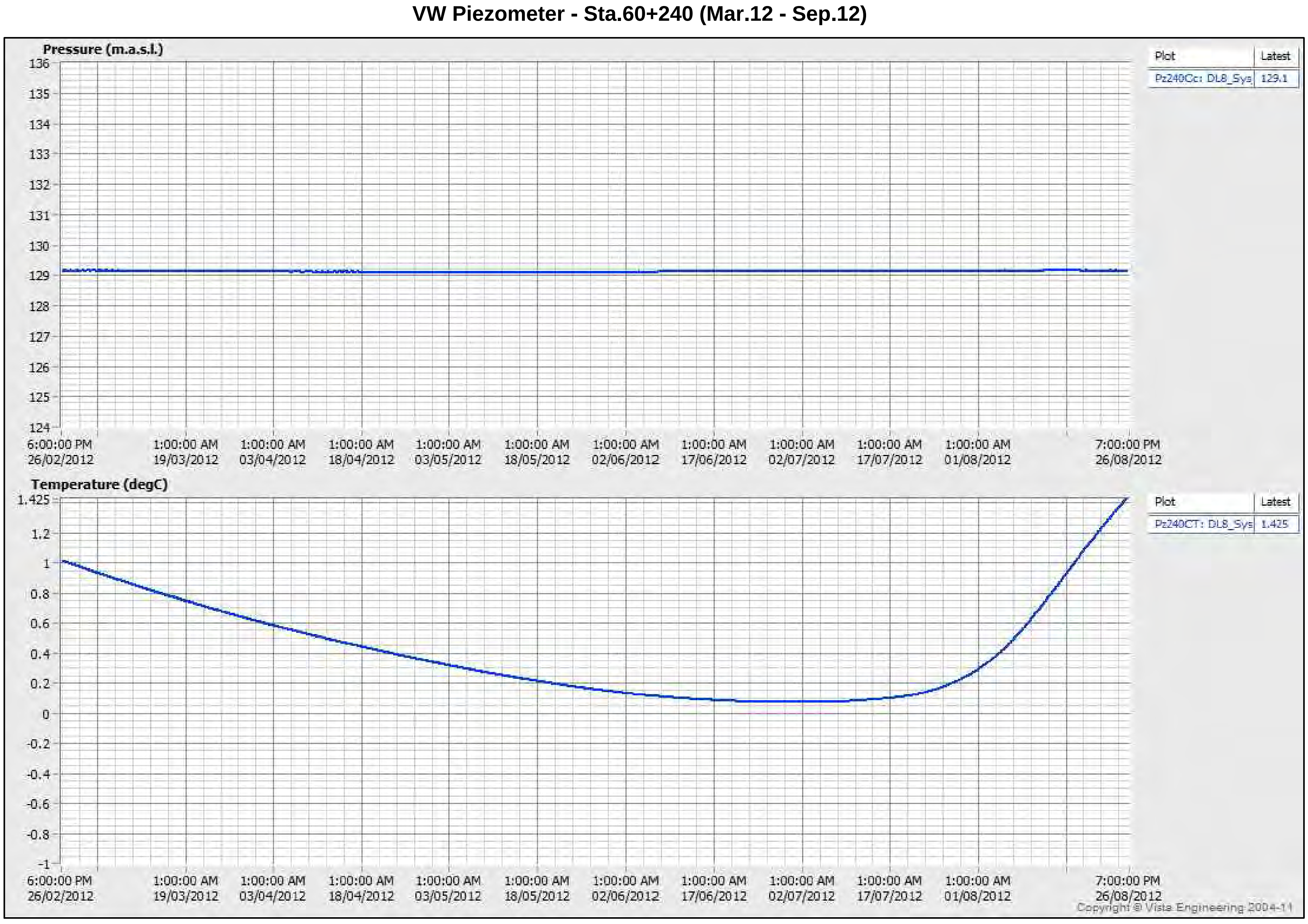
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C1-8**	
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.60+240 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+240 (Mar.12 - Sep.12)



PROJECT

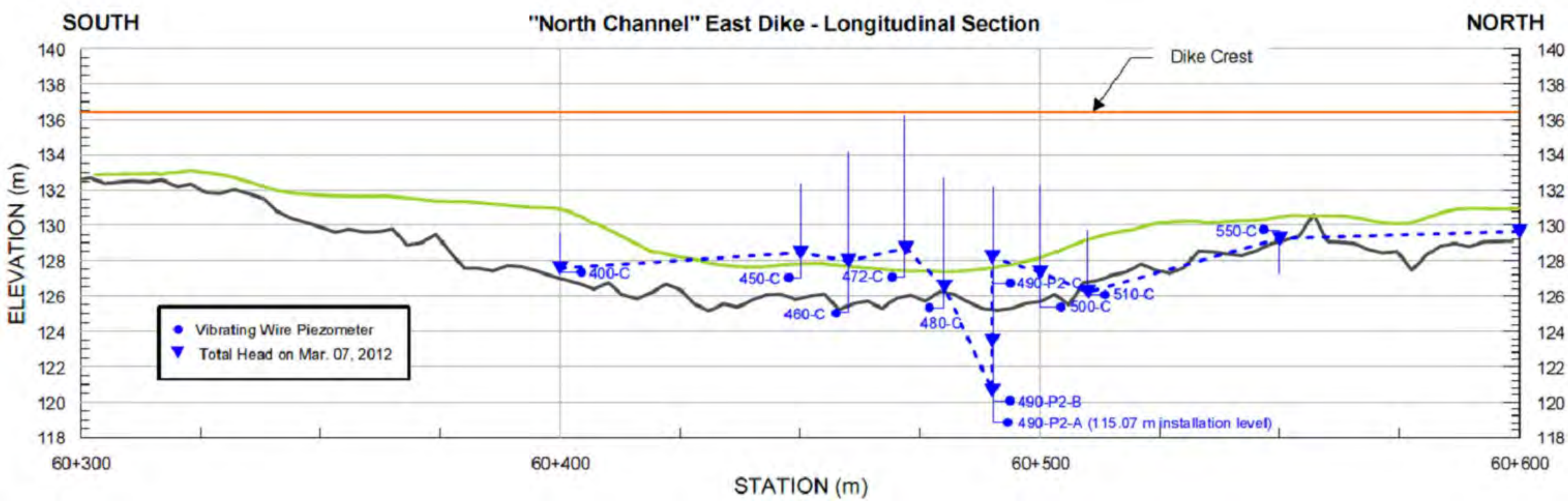
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

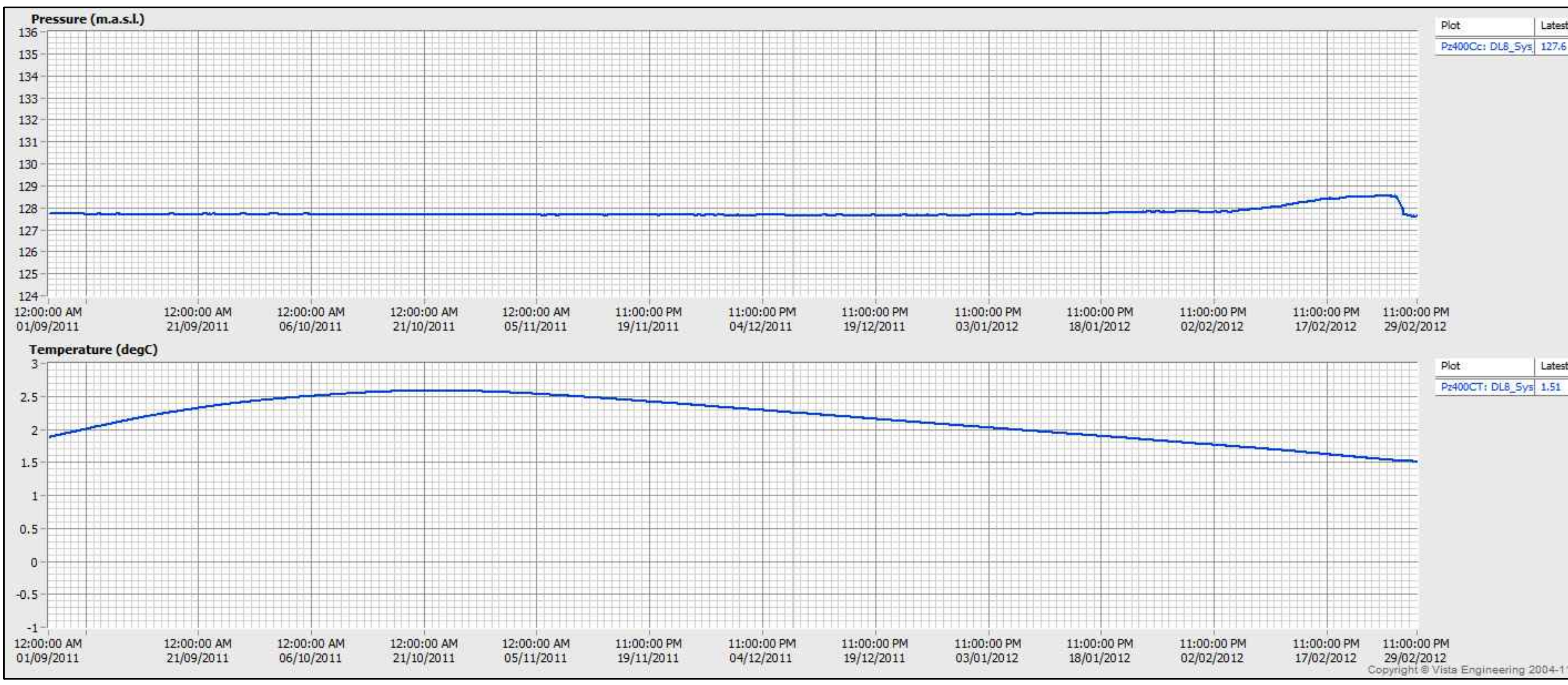
EAST DIKE - SOUTH CHANNEL 60+240
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

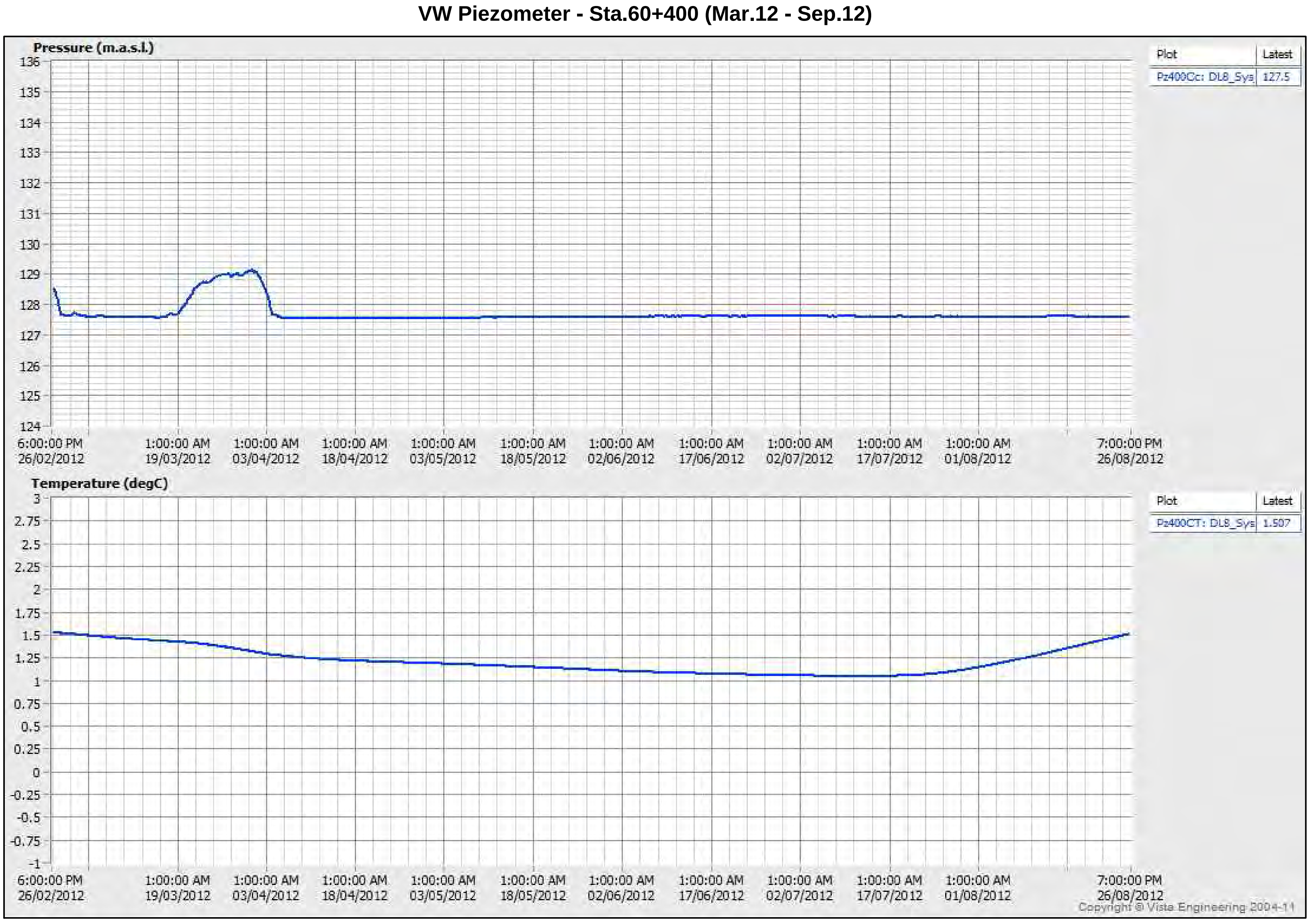
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C1-9**	
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.60+400 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+400 (Mar.12 - Sep.12)



PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

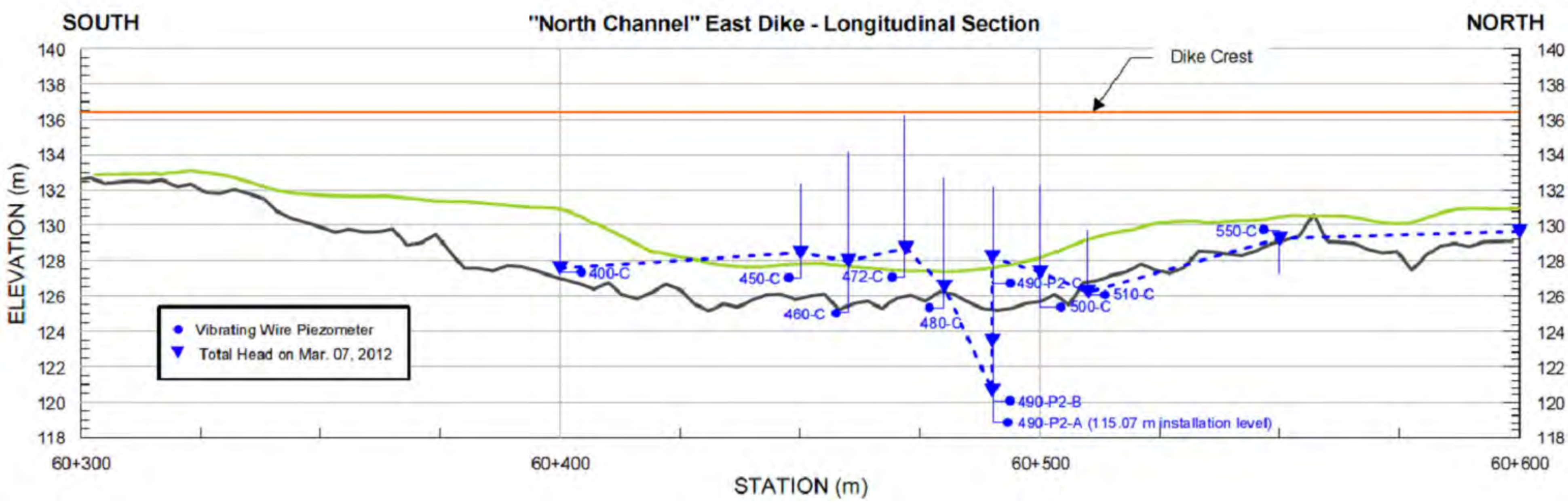
TITLE

EAST DIKE - NORTH CHANNEL 60+400
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

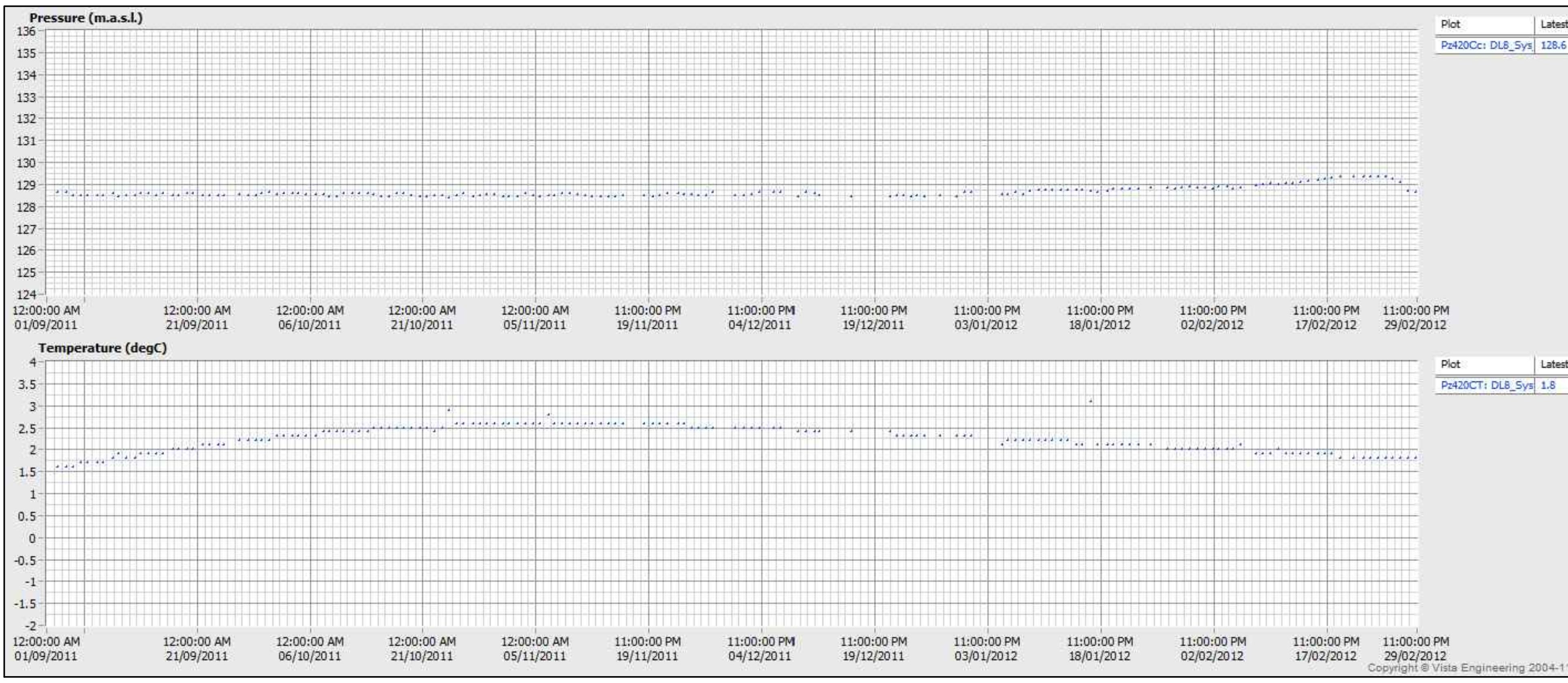
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

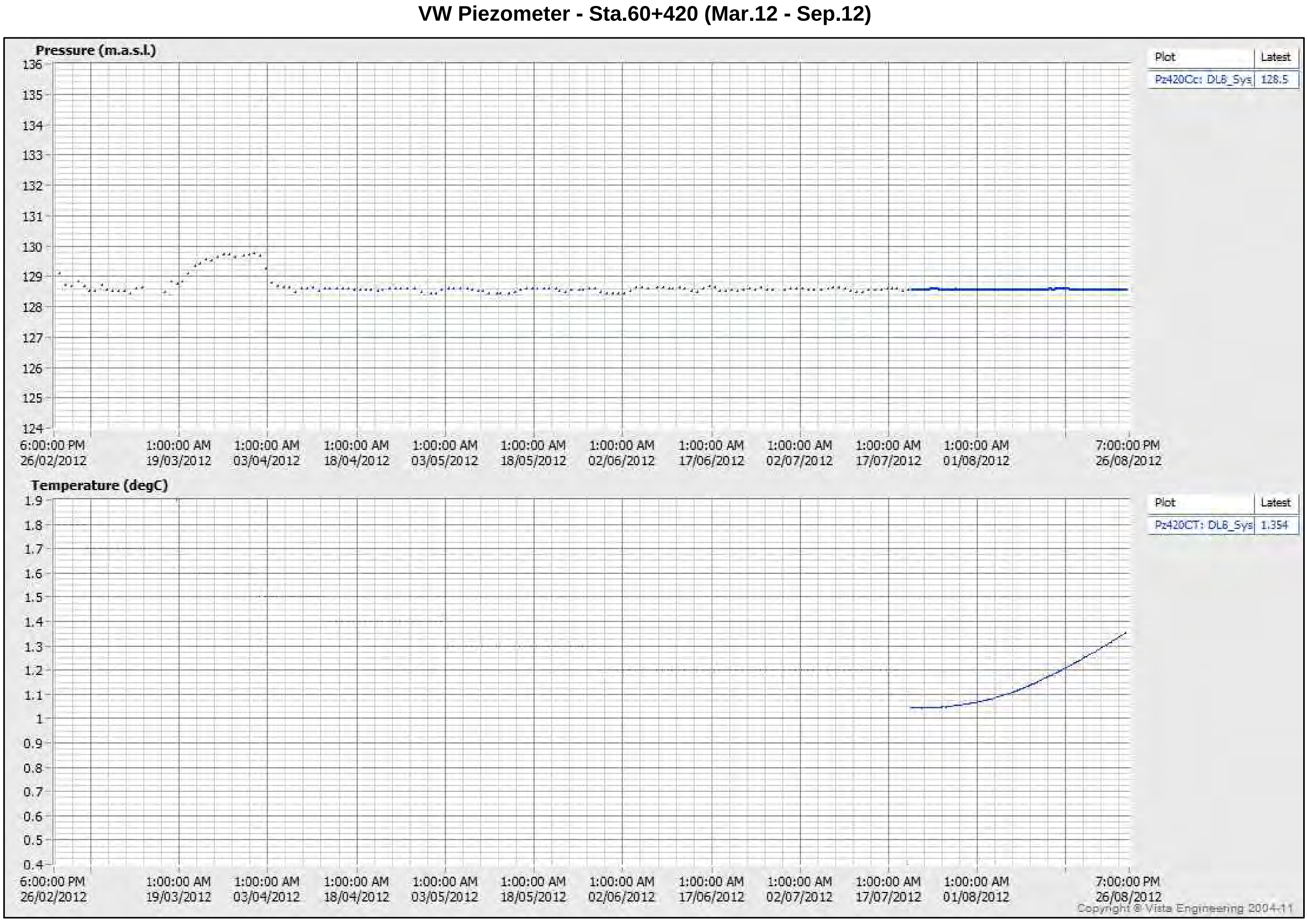
FIGURE C1-10



VW Piezometer - Sta.60+420 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+420 (Mar.12 - Sep.12)



PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

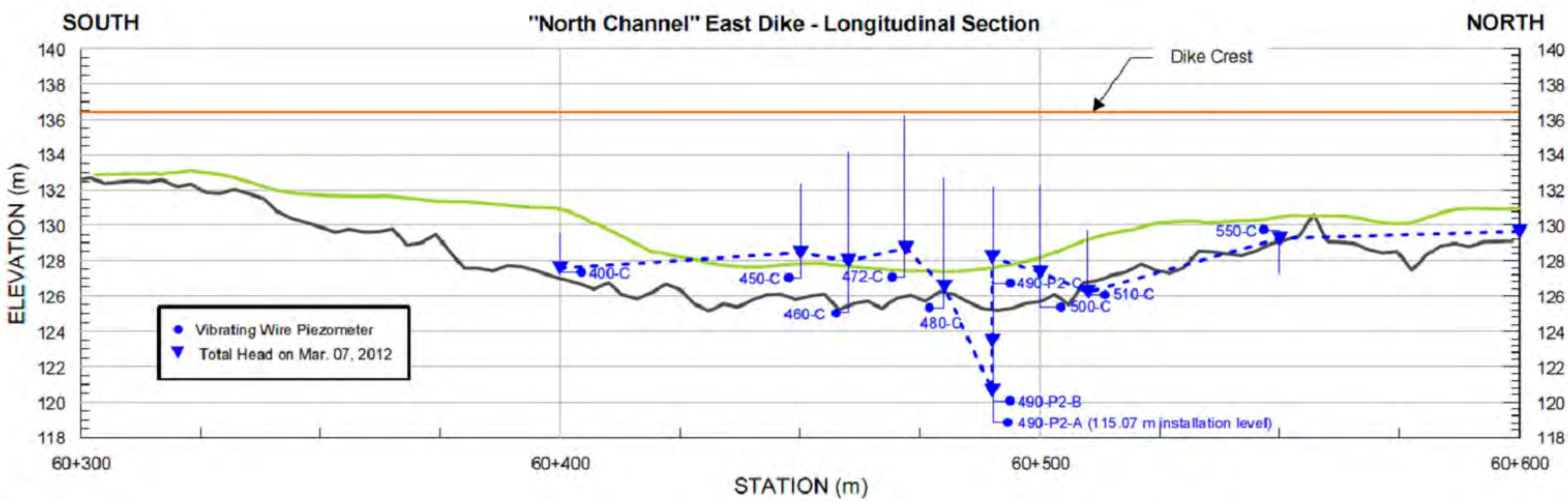
EAST DIKE - NORTH CHANNEL 60+420
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

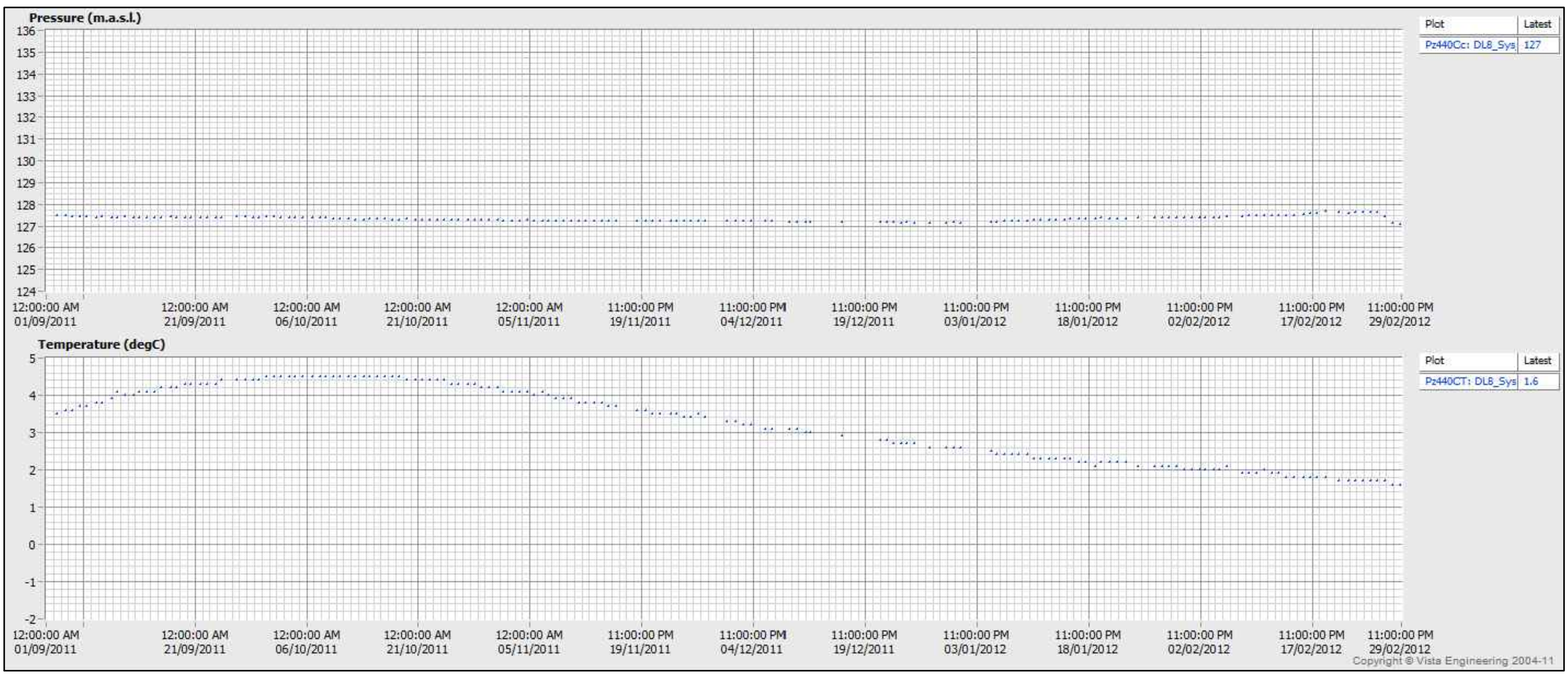
PROJECT No.		12-1221-0073
DESIGN	AEM	09/19/2012
CADD	FLB	10/19/2012
CHECK	YB	11/08/2012
REVIEW	FE	11/15/2012

PHASE No. 3000
SCALE
REV. -

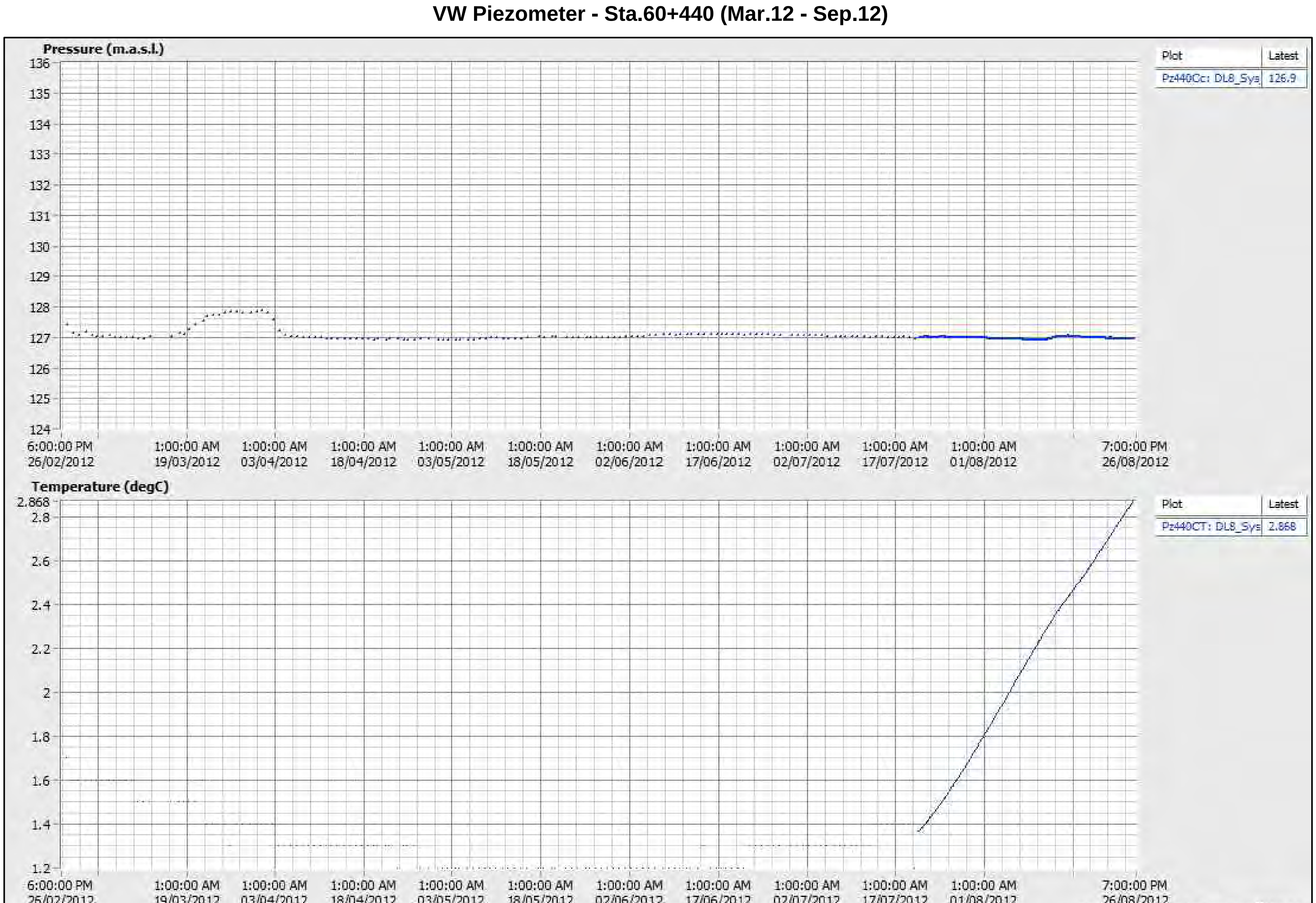
FIGURE C1-11



VW Piezometer - Sta.60+440 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+440 (Mar.12 - Sep.12)



PROJECT

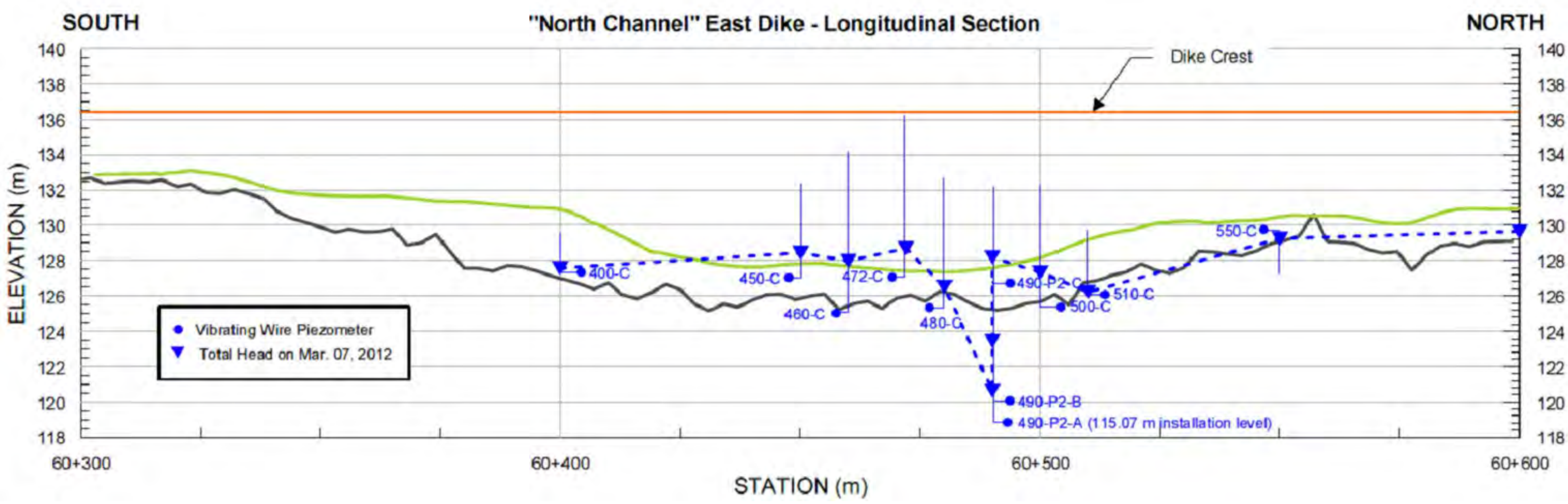
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

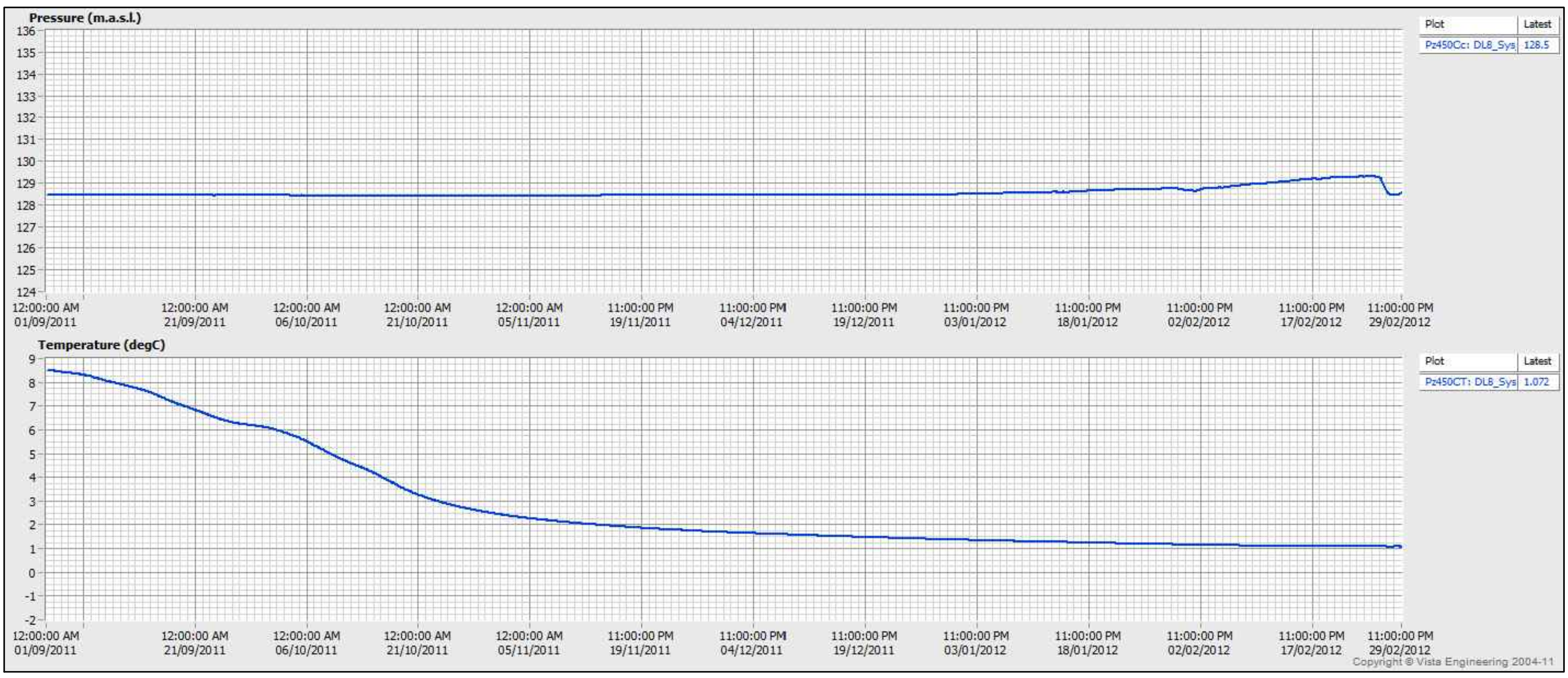
EAST DIKE - NORTH CHANNEL 60+440
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

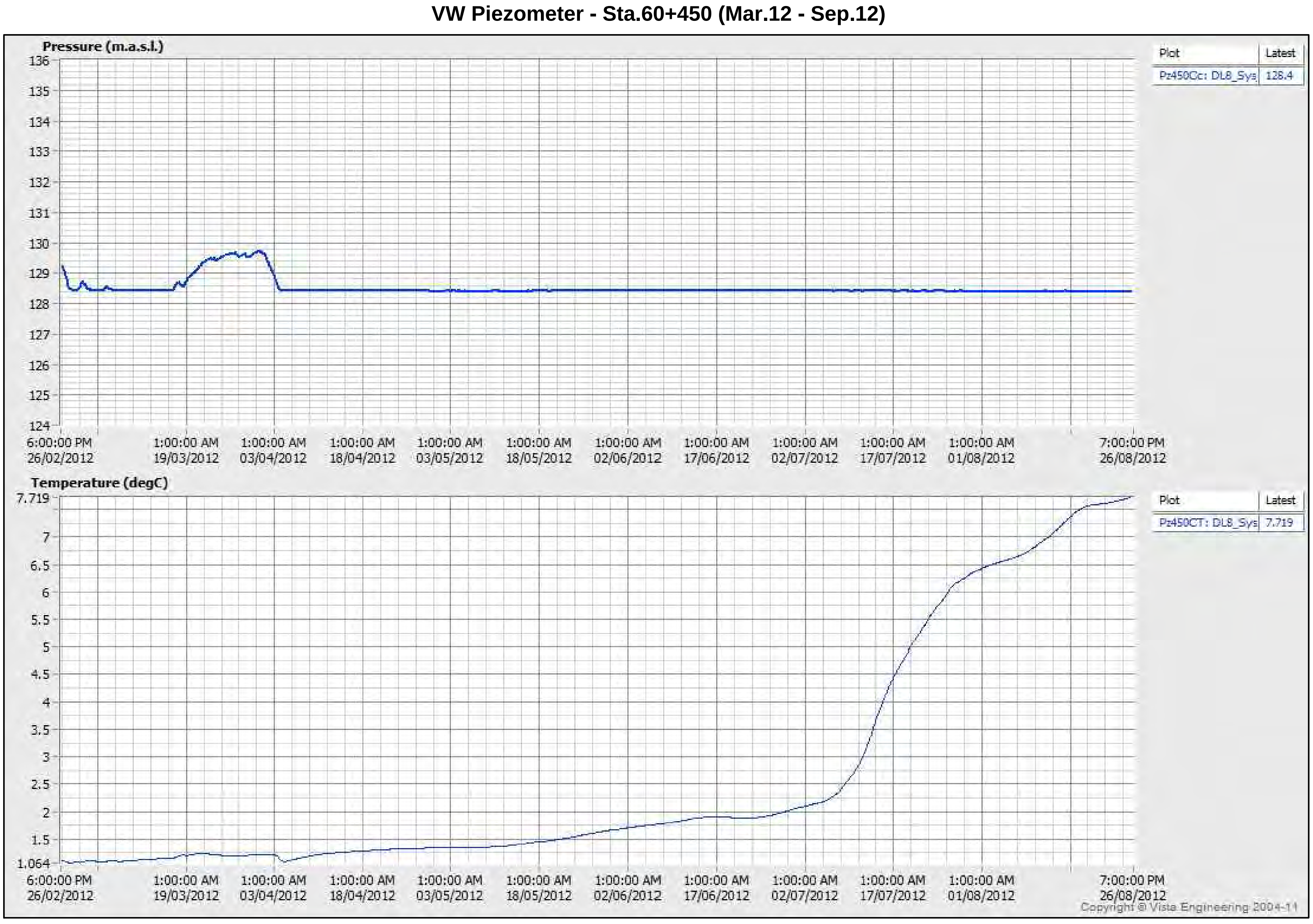
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C1-12	
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.60+450 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+450 (Mar.12 - Sep.12)



PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

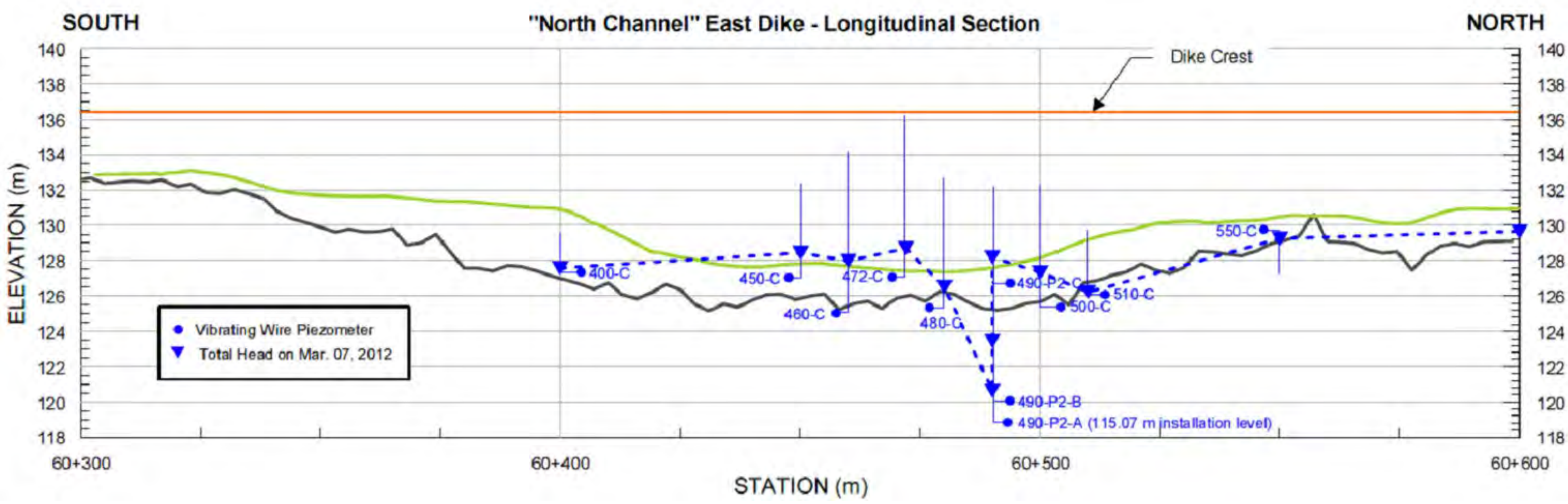
TITLE

EAST DIKE - NORTH CHANNEL 60+450
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

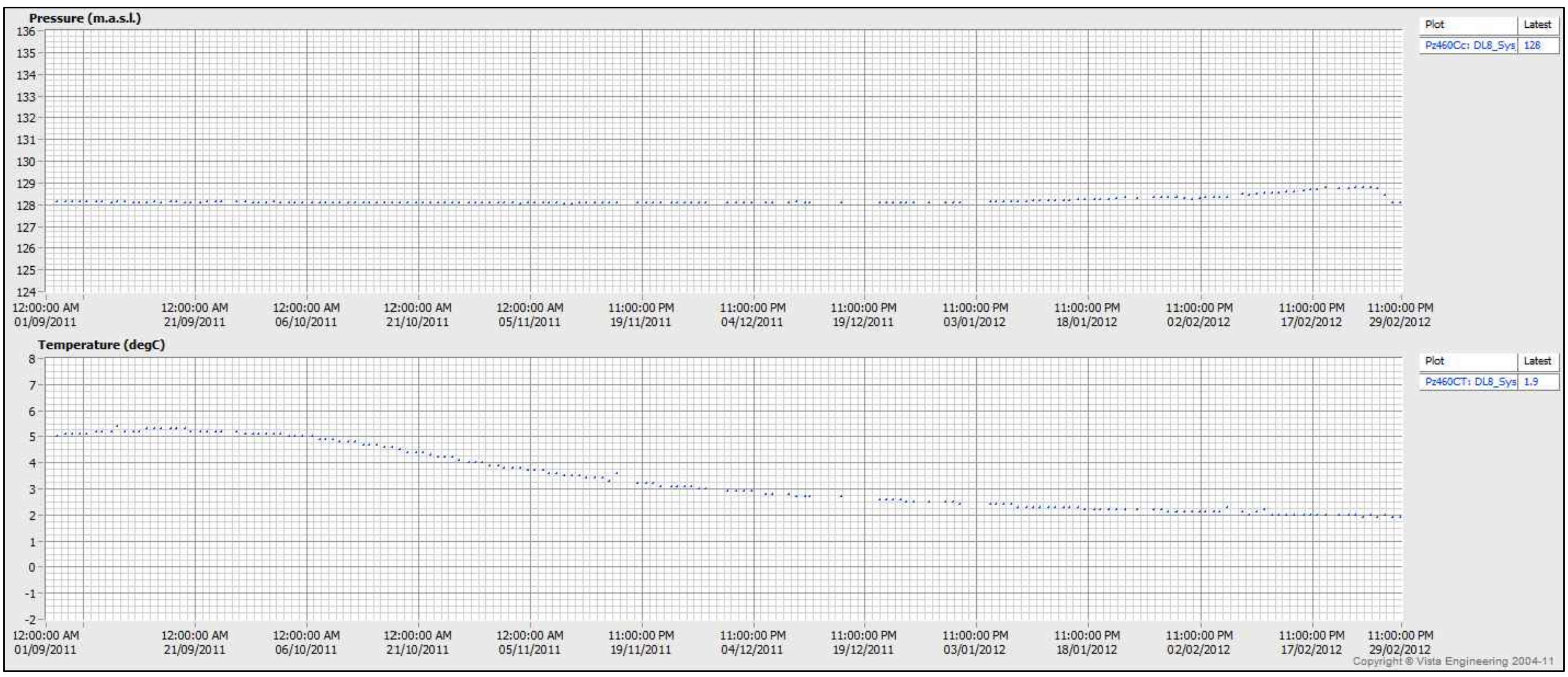
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

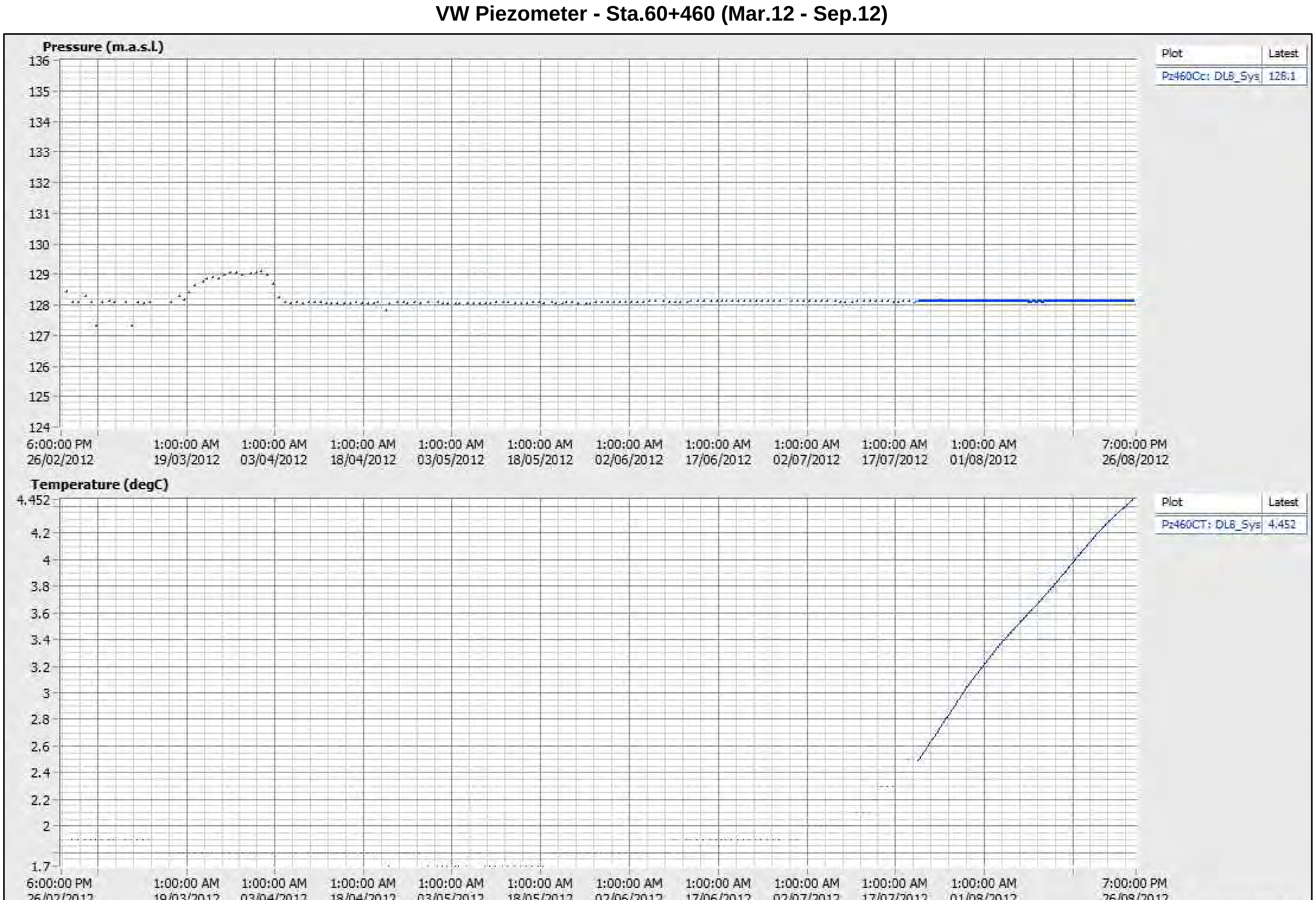
FIGURE C1-13



VW Piezometer - Sta.60+460 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+460 (Mar.12 - Sep.12)



PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

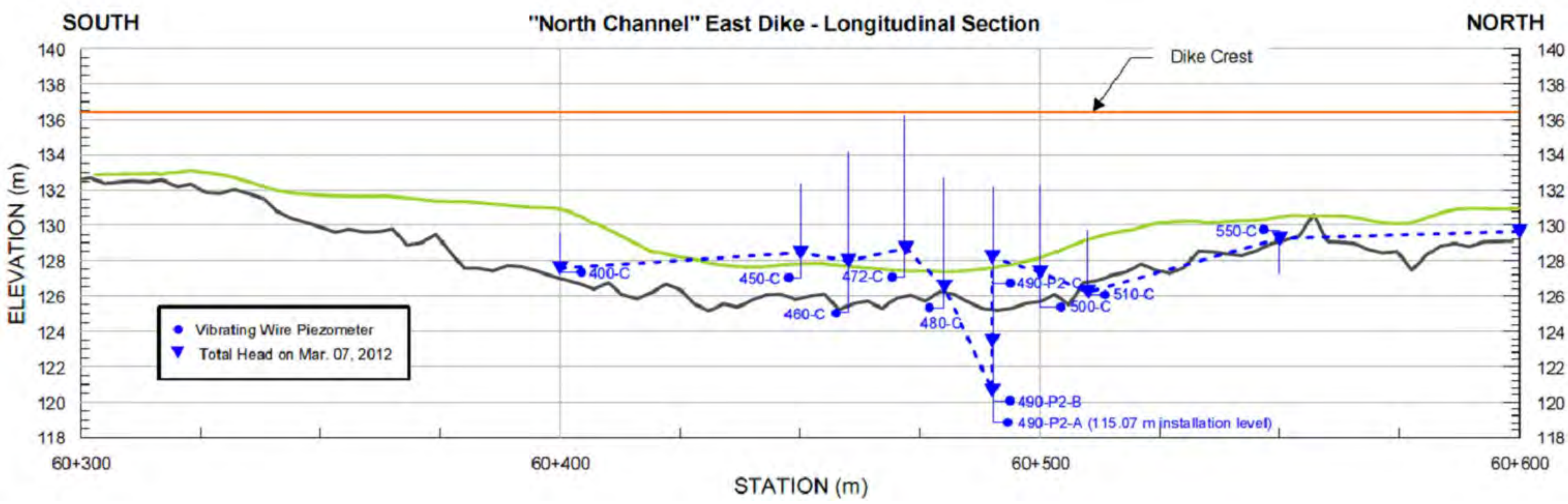
EAST DIKE - NORTH CHANNEL 60+460
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

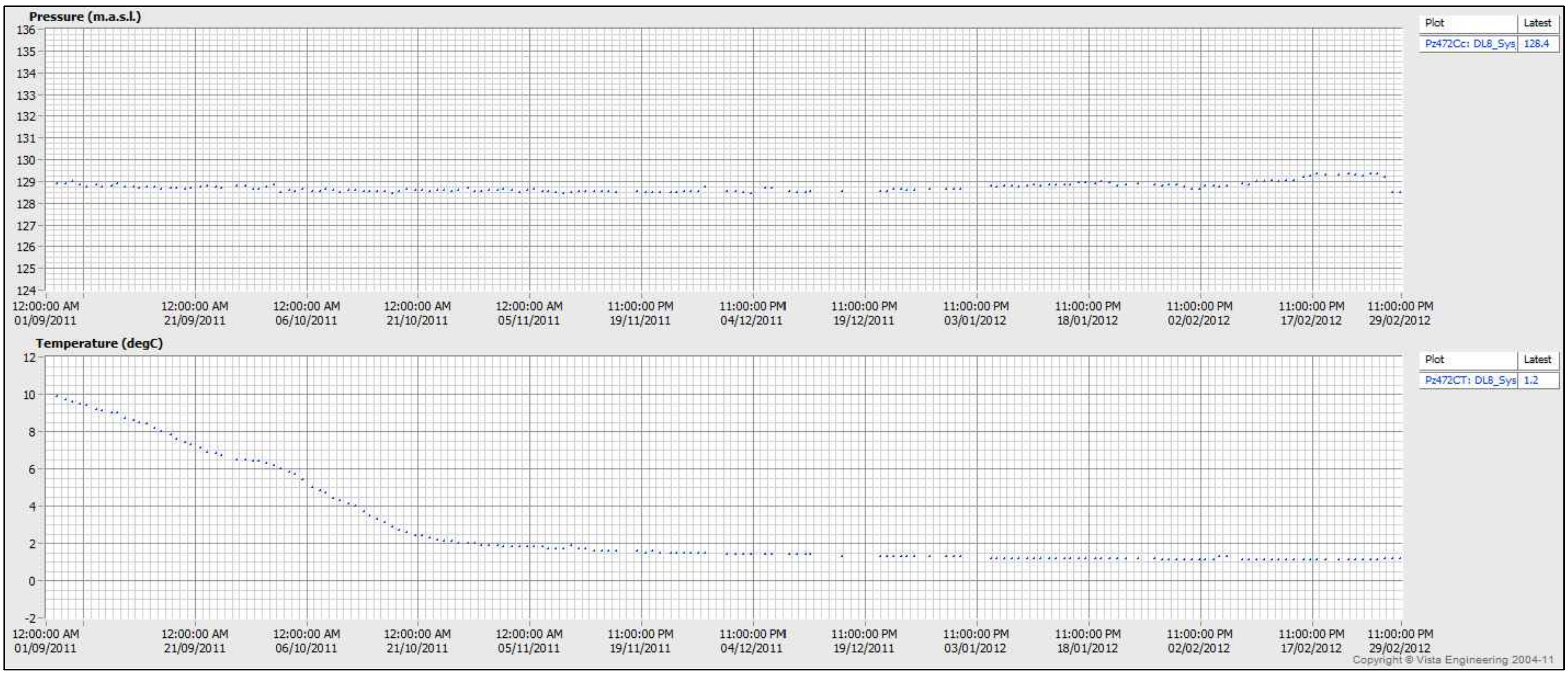
PROJECT No.		12-1221-0073
DESIGN	AEM	09/19/2012
CADD	FLB	10/19/2012
CHECK	YB	11/08/2012
REVIEW	FE	11/15/2012

PHASE No. 3000
SCALE
REV. -

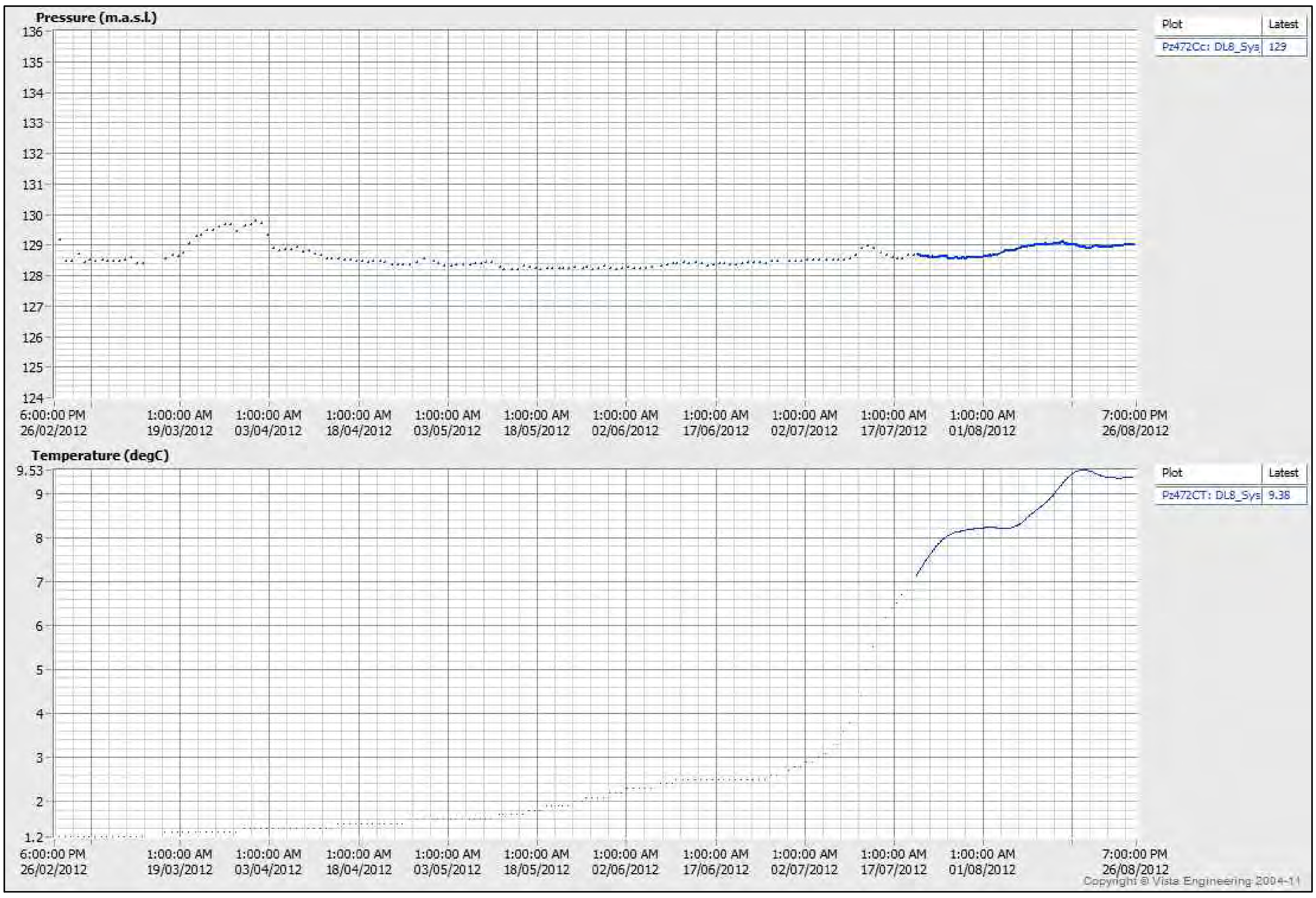
FIGURE C1-14



VW Piezometer - Sta.60+472 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+472 (Mar.12 - Sep.12)



PROJECT

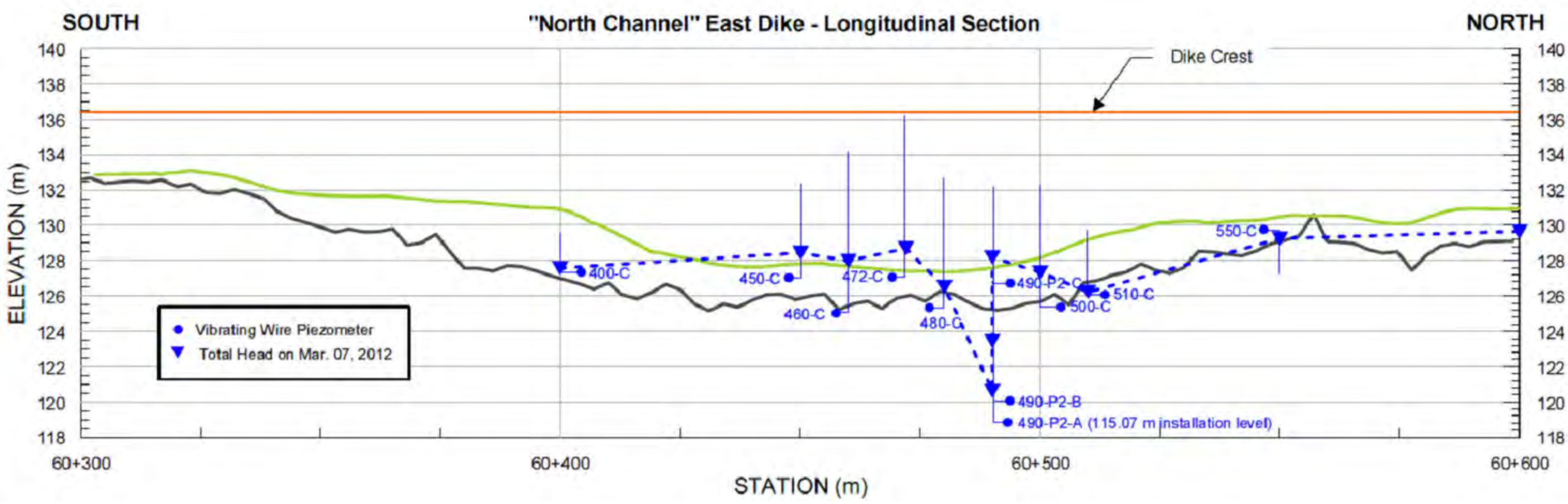
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

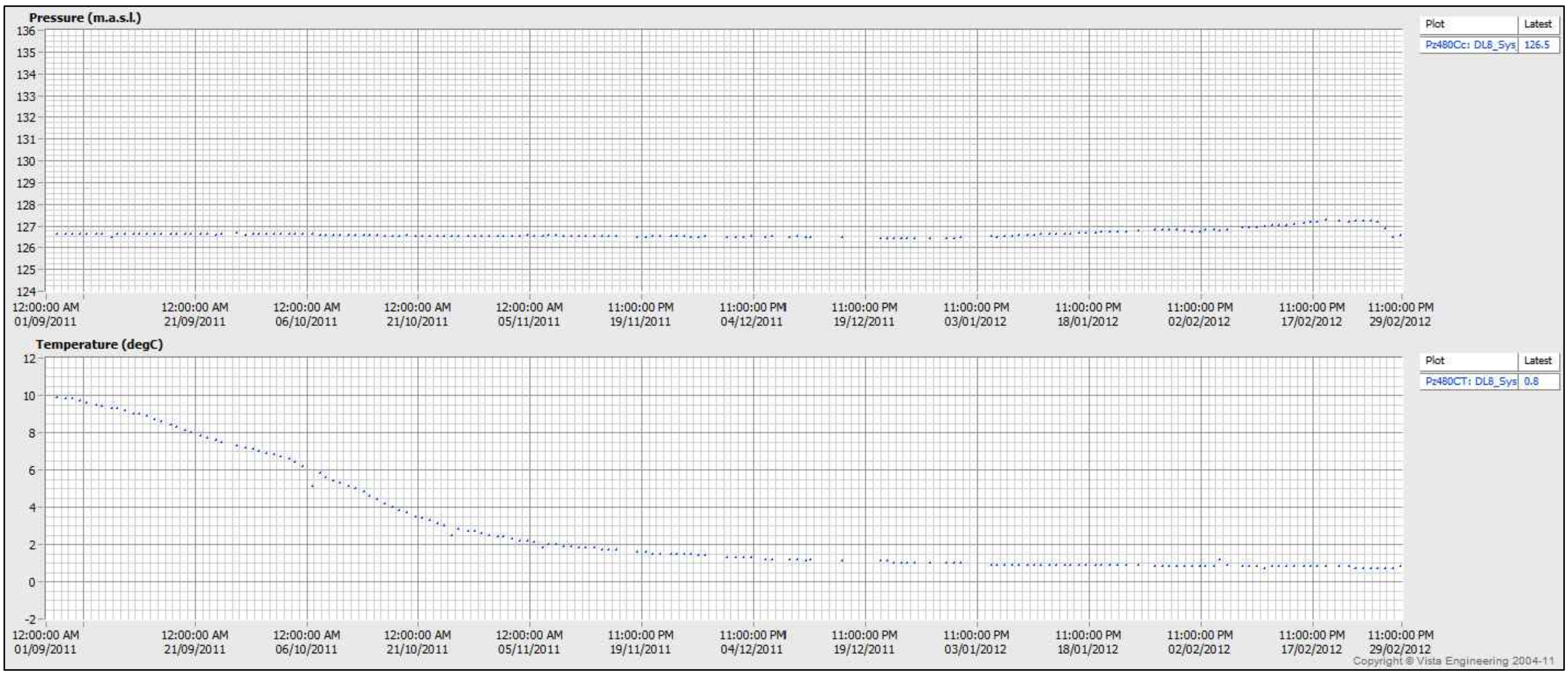
EAST DIKE - NORTH CHANNEL 60+472
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

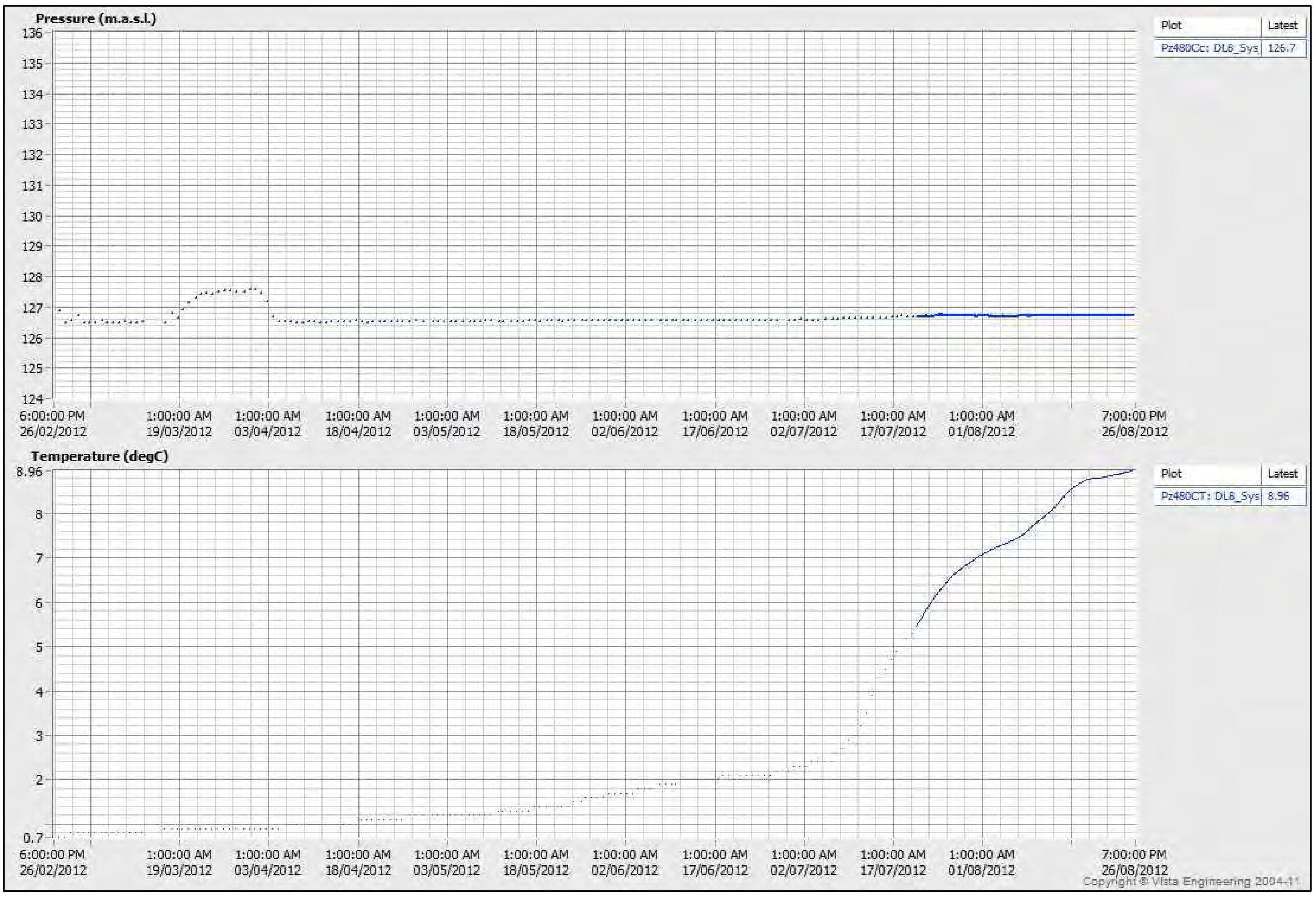
PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C1-15	
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.60+480 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+480 (Mar.12 - Sep.12)



PROJECT

AEM

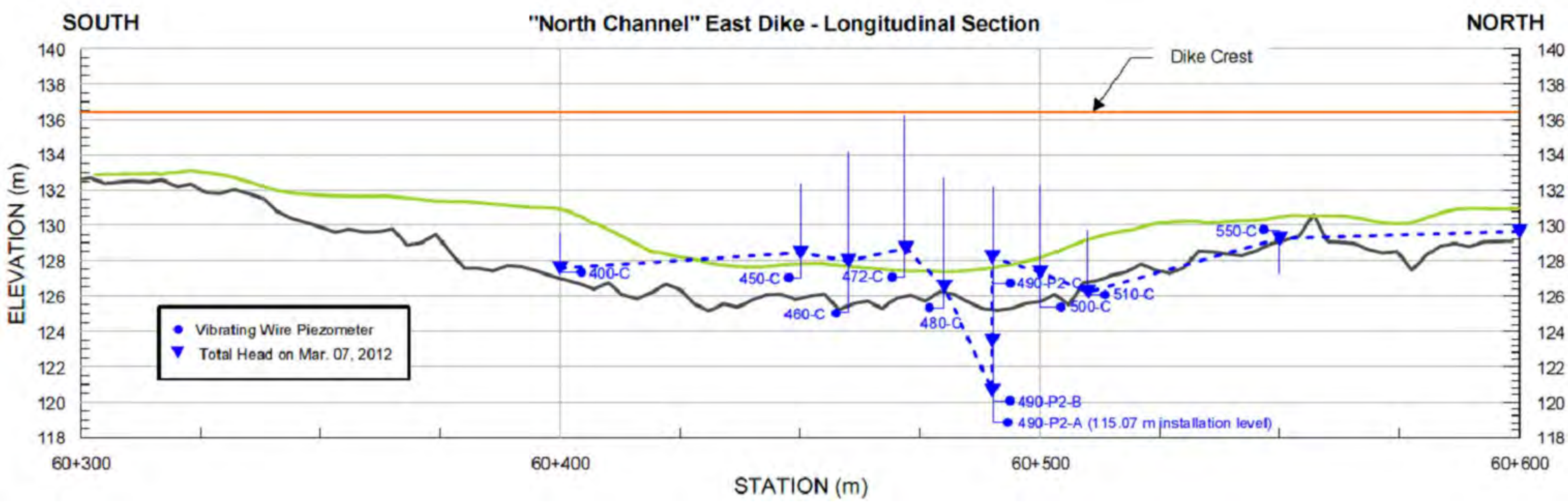
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

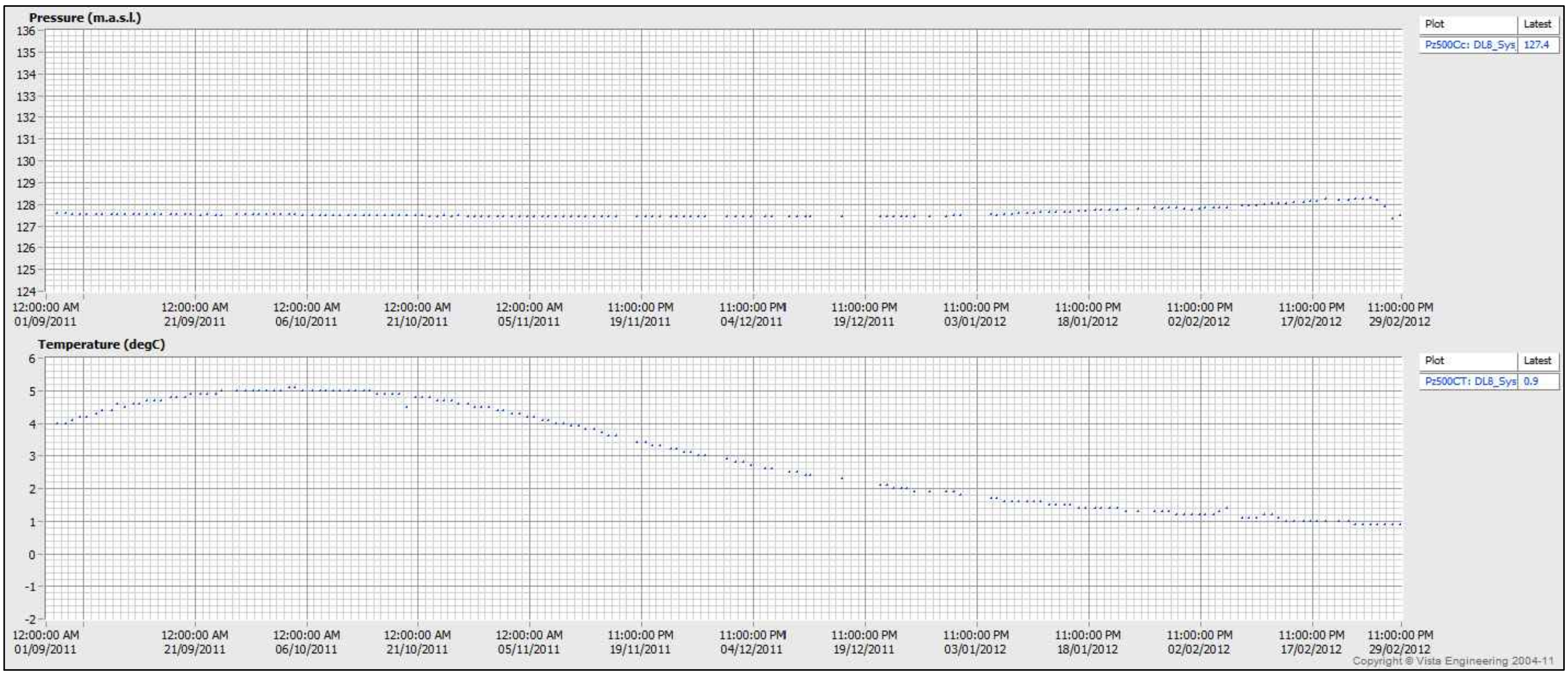
EAST DIKE - NORTH CHANNEL 60+480
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

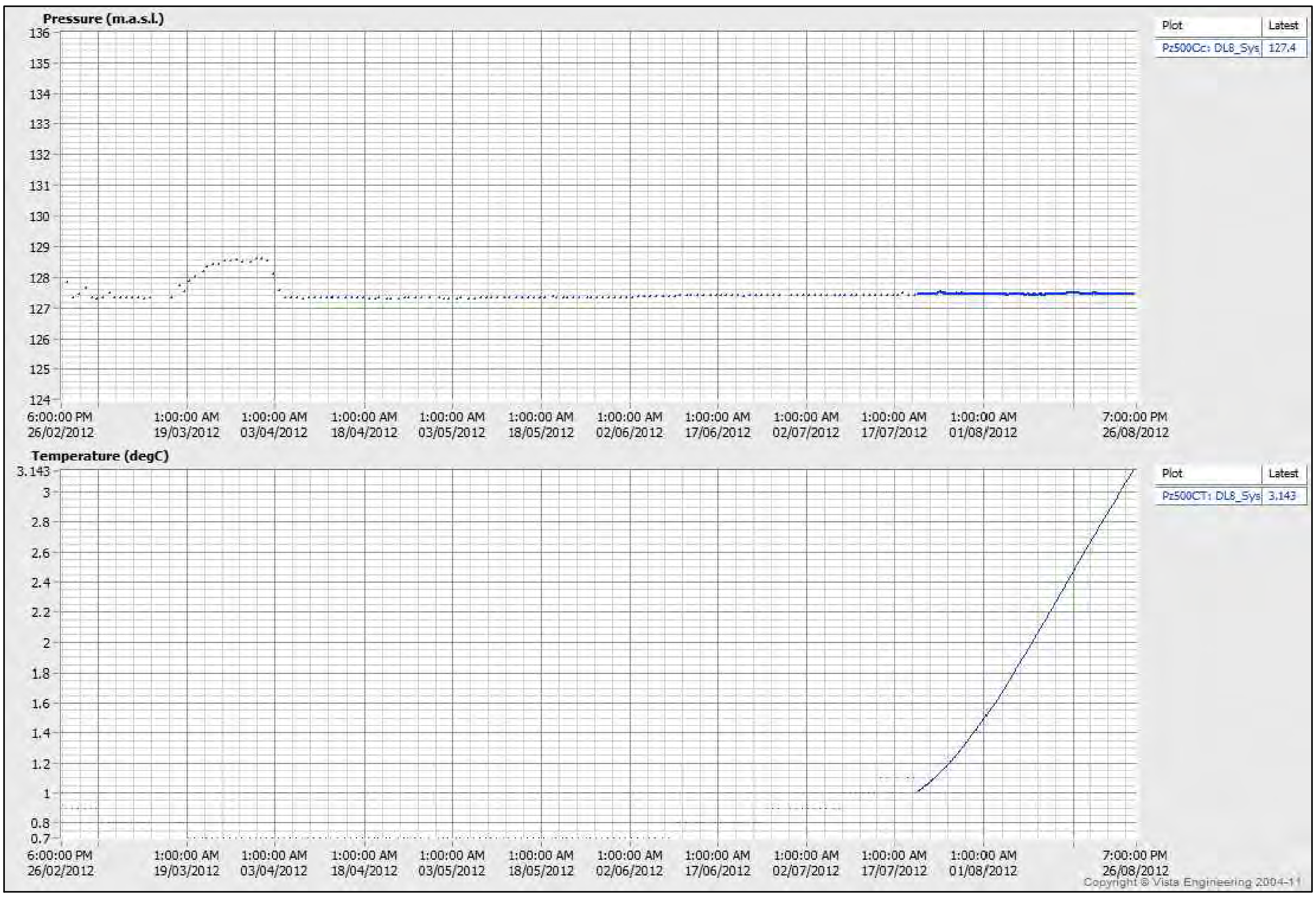
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C1-16**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.60+500 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+500 (Mar.12 - Sep.12)



PROJECT

AEM

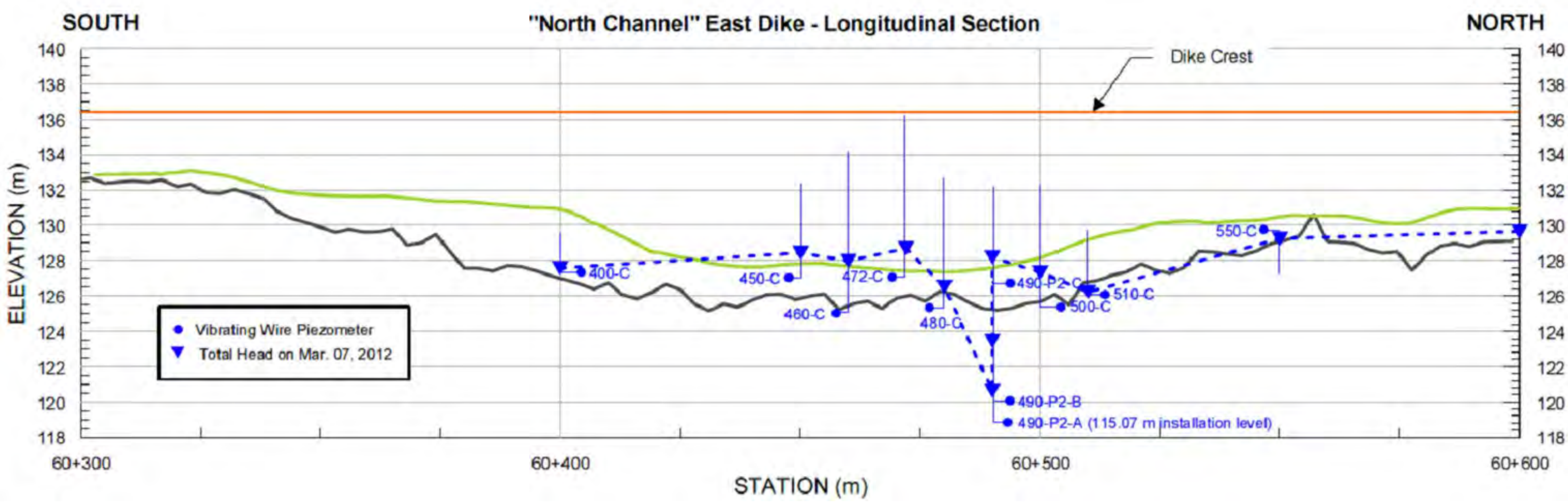
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

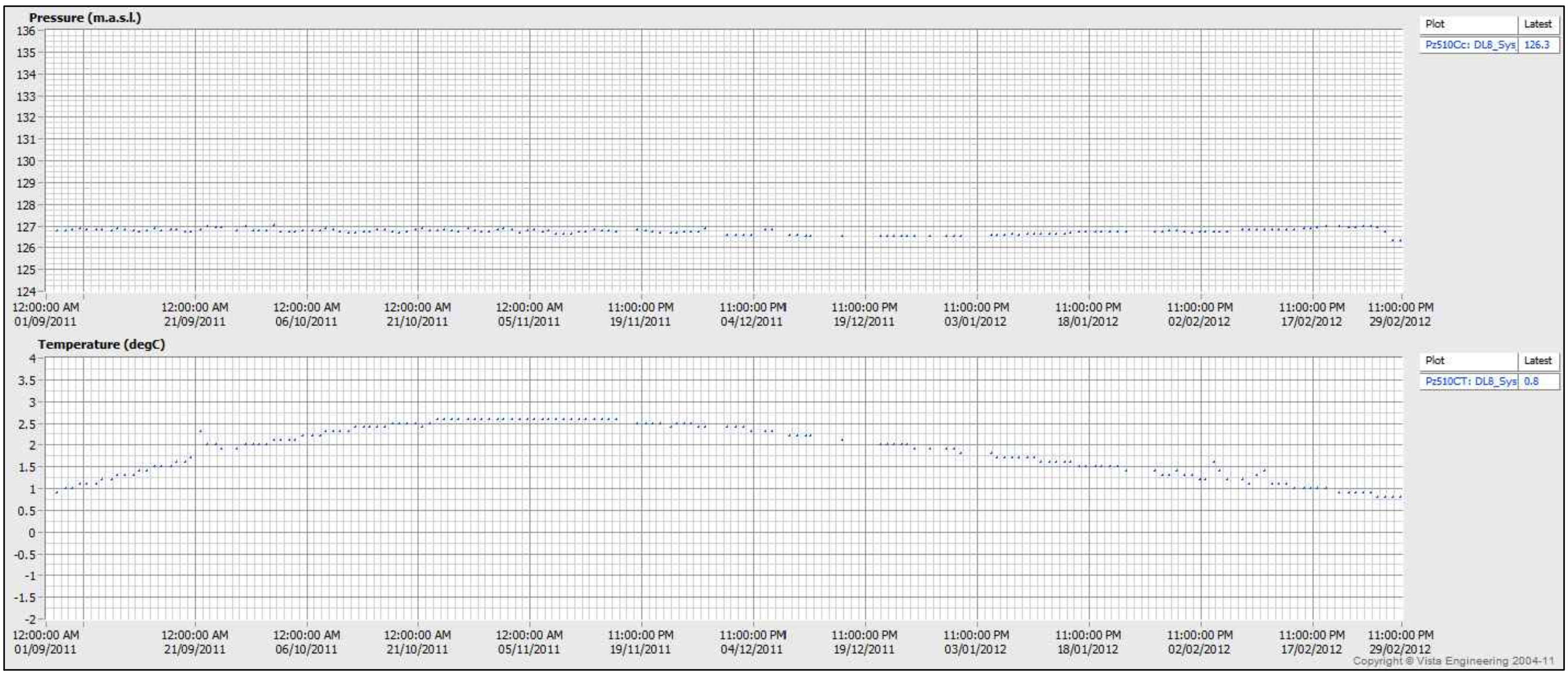
EAST DIKE - NORTH CHANNEL 60+500
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

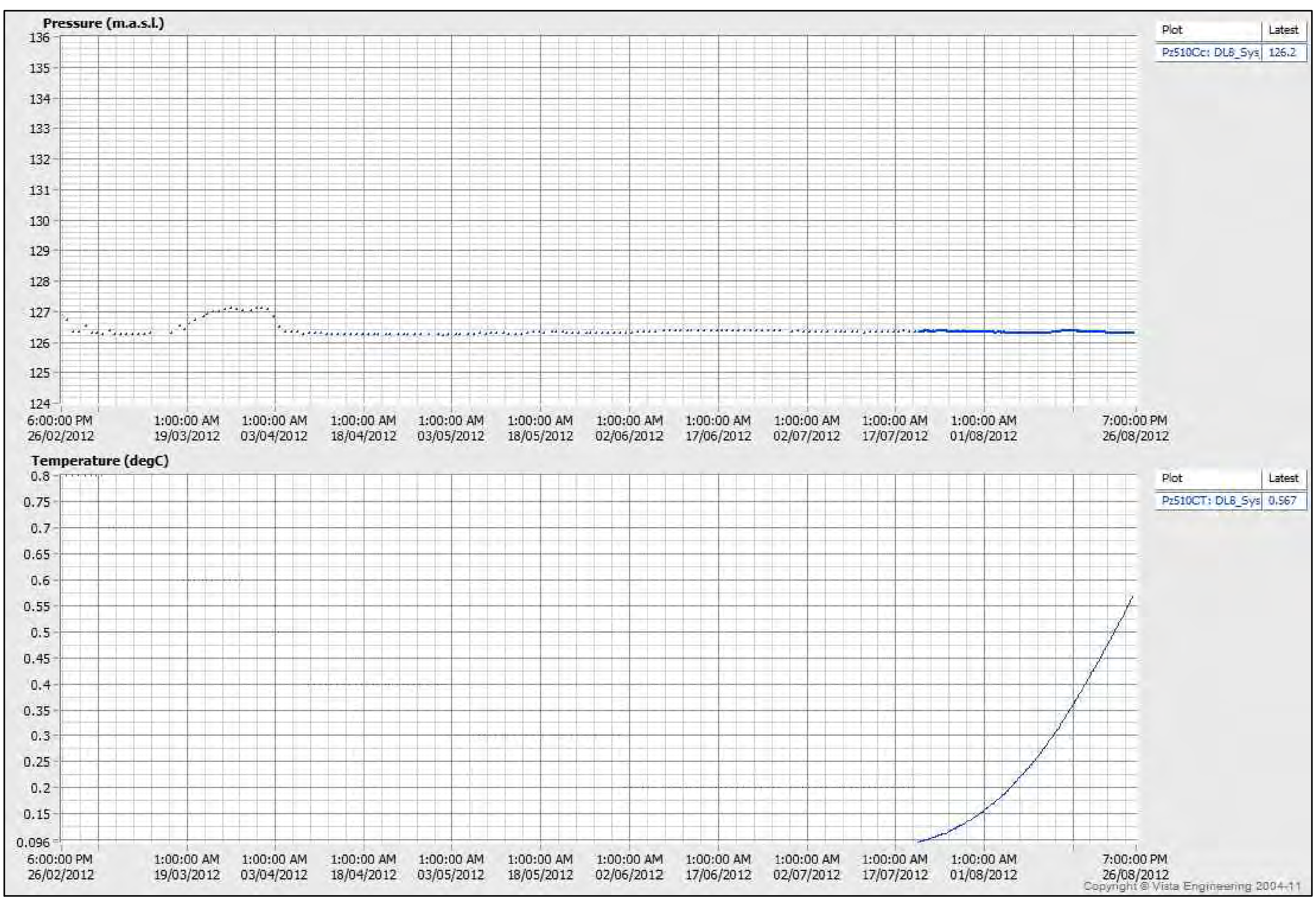
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C1-17**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.60+510 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+510 (Mar.12 - Sep.12)



PROJECT

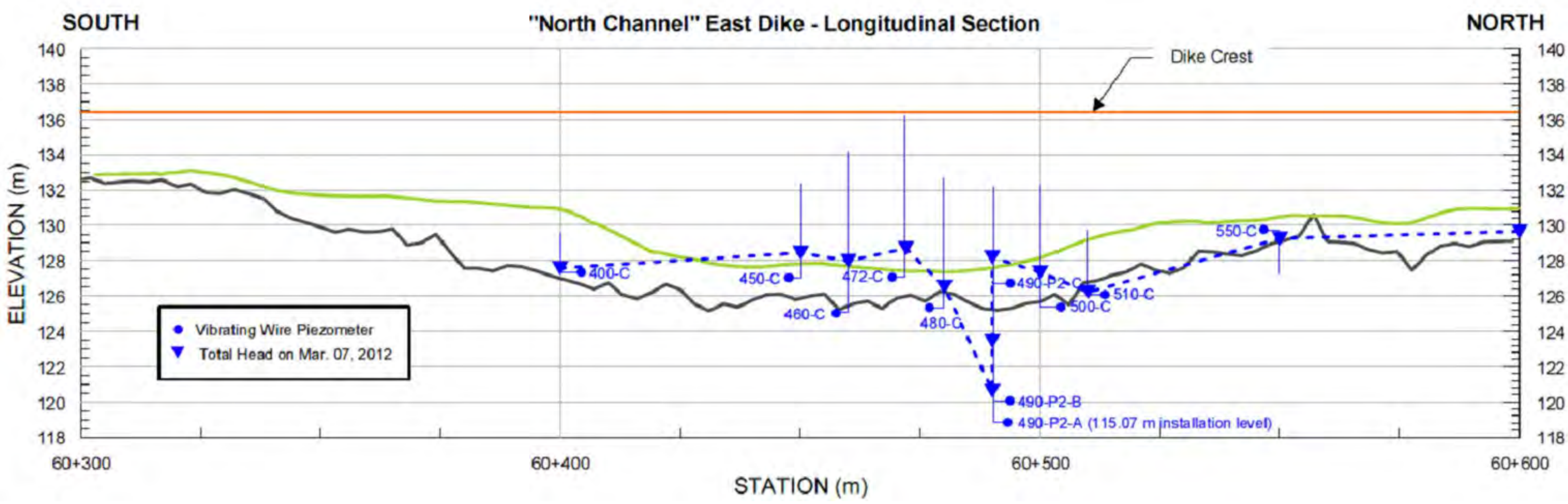
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

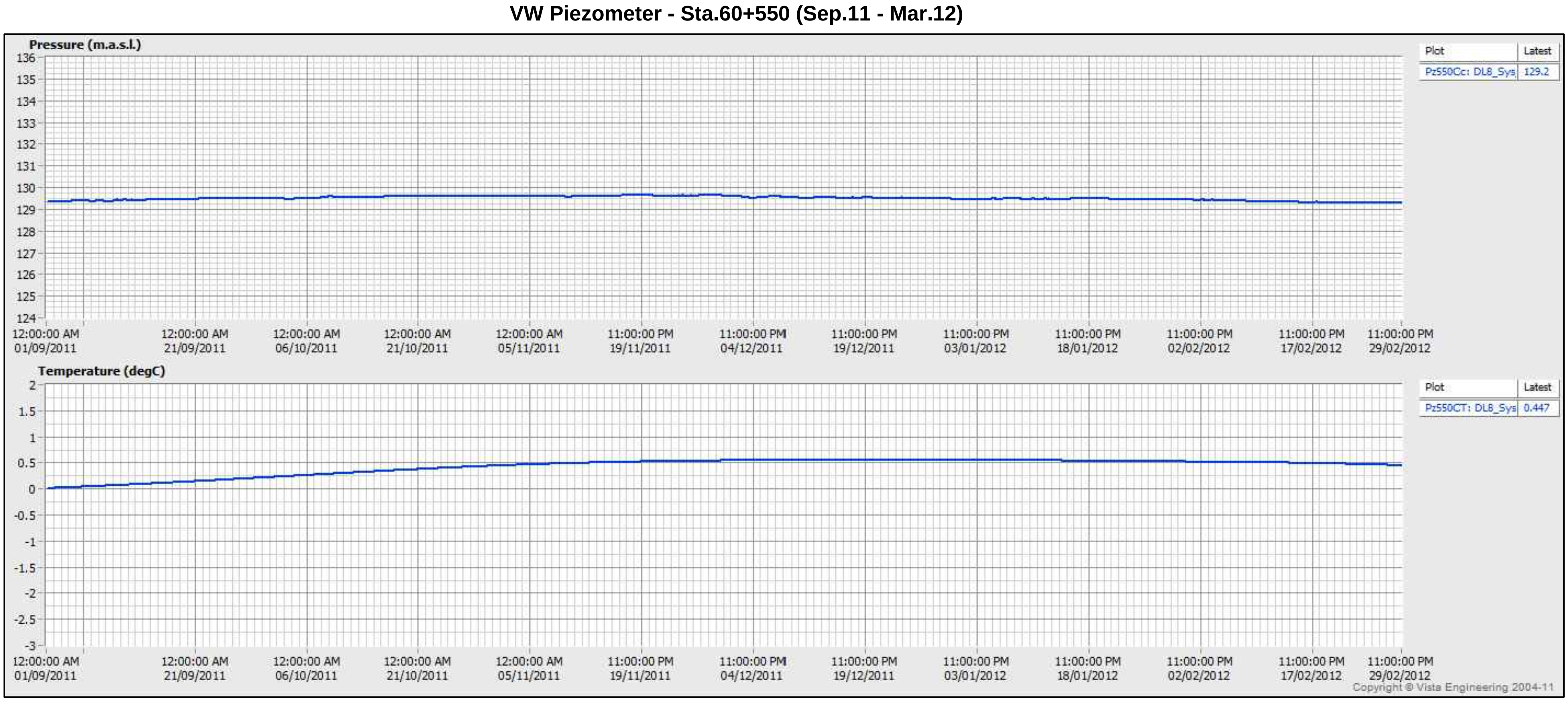
EAST DIKE - NORTH CHANNEL 60+510
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

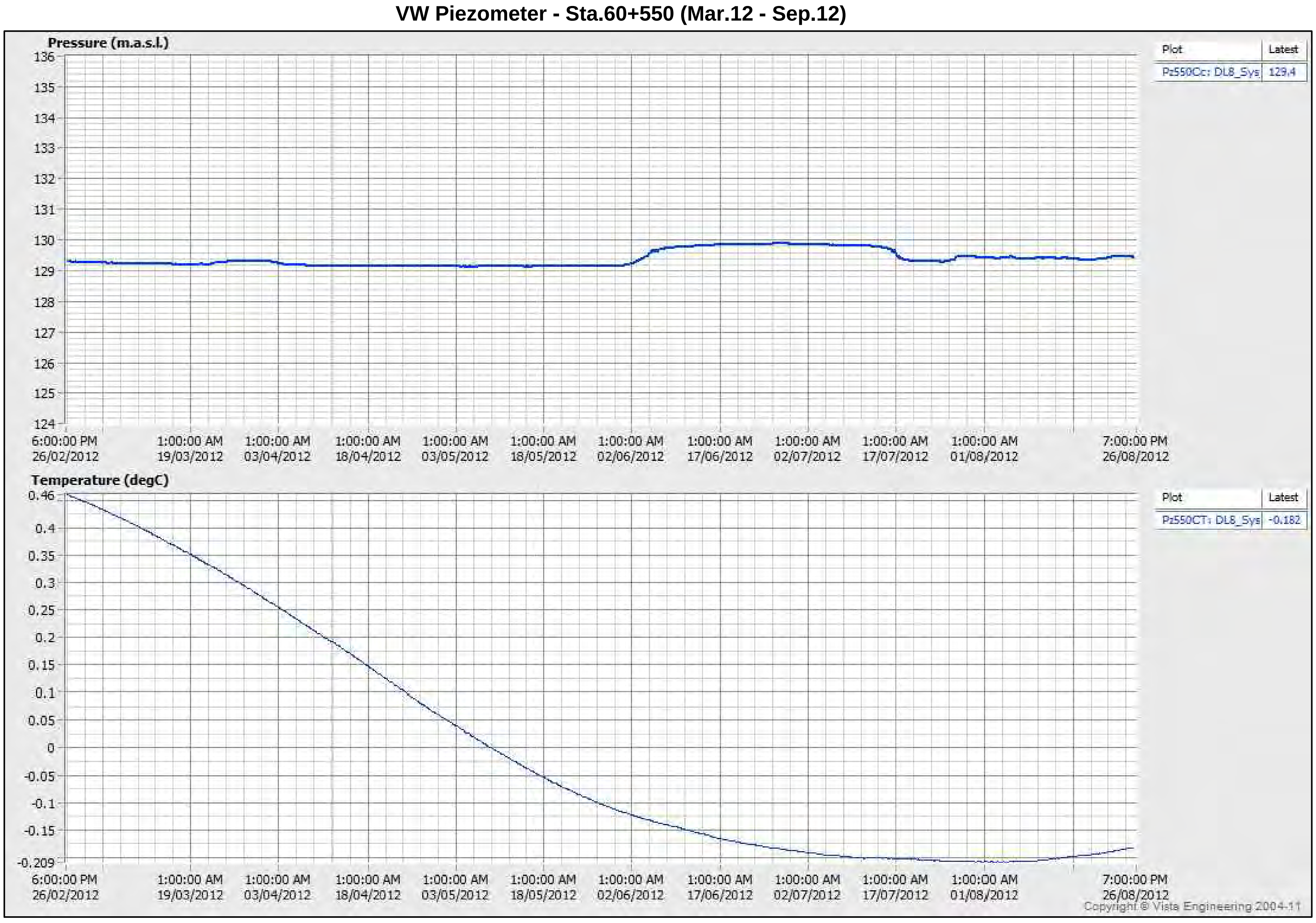
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C1-18**	
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.60+550 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+550 (Mar.12 - Sep.12)

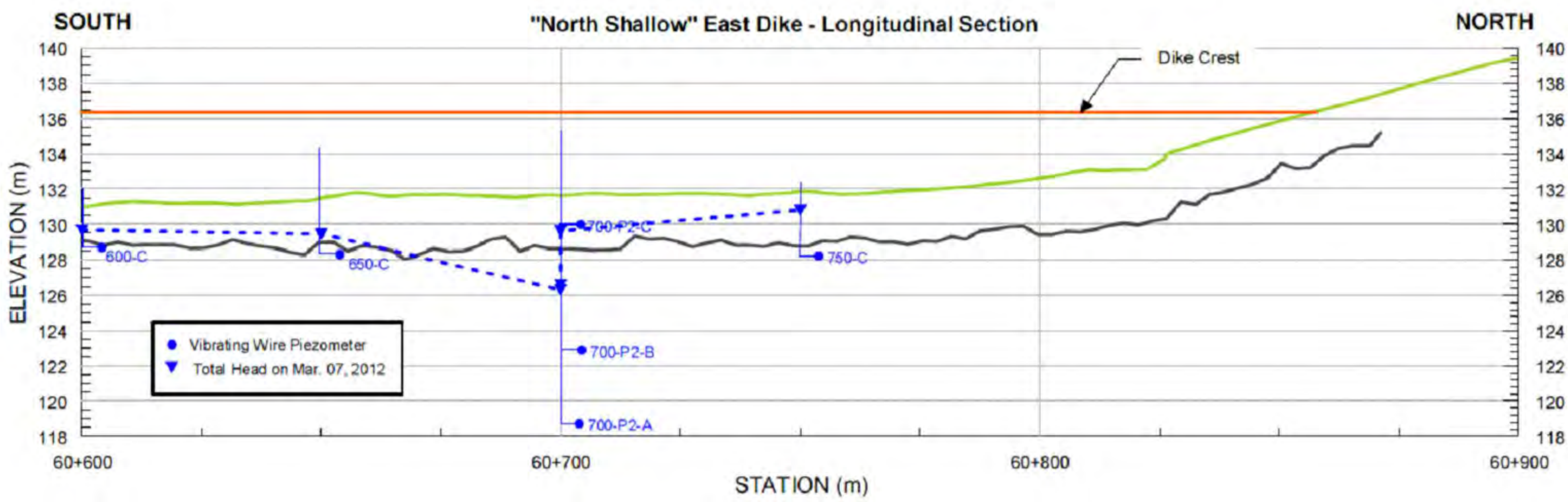


PROJECT
AEM
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

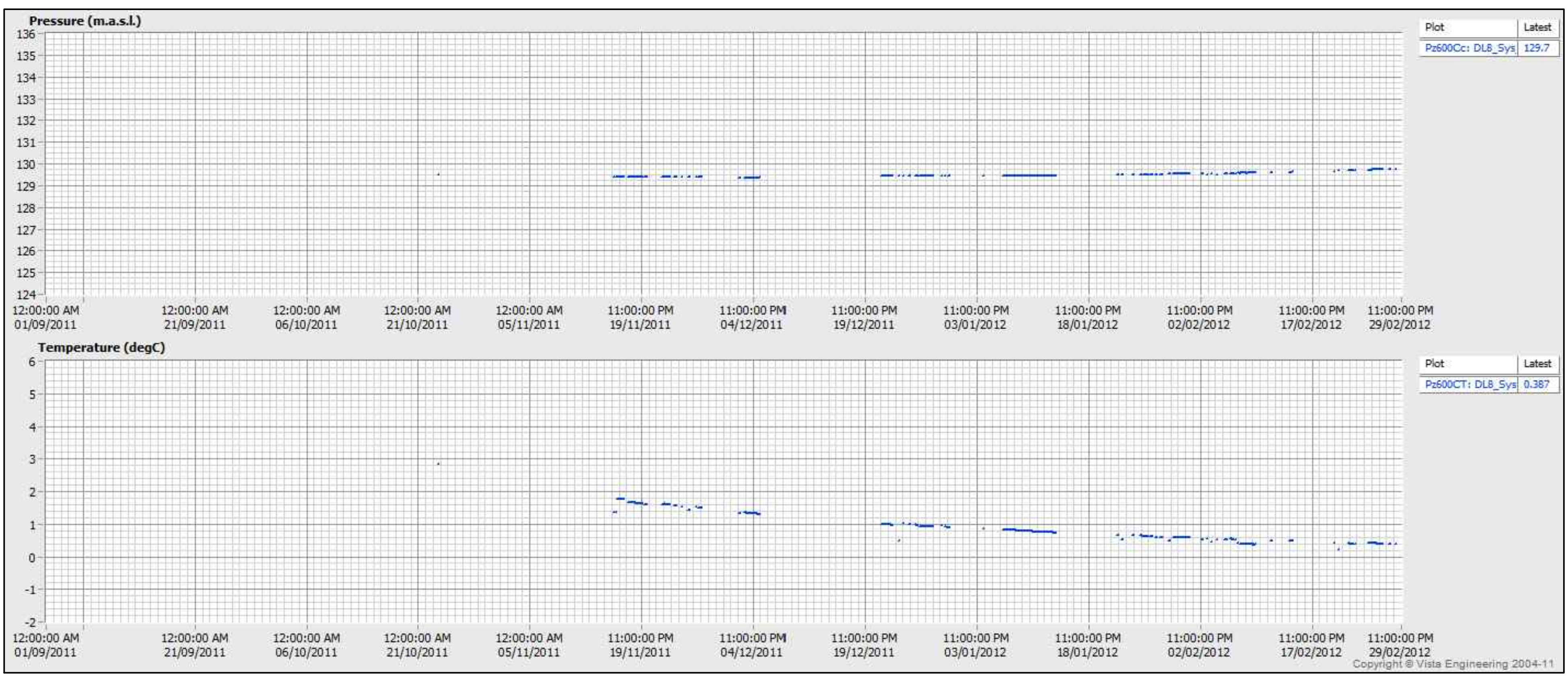
TITLE
EAST DIKE - NORTH CHANNEL 60+550
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

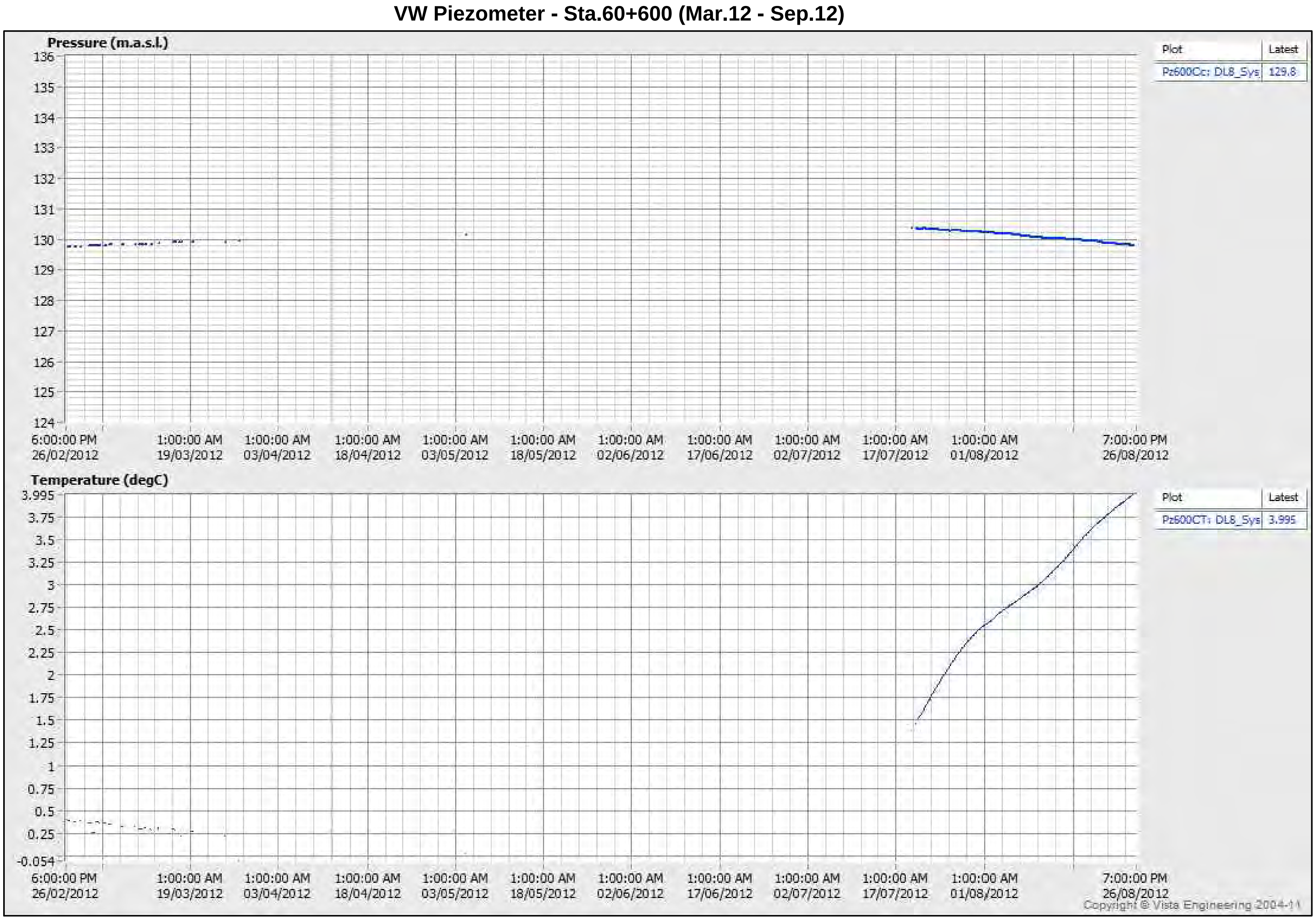
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C1-19**	
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.60+600 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+600 (Mar.12 - Sep.12)



PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

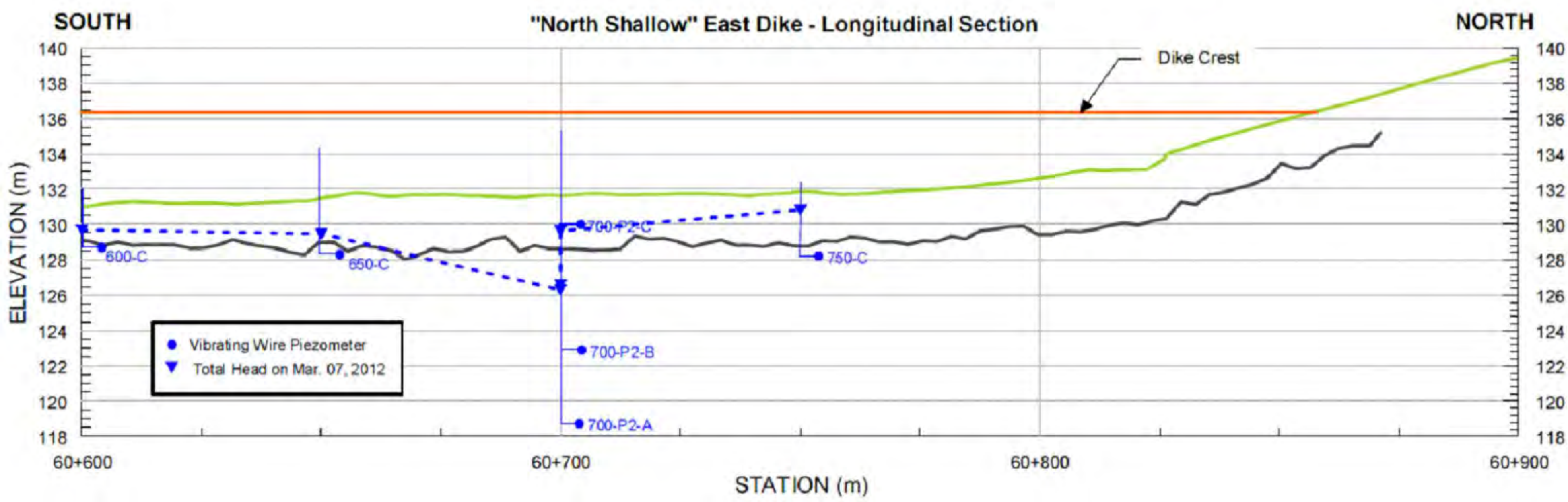
TITLE

EAST DIKE - NORTH SHALLOW 60+600
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

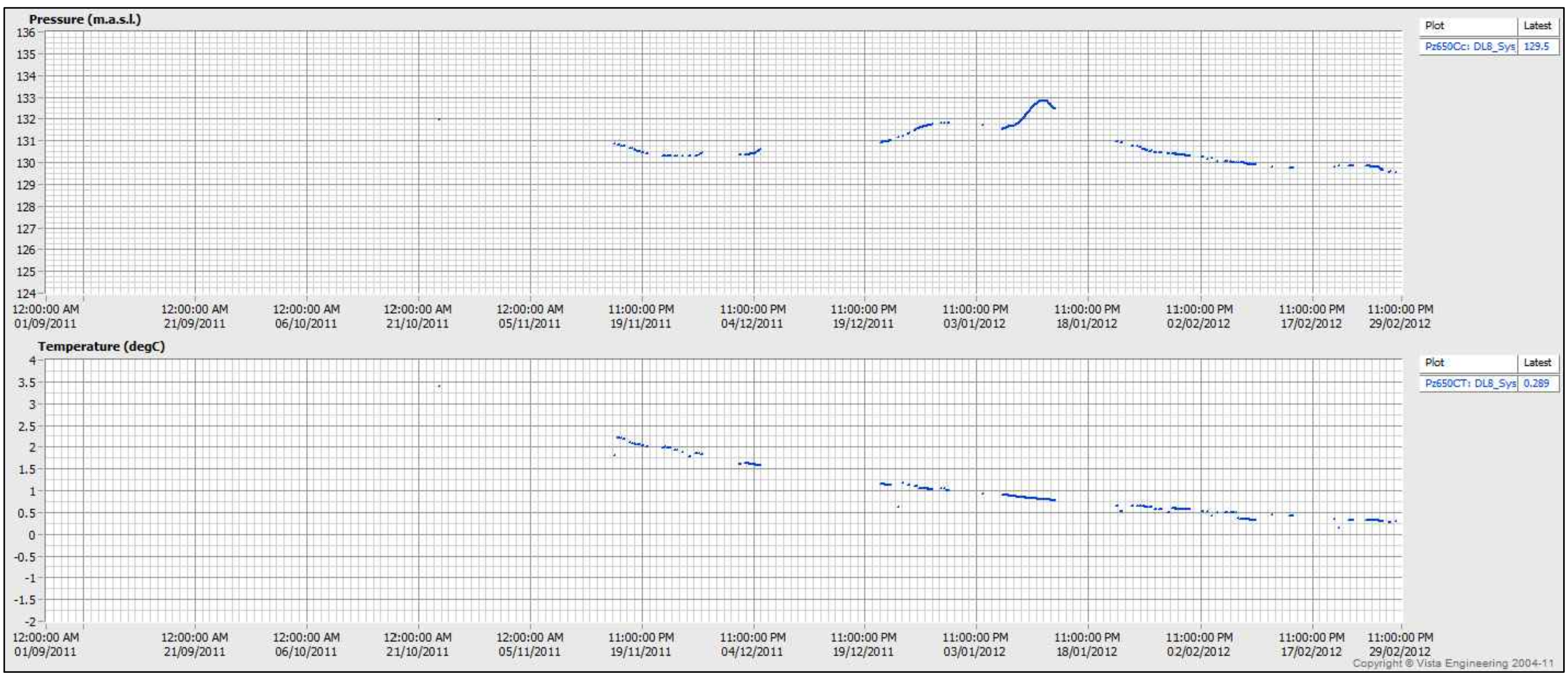
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

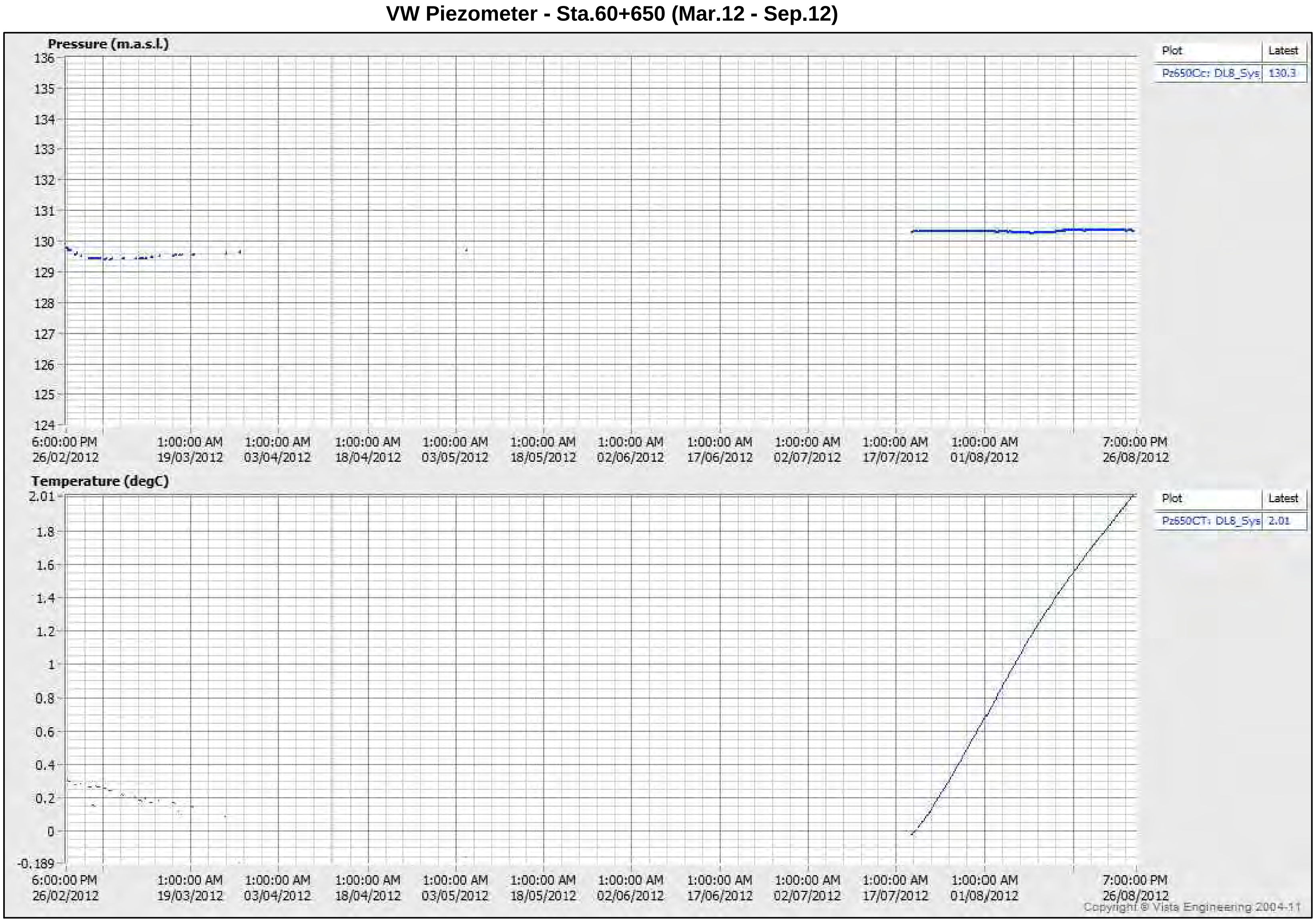
FIGURE C1-20



VW Piezometer - Sta.60+650 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+650 (Mar.12 - Sep.12)



PROJECT

AEM

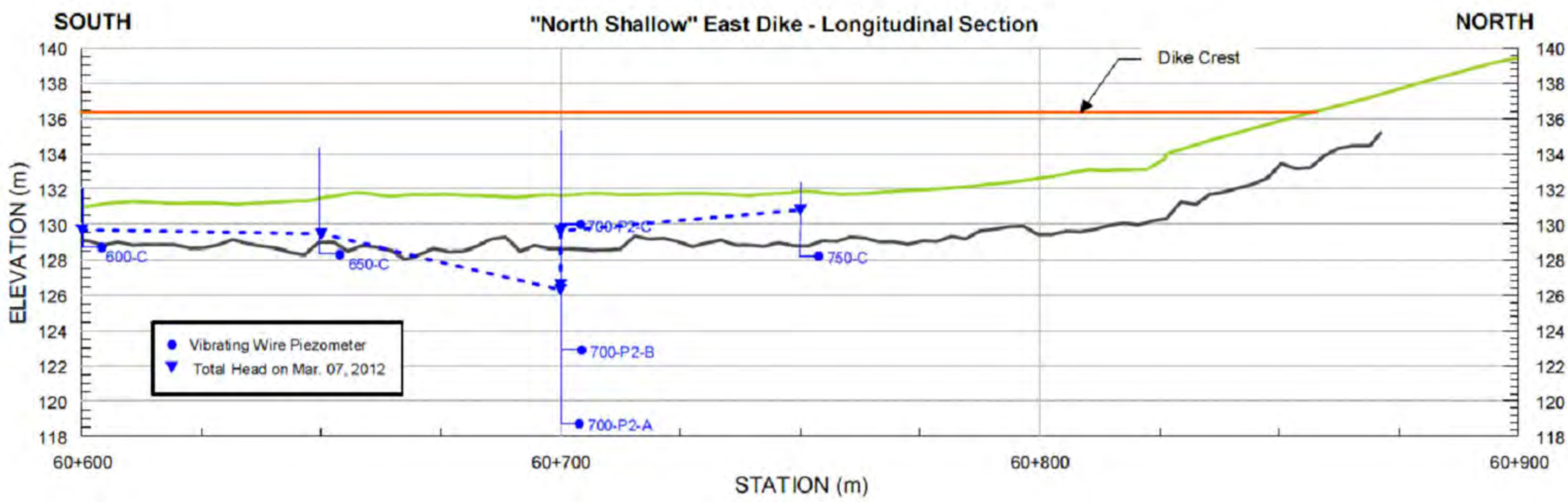
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

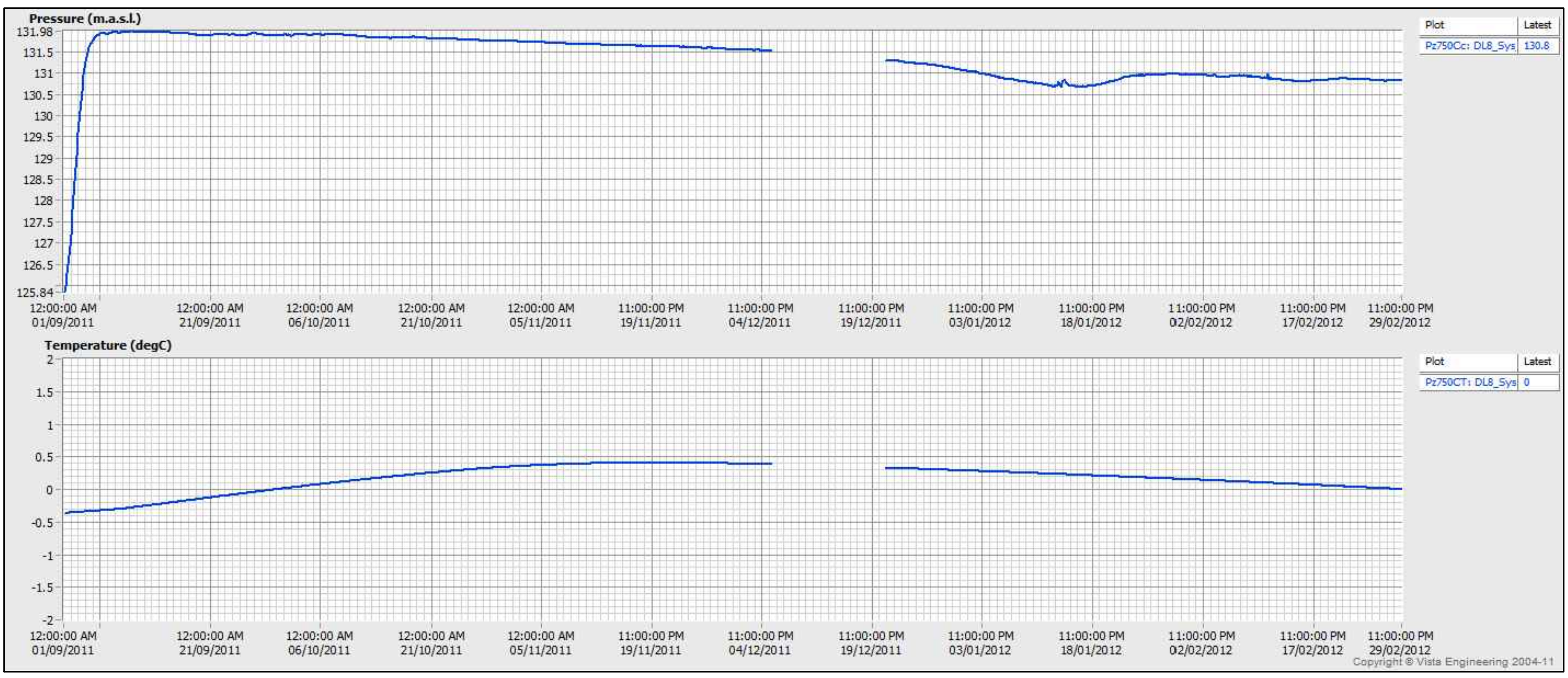
EAST DIKE - NORTH SHALLOW 60+650
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

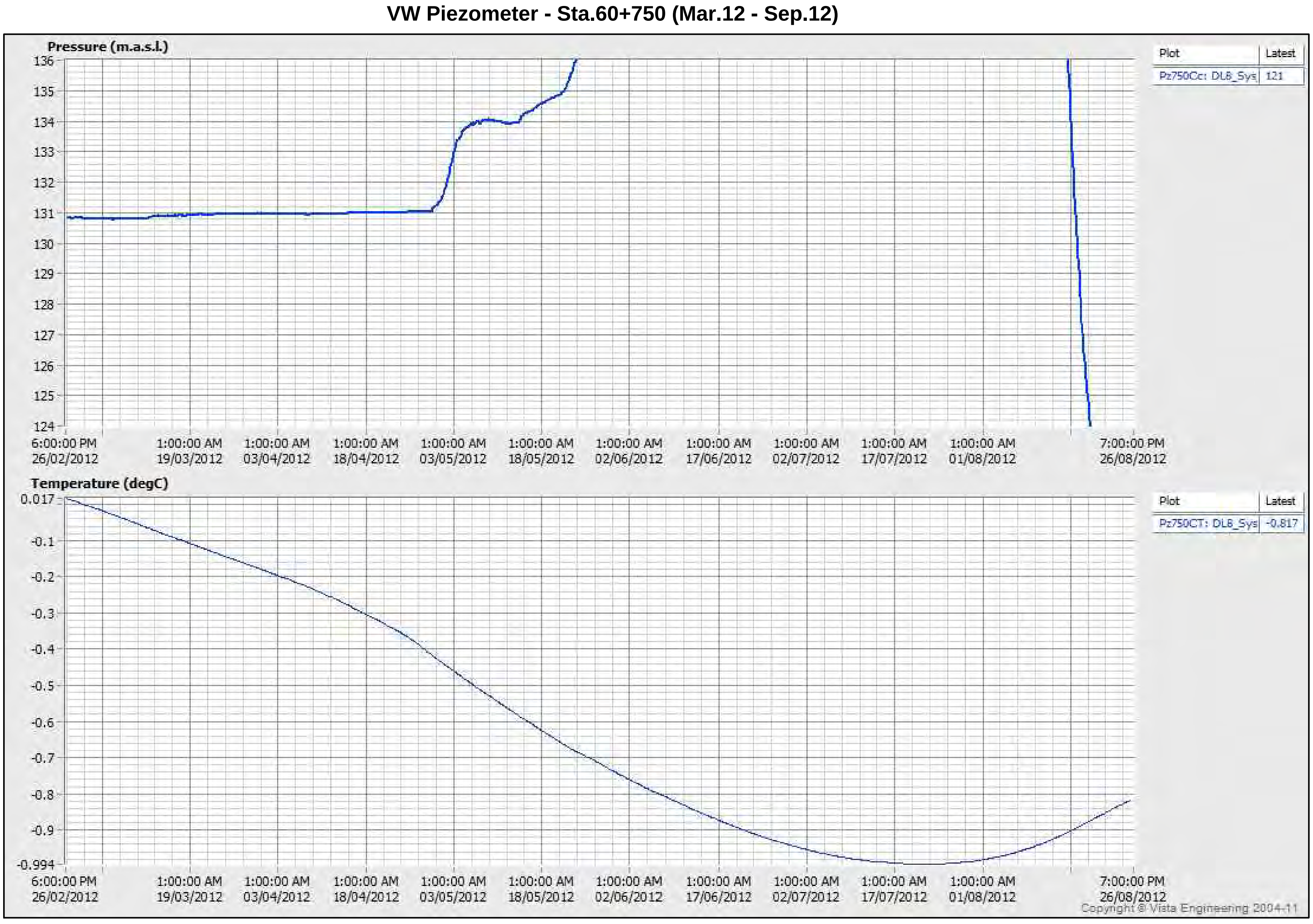
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C1-21	
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.60+750 (Sep.11 - Mar.12)



VW Piezometer - Sta.60+750 (Mar.12 - Sep.12)

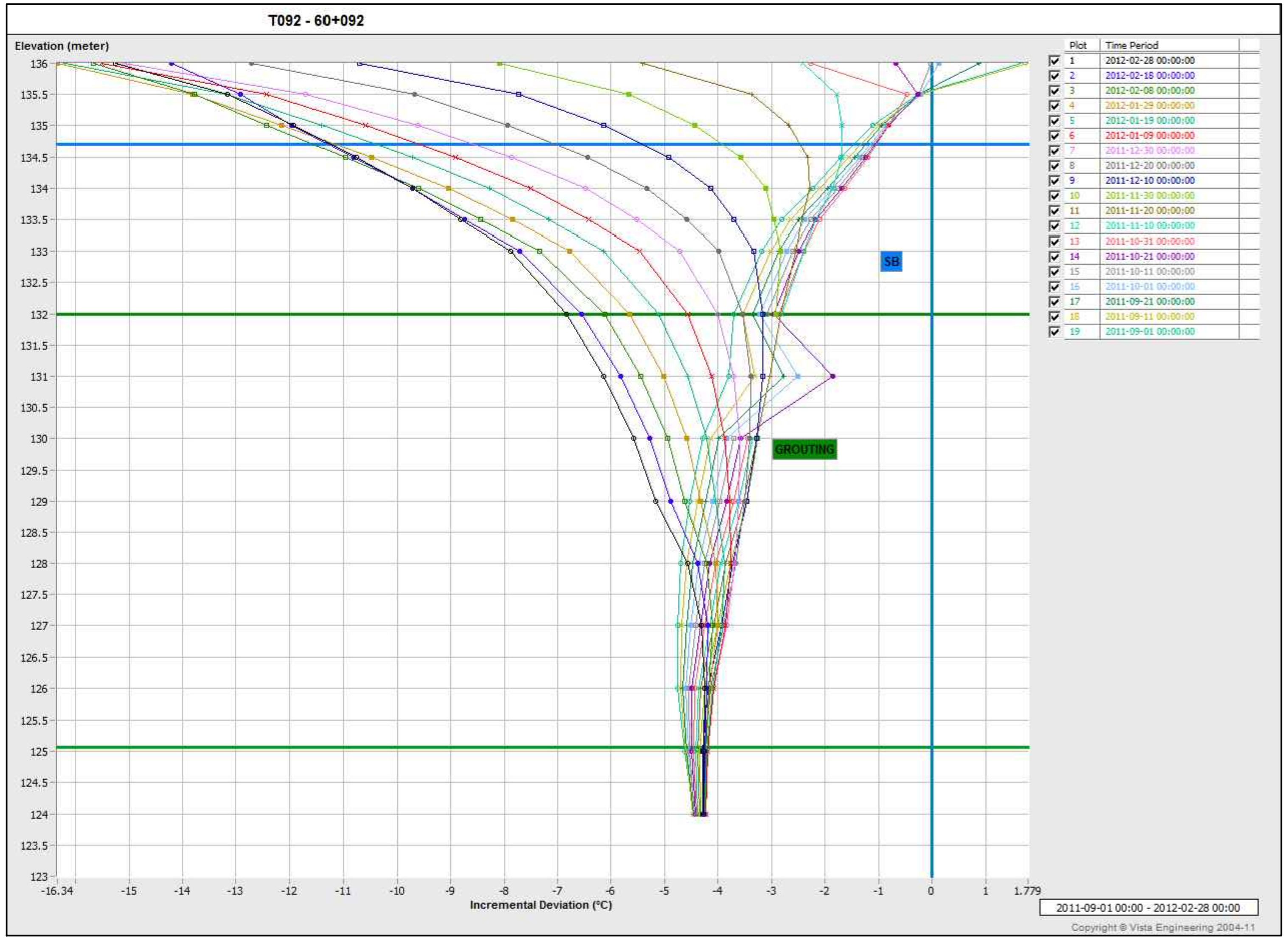


PROJECT	AEM	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE		**EAST DIKE - NORTH SHALLOW 60+750 PIEZOMETRIC DATA (SEP.2011 - SEP.2012)**

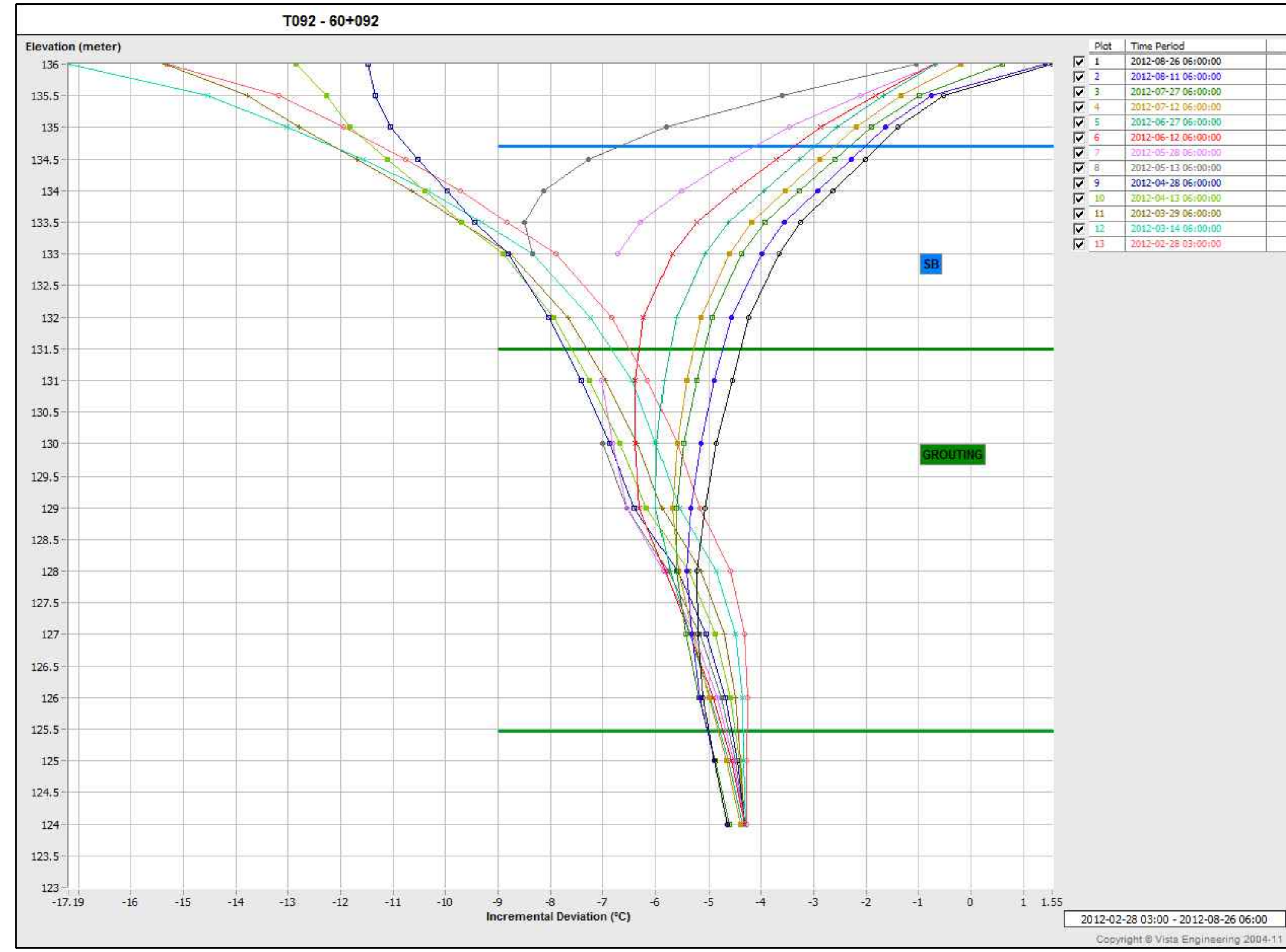
Golder Associates
Montréal, Québec

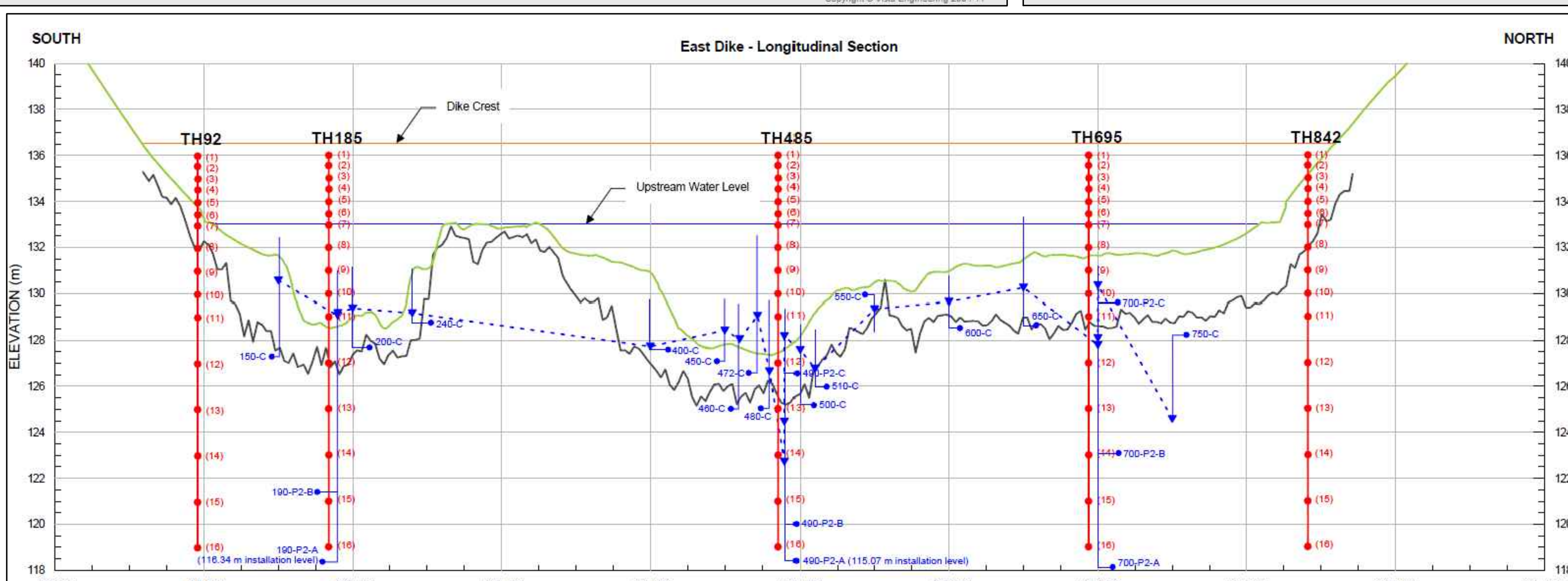
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C1-22**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

TH 92 - Sta.60+092 (Sep.11 - Mar.12)



TH 92 - Sta.60+092 (Mar.12 - Sep.12)



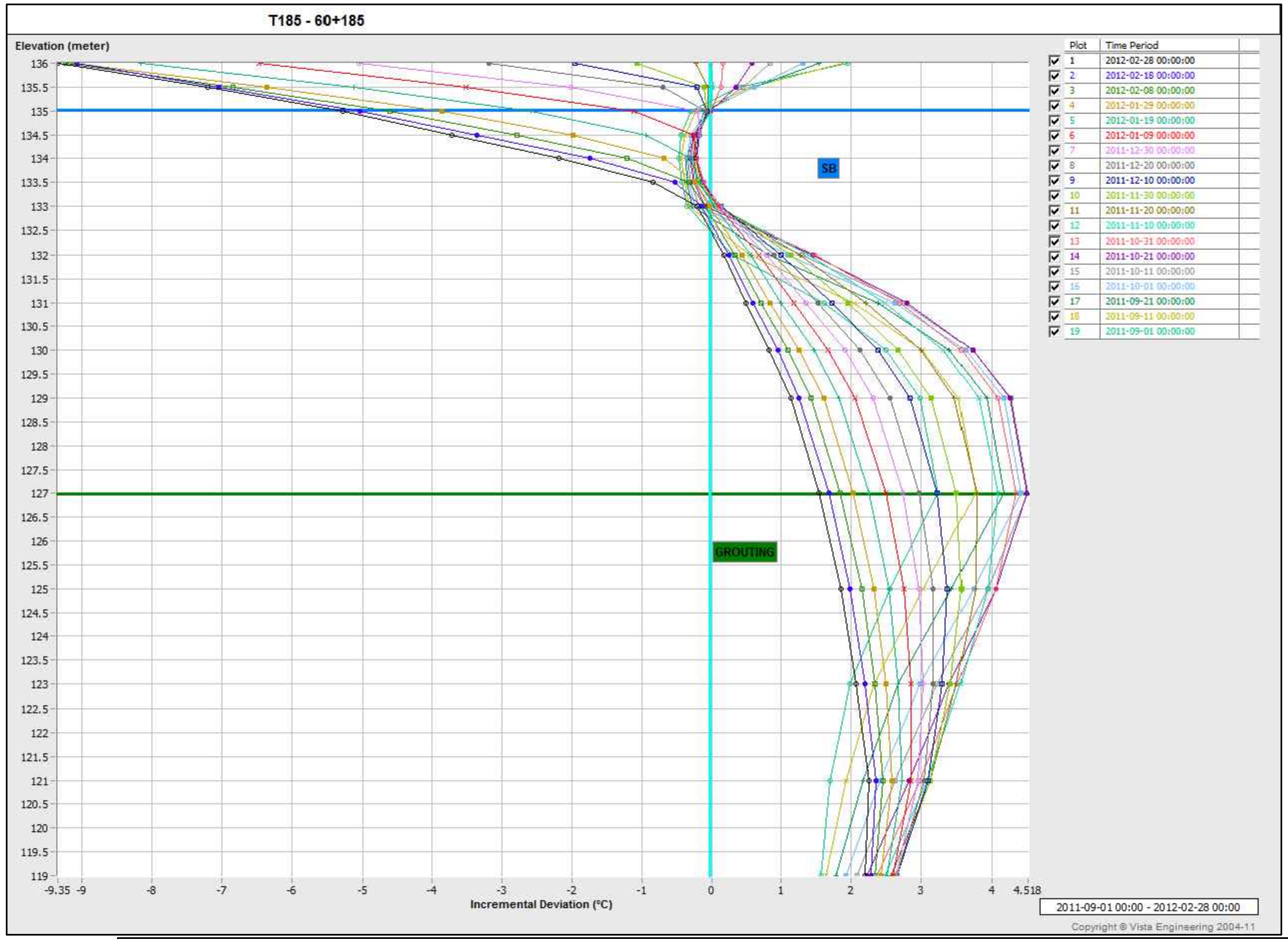


PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**EAST DIKE - TH 92 - 60+092 THERMISTOR DATA (SEP.2011 - SEP.2012)**

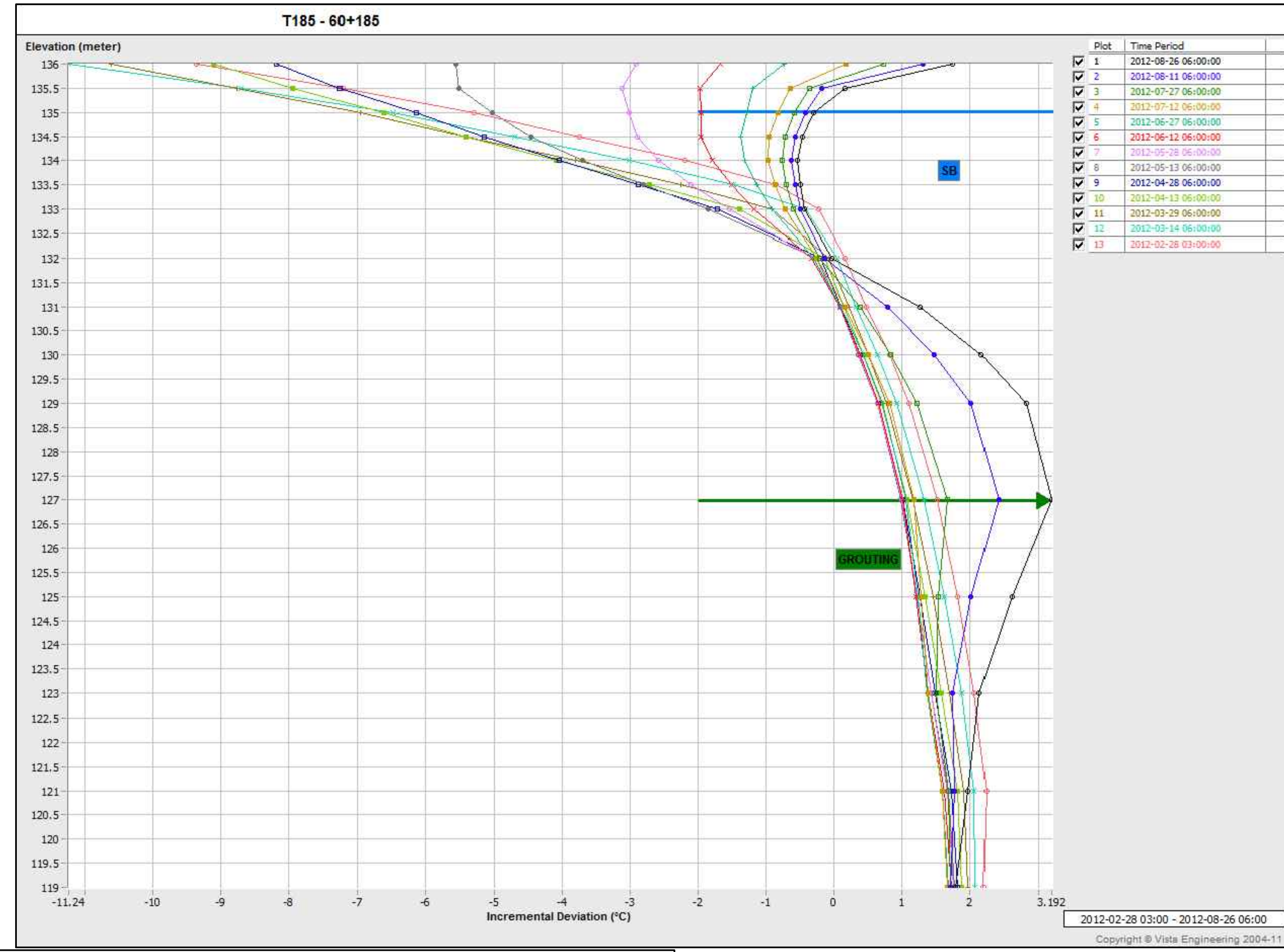
Golder Associates
Montréal, Québec

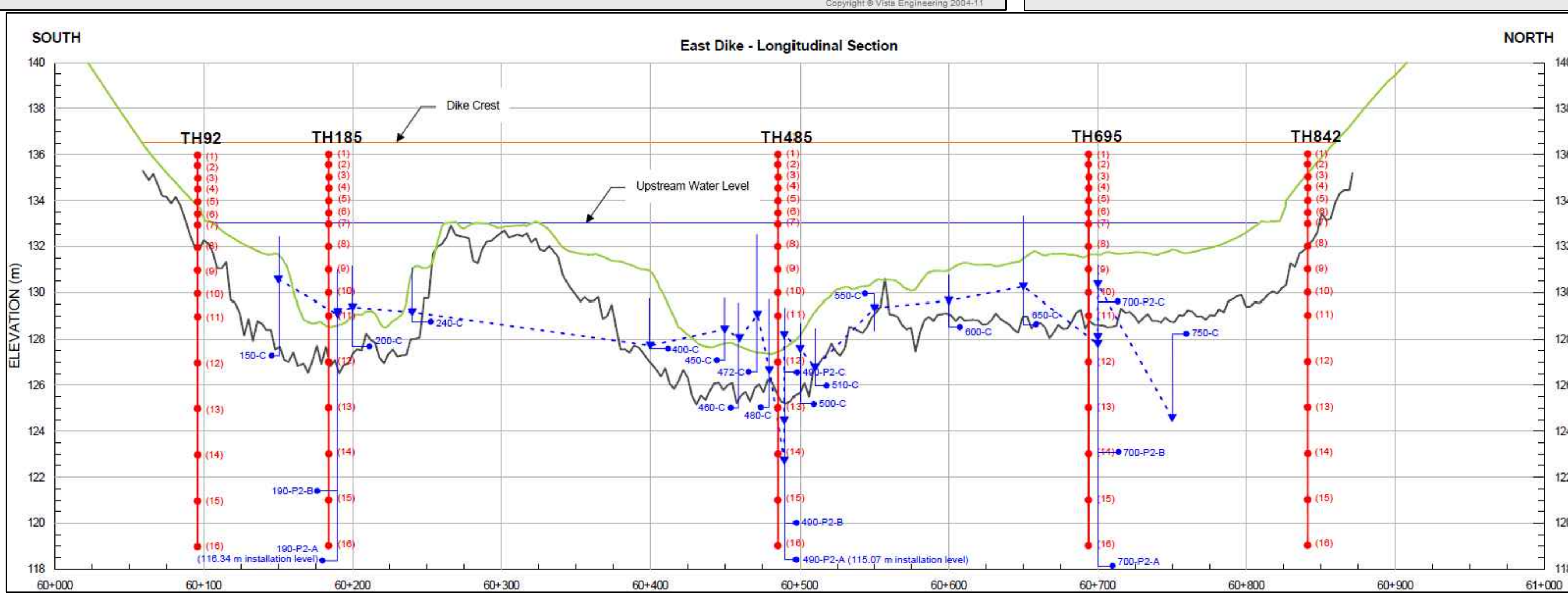
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C1-23**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

TH 185 - Sta.60+185 (Sep.11 - Mar.12)



TH 185 - Sta.60+185 (Mar.12 - Sep.12)



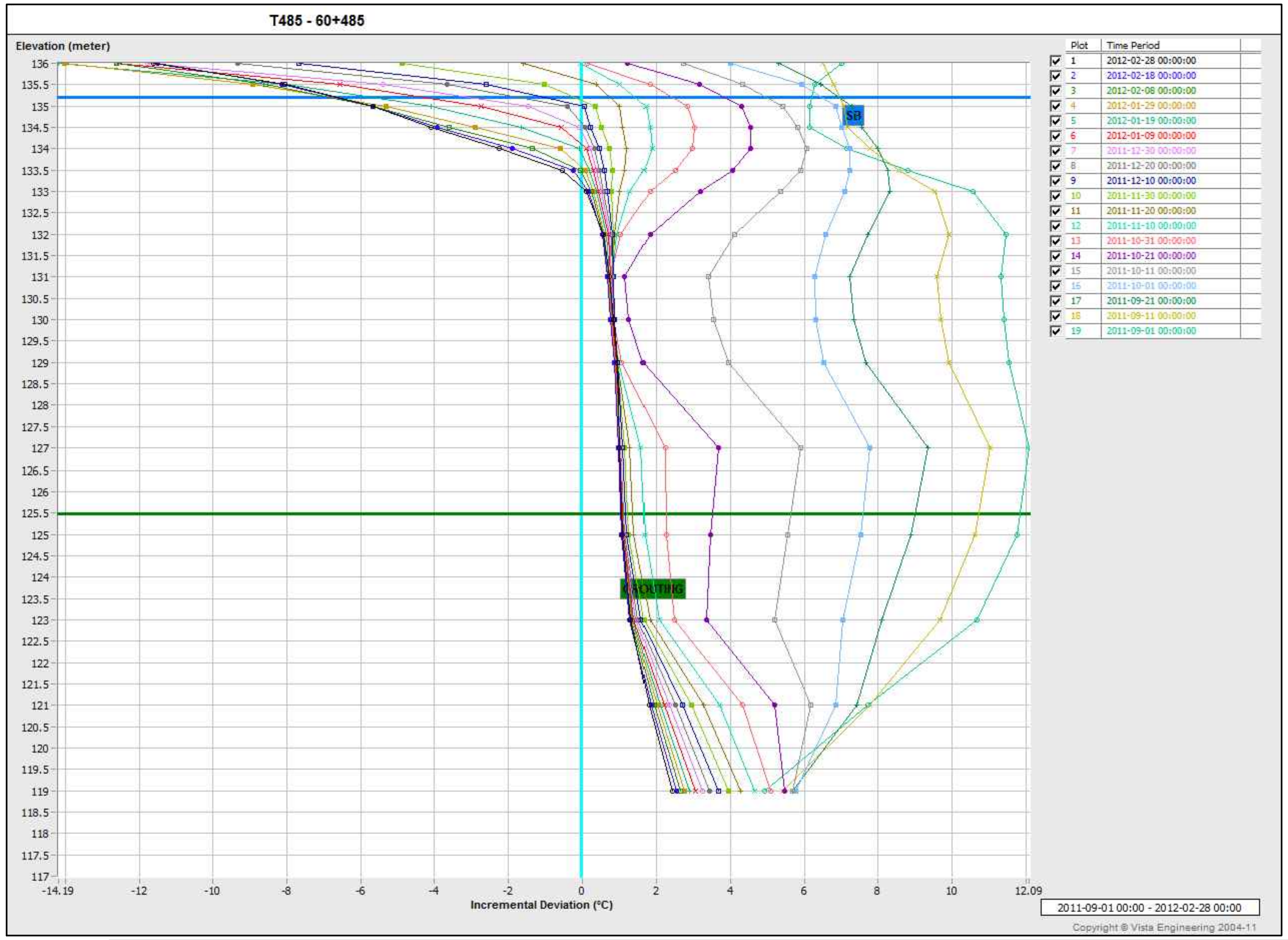


PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	EAST DIKE - TH 185 - 60+185 THERMISTOR DATA (SEP.2011 - SEP.2012)

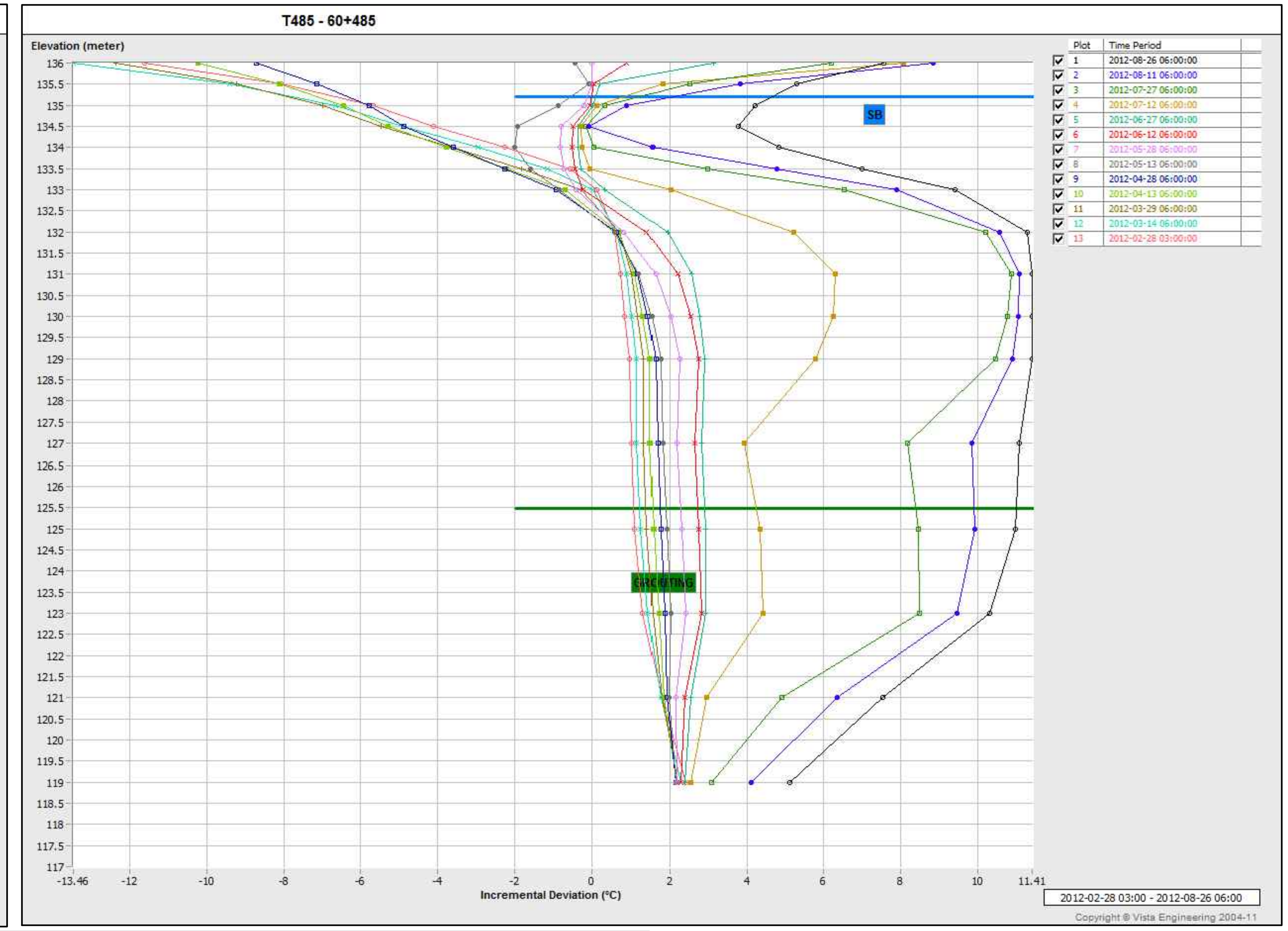
Golder Associates
Montréal, Québec

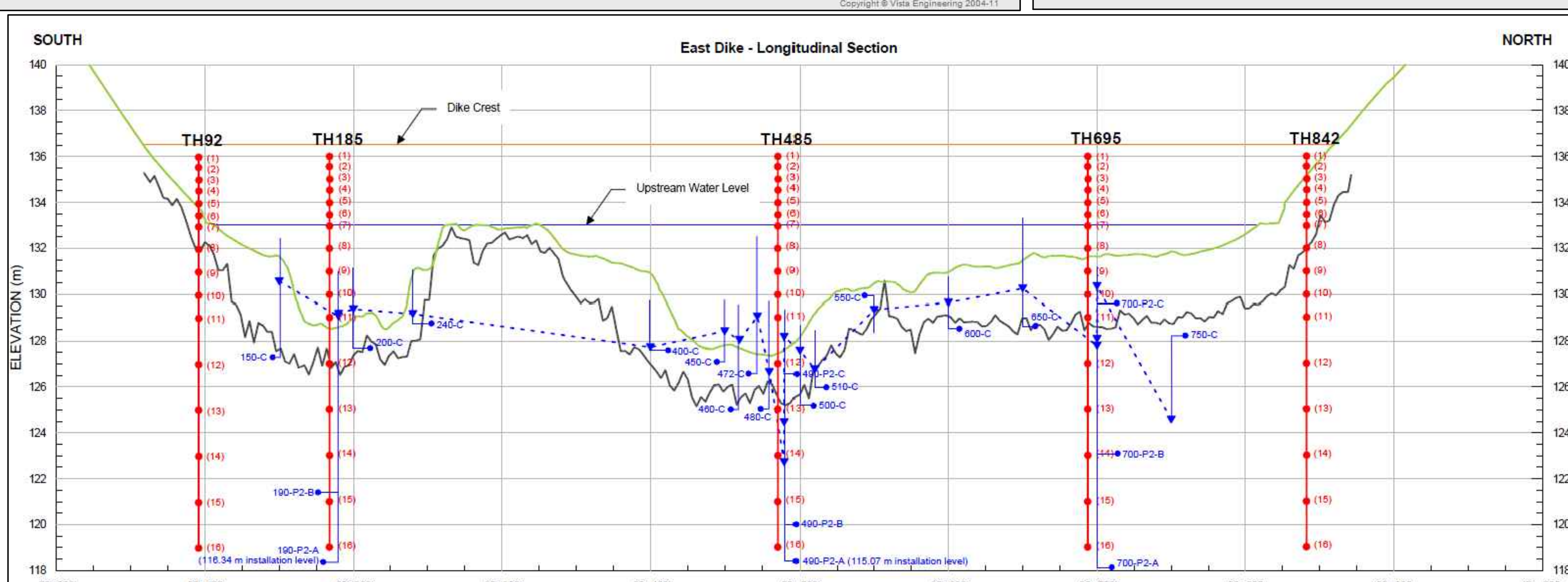
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE	
REVIEW	FE	11/15/2012	C1-24	

TH 485 - Sta.60+485 (Sep.11 - Mar.12)



TH 485 - Sta.60+485 (Mar.12 - Sep.12)



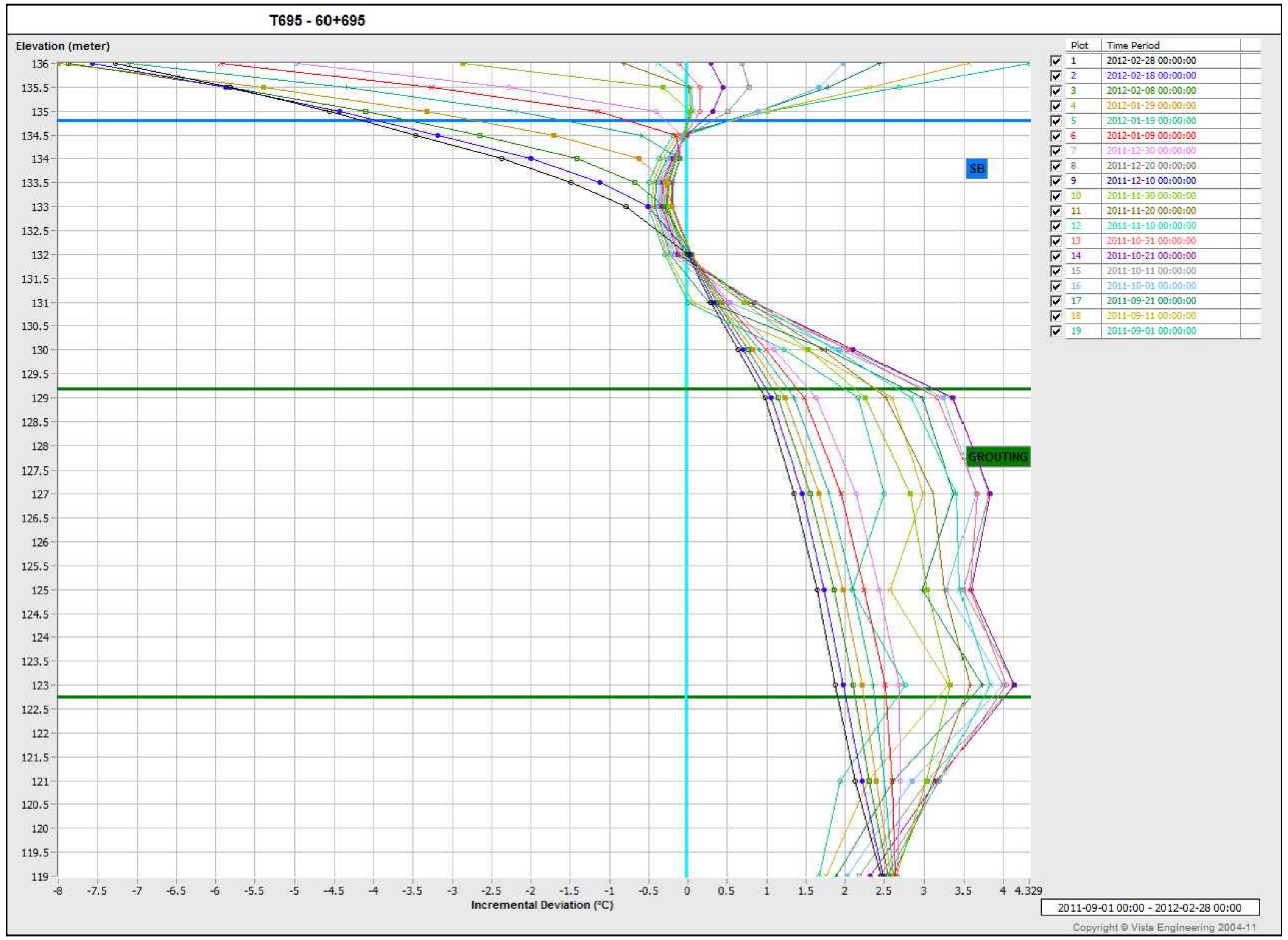


PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**EAST DIKE - TH 485 - 60+485** **THERMISTOR DATA (SEP.2011 - SEP.2012)**

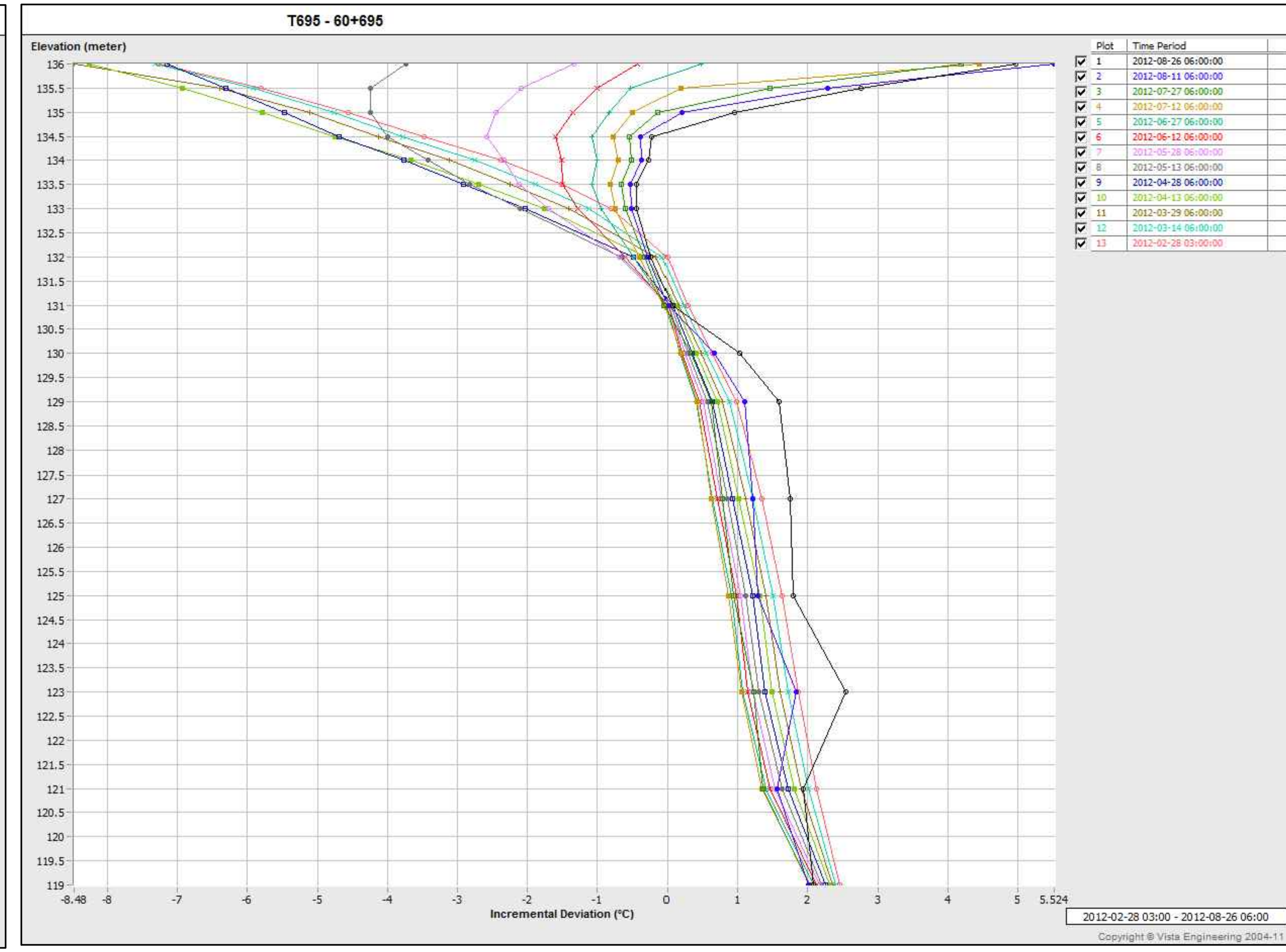
Golder Associates
Montréal, Québec

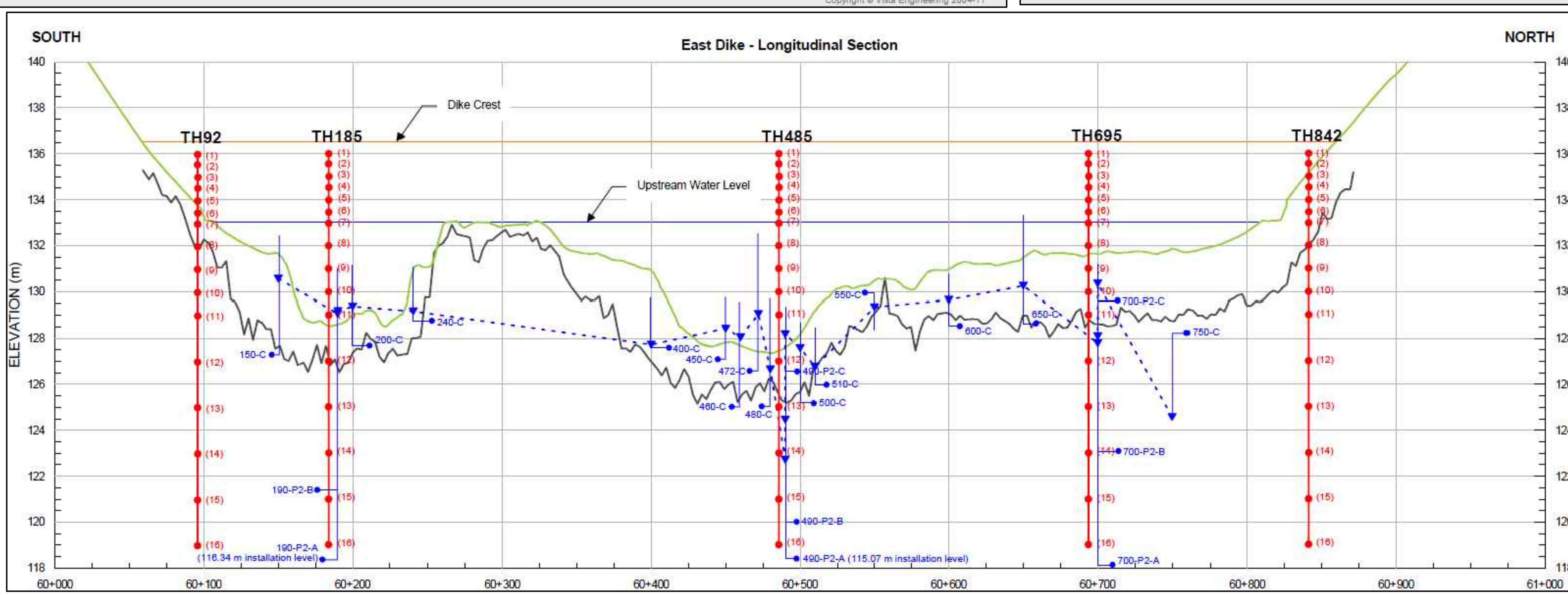
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE**	
CHECK	YB	11/08/2012	**C1-25**	
REVIEW	FE	11/15/2012		

TH 695 - Sta.60+695 (Sep.11 - Mar.12)



TH 695 - Sta.60+695 (Mar.12 - Sep.12)



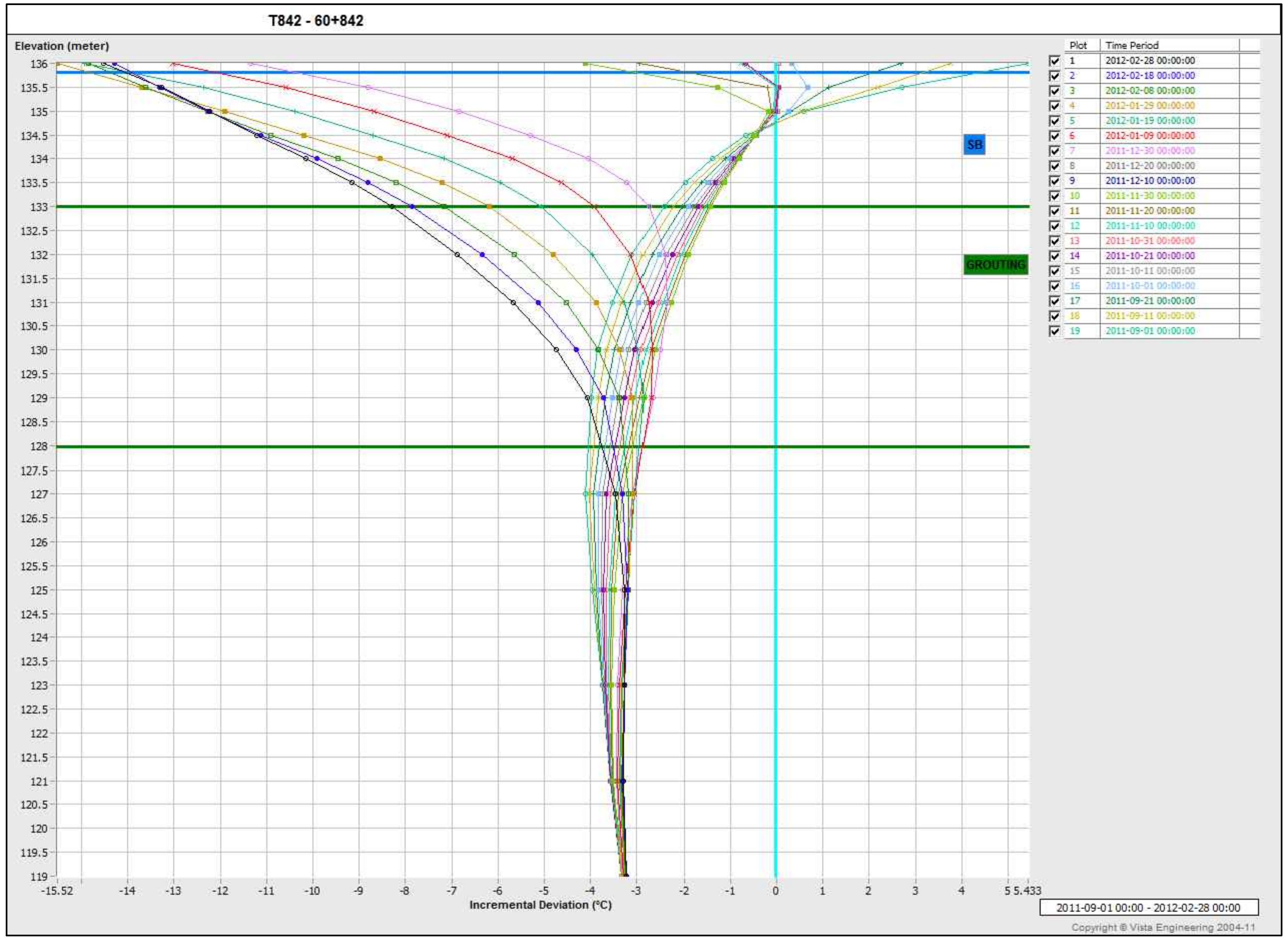


PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	EAST DIKE - TH 695 - 60+695 THERMISTOR DATA (SEP.2011 - SEP.2012)

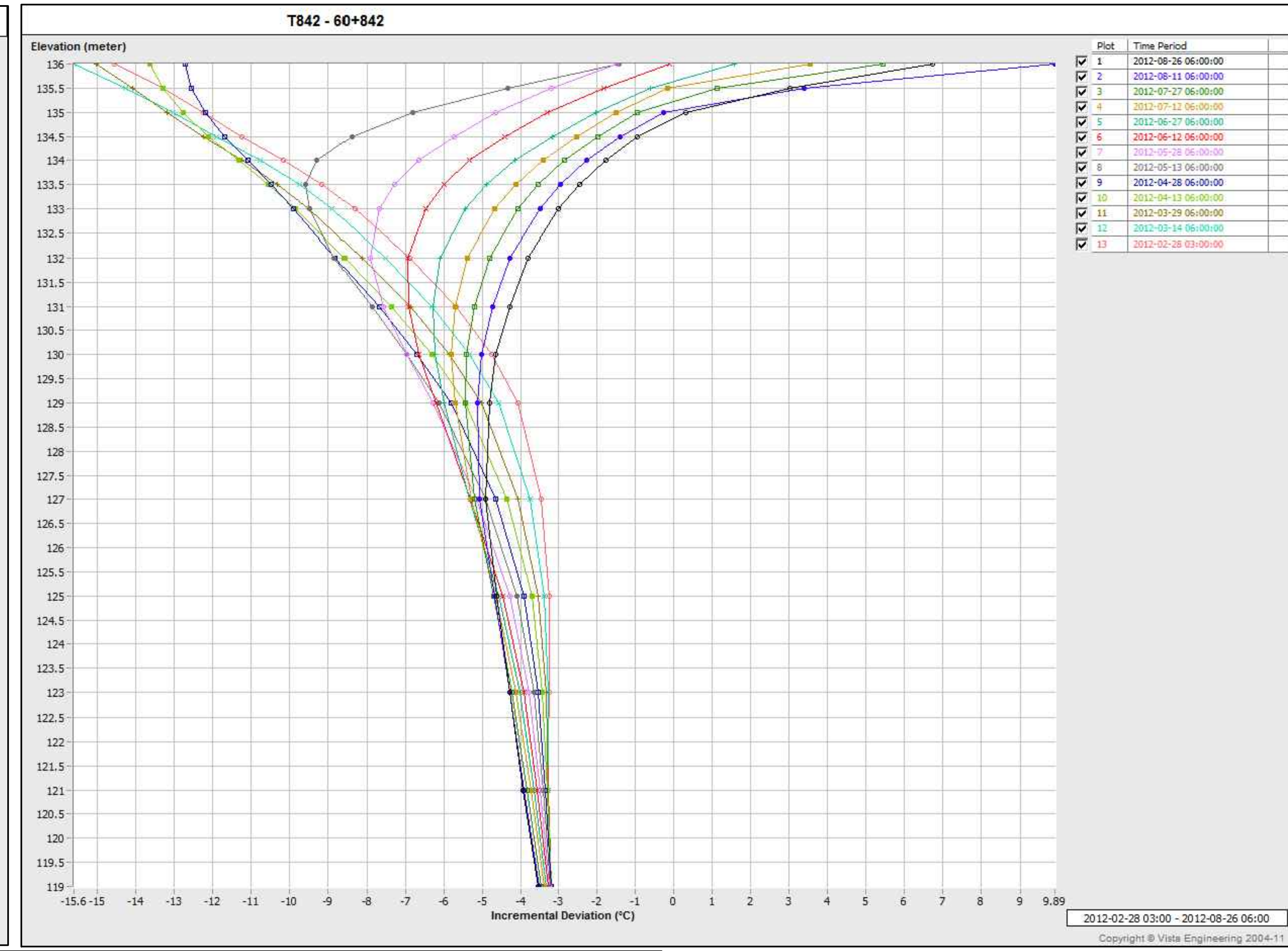
PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C1-26	
REVIEW	FE	11/15/2012		

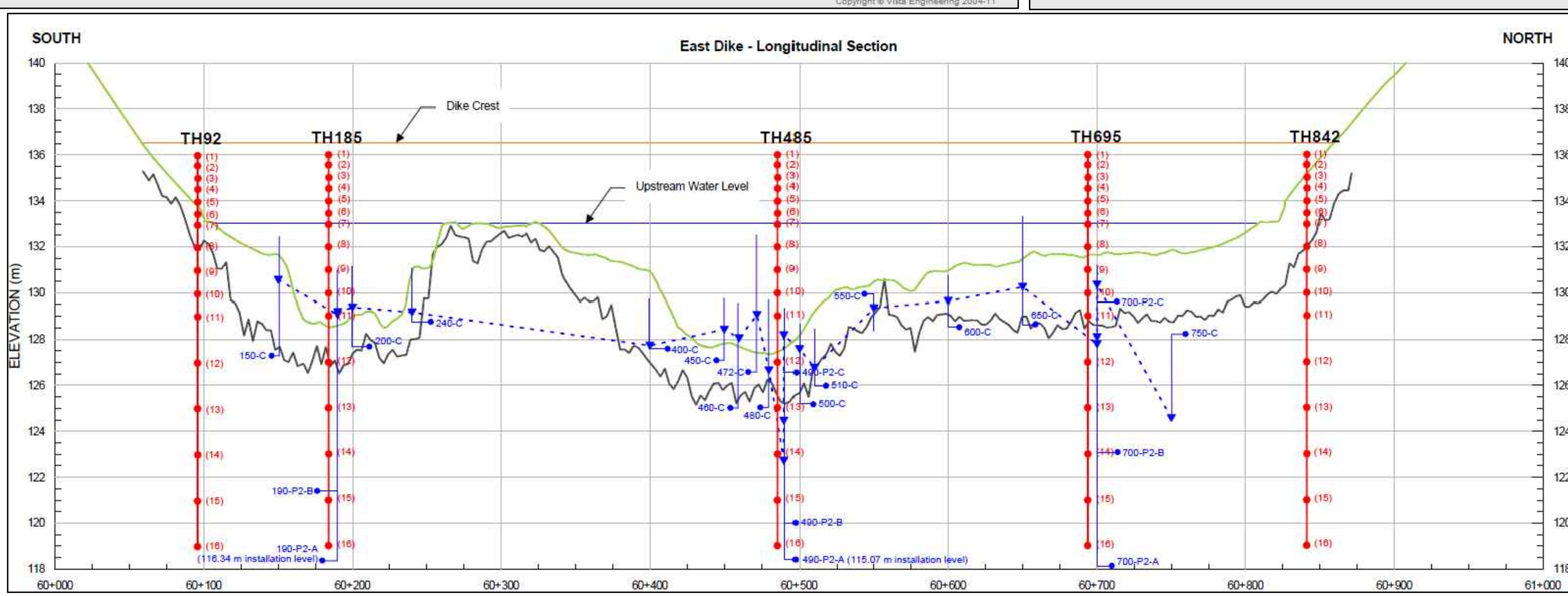
Golder Associates
Montréal, Québec

TH 842 - Sta.60+842 (Sep.11 - Mar.12)



TH 842 - Sta.60+842 (Mar.12 - Sep.12)





PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

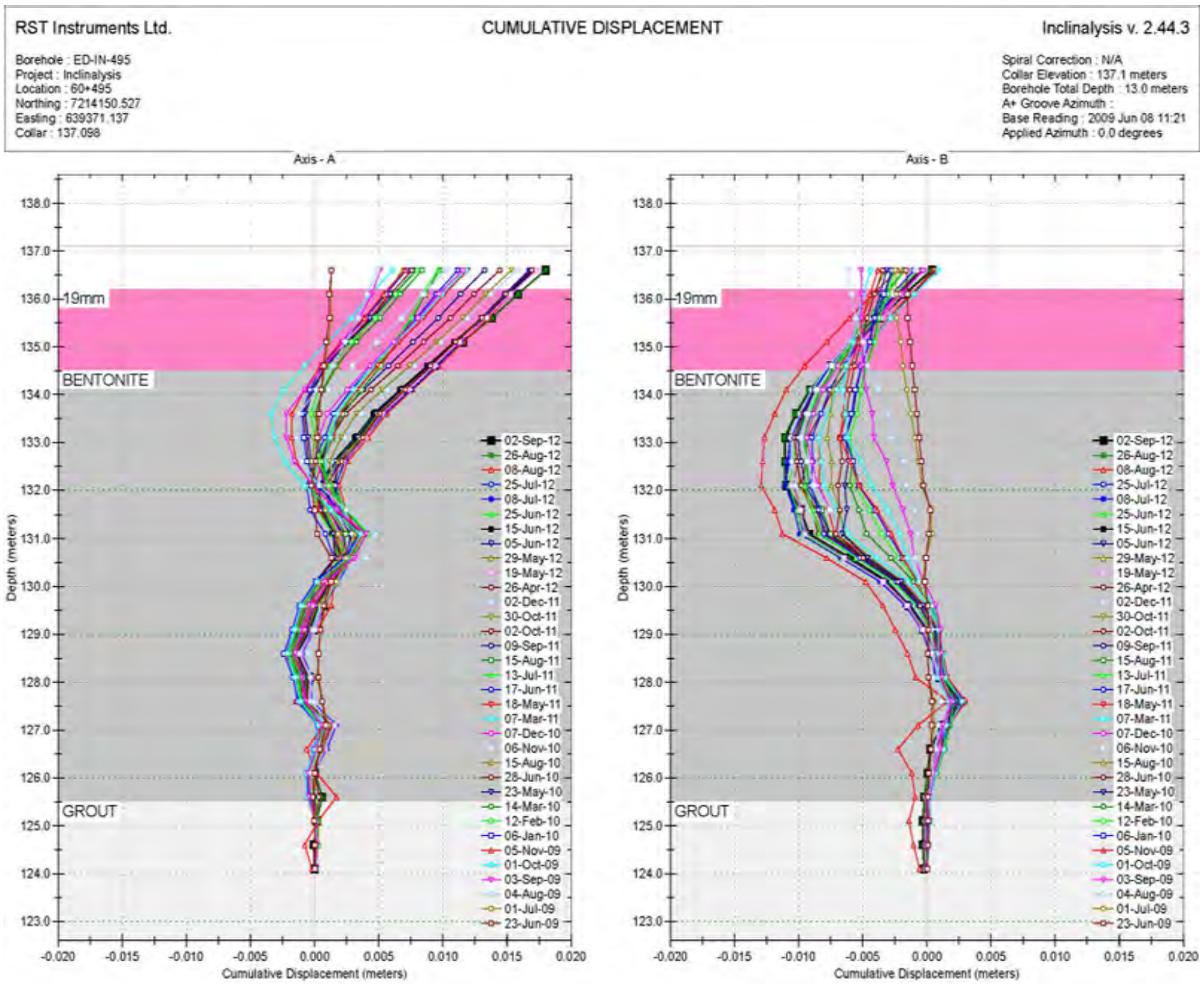
TITLE

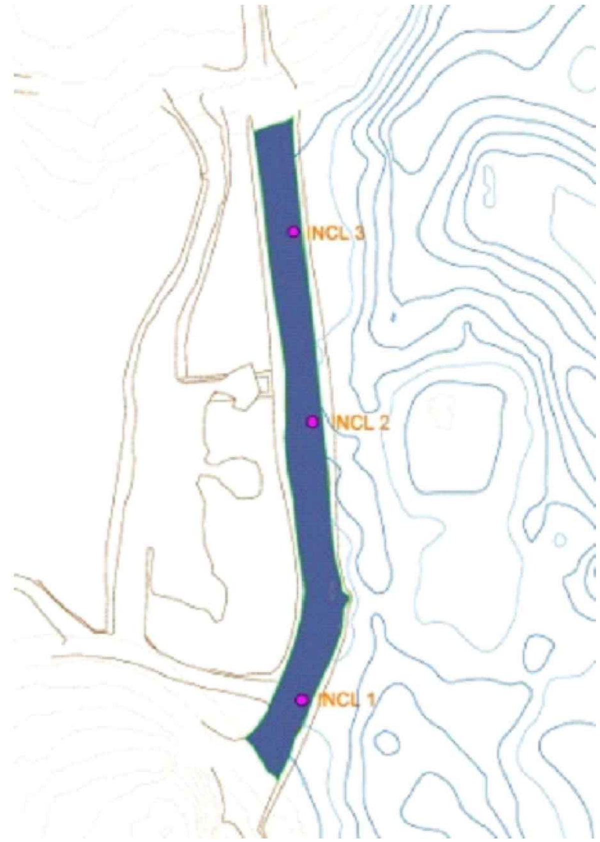
EAST DIKE - TH 842 - 60+842
THERMISTOR DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C1-27**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

Inclinometer 2 - Sta.60+495 (Sep.11 - Sep.12)





PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

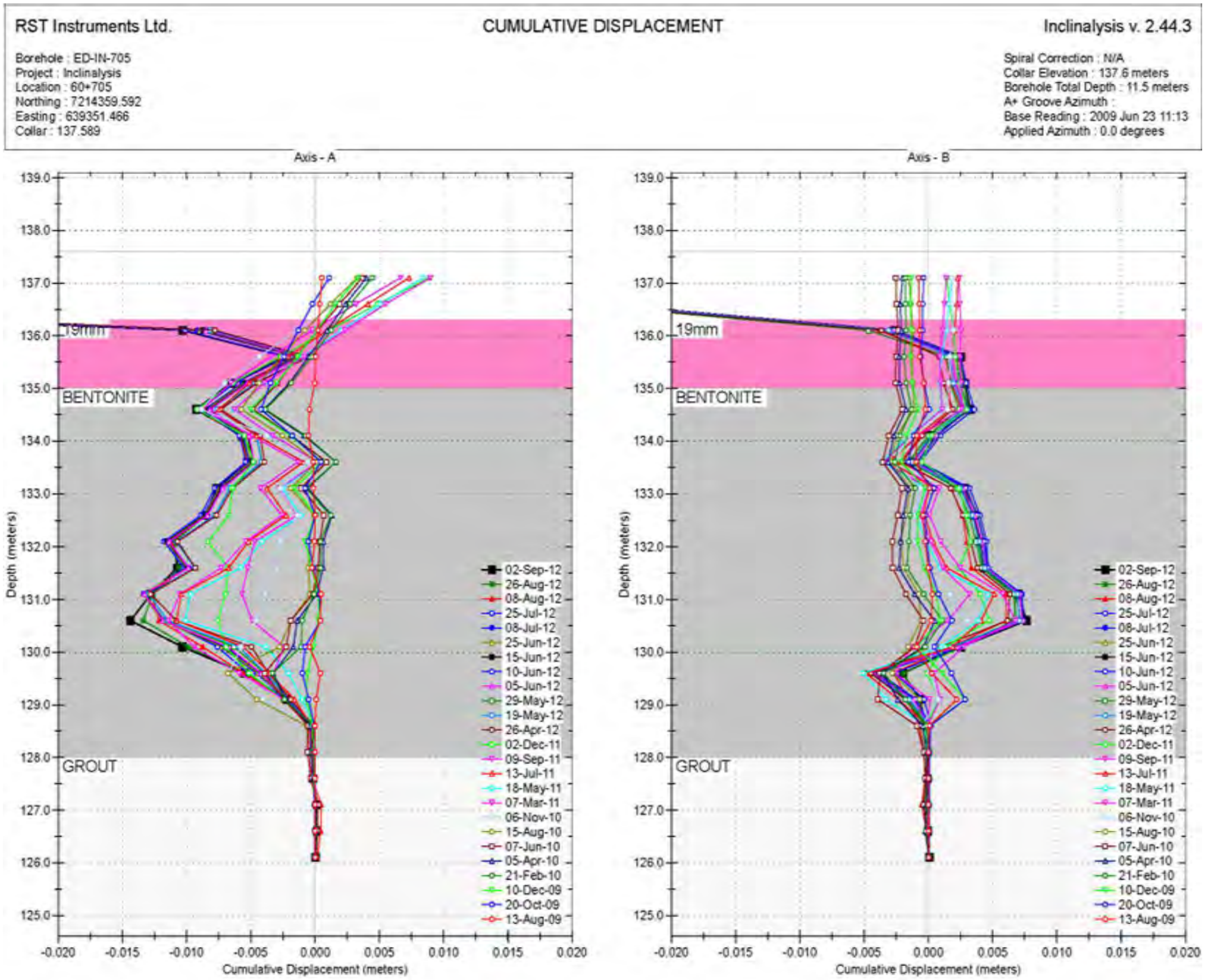
TITLE

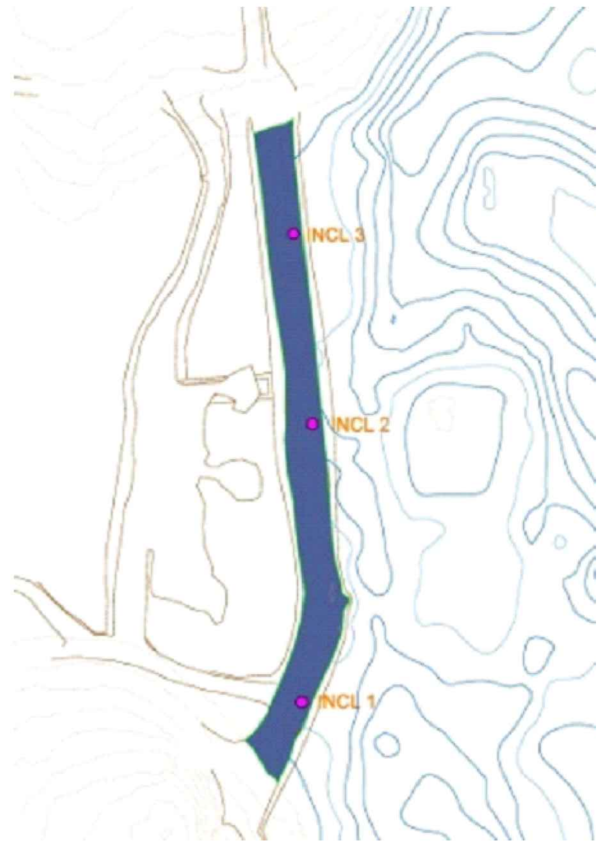
EAST DIKE - STA. 60+495
INCLINOMETER 2 DATA
(SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C1-28**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

Inclinometer 3 - Sta.60+705 (Sep.11 - Sep.12)





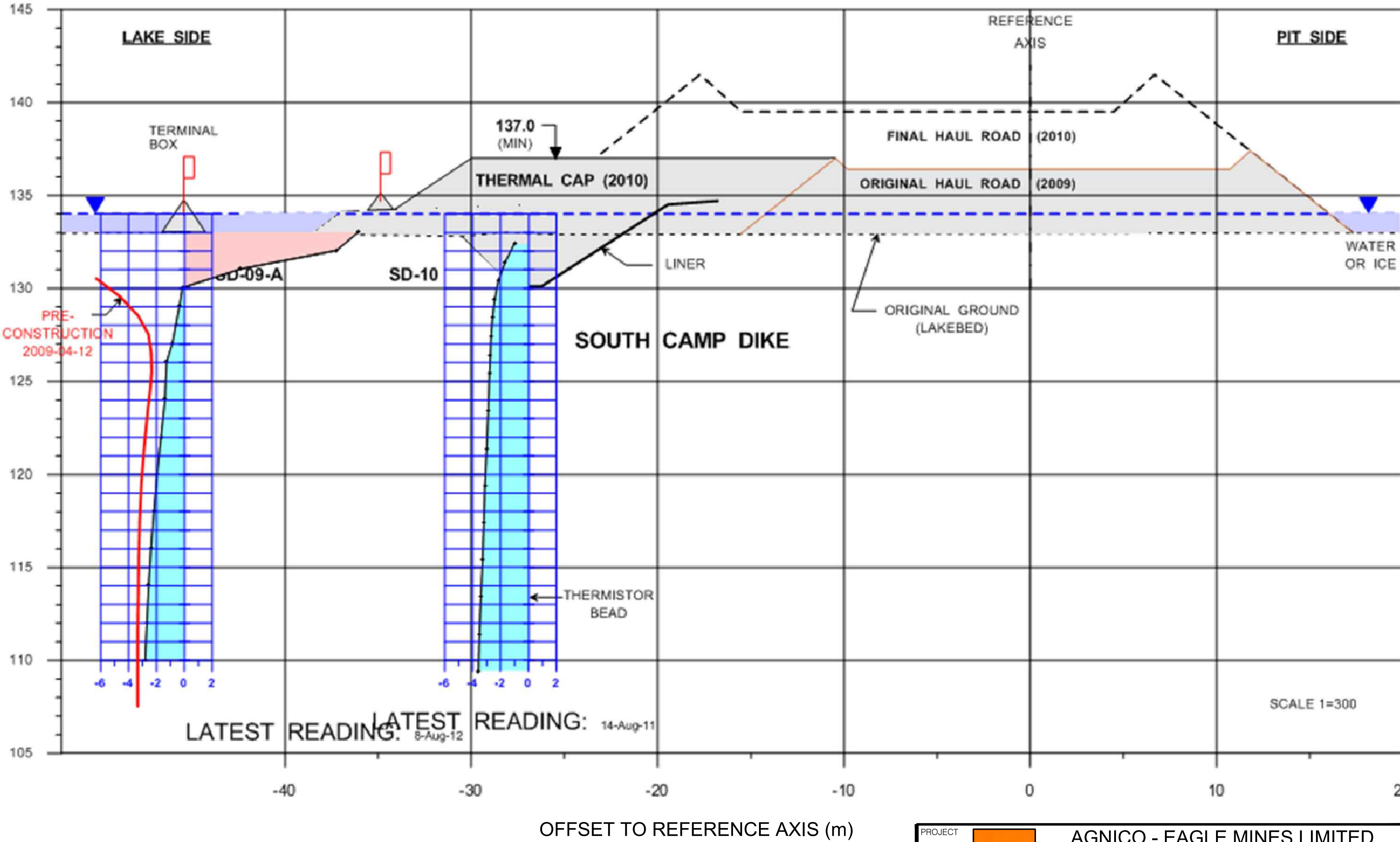
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**EAST DIKE - STA. 60+705 INCLINOMETER 3 DATA (SEP.2011 - SEP.2012)**

Golder Associates
Montréal, Québec

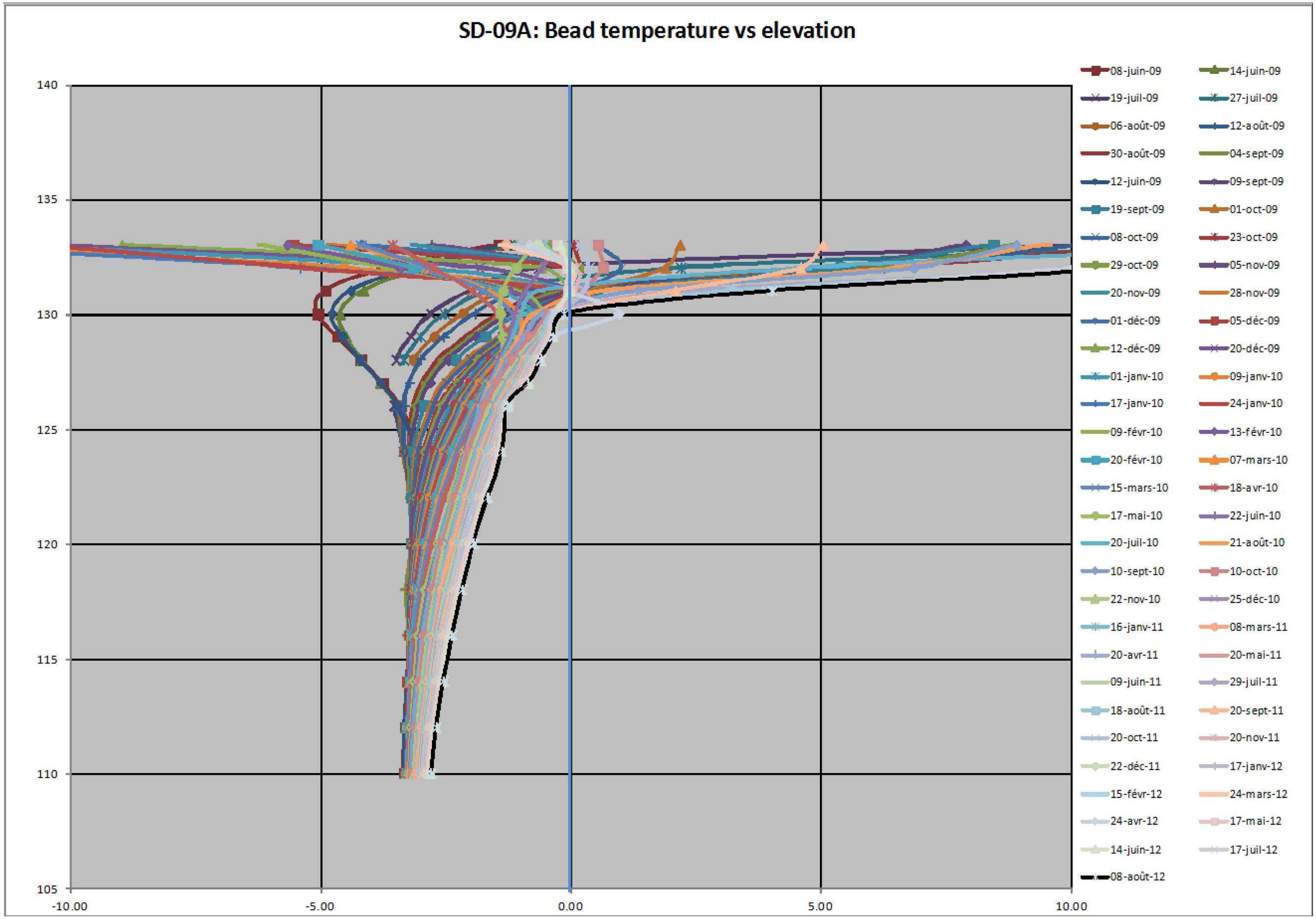
PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C1-29**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

APPENDIX C2

South Camp Dike Thermistor Data



PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT			
TITLE	SOUTH CAMP DIKE TEMPERATURE MONITORING IN DIKE FOUNDATION			
Golder Associates, Montréal, Québec	PROJECT No.	12-1221-0073	PHASE No.	3000
	DESIGN AEM	09/19/2012	SCALE	REV. -
	CADD FLB	10/19/2012	FIGURE C2-1	
	CHECK YB	11/08/2012		
	REVIEW FE	11/15/2012		



PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

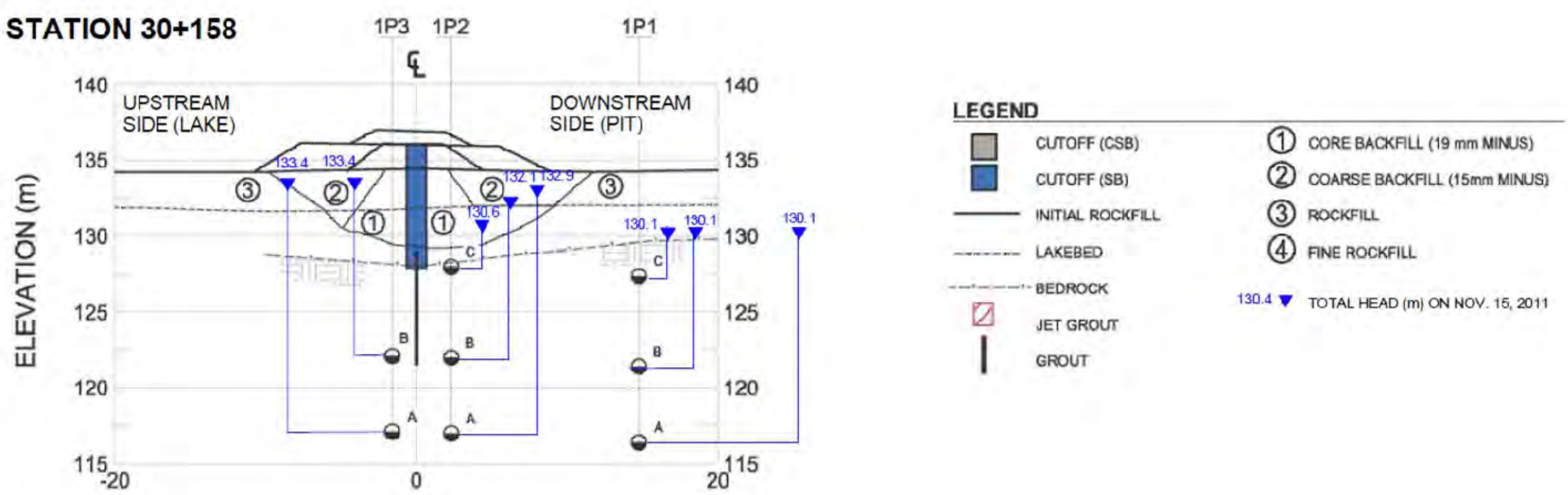
SOUTH CAMP DIKE - SD-09A
BEAD TEMPERATURE VS ELEVATION

Golder Associates
Montréal, Québec

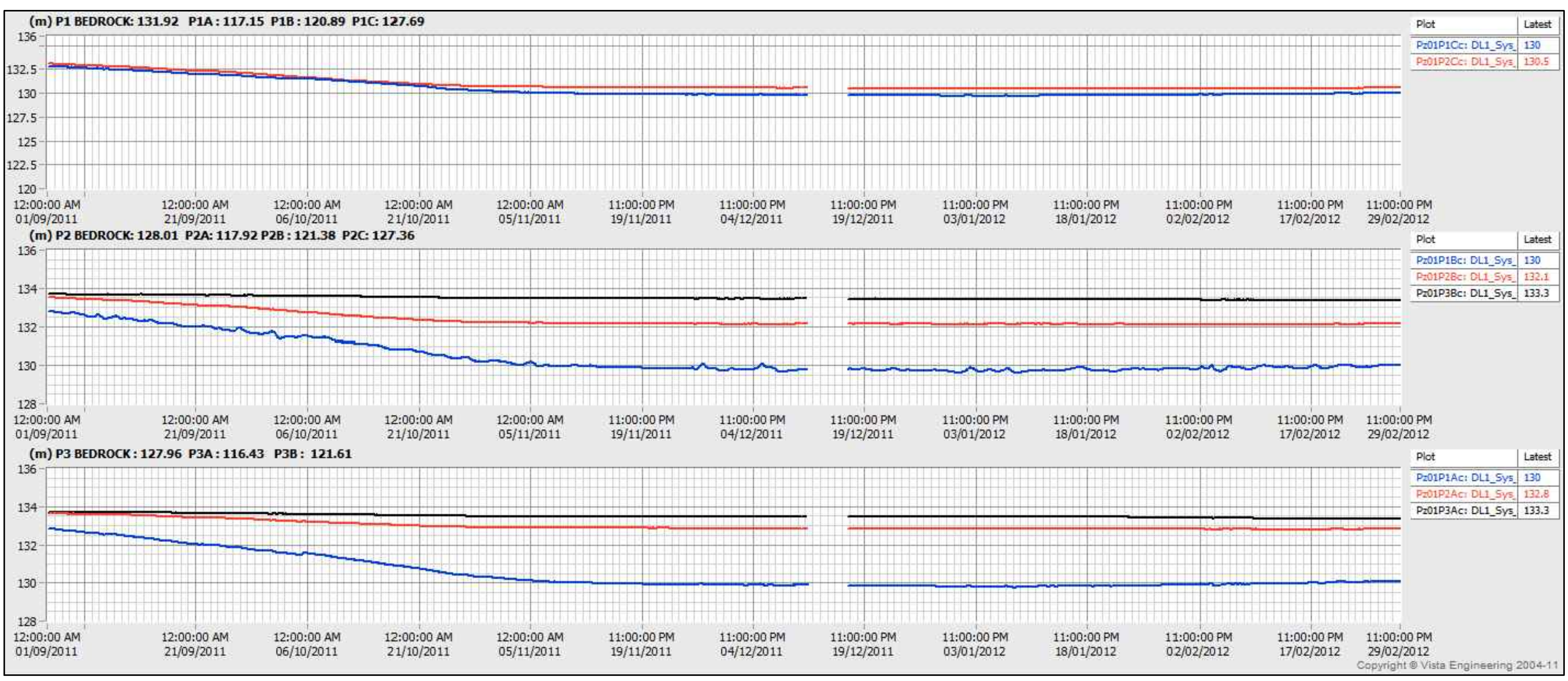
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	FIGURE C2-2	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

APPENDIX C3

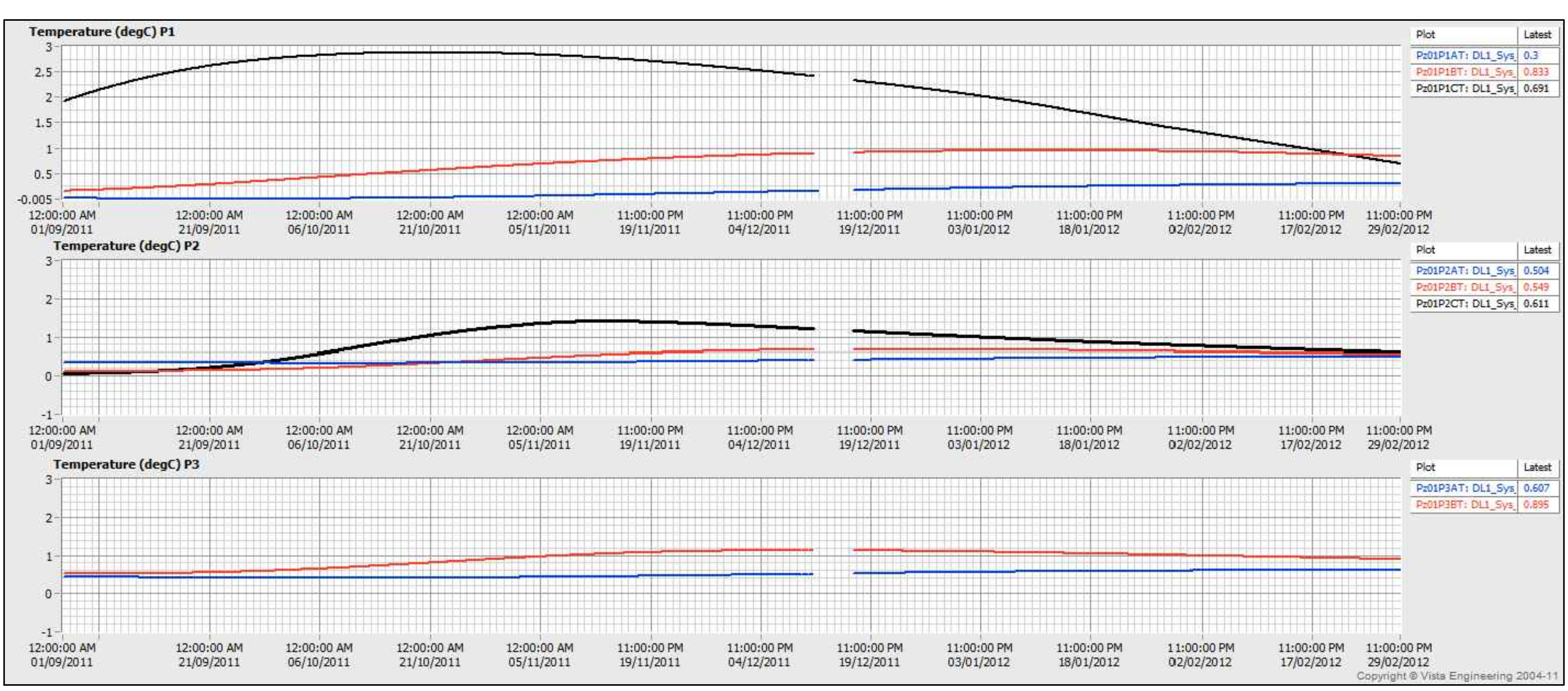
Bay-Goose Dike Piezometric, Thermistor and Inclinometer Data



VW Piezometer - Total Head (Sep.11 - Mar.12)



VW Piezometer - Temperature (Sep.11 - Mar.12)



PROJECT

AEM

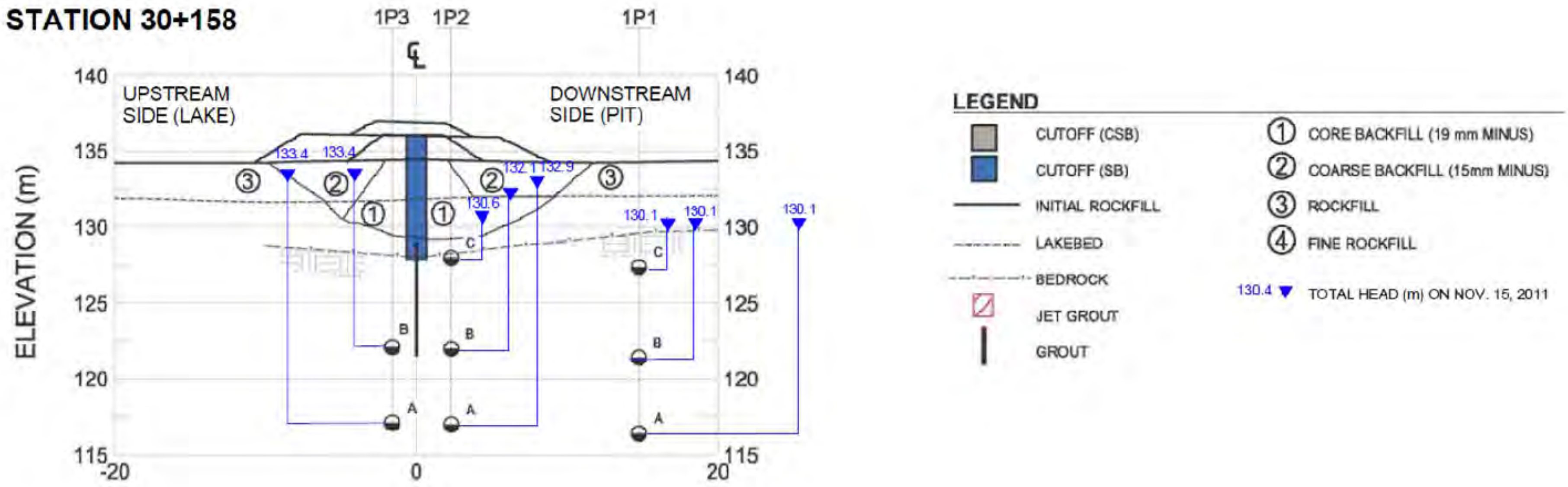
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

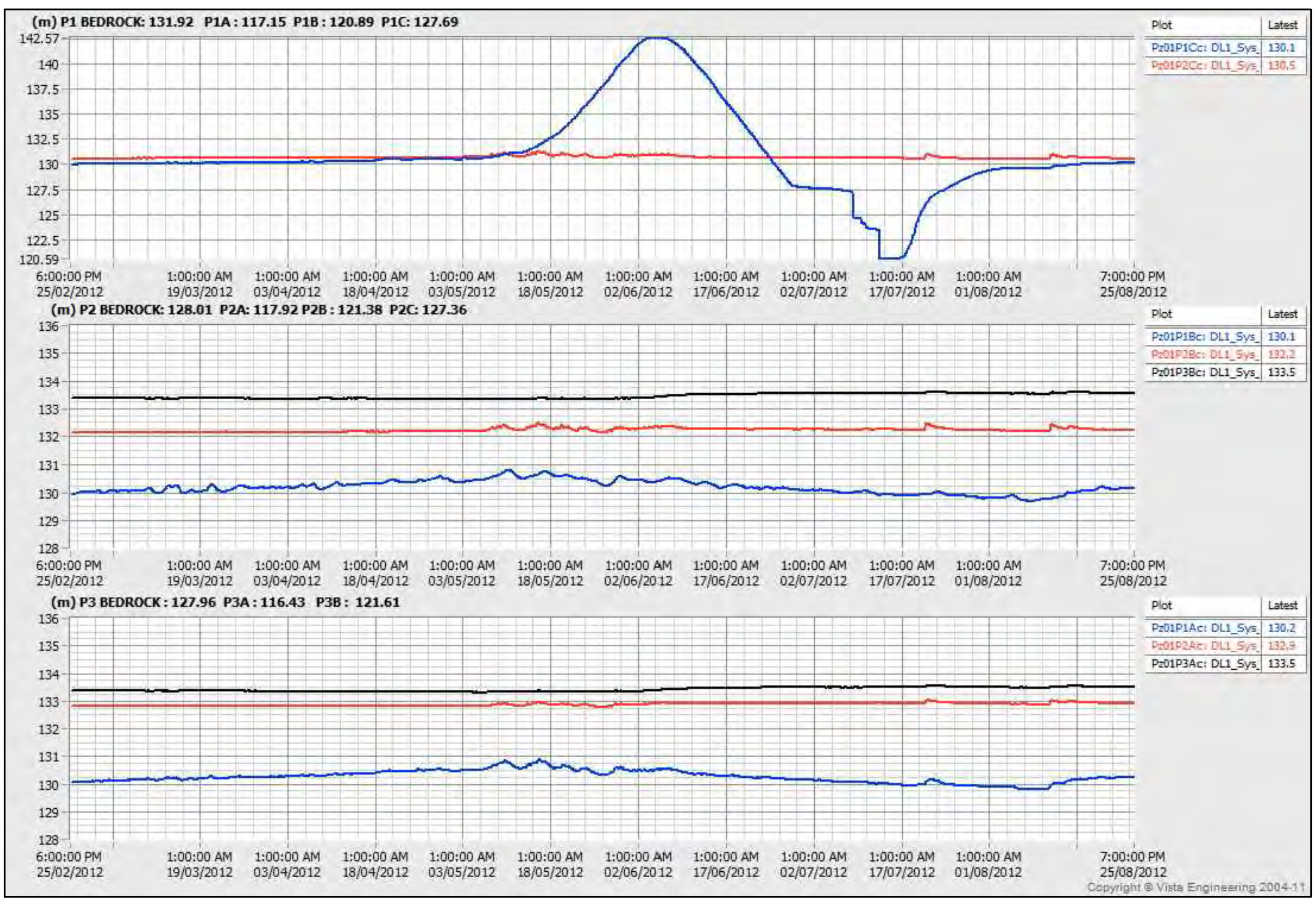
BAY-GOOSE DIKE - SECTION 30+158
PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

Golder Associates
Montréal, Québec

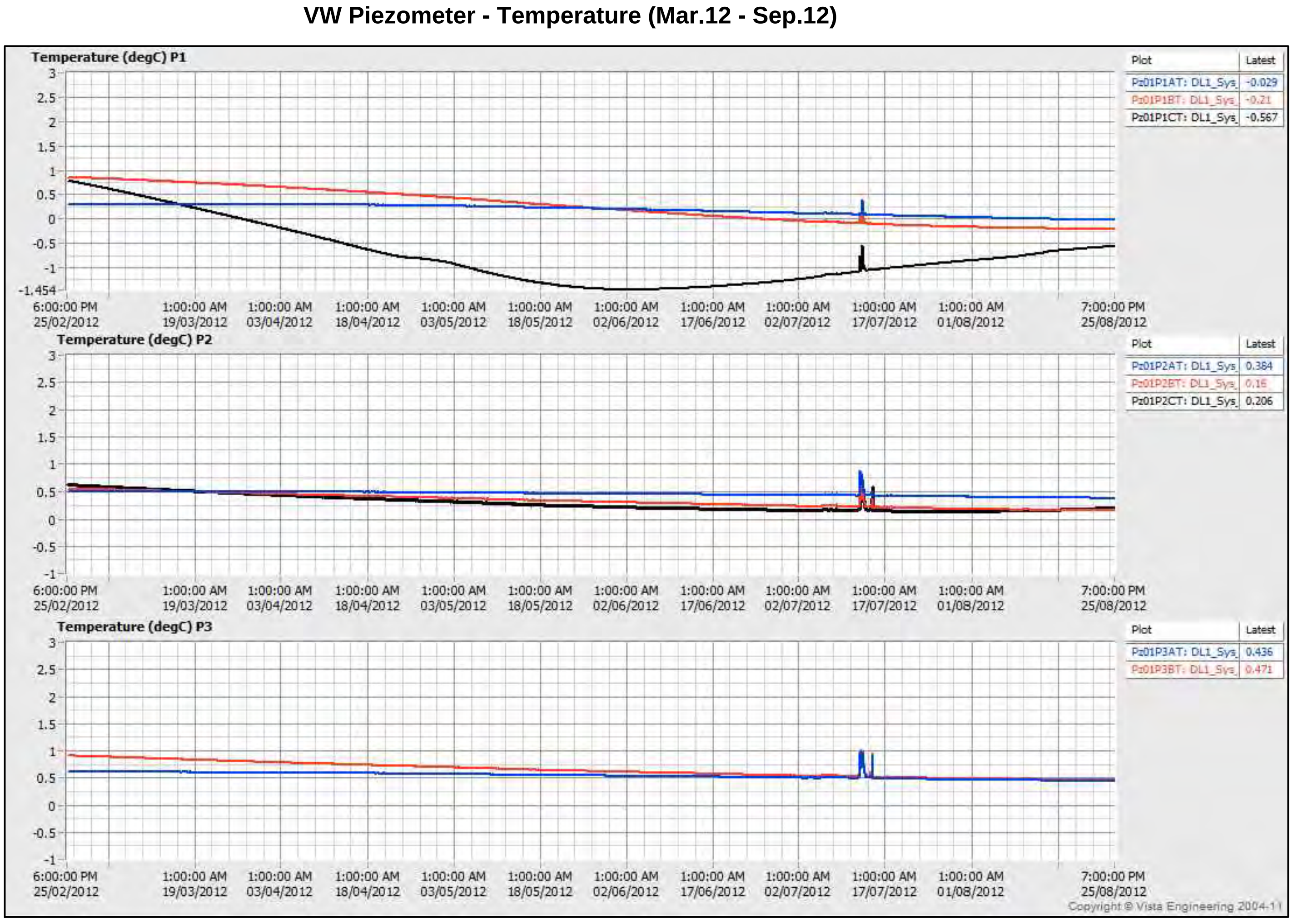
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C3-1**	
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Mar.12 - Sep.12)



VW Piezometer - Temperature (Mar.12 - Sep.12)

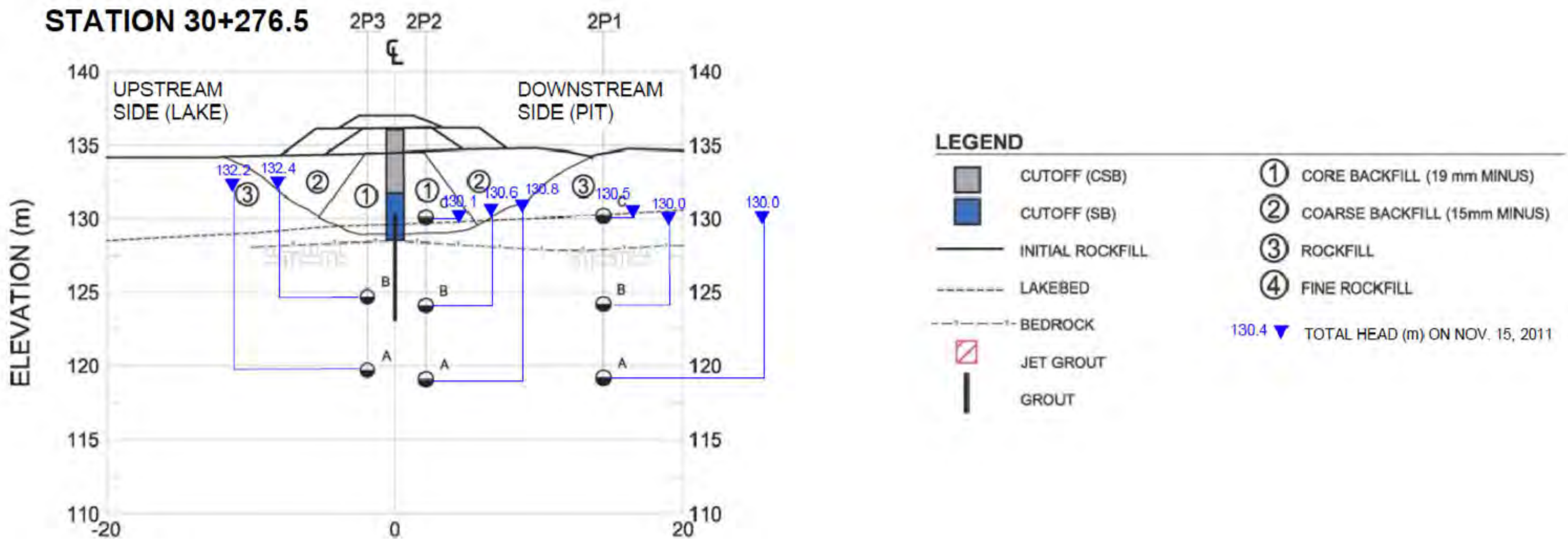


PROJECT: AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

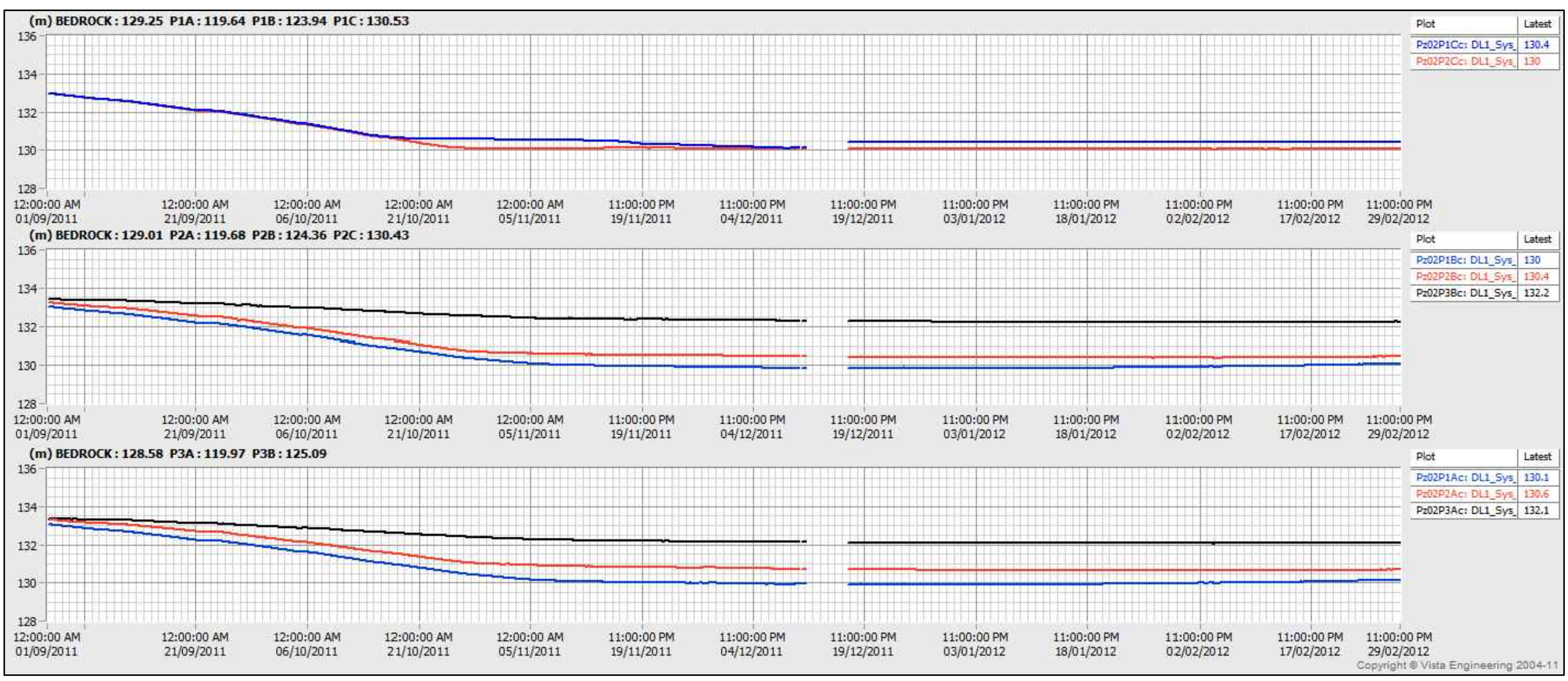
TITLE: **BAY-GOOSE DIKE - SECTION 30+158**
PIEZOMETRIC DATA (MAR.2012 - SEP.2012)

Golder Associates
Montréal, Québec

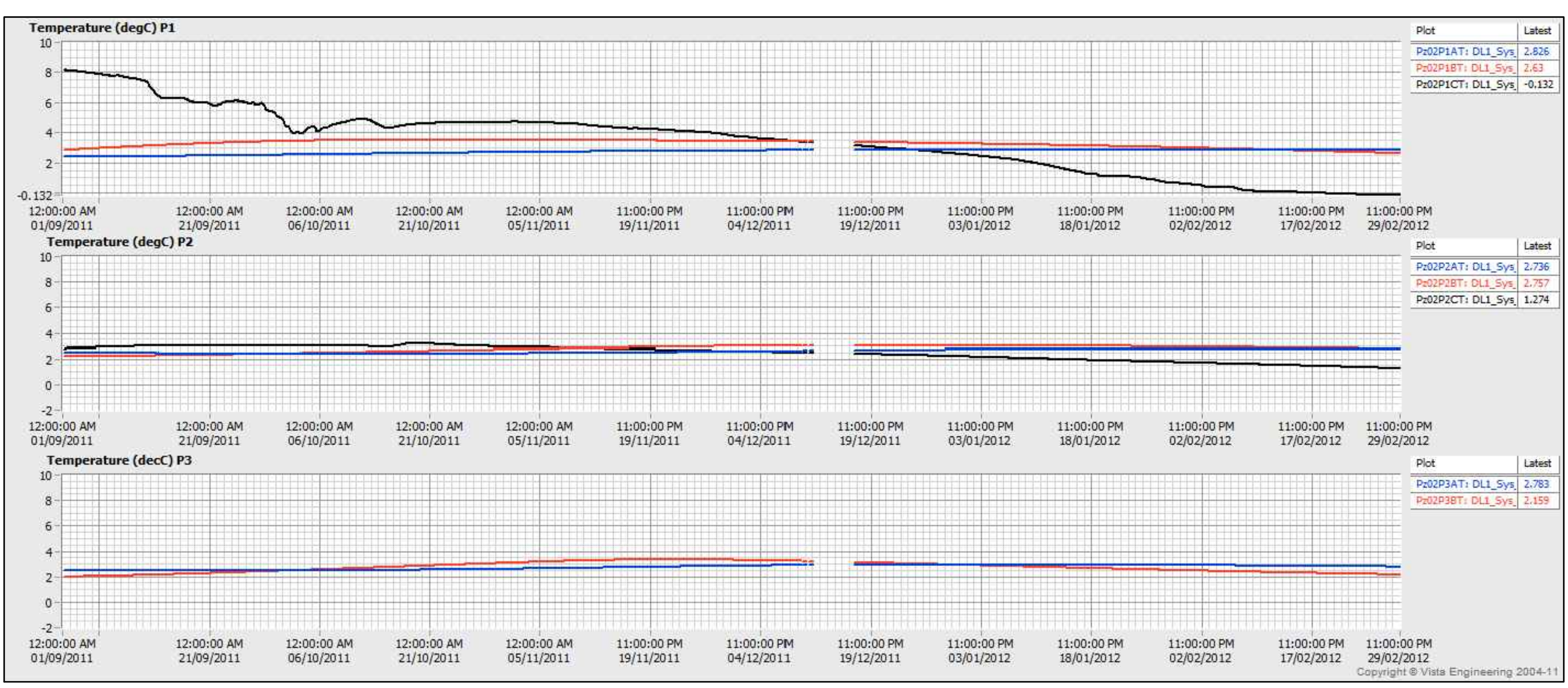
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-2**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Sep.11 - Mar.12)



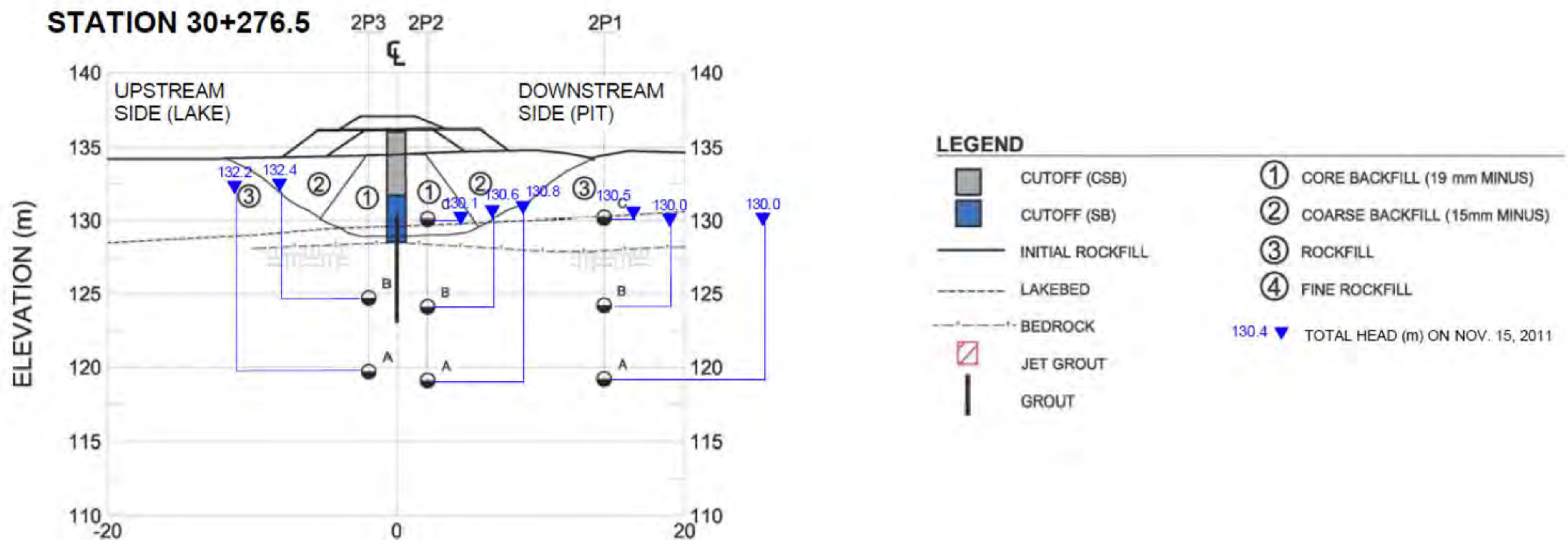
VW Piezometer - Temperature (Sep.11 - Mar.12)



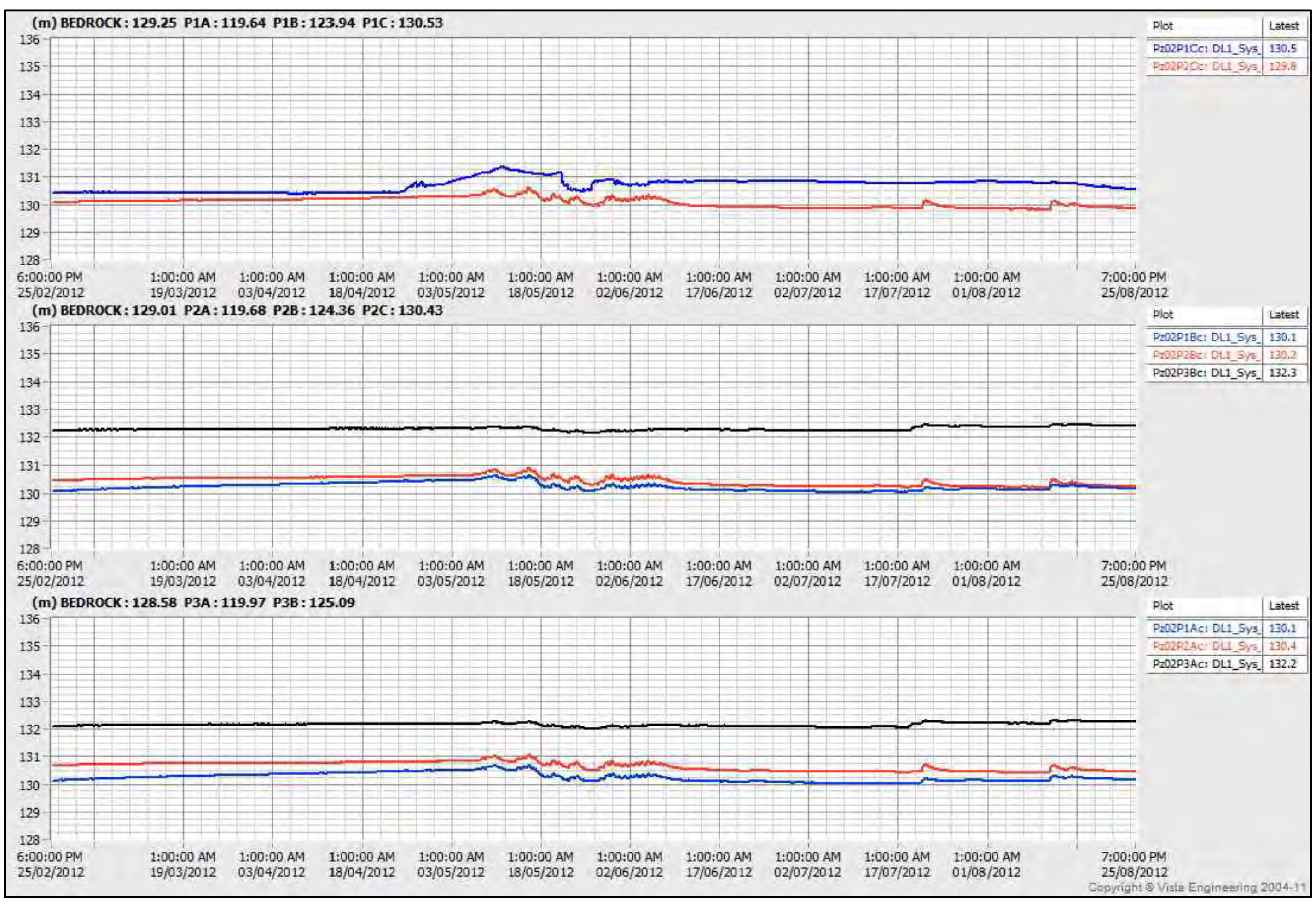
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**BAY-GOOSE DIKE - SECTION 30+276** **PIEZOMETRIC DATA (SEP.2011 - MAR.2012)**

Golder Associates
Montréal, Québec

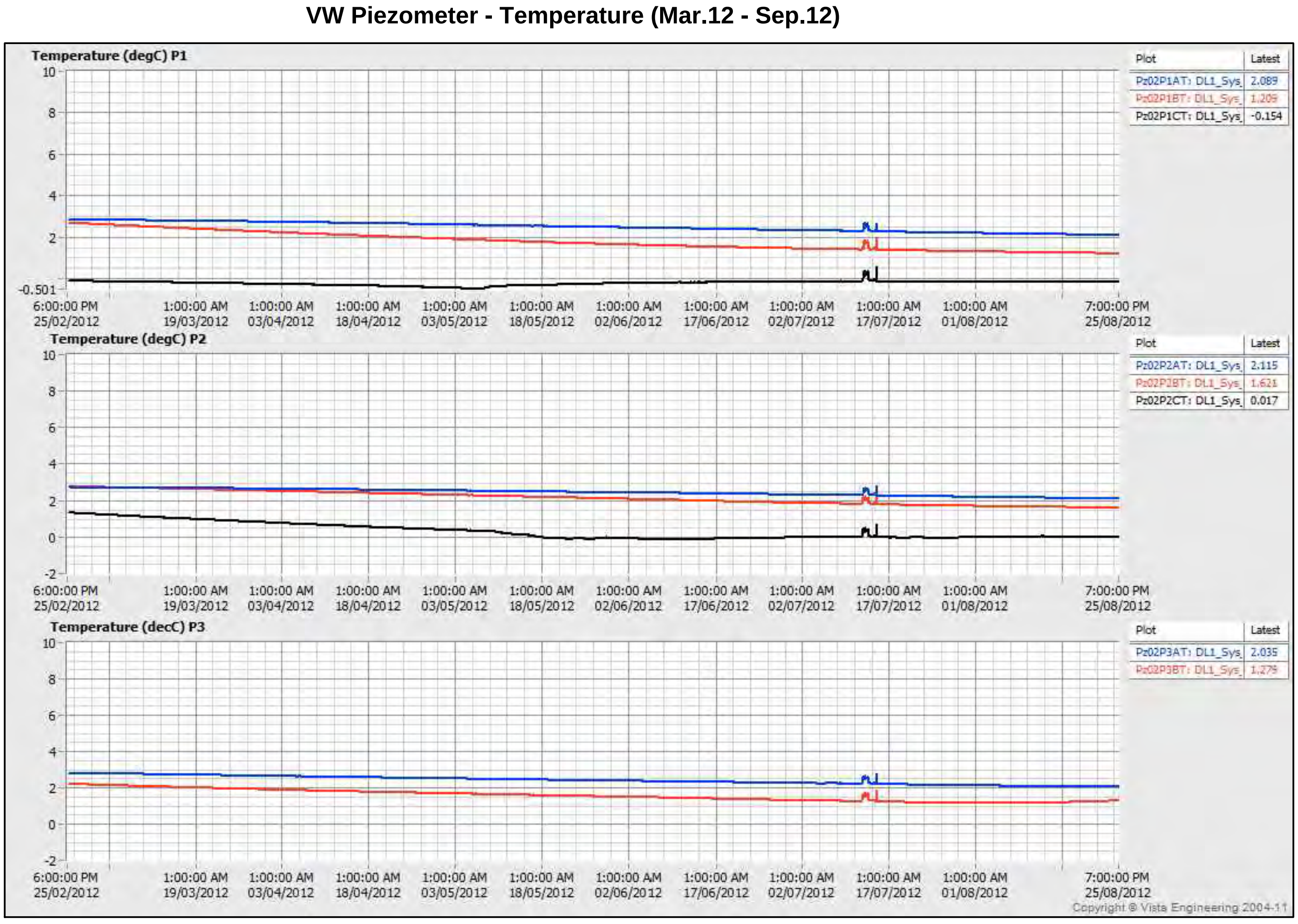
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/29/2012		
CHECK	YB	11/08/2012	**FIGURE C3-3**	
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Mar.12 - Sep.12)



VW Piezometer - Temperature (Mar.12 - Sep.12)



PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

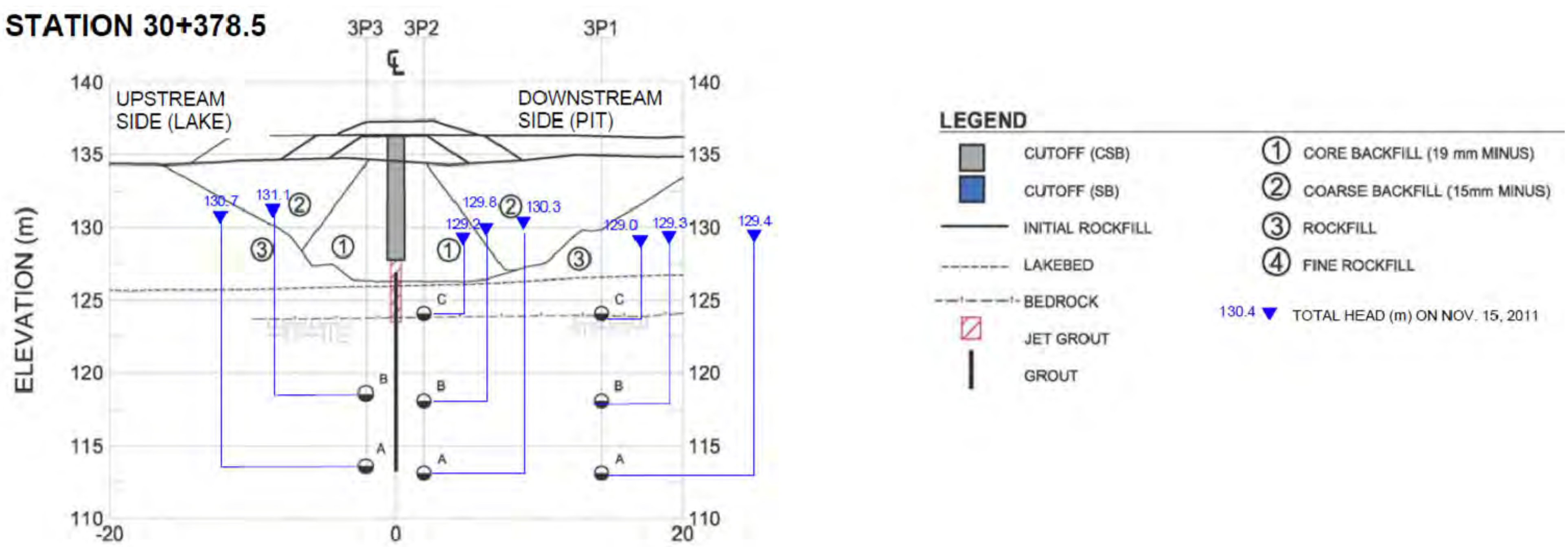
TITLE

BAY-GOOSE DIKE - SECTION 30+276
PIEZOMETRIC DATA (MAR.2012 - SEP.2012)

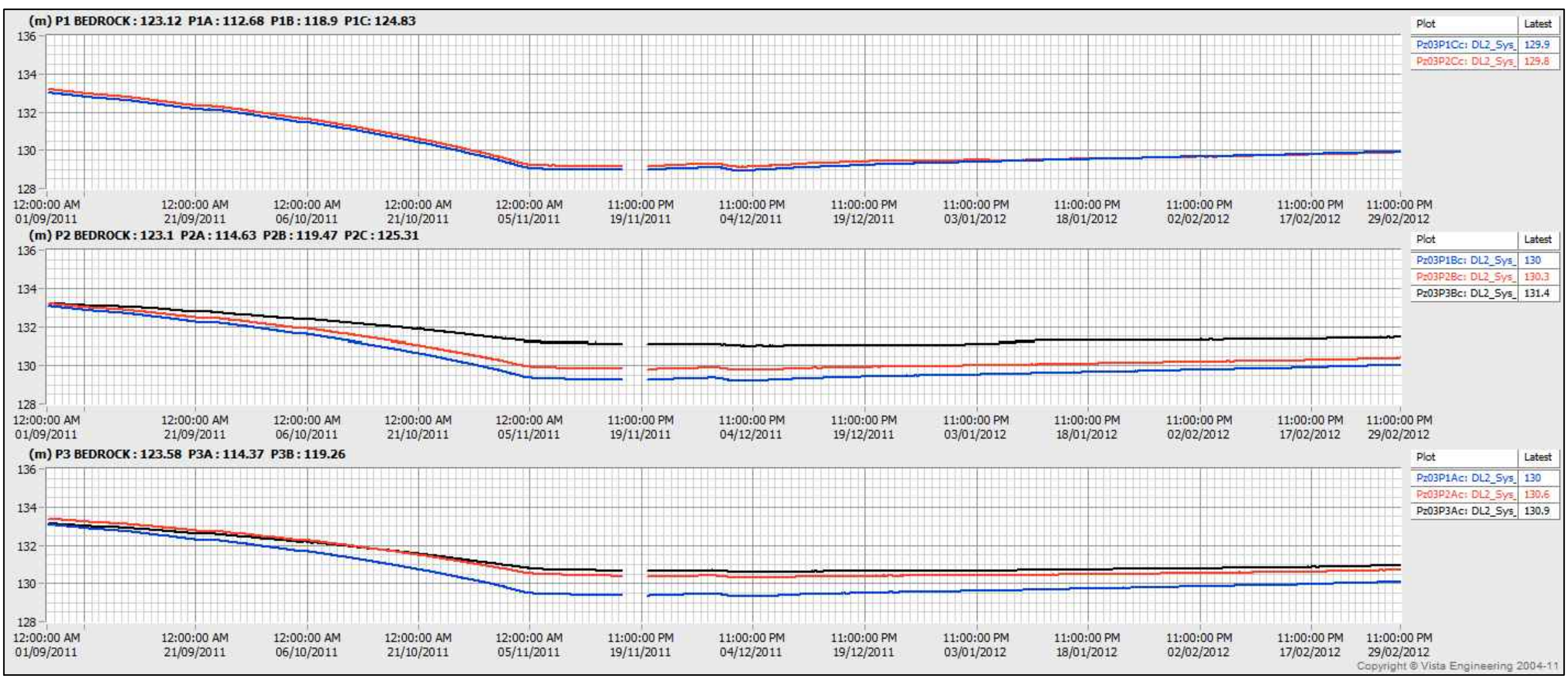
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

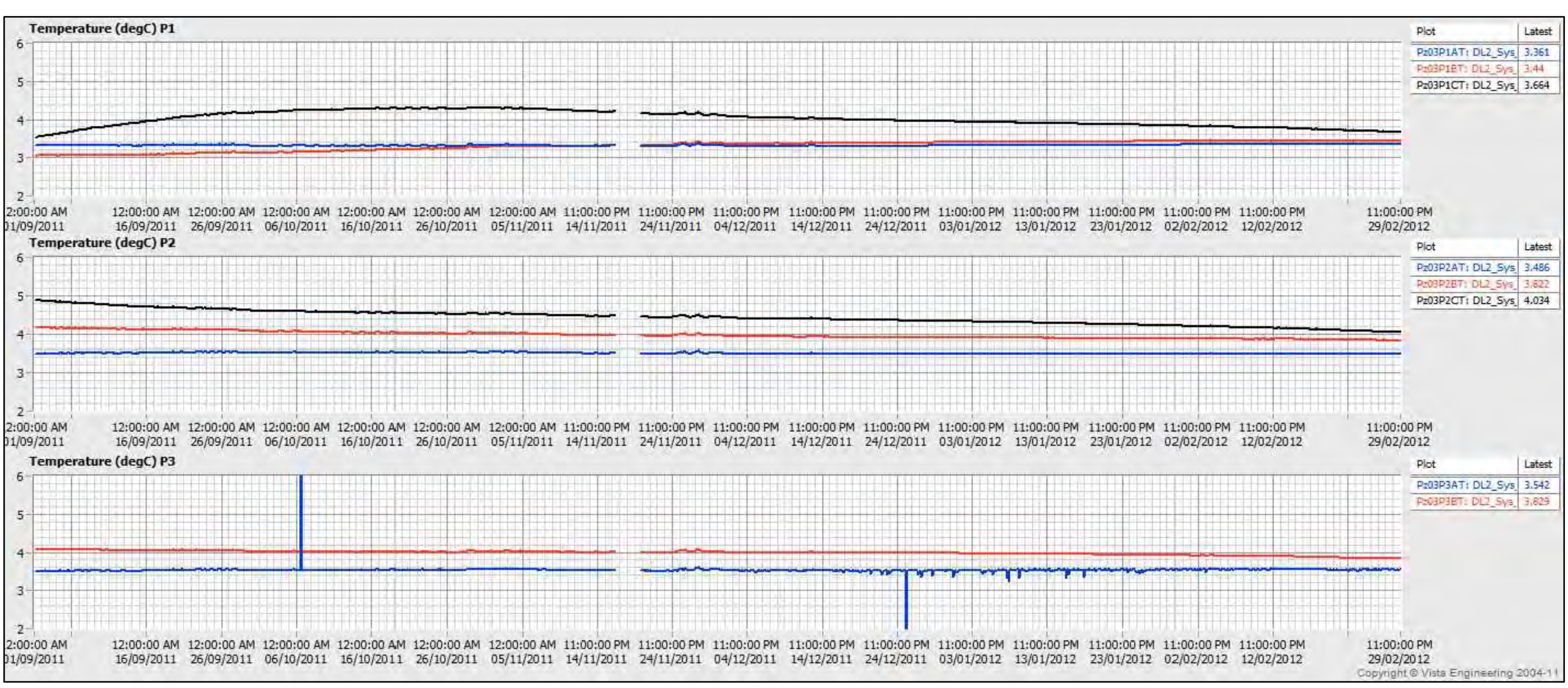
FIGURE C3-4



VW Piezometer - Total Head (Sep.11 - Mar.12)



VW Piezometer - Temperature (Sep.11 - Mar.12)



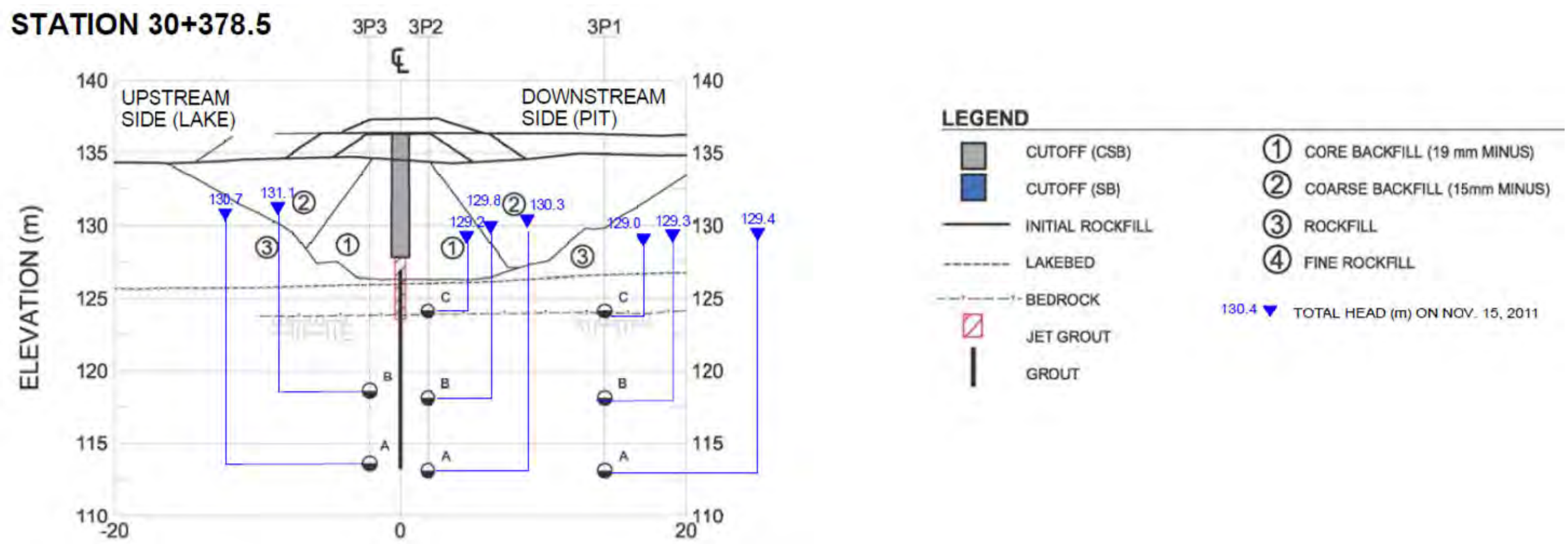
PROJECT
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE
BAY-GOOSE DIKE - SECTION 30+378
PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

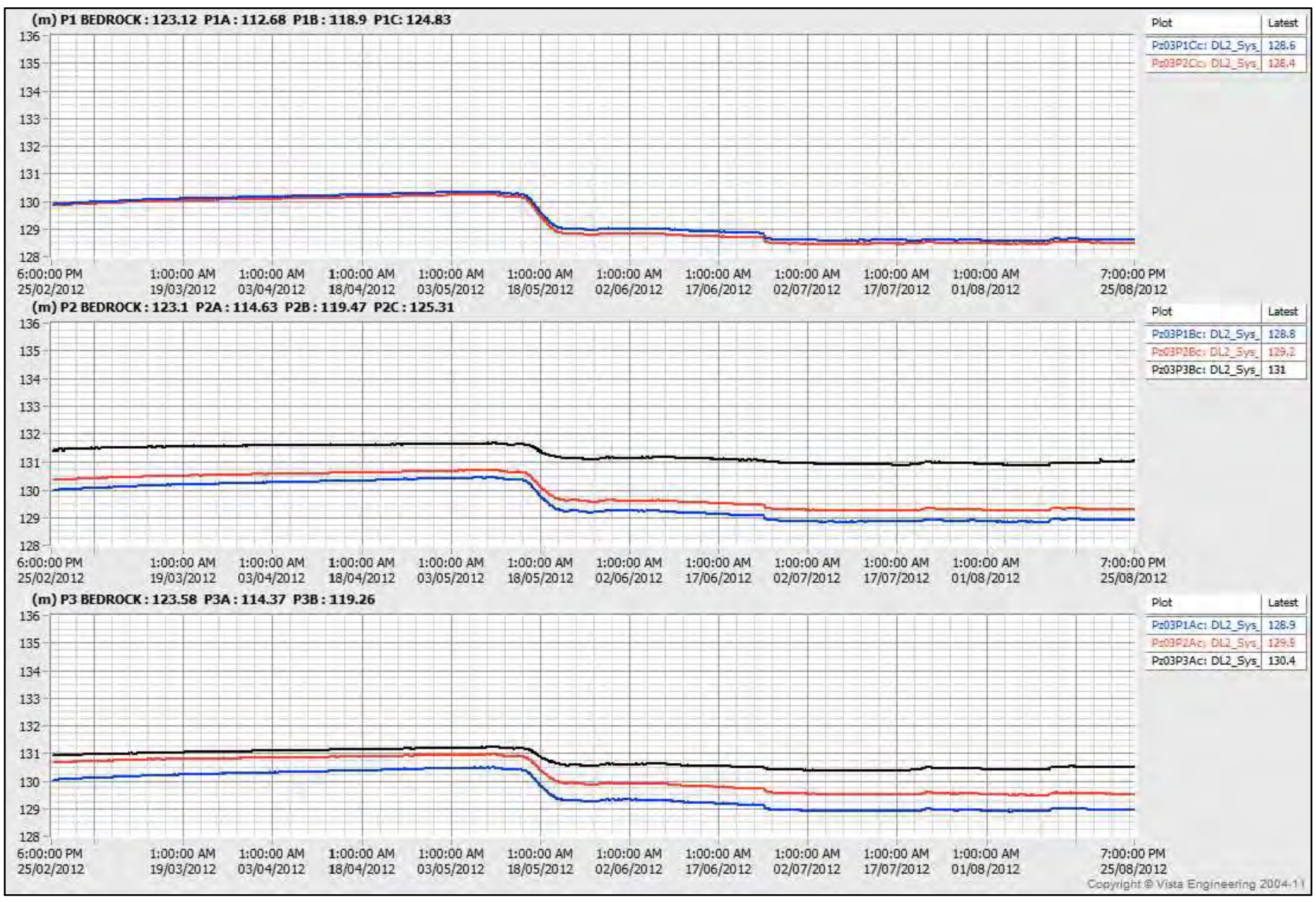
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

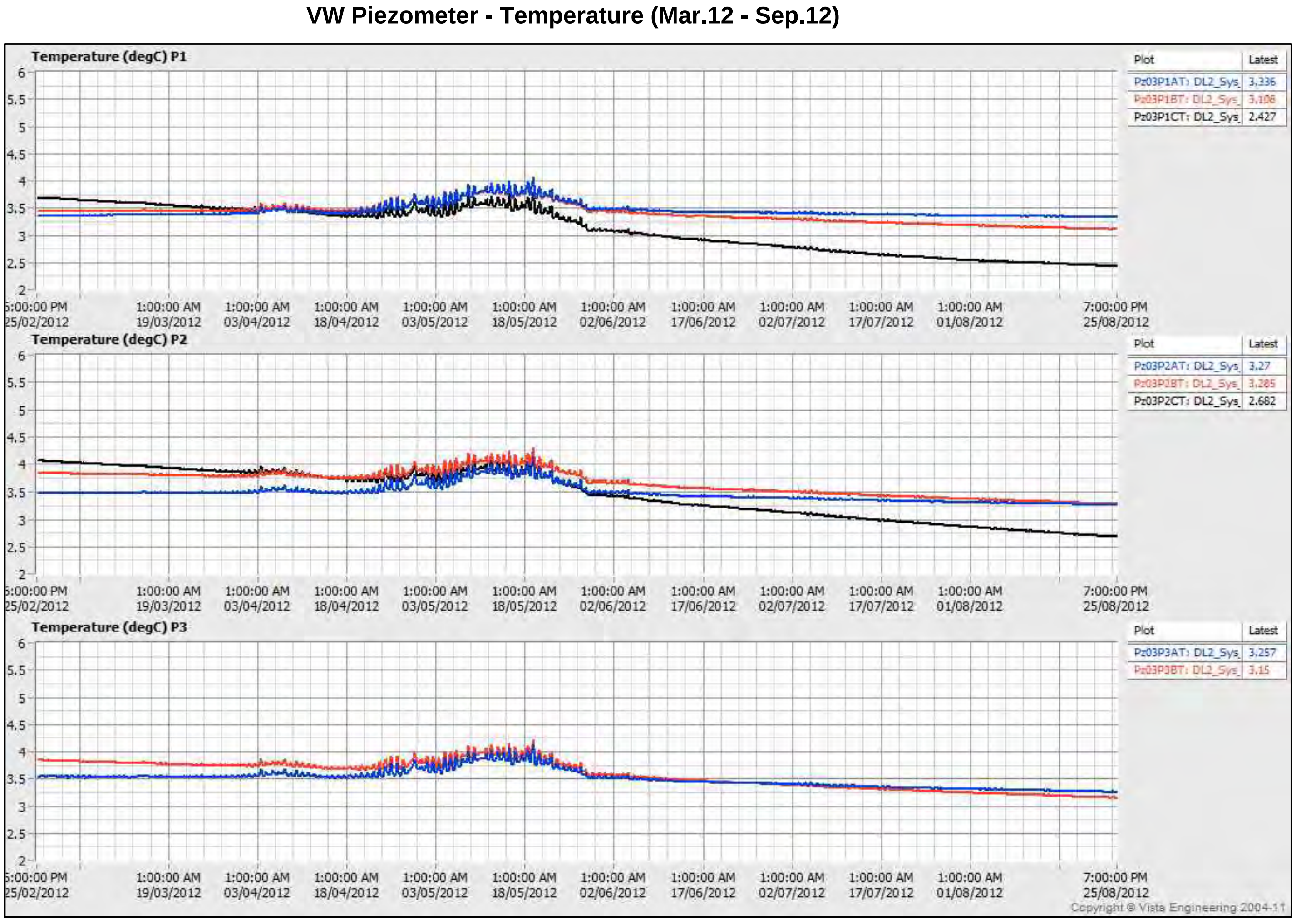
FIGURE C3-5



VW Piezometer - Total Head (Mar.12 - Sep.12)



VW Piezometer - Temperature (Mar.12 - Sep.12)



PROJECT

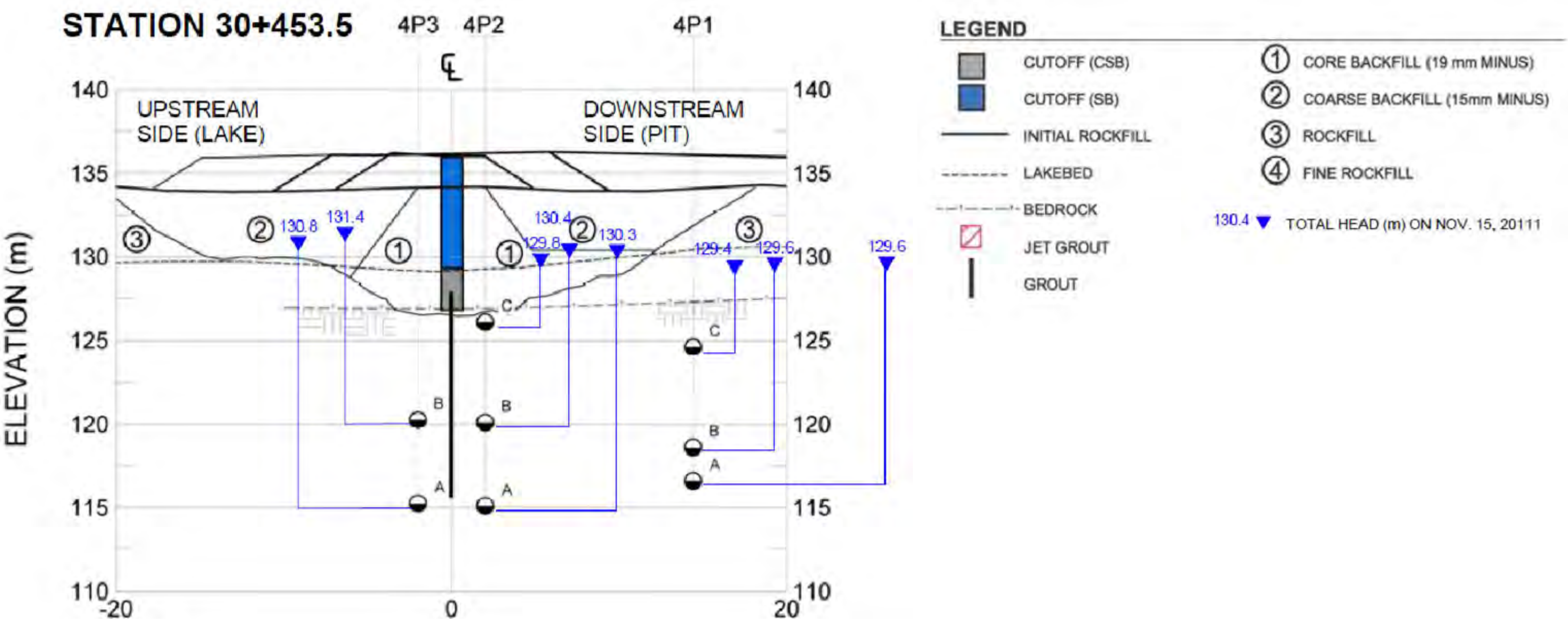
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

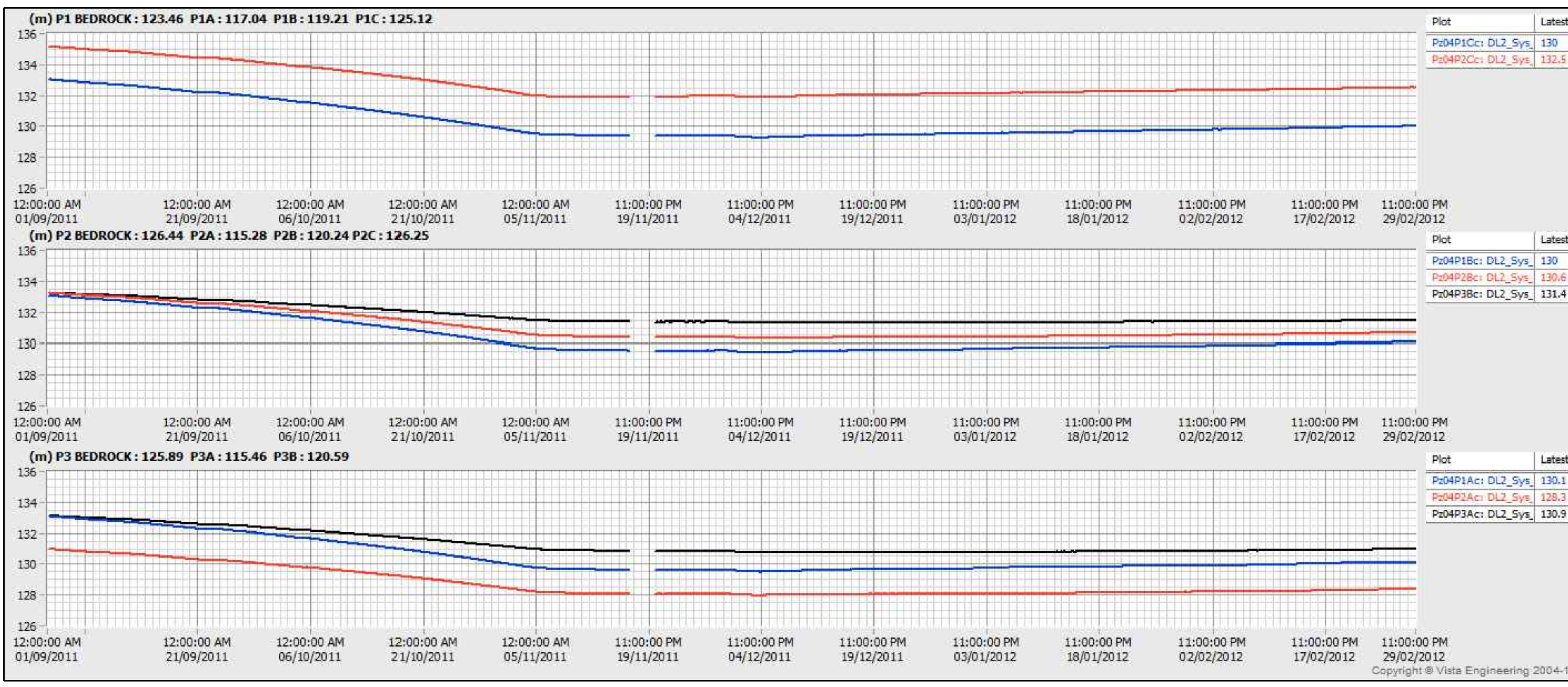
BAY-GOOSE DIKE - SECTION 30+378
PIEZOMETRIC DATA (MAR.2012 - SEP.2012)

Golder Associates
Montréal, Québec

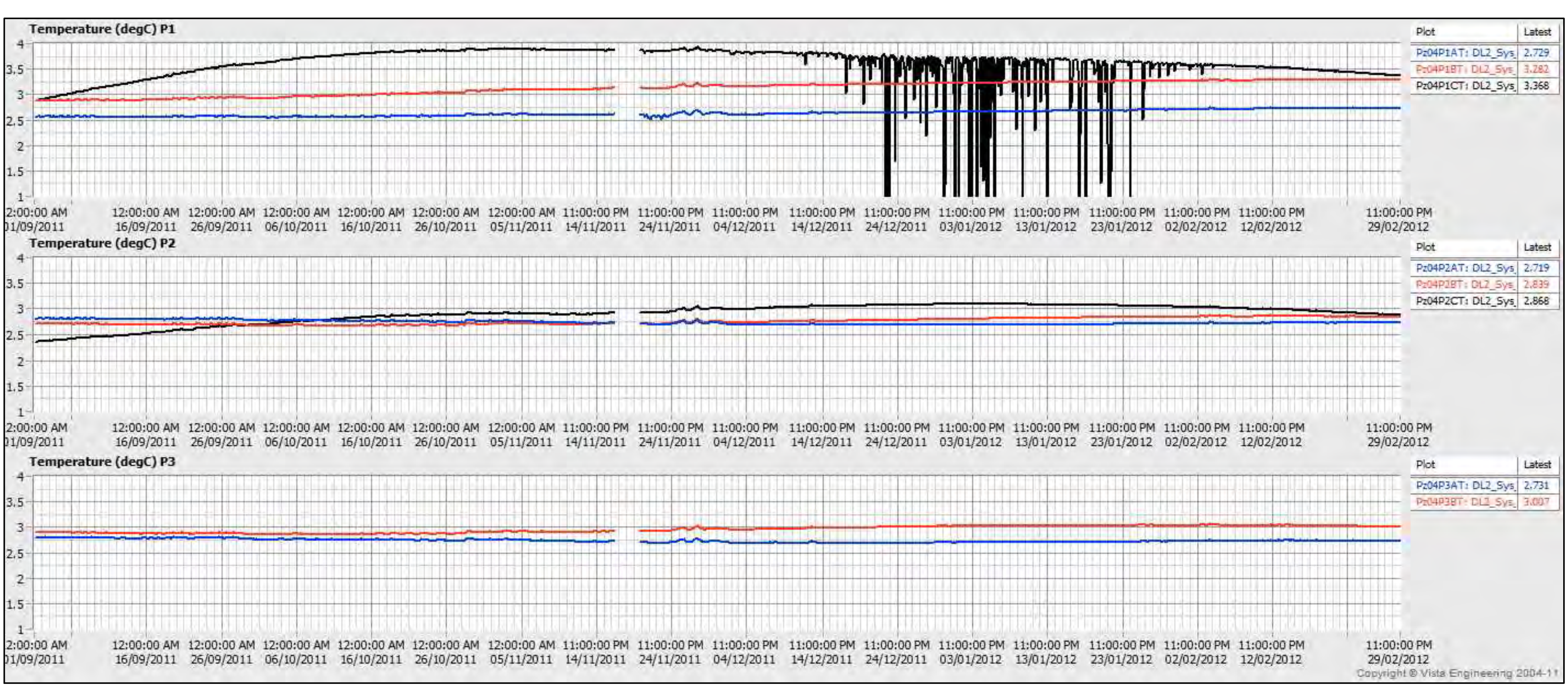
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C3-6**	
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Sep.11 - Mar.12)



VW Piezometer - Temperature (Sep.11 - Mar.12)



PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

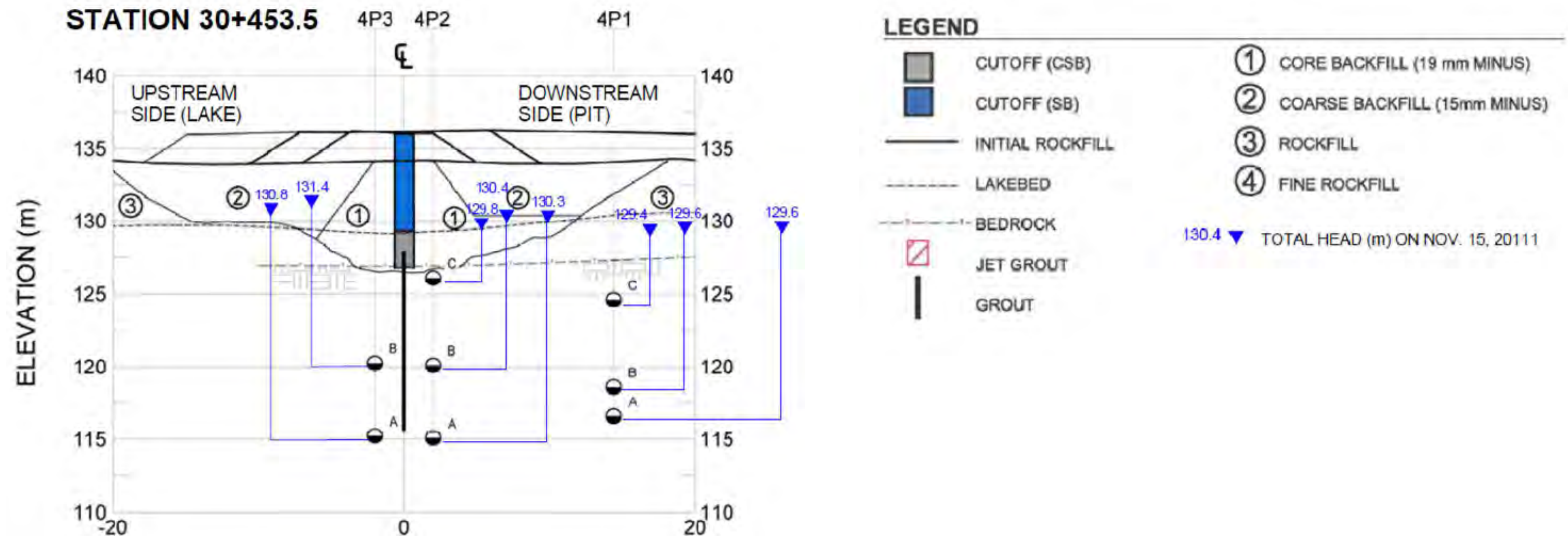
TITLE

BAY-GOOSE DIKE - SECTION 30+453
PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

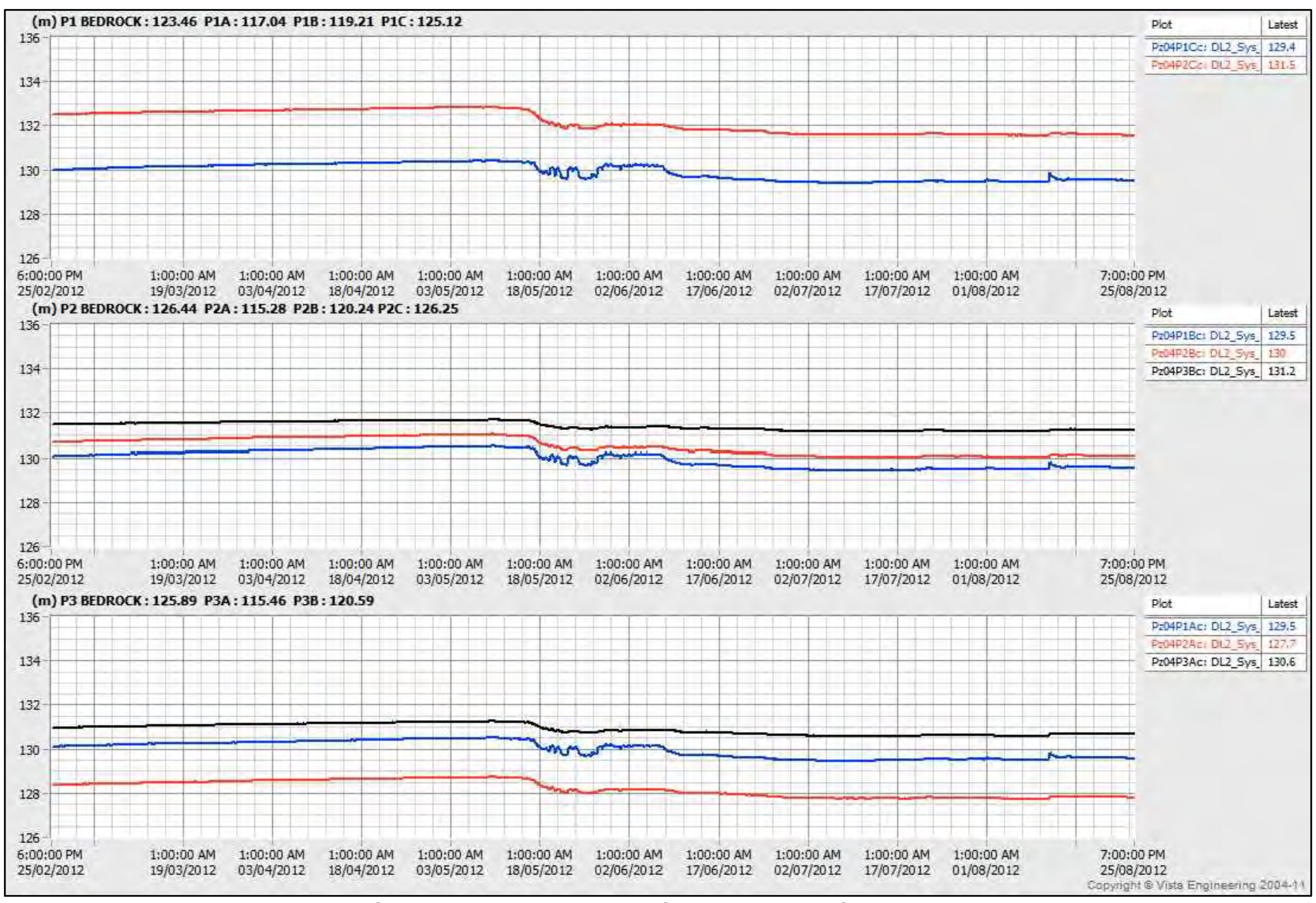
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

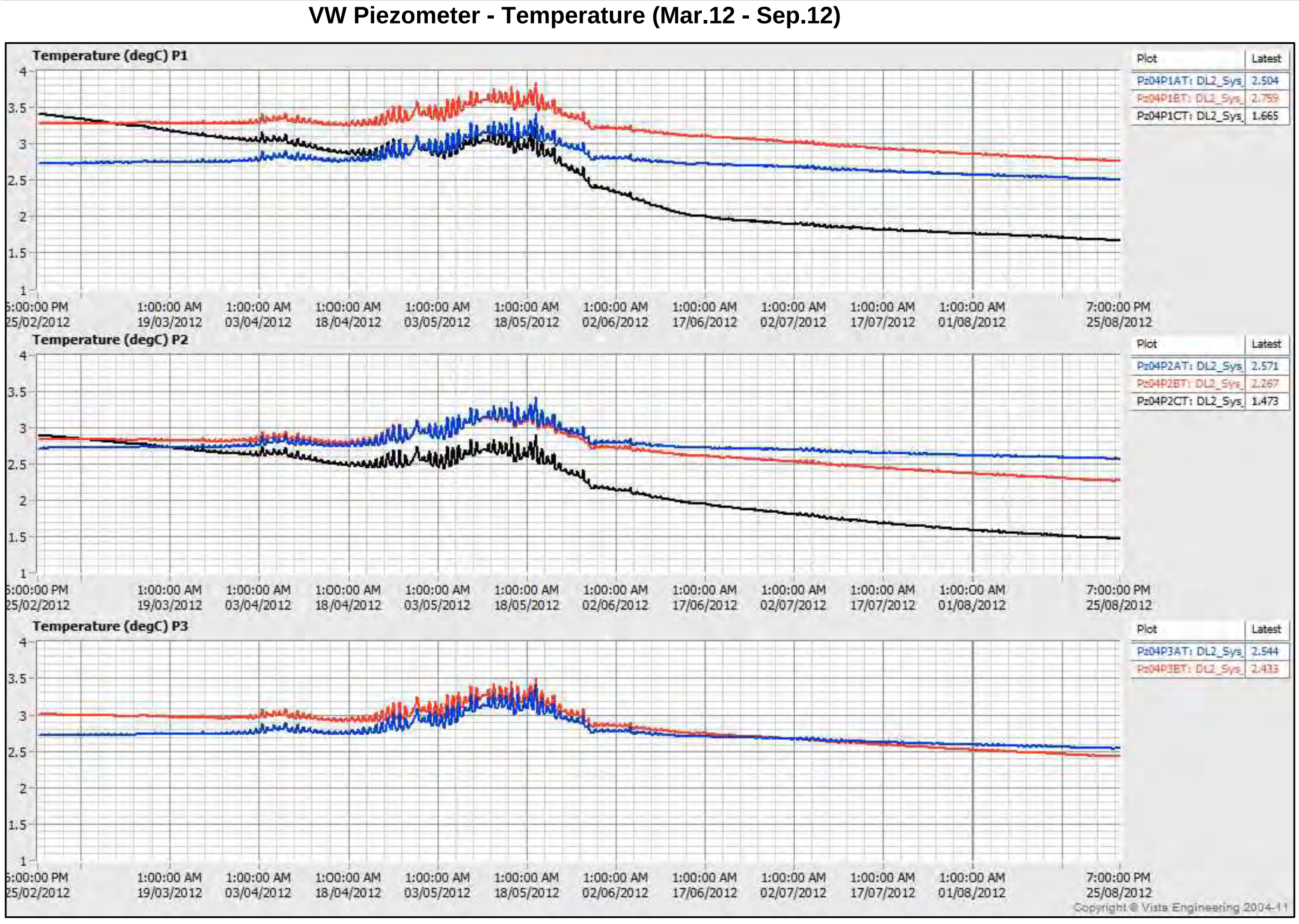
FIGURE C3-7



VW Piezometer - Total Head (Mar.12 - Sep.12)



VW Piezometer - Temperature (Mar.12 - Sep.12)



PROJECT
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

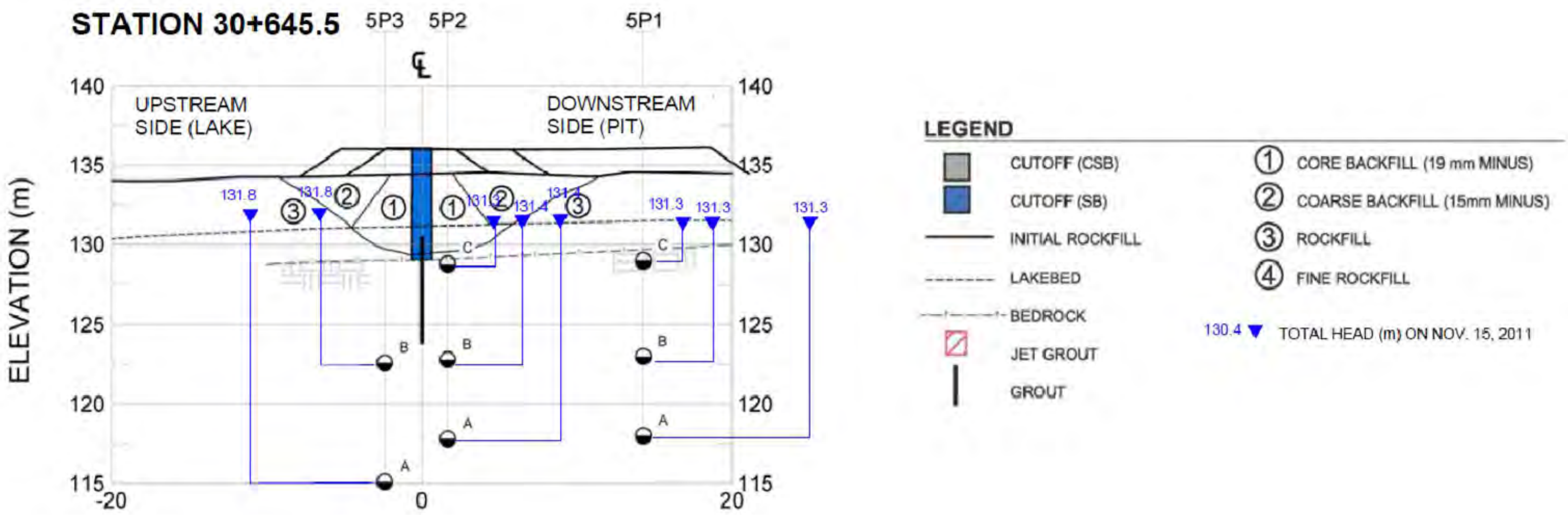
TITLE
BAY-GOOSE DIKE - SECTION 30+453
PIEZOMETRIC DATA (MAR.2012 - SEP.2012)

Golder Associates
Montréal, Québec

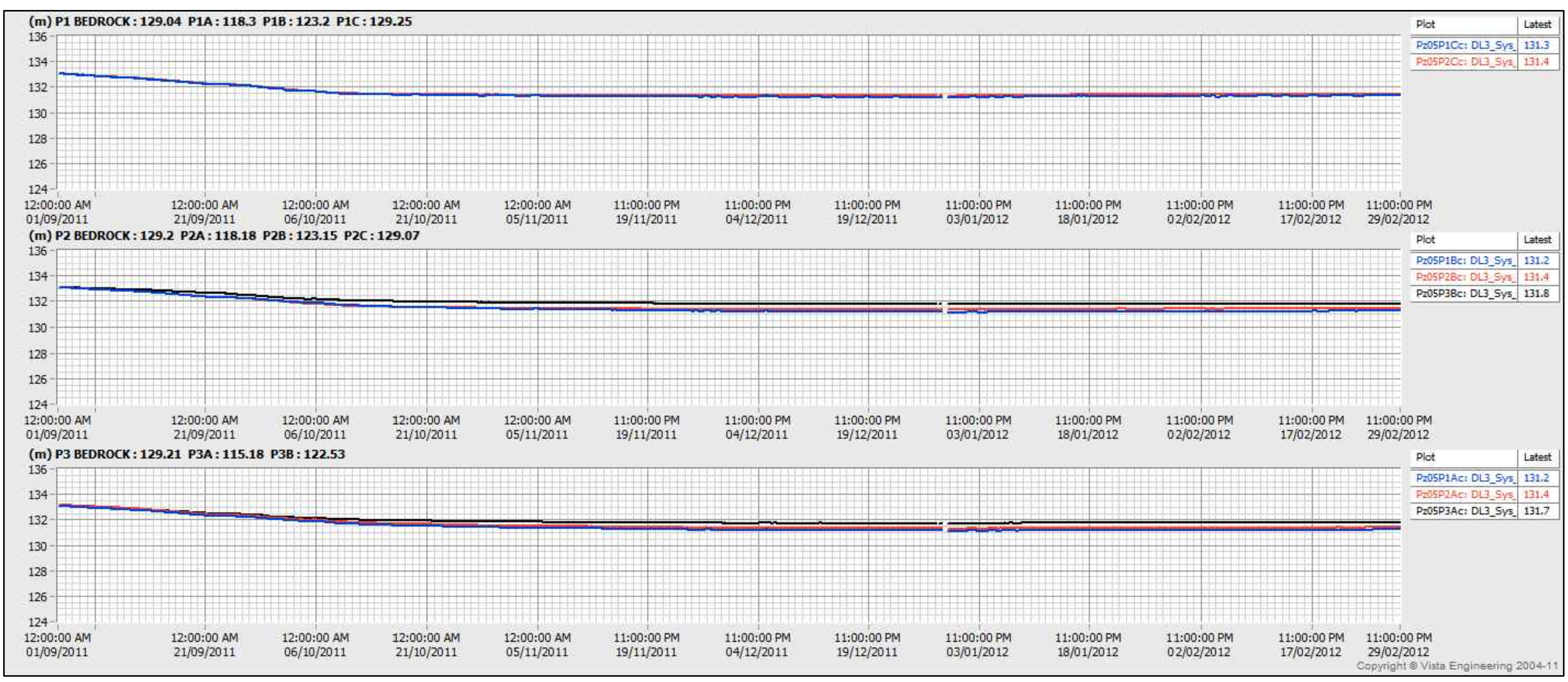
PROJECT No.		12-1221-0073
DESIGN	AEM	09/19/2012
CADD	FLB	10/19/2012
CHECK	YB	11/08/2012
REVIEW	FE	11/15/2012

PHASE No. 3000
SCALE
REV. -

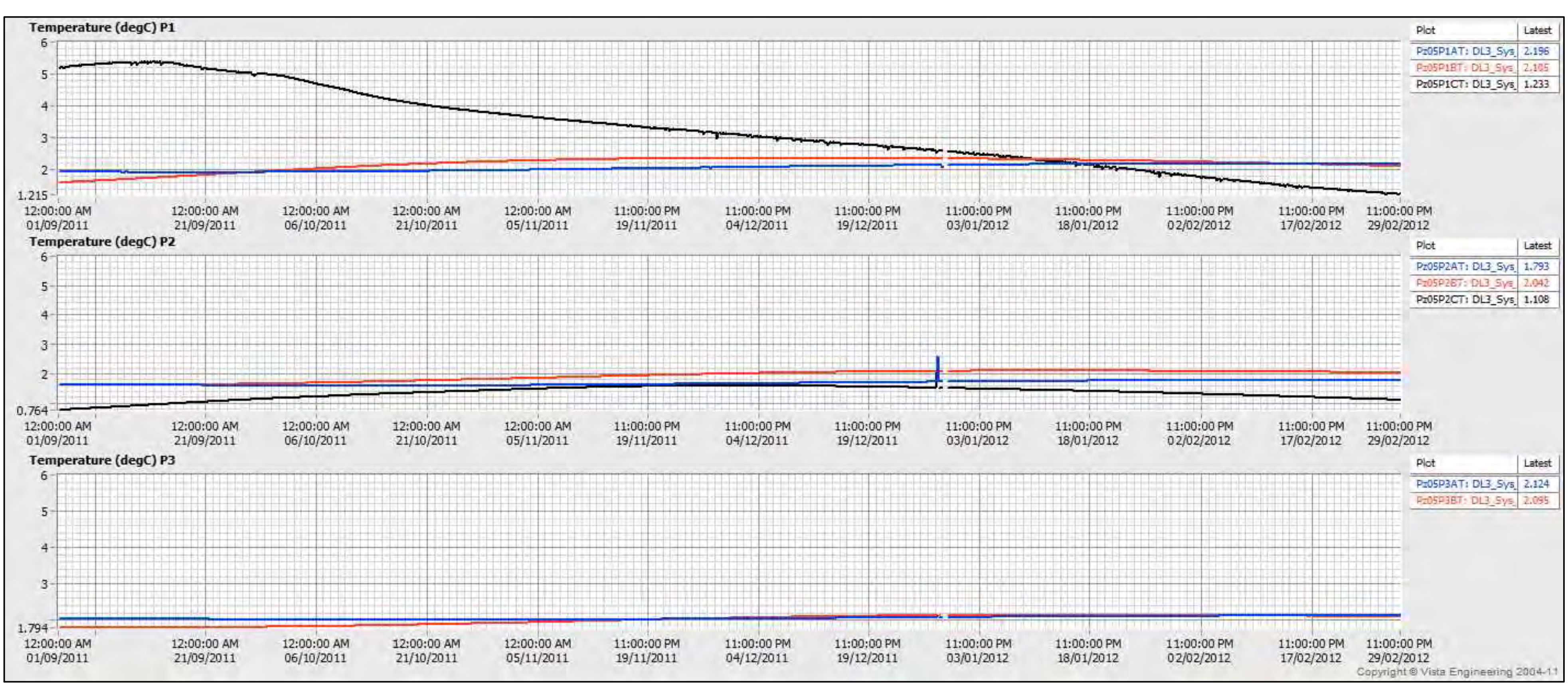
FIGURE C3-8



VW Piezometer - Total Head (Sep.11 - Mar.12)



VW Piezometer - Temperature (Sep.11 - Mar.12)



PROJECT

AEM

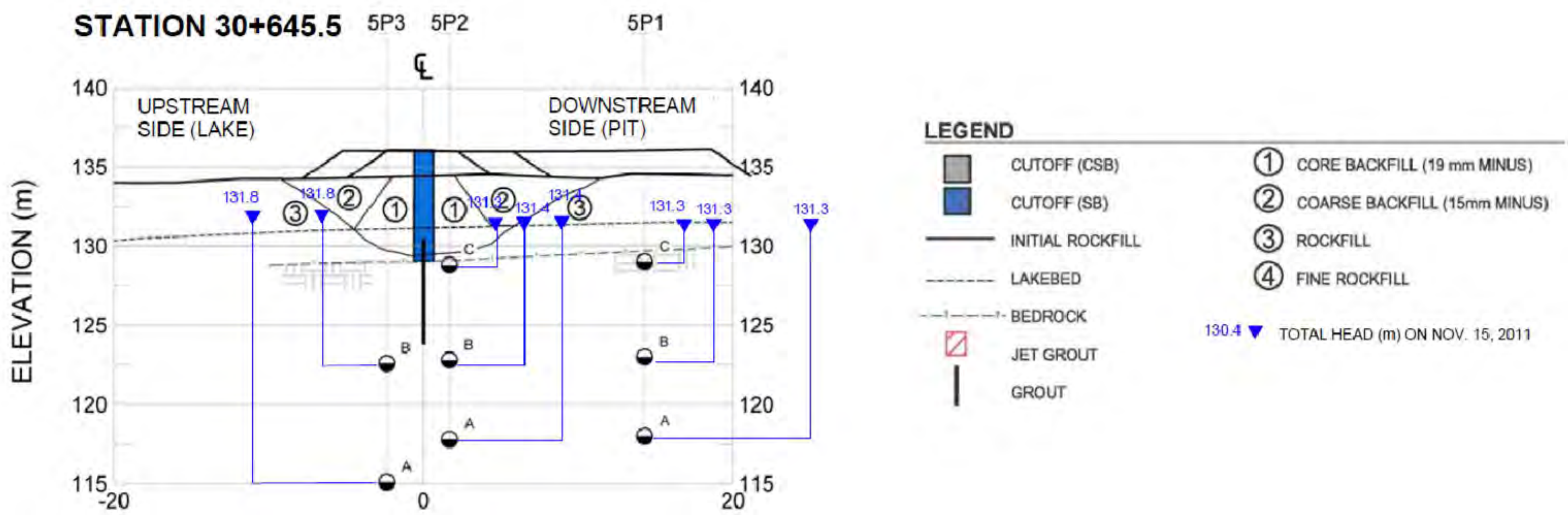
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

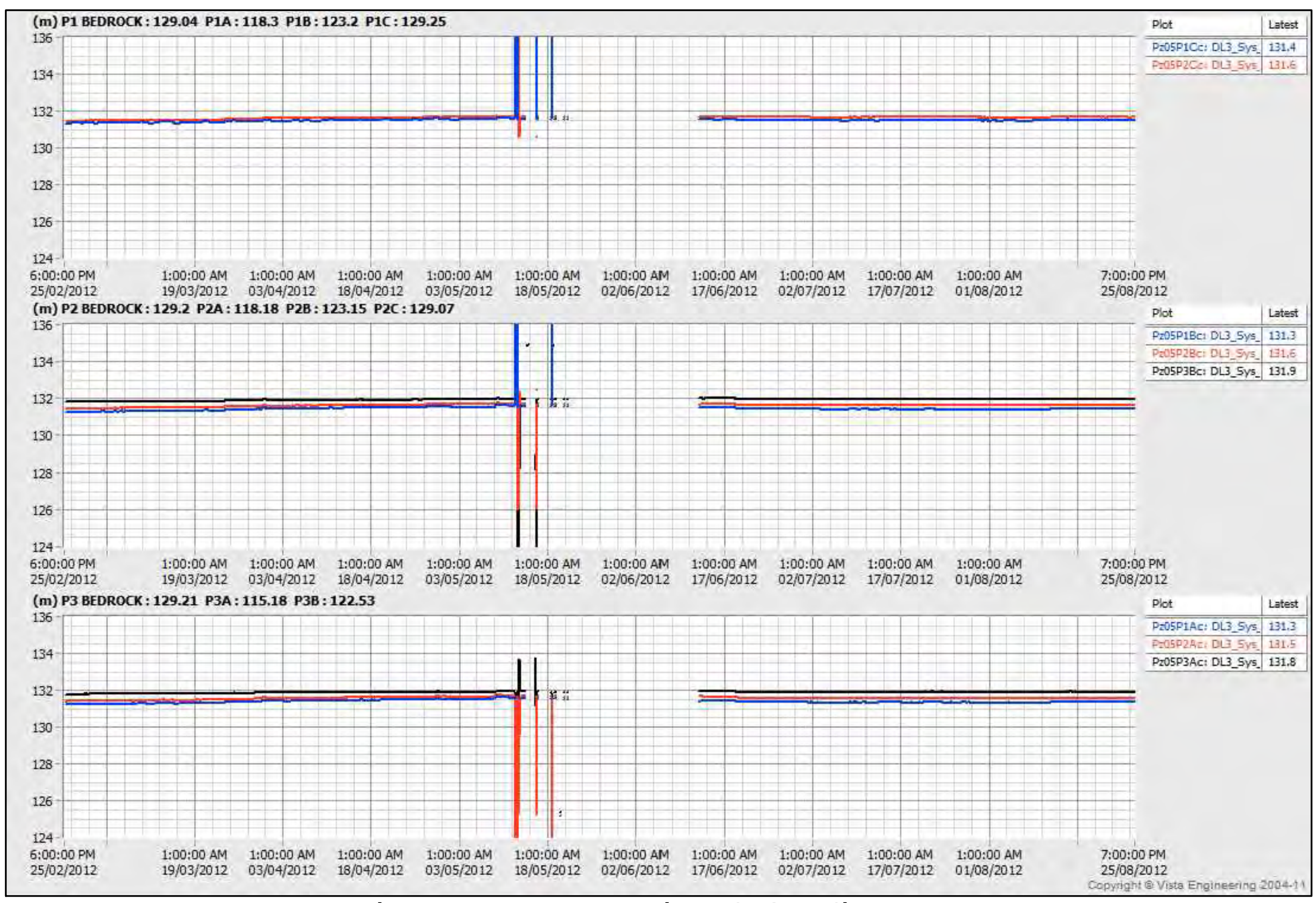
BAY-GOOSE DIKE - SECTION 30+645
PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

Golder Associates
Montréal, Québec

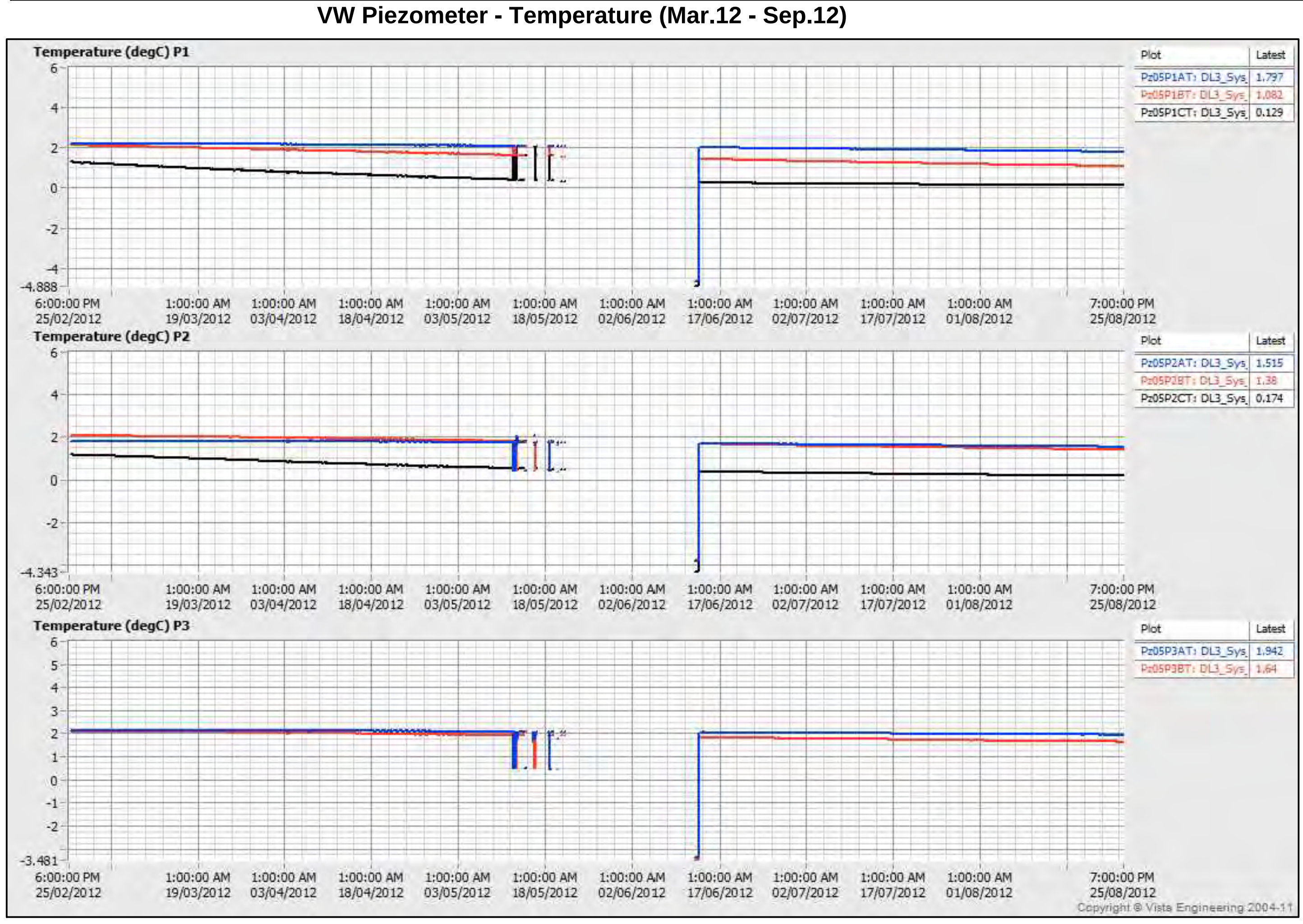
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C3-9**	
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Mar.12 - Sep.12)



VW Piezometer - Temperature (Mar.12 - Sep.12)



PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

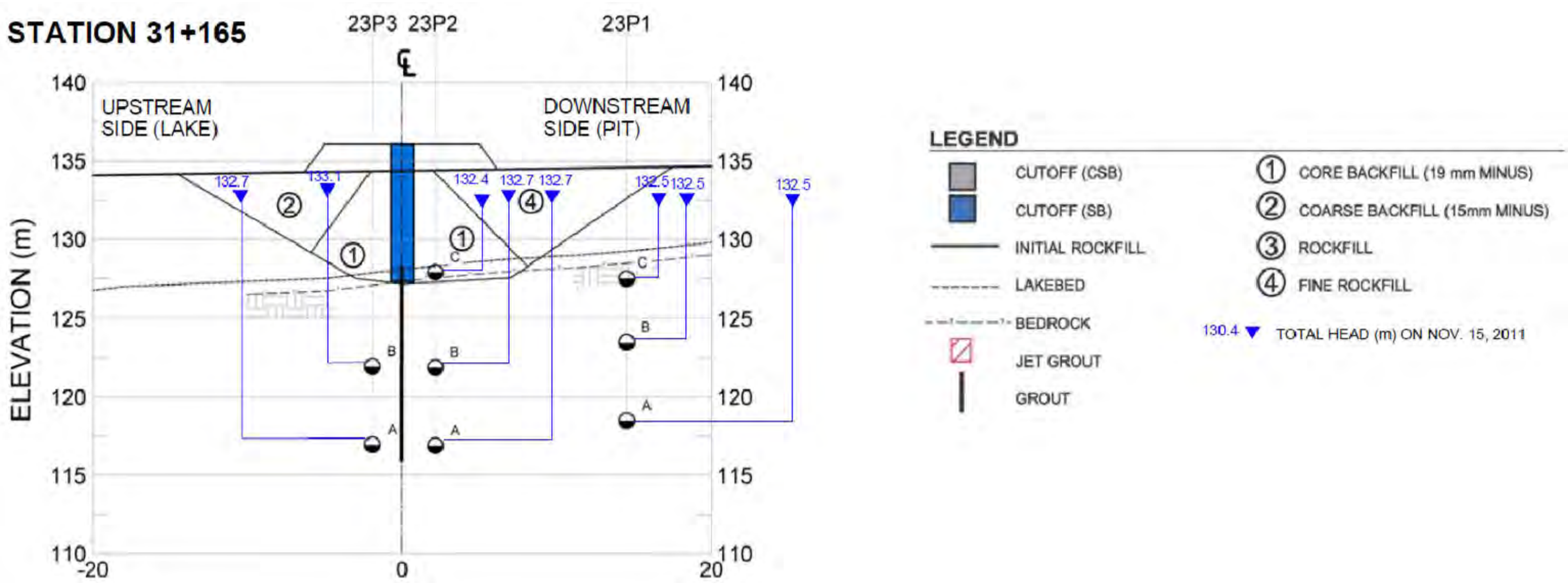
TITLE

BAY-GOOSE DIKE - SECTION 30+645
PIEZOMETRIC DATA (MAR.2012 - SEP.2012)

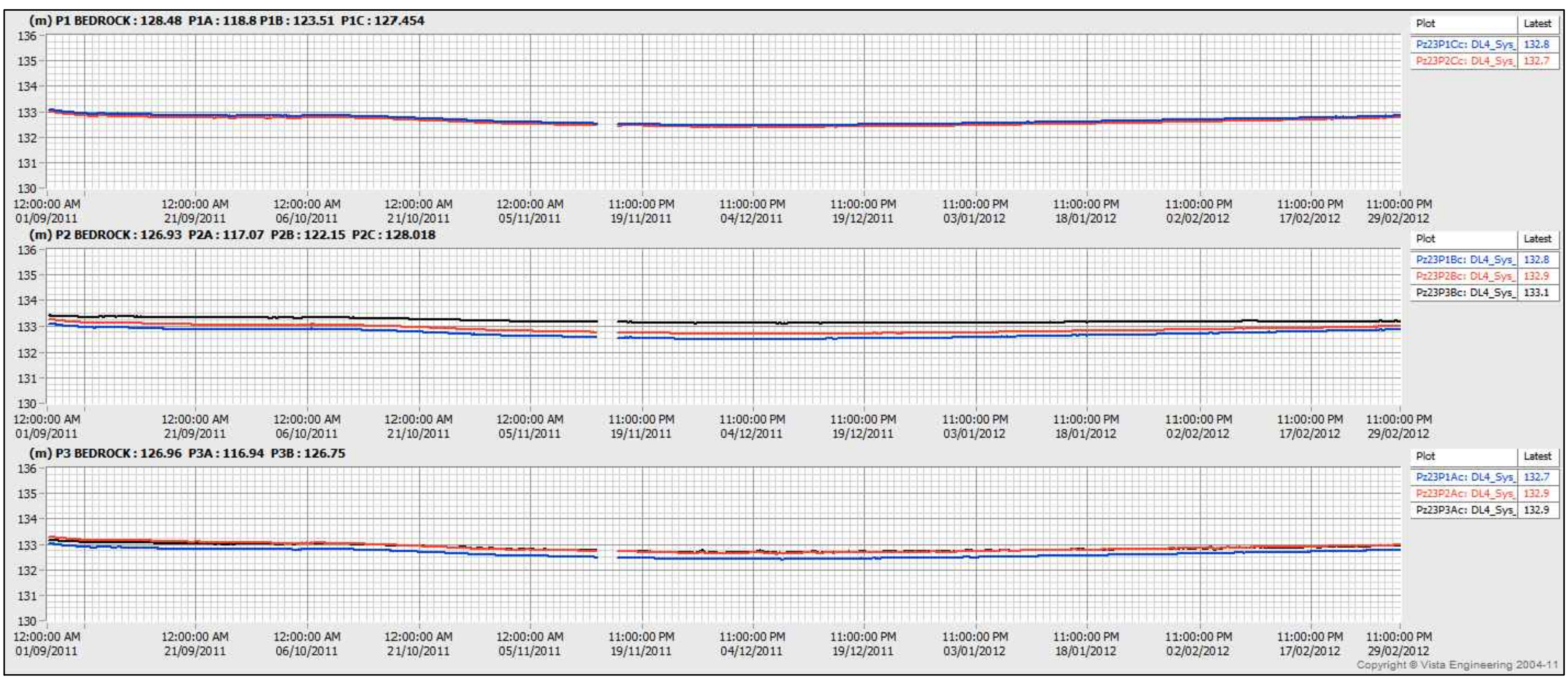
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

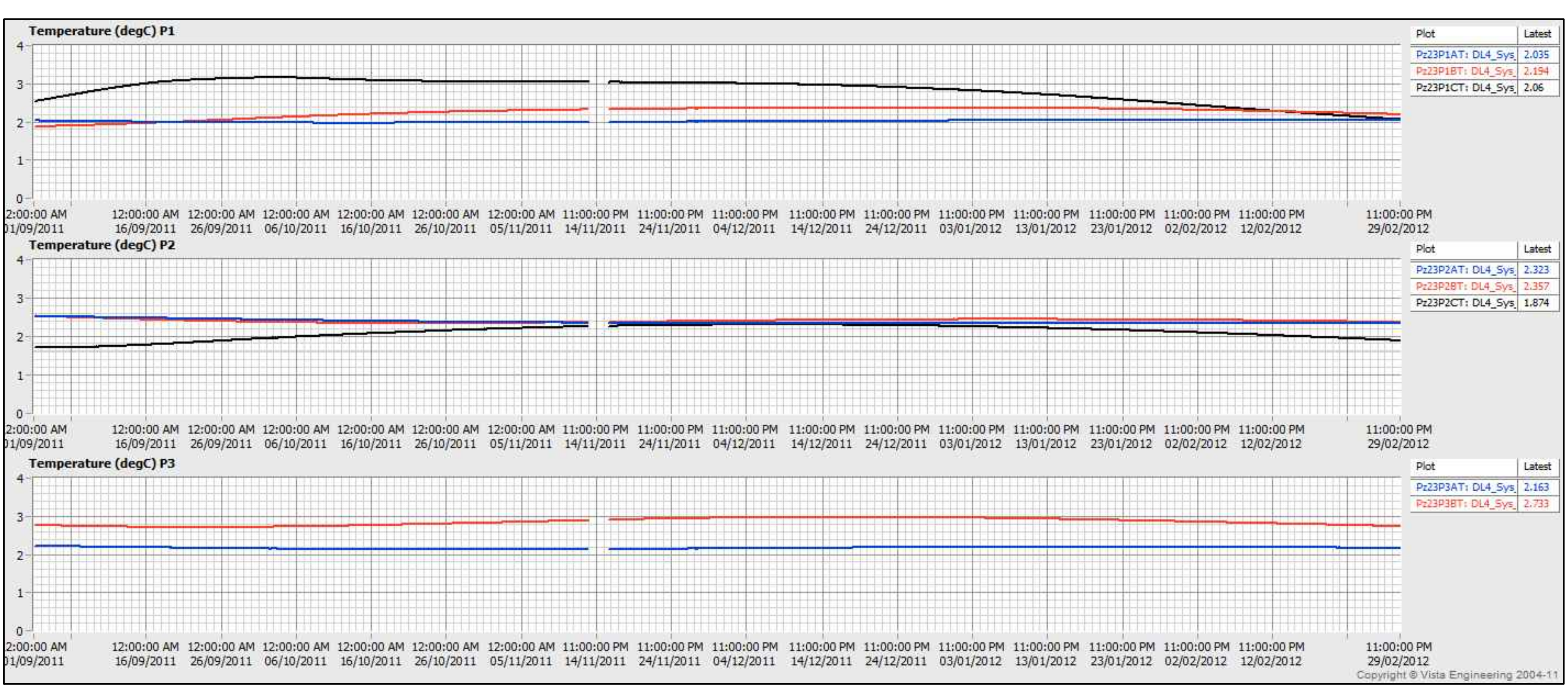
FIGURE C3-10



VW Piezometer - Total Head (Sep.11 - Mar.12)



VW Piezometer - Temperature (Sep.11 - Mar.12)



PROJECT

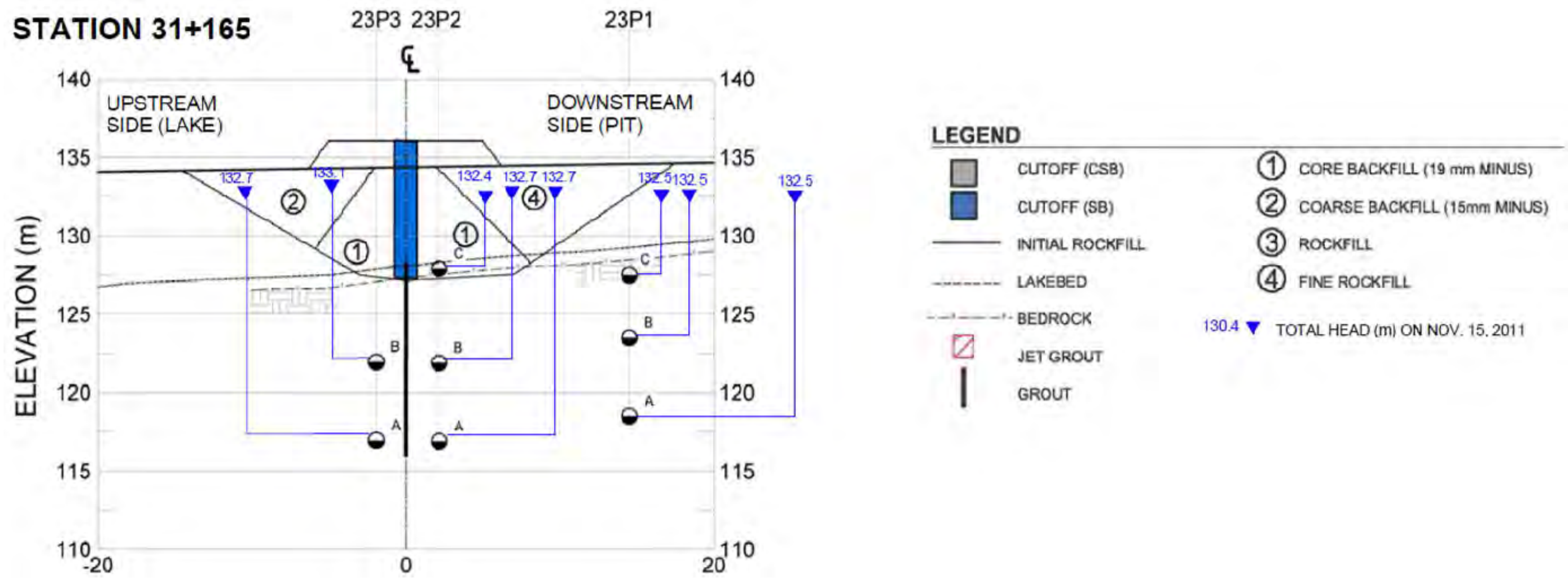
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

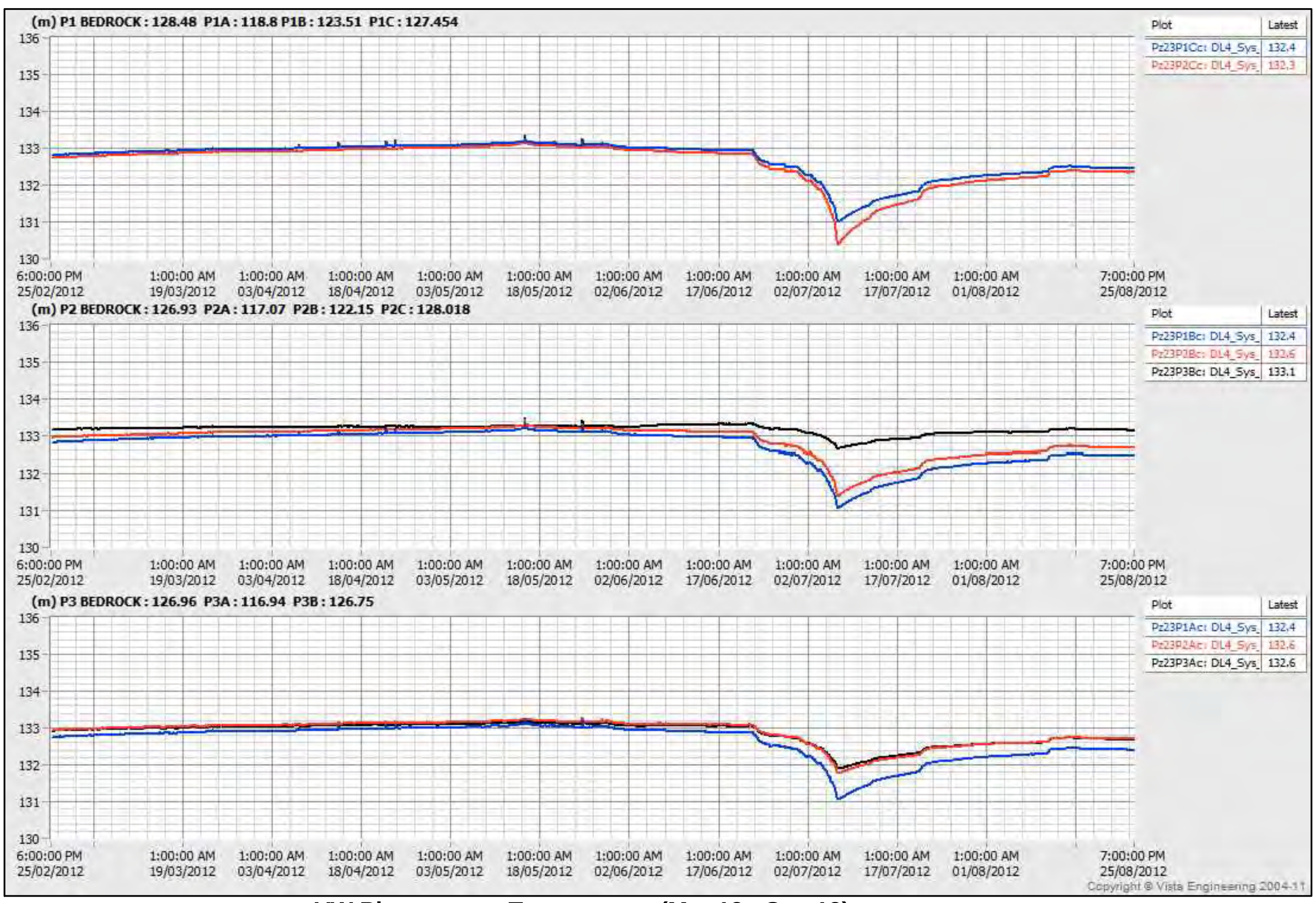
BAY-GOOSE DIKE - SECTION 31+165
PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

Golder Associates
Montréal, Québec

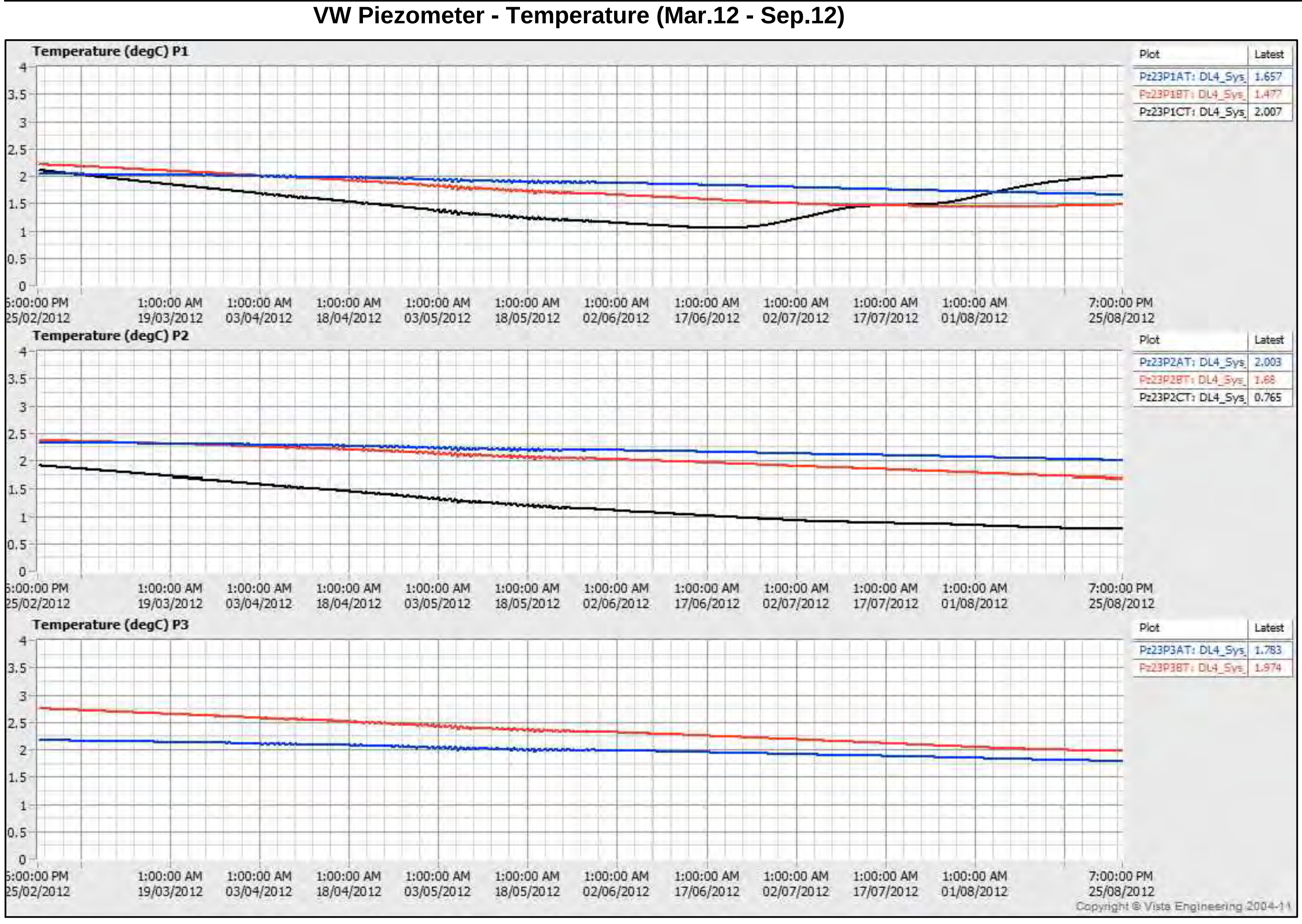
PROJECT No.	12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	FIGURE C3-11	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Mar.12 - Sep.12)



VW Piezometer - Temperature (Mar.12 - Sep.12)



PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

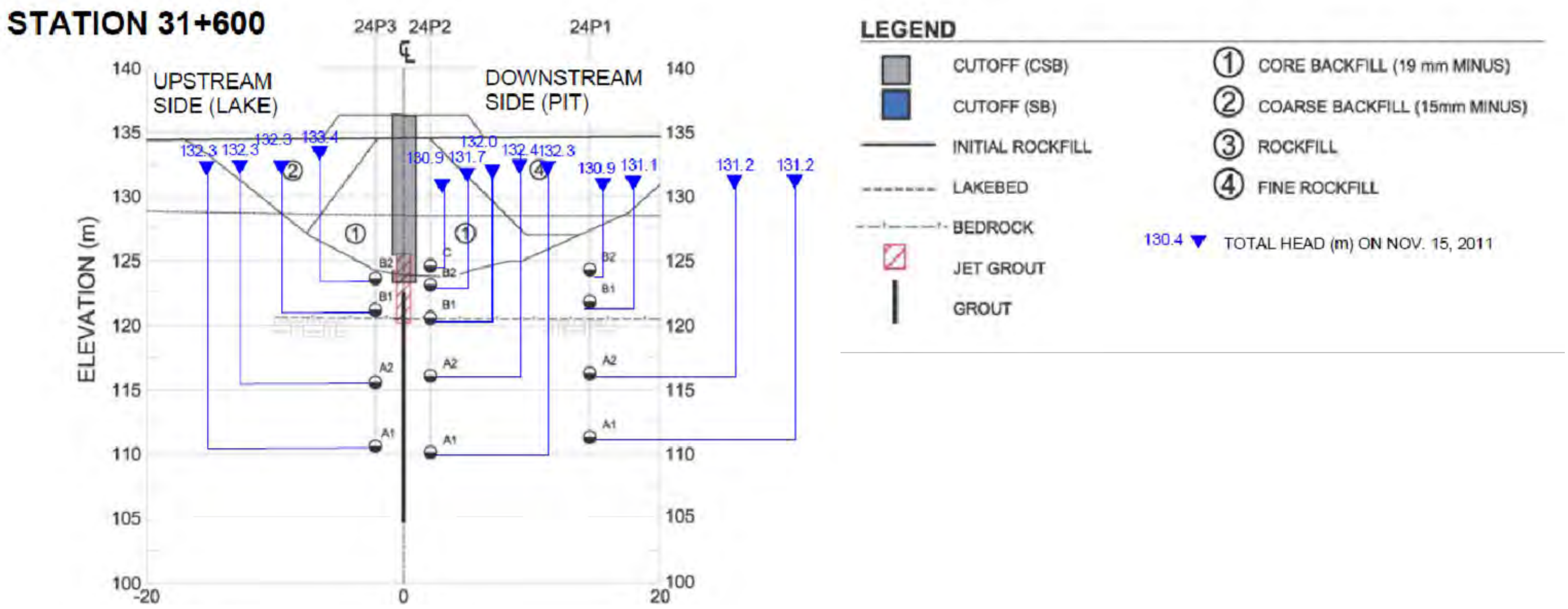
TITLE

BAY-GOOSE DIKE - SECTION 31+165
PIEZOMETRIC DATA (MAR.2012 - SEP.2012)

Golder Associates
Montréal, Québec

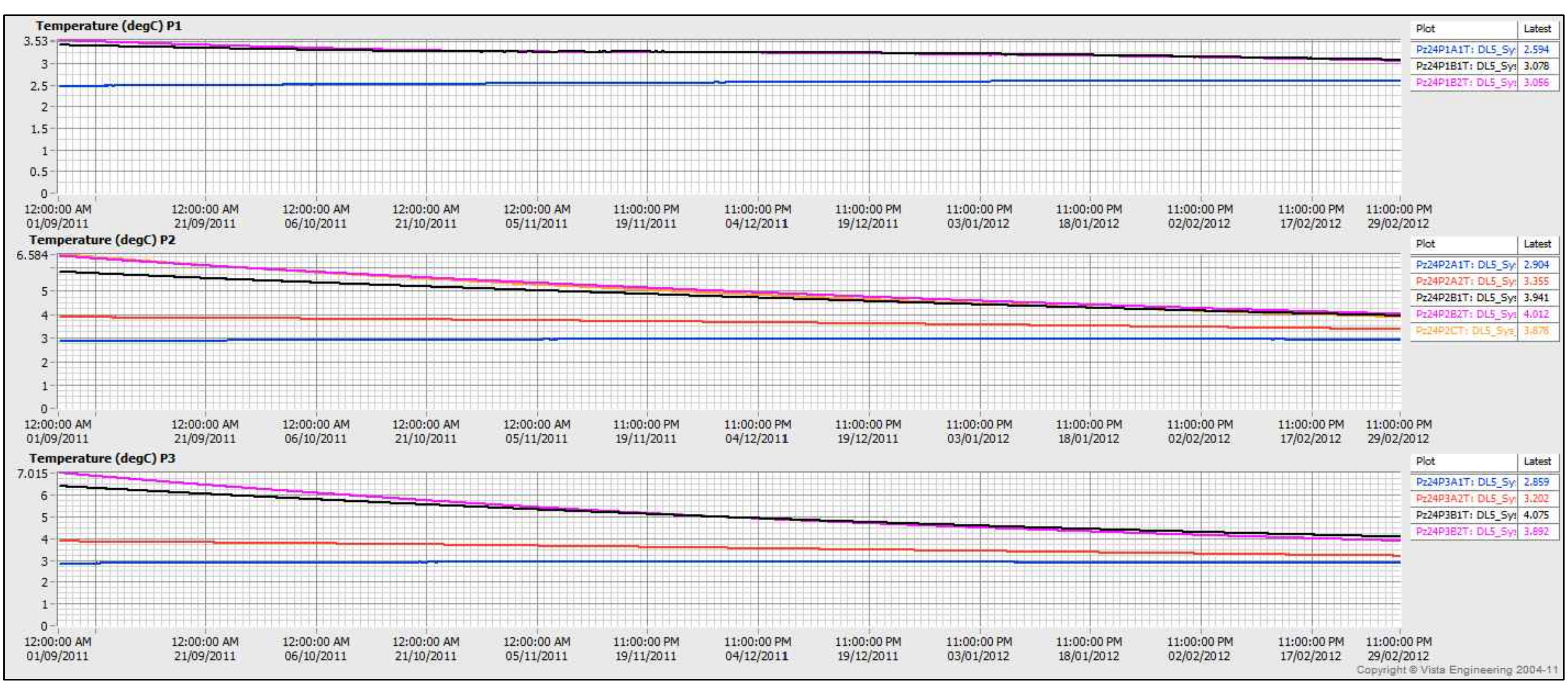
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

FIGURE C3-12



VW Piezometer - Total Head (Sep.11 - Mar.12)

VW Piezometer - Temperature (Sep.11 - Mar.12)



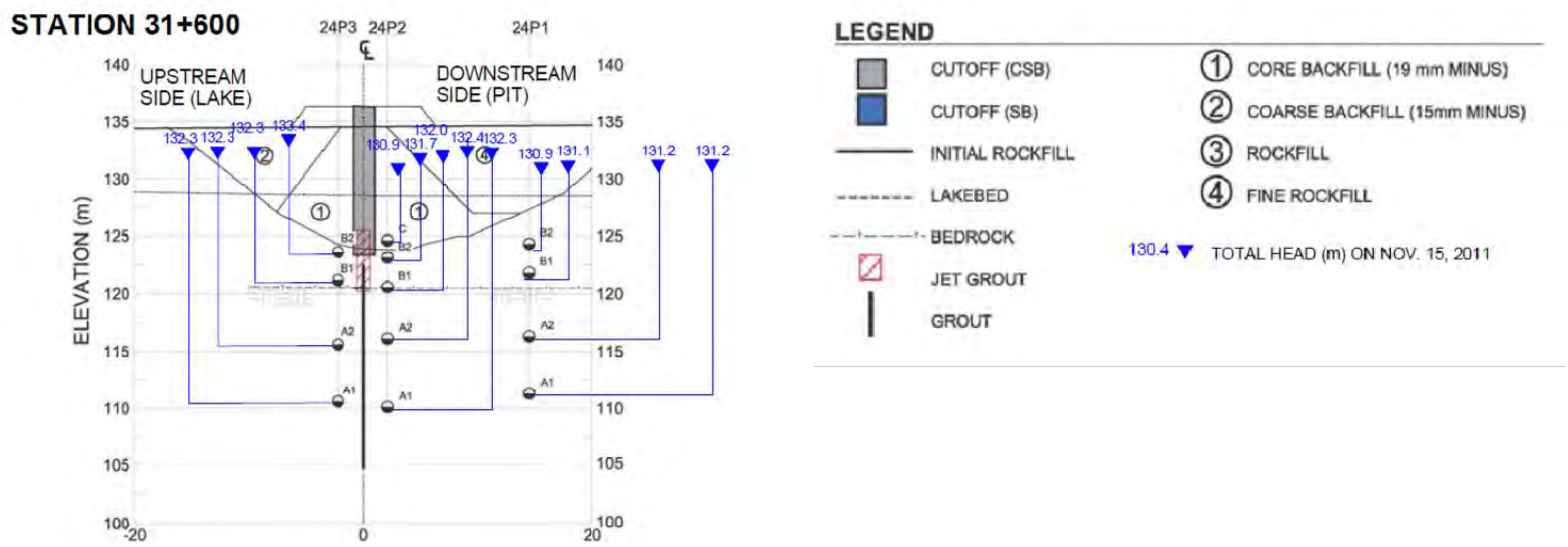
PROJECT
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE
BAY-GOOSE DIKE - SECTION 31+600
PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

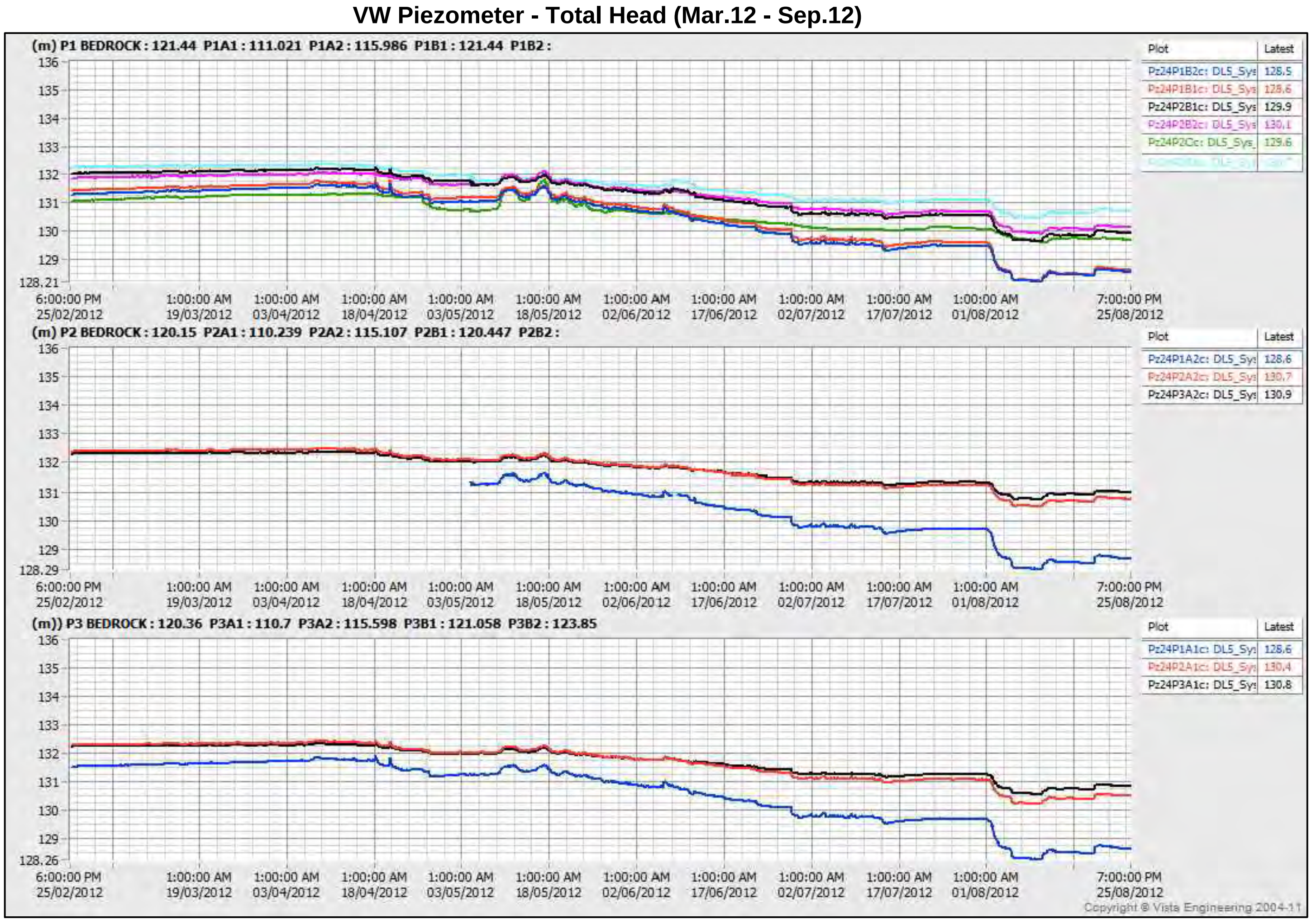
Golder Associates
Montréal, Québec

PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

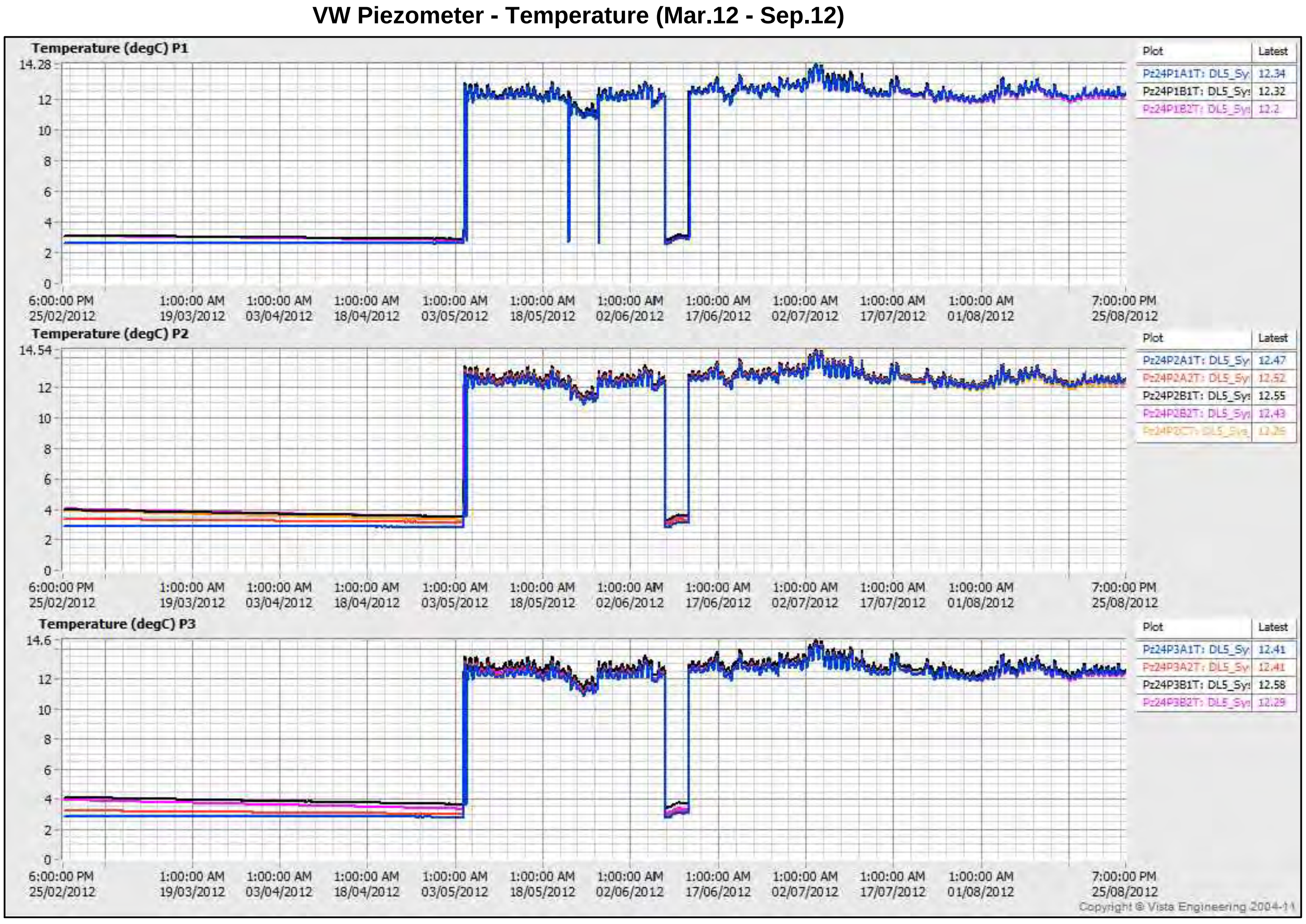
FIGURE C3-13



VW Piezometer - Total Head (Mar.12 - Sep.12)



VW Piezometer - Temperature (Mar.12 - Sep.12)



PROJECT

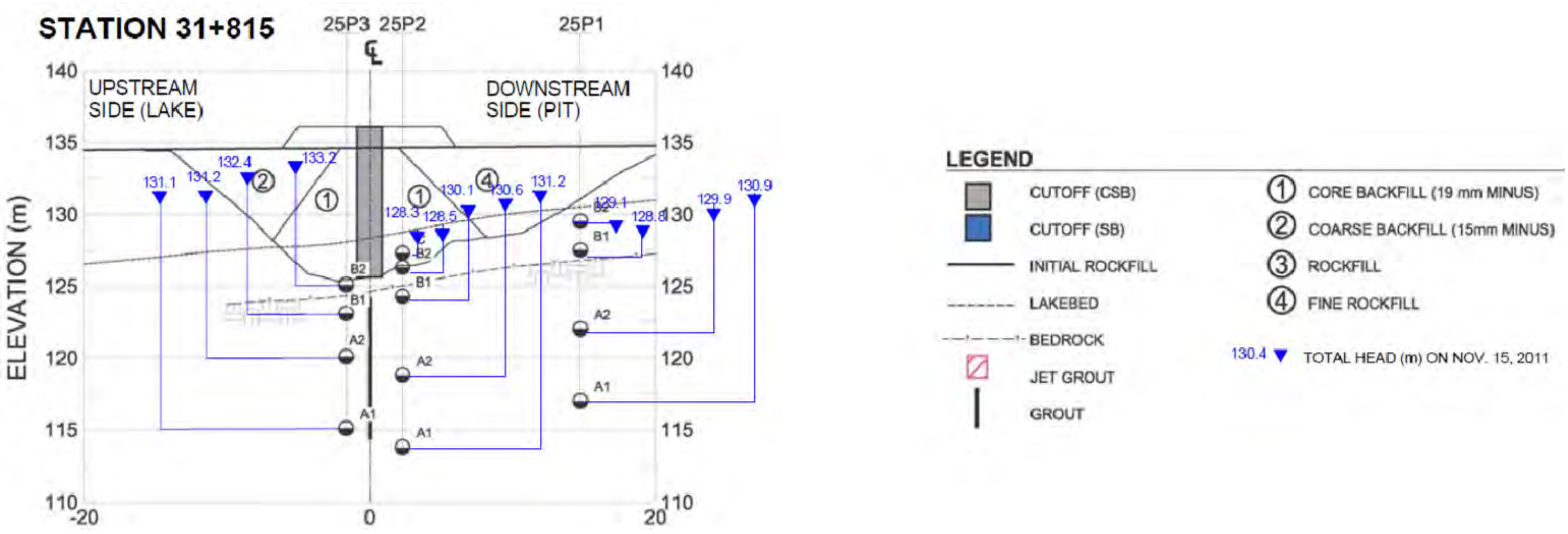
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

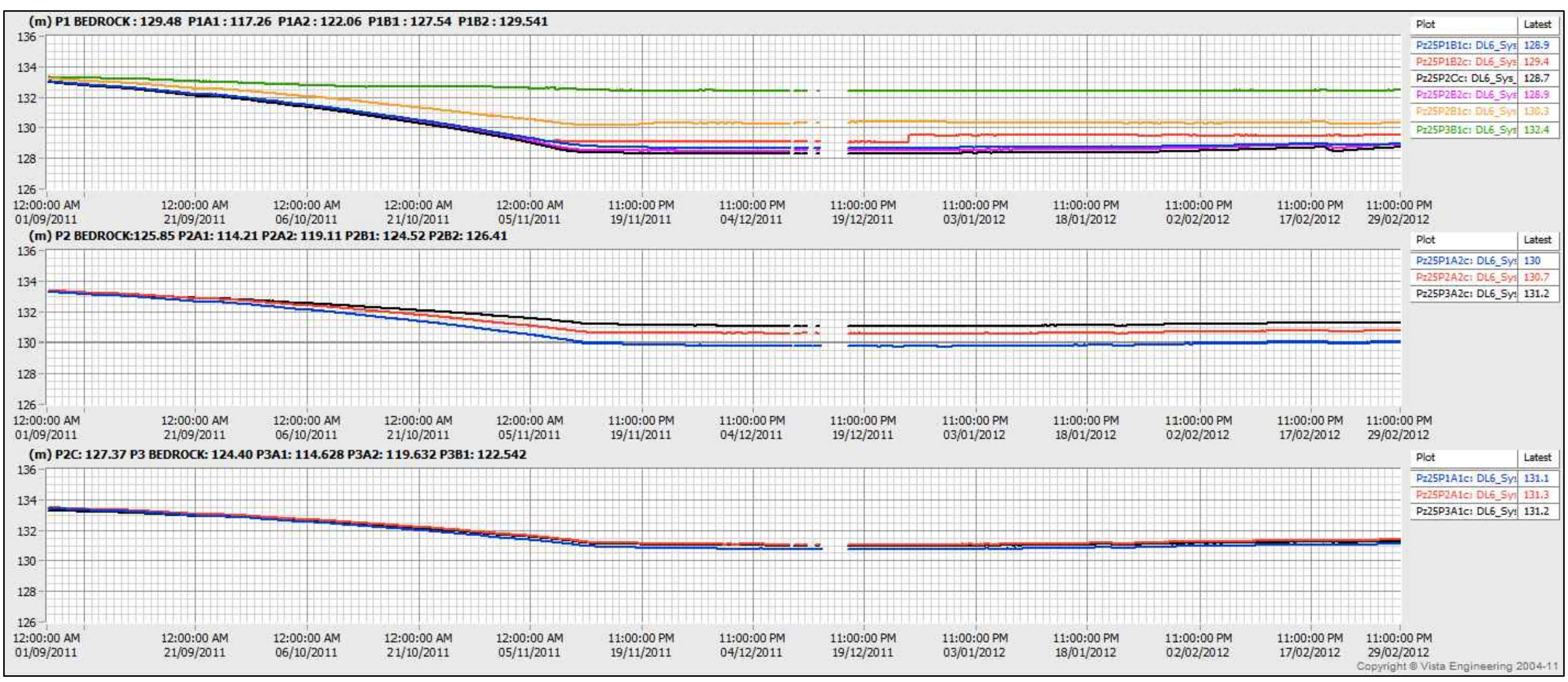
BAY-GOOSE DIKE - SECTION 31+600
PIEZOMETRIC DATA (MAR.2012 - SEP.2012)

Golder Associates
Montréal, Québec

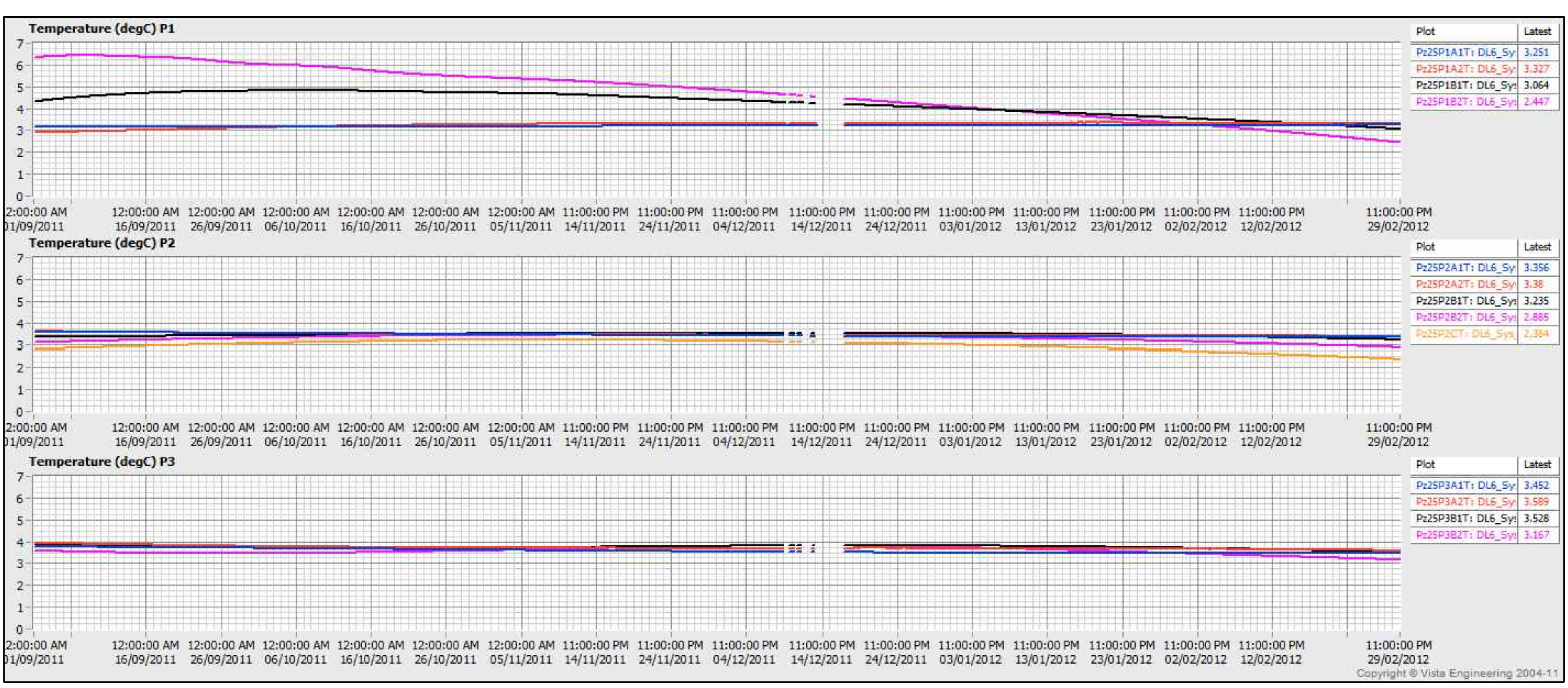
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	FIGURE C3-14	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Sep.11 - Mar.12)



VW Piezometer - Temperature (Sep.11 - Mar.12)



PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

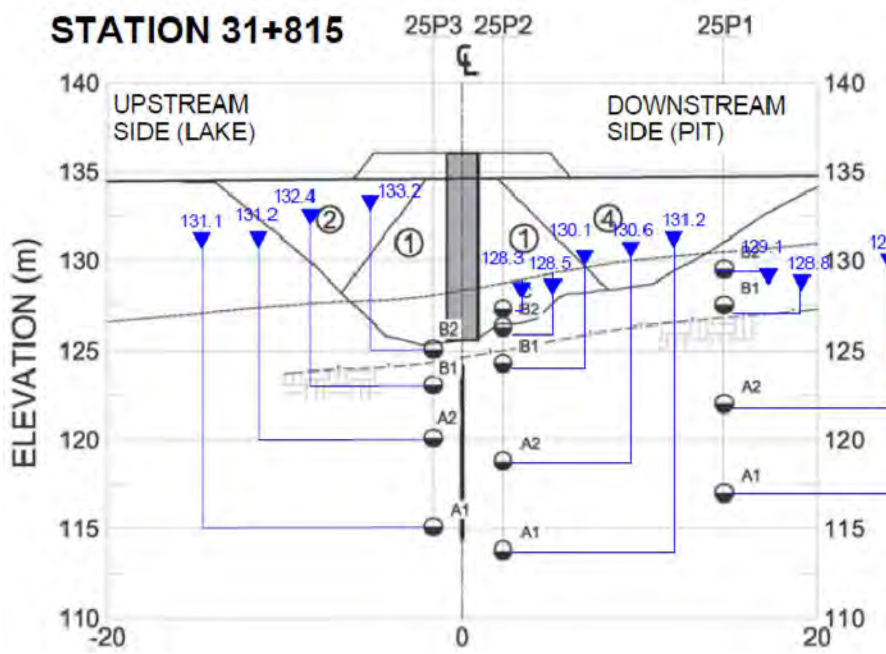
TITLE

BAY-GOOSE DIKE - SECTION 31+815
PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

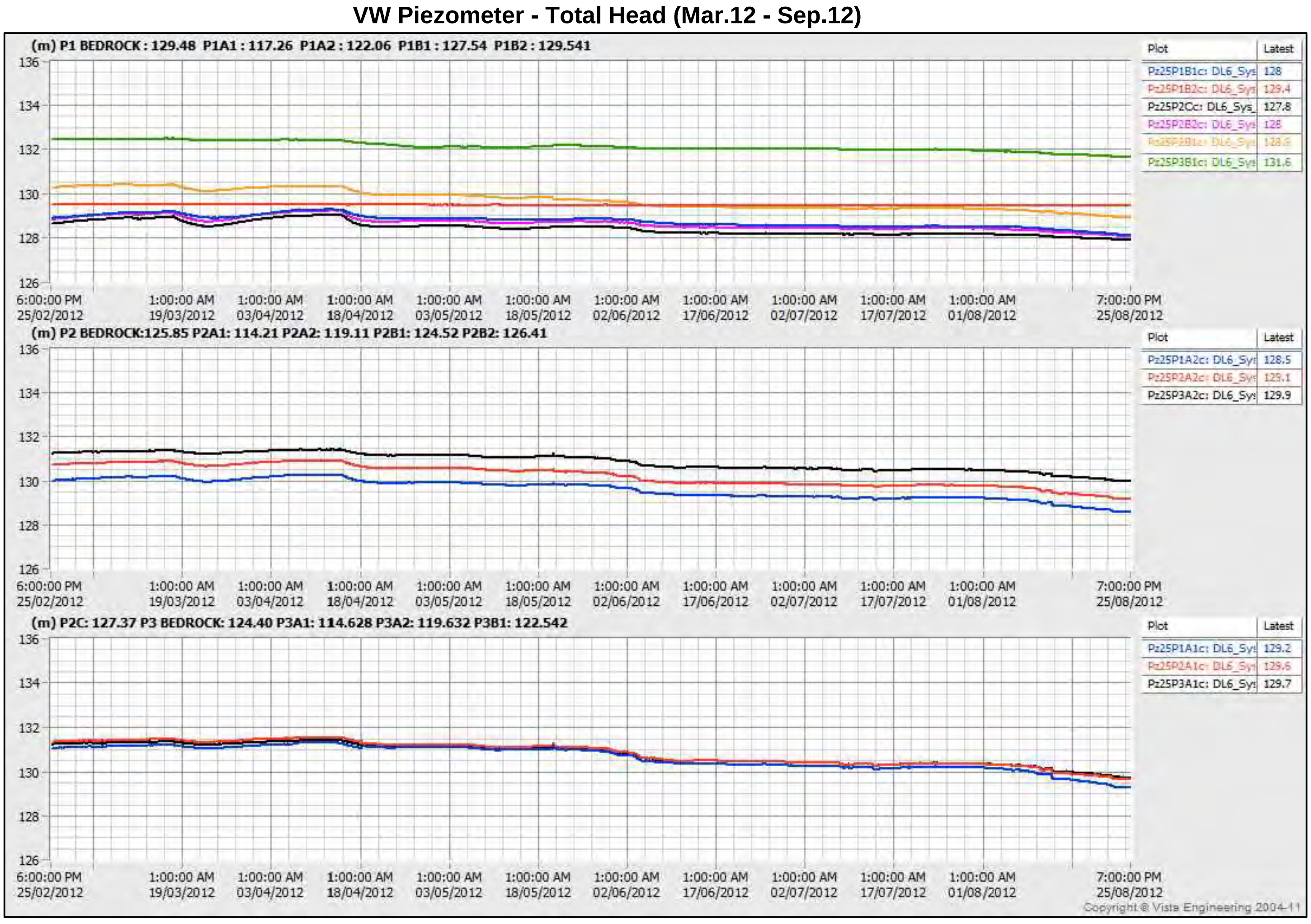
FIGURE C3-15



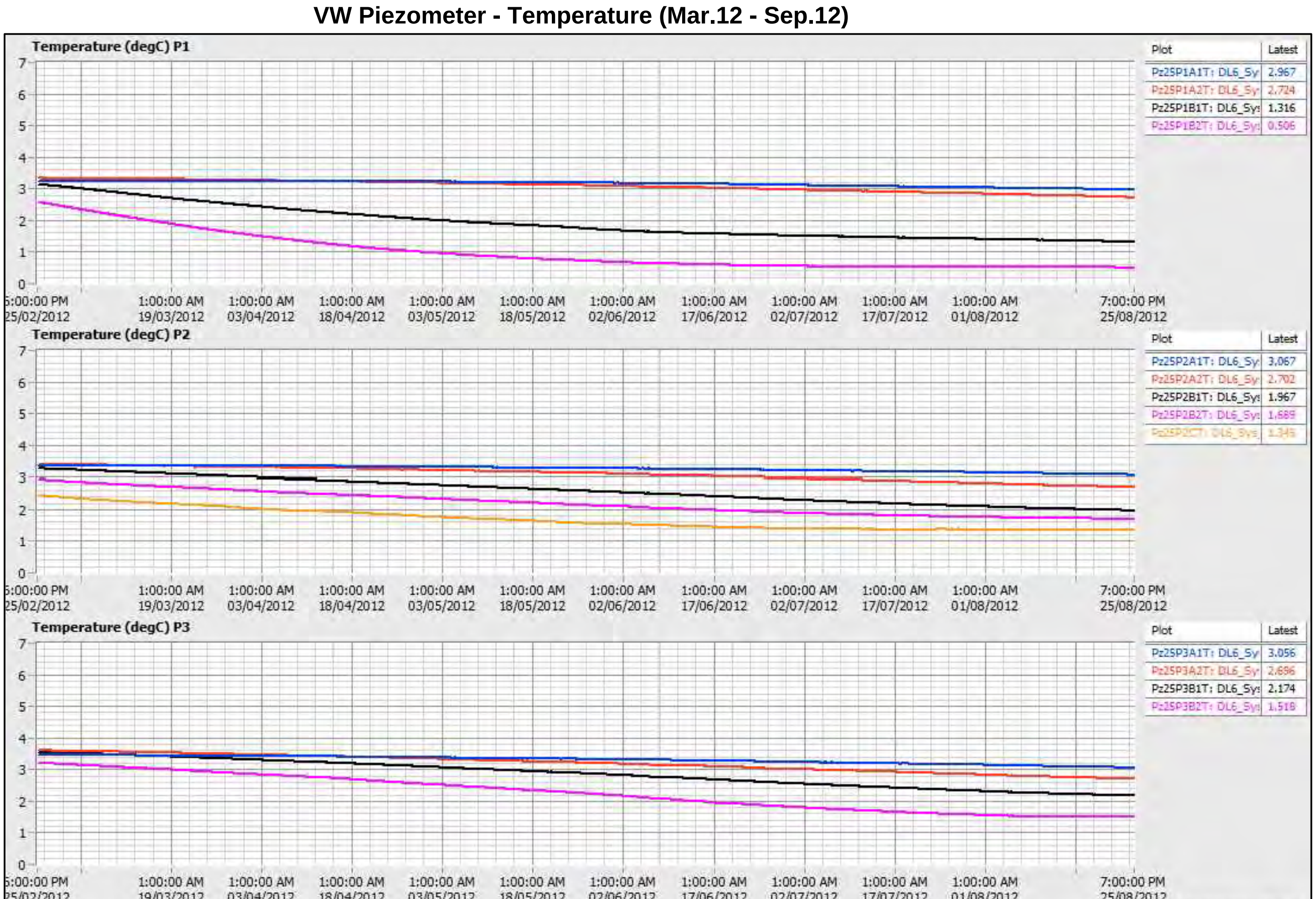
LEGEND

- CUTOFF (CSB)
- CUTOFF (SB)
- INITIAL ROCKFILL
- LAKEBED
- BEDROCK
- JET GROUT
- GROUT
- ① CORE BACKFILL (19 mm MINUS)
- ② COARSE BACKFILL (15mm MINUS)
- ③ ROCKFILL
- ④ FINE ROCKFILL
- 130.4 ▼ TOTAL HEAD (m) ON NOV. 15, 2011

VW Piezometer - Total Head (Mar.12 - Sep.12)



VW Piezometer - Temperature (Mar.12 - Sep.12)



PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

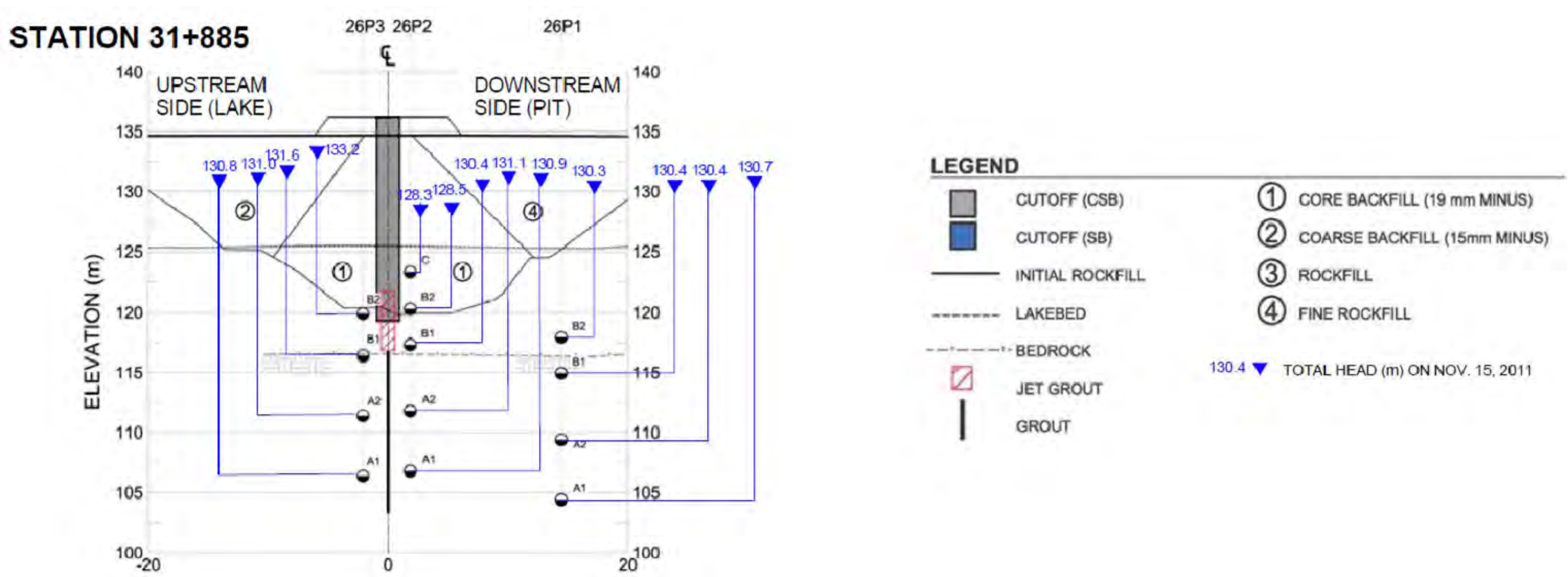
TITLE

BAY-GOOSE DIKE - SECTION 31+815
PIEZOMETRIC DATA (MAR.2012 - SEP.2012)

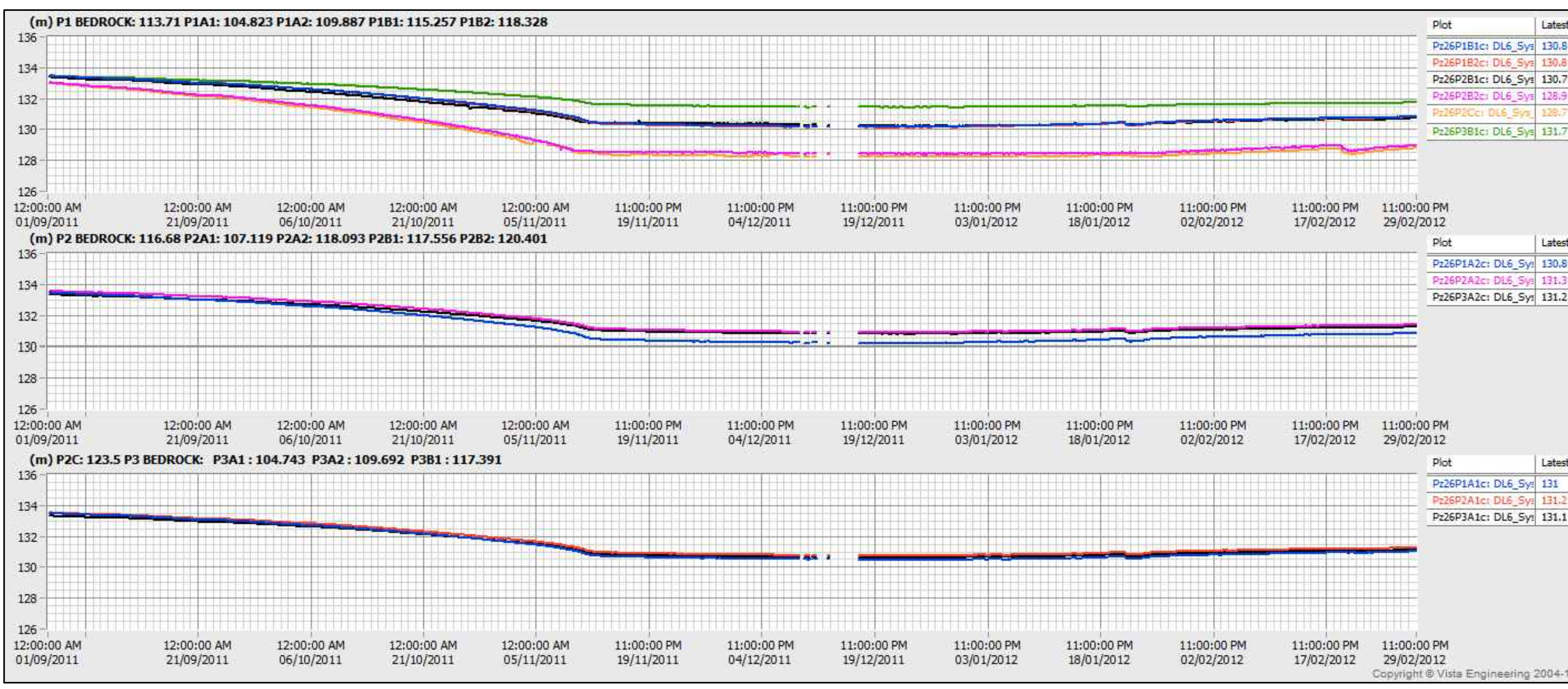
Golder Associates
Montréal, Québec

PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

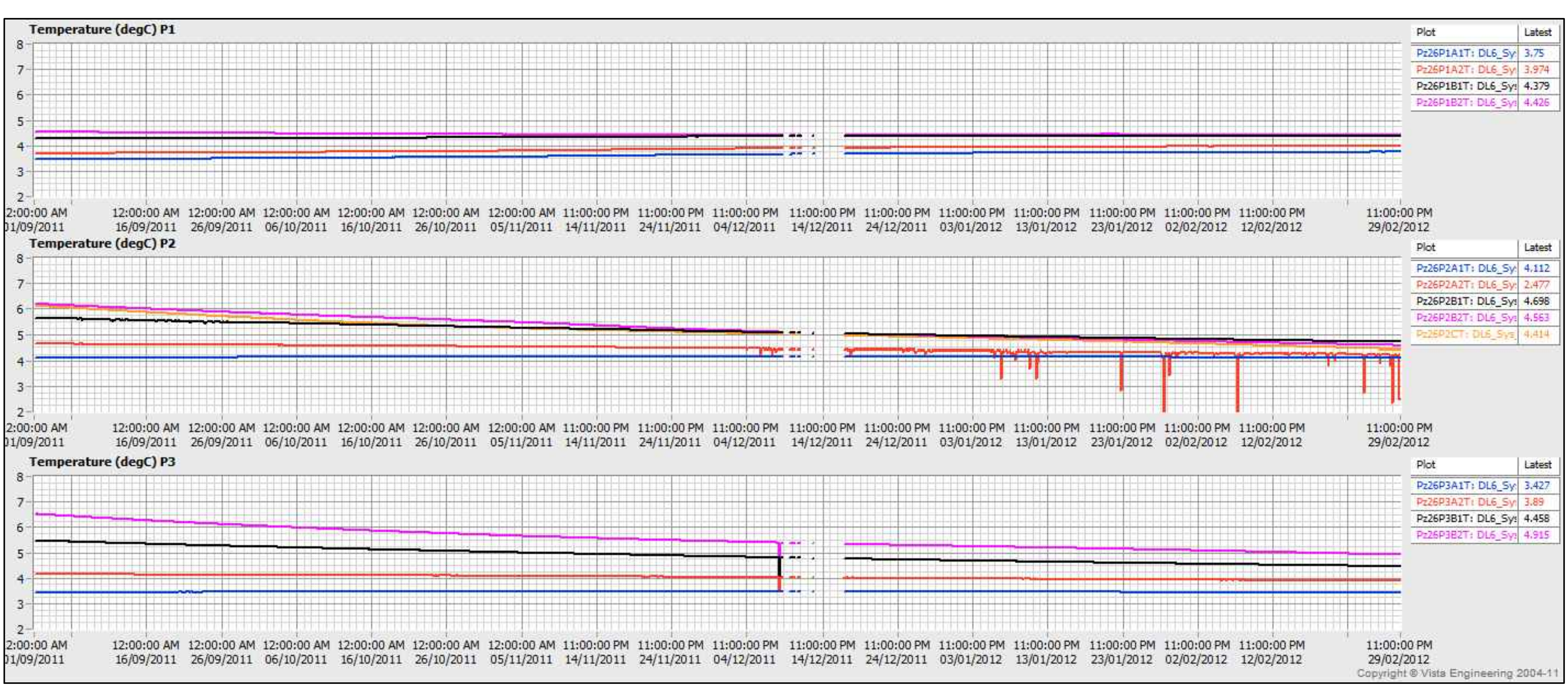
FIGURE C3-16



VW Piezometer - Total Head (Sep.11 - Mar.12)



VW Piezometer - Temperature (Sep.11 - Mar.12)



PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

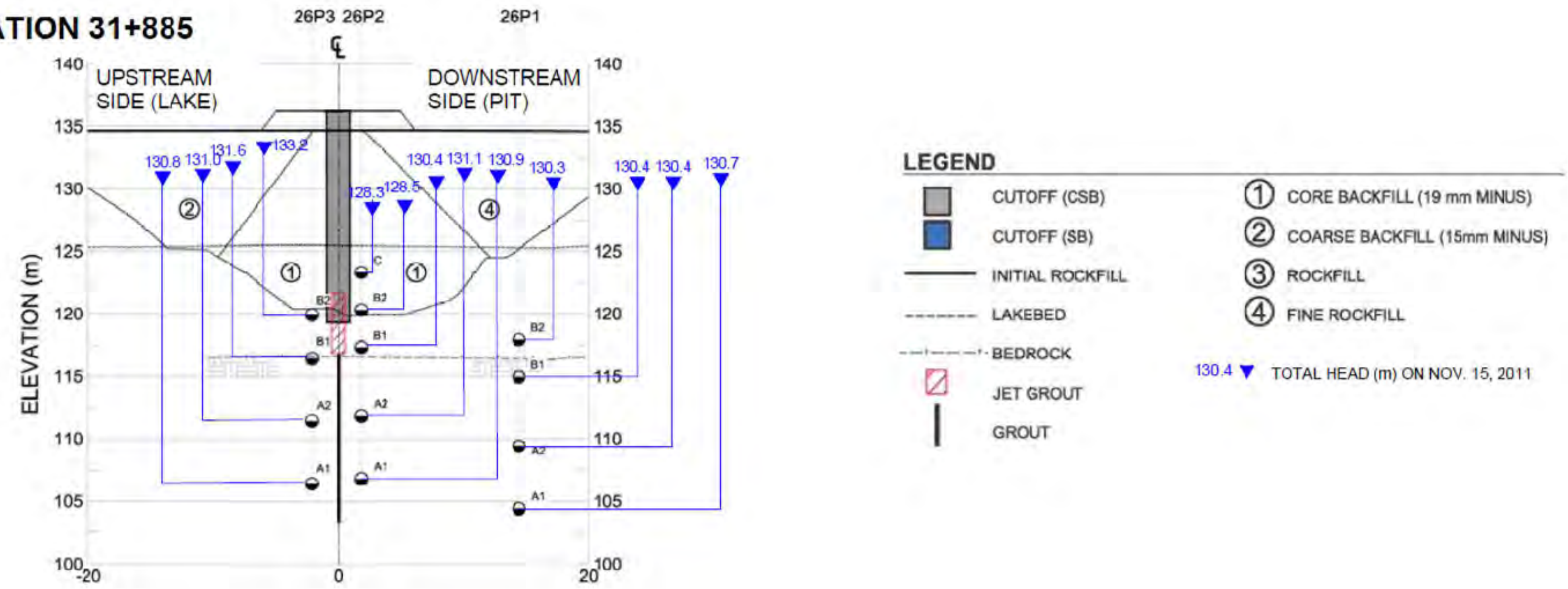
TITLE

BAY-GOOSE DIKE - SECTION 31+885
PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

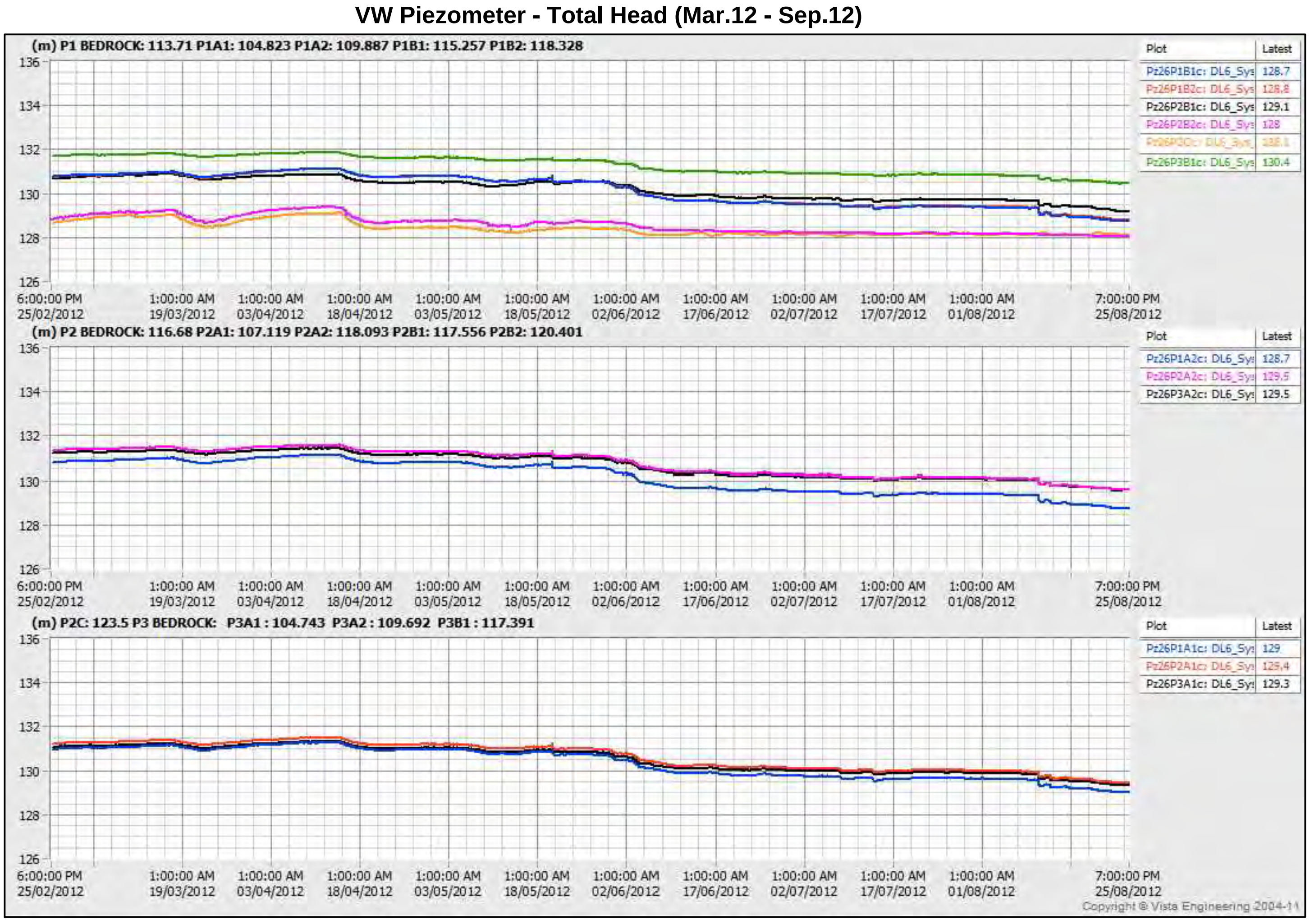
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C3-17**	
REVIEW	FE	11/15/2012		

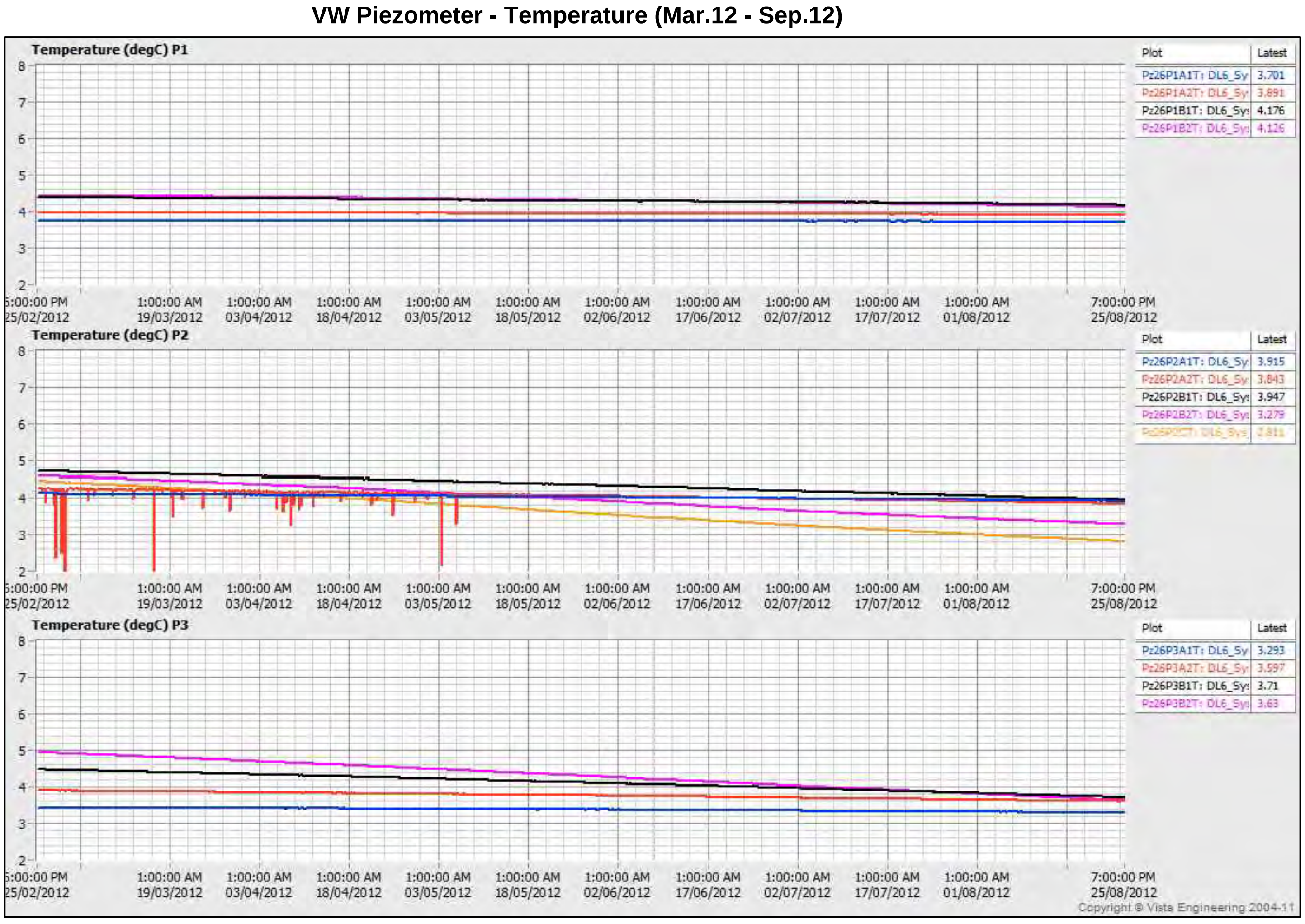
STATION 31+885



VW Piezometer - Total Head (Mar.12 - Sep.12)



VW Piezometer - Temperature (Mar.12 - Sep.12)



PROJECT

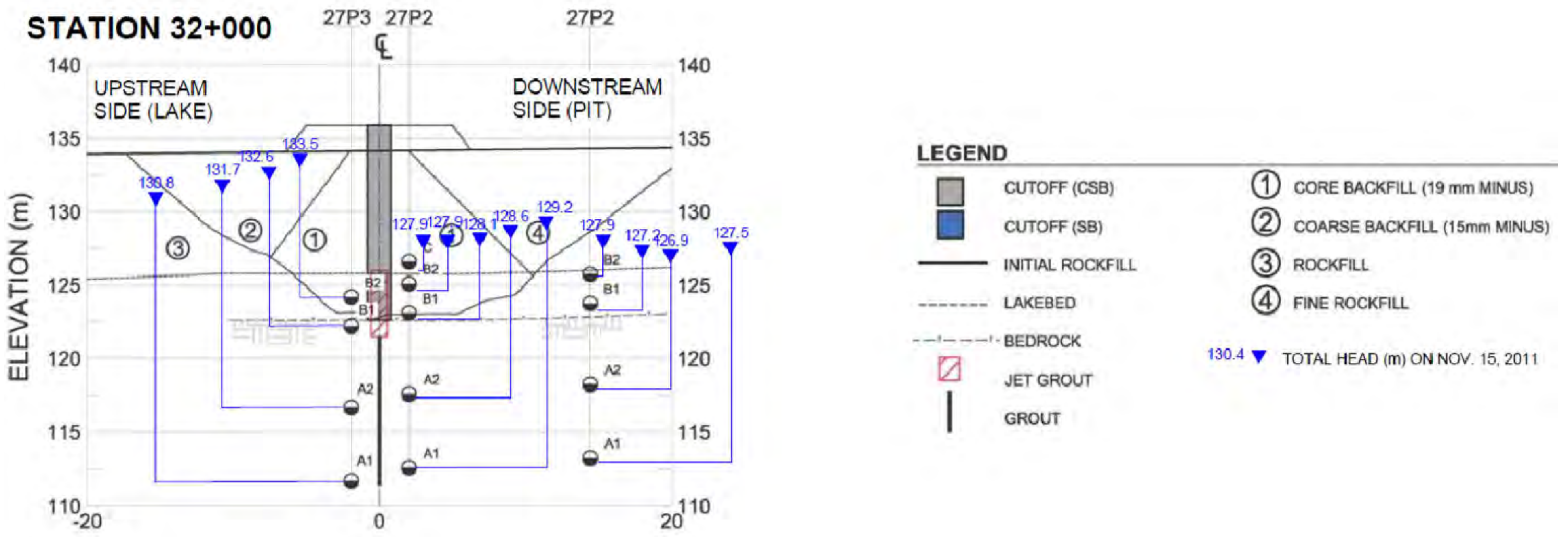
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

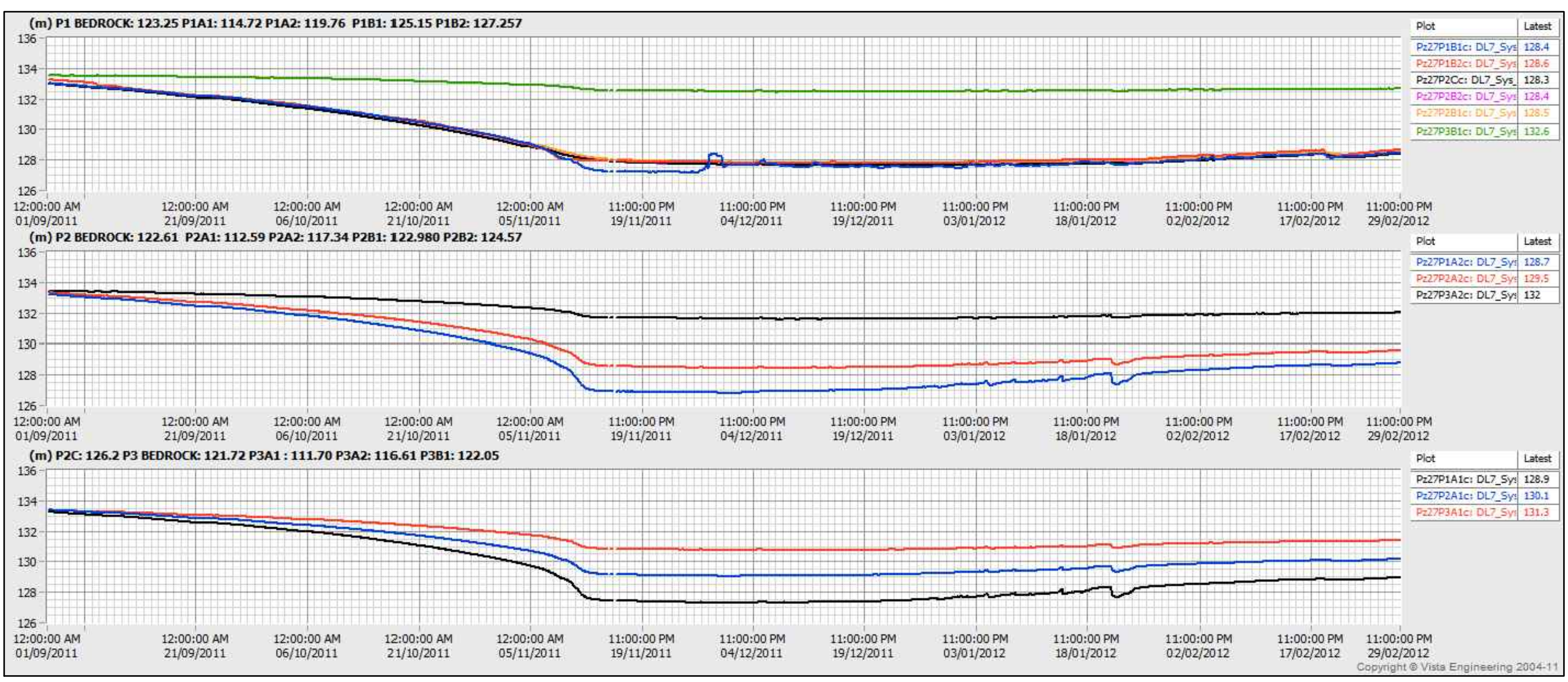
BAY-GOOSE DIKE - SECTION 31+885
PIEZOMETRIC DATA (MAR.2012 - SEP.2012)

Golder Associates
Montréal, Québec

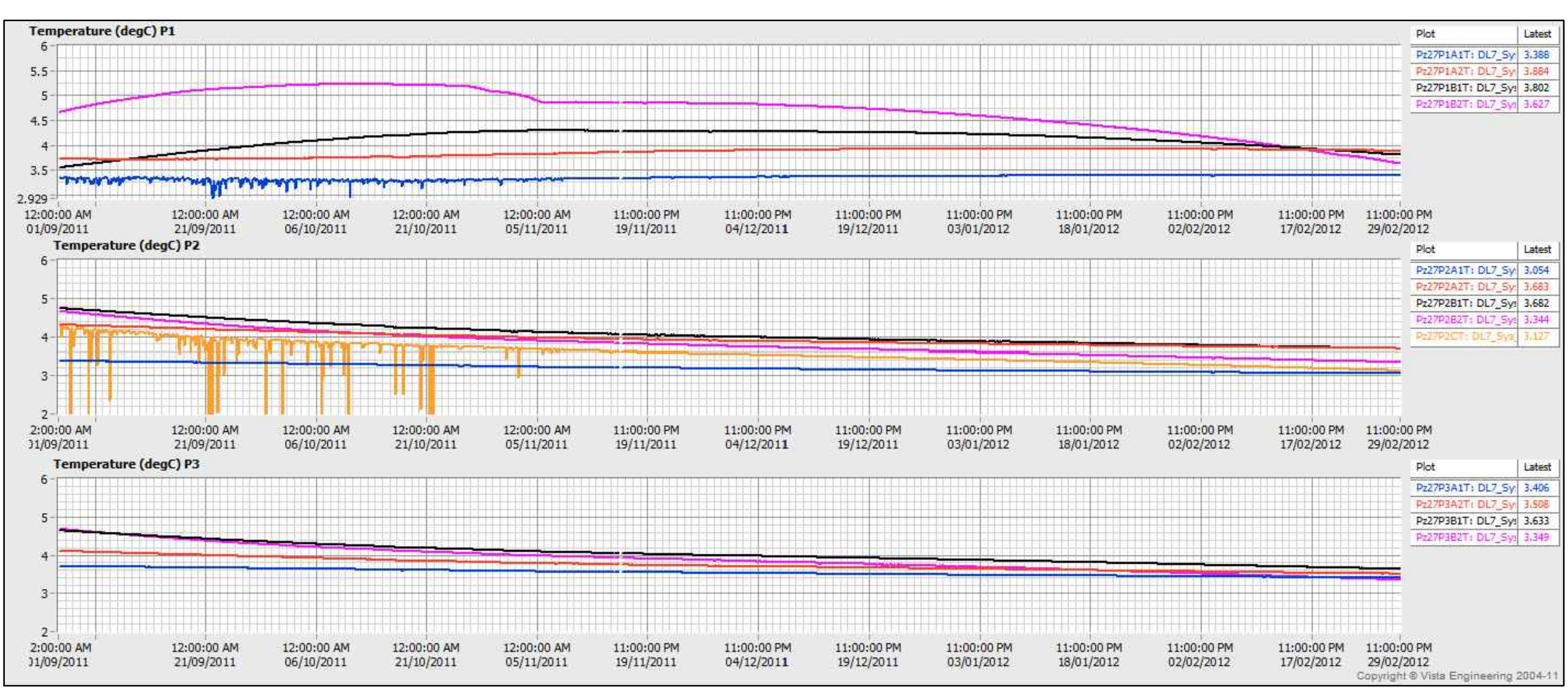
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-18**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Sep.11 - Mar.12)



VW Piezometer - Temperature (Sep.11 - Mar.12)



PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

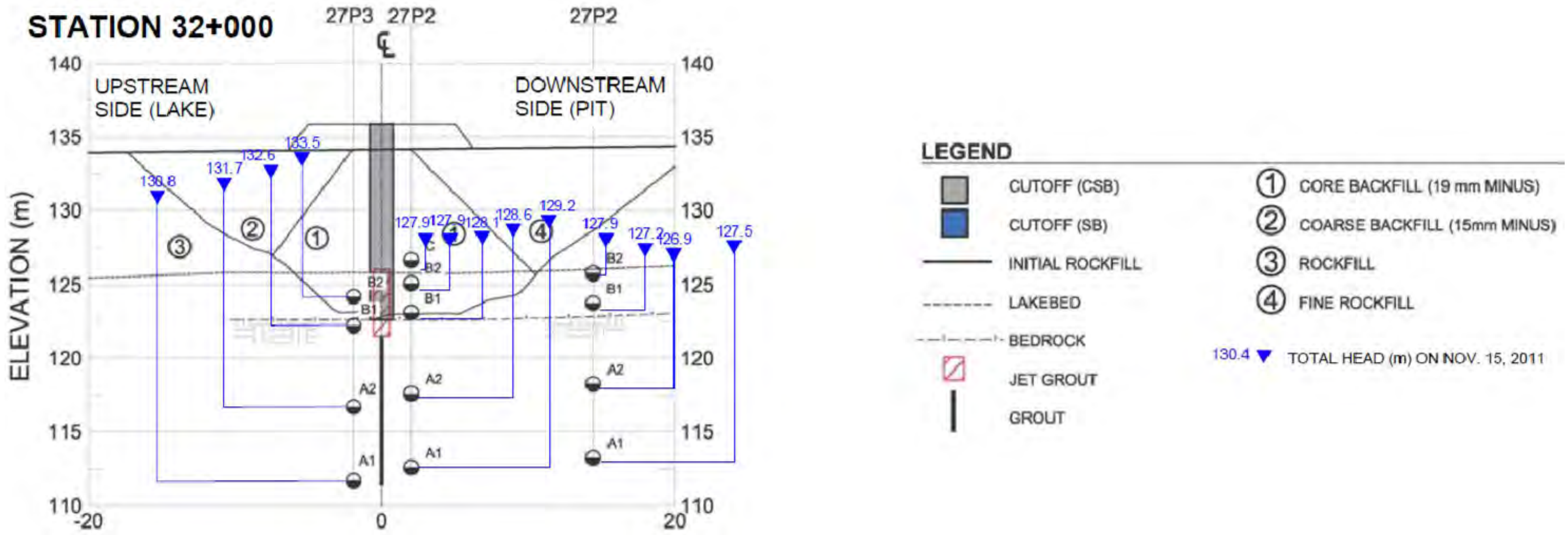
BAY-GOOSE DIKE - SECTION 32+000
PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

Golder Associates
Montréal, Québec

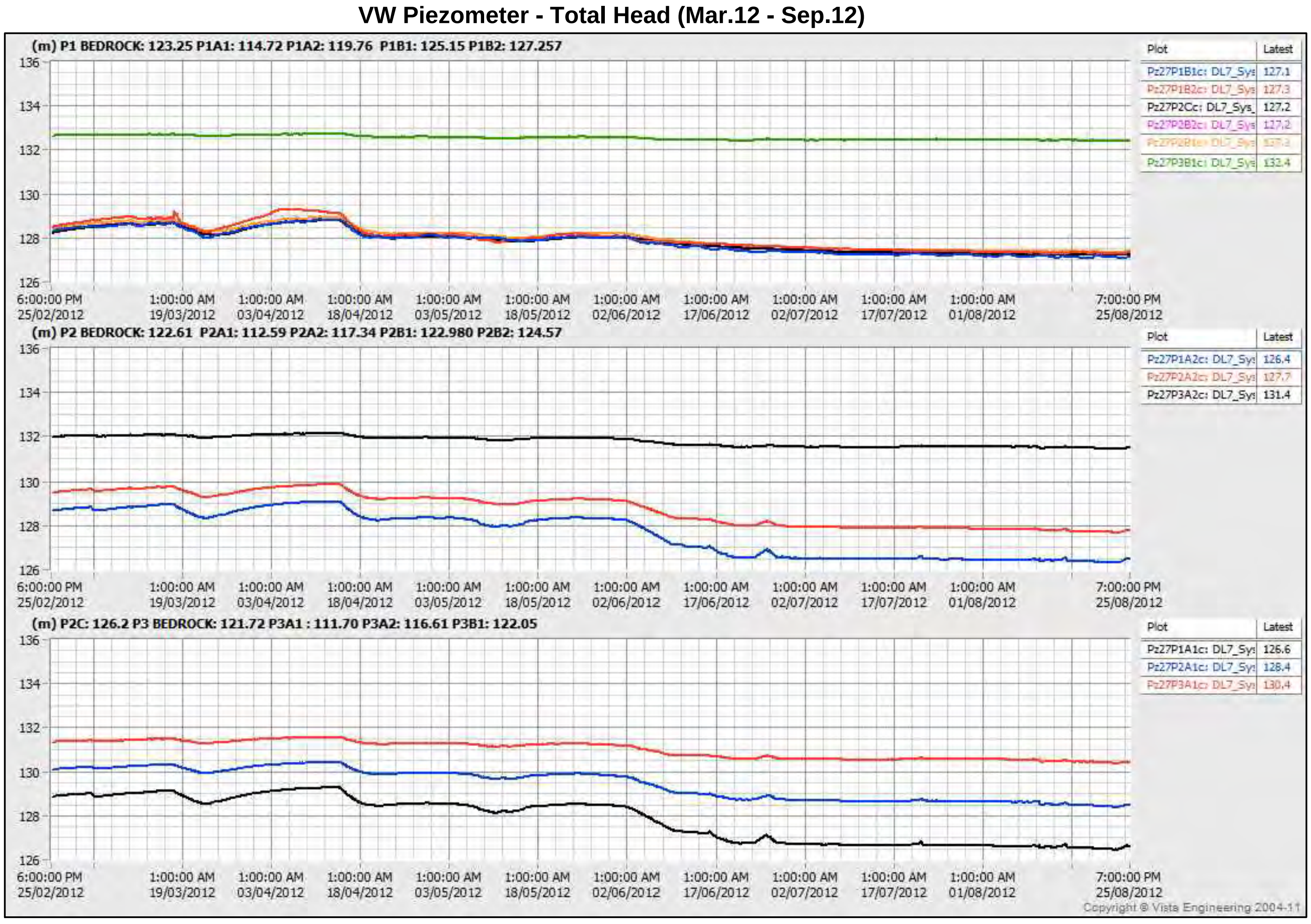
PROJECT No.		12-1221-0073
DESIGN	AEM	09/19/2012
CADD	FLB	10/19/2012
CHECK	YB	11/08/2012
REVIEW	FE	11/15/2012

PHASE No. 3000
SCALE
REV. -

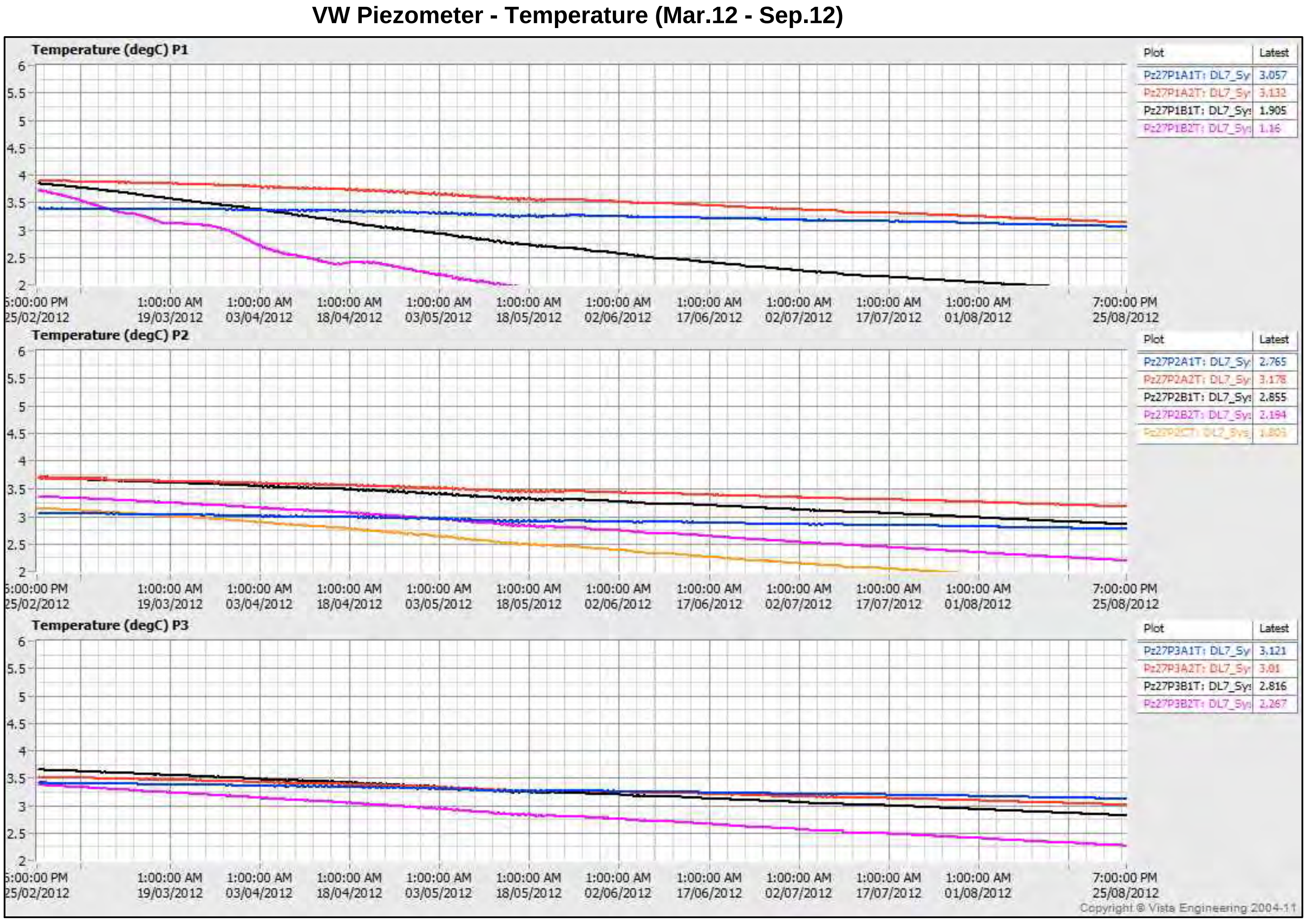
FIGURE C3-19



VW Piezometer - Total Head (Mar.12 - Sep.12)



VW Piezometer - Temperature (Mar.12 - Sep.12)



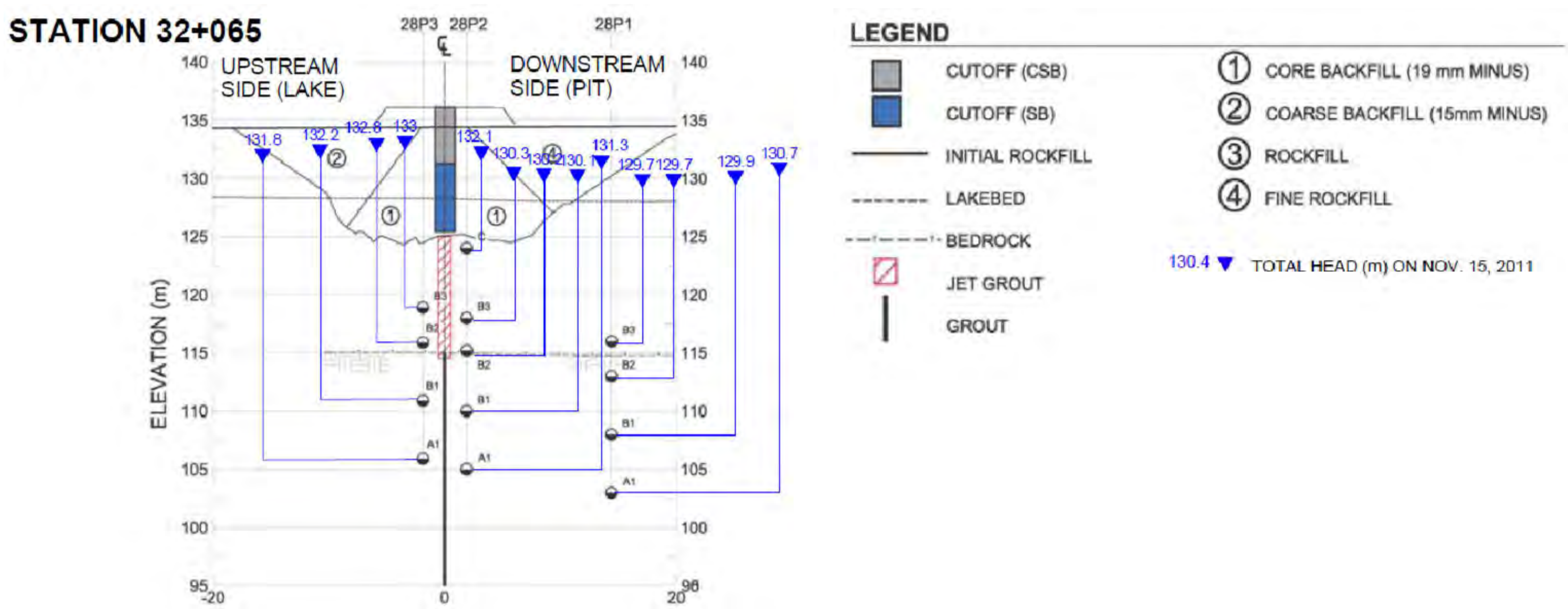
PROJECT
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE
BAY-GOOSE DIKE - SECTION 32+000
PIEZOMETRIC DATA (MAR.2012 - SEP.2012)

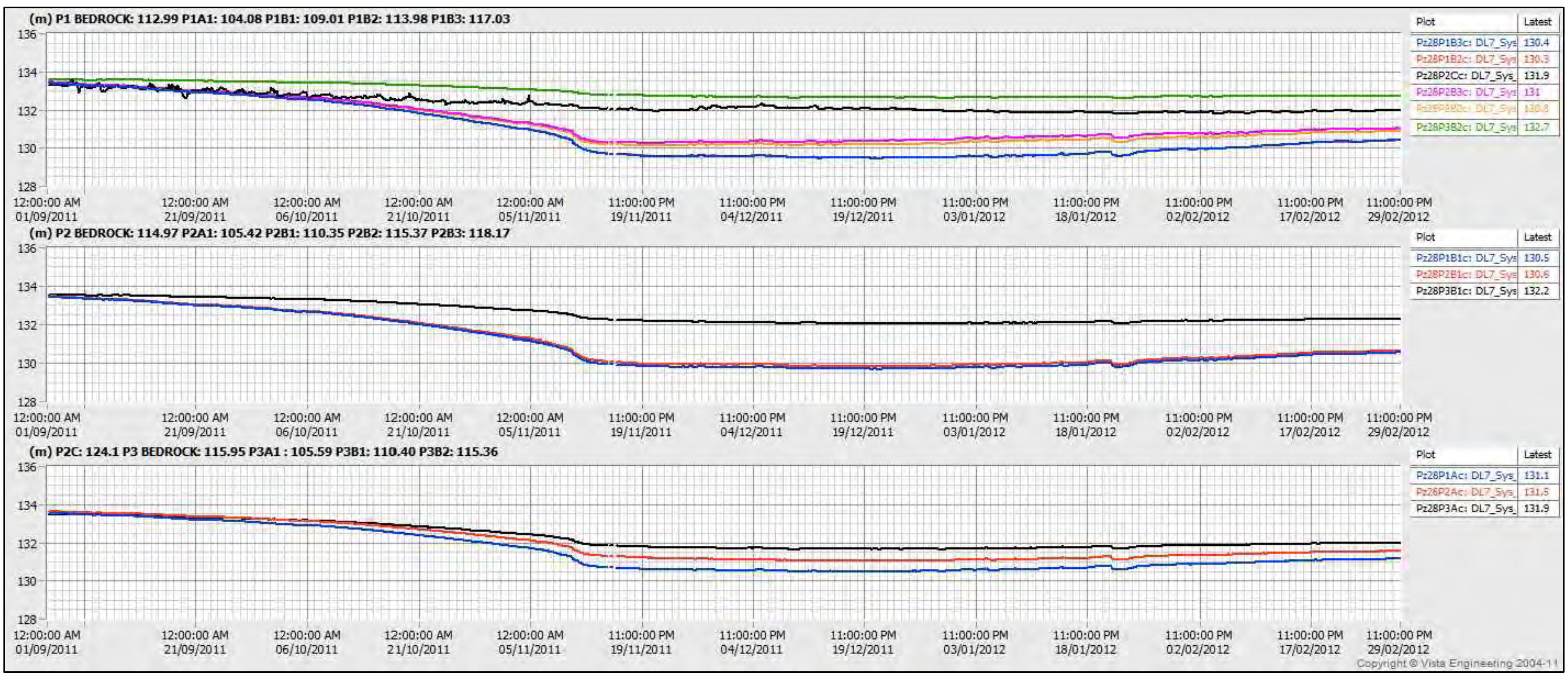
Golder Associates
Montréal, Québec

PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

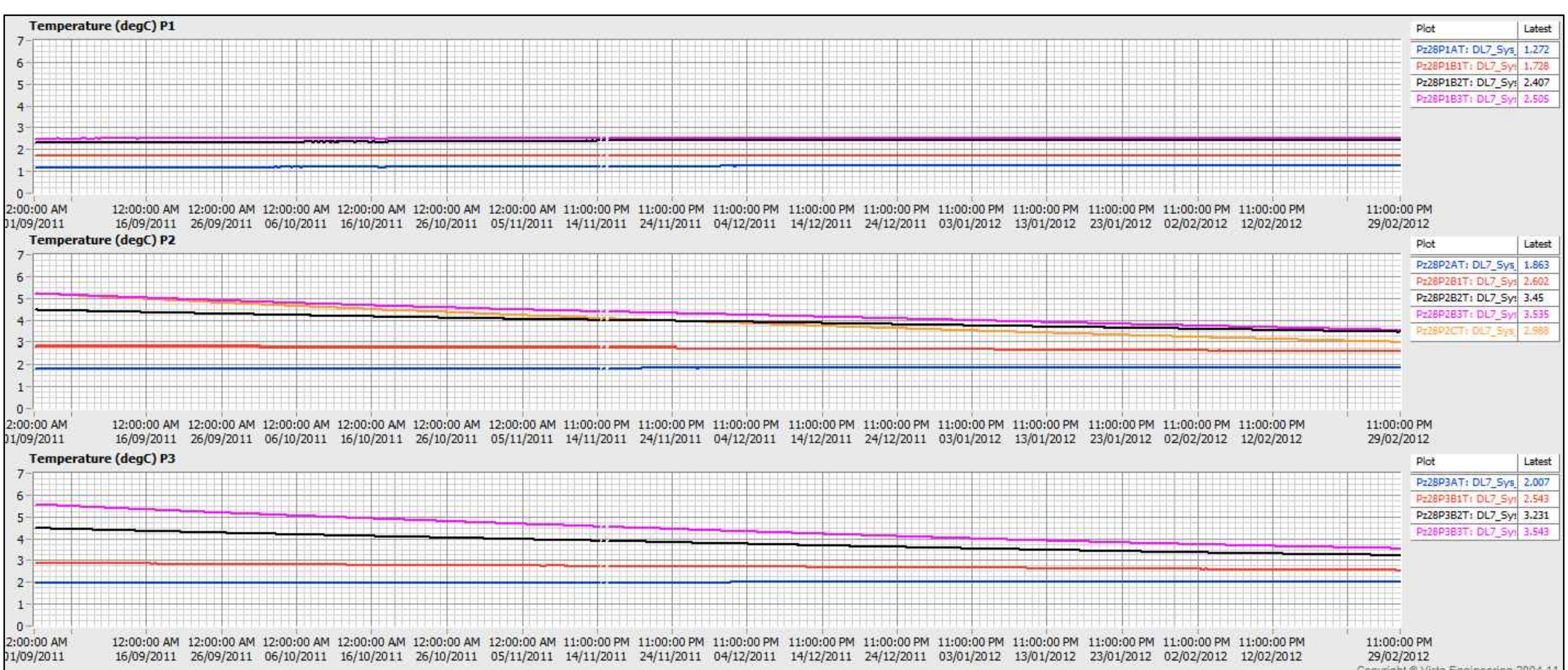
FIGURE C3-20



VW Piezometer - Total Head (Sep.11 - Mar.12)



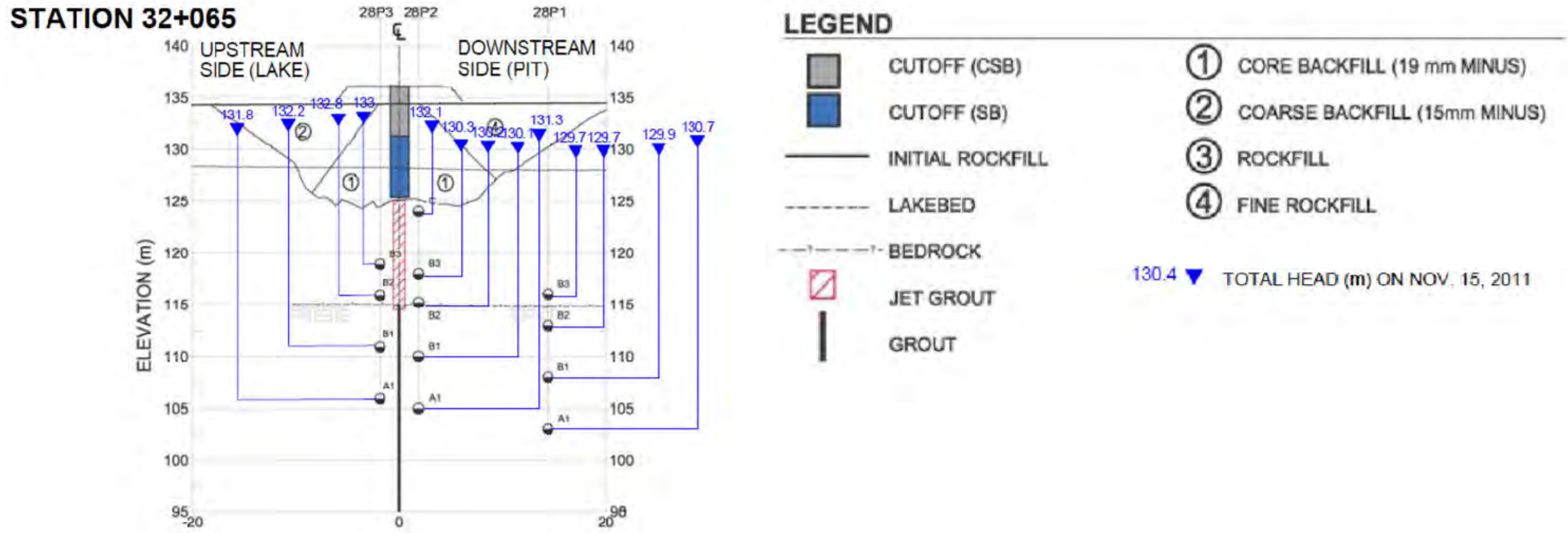
VW Piezometer - Temperature (Sep.11 - Mar.12)



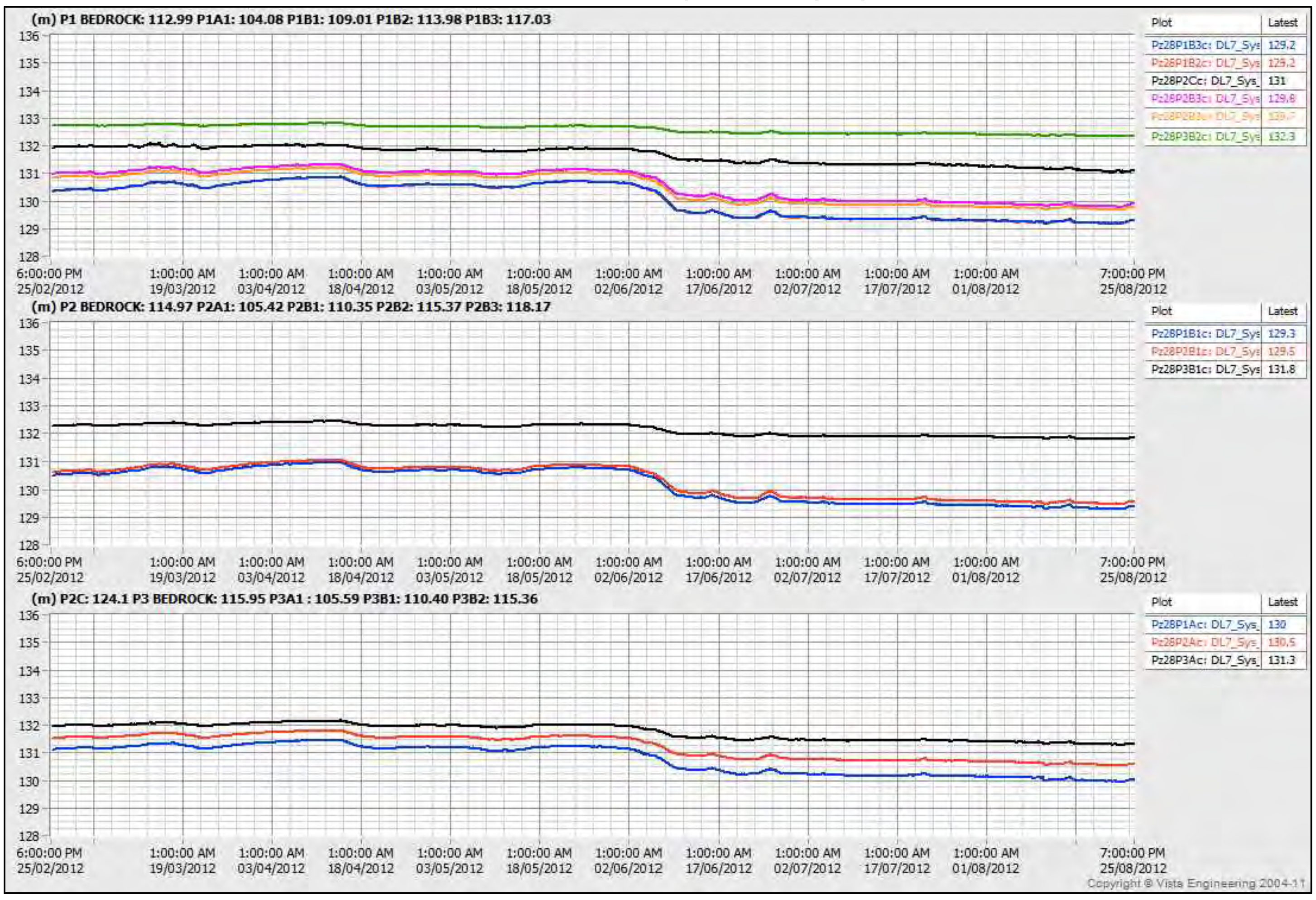
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	BAY-GOOSE DIKE - SECTION 32+065 PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

Golder Associates
Montréal, Québec

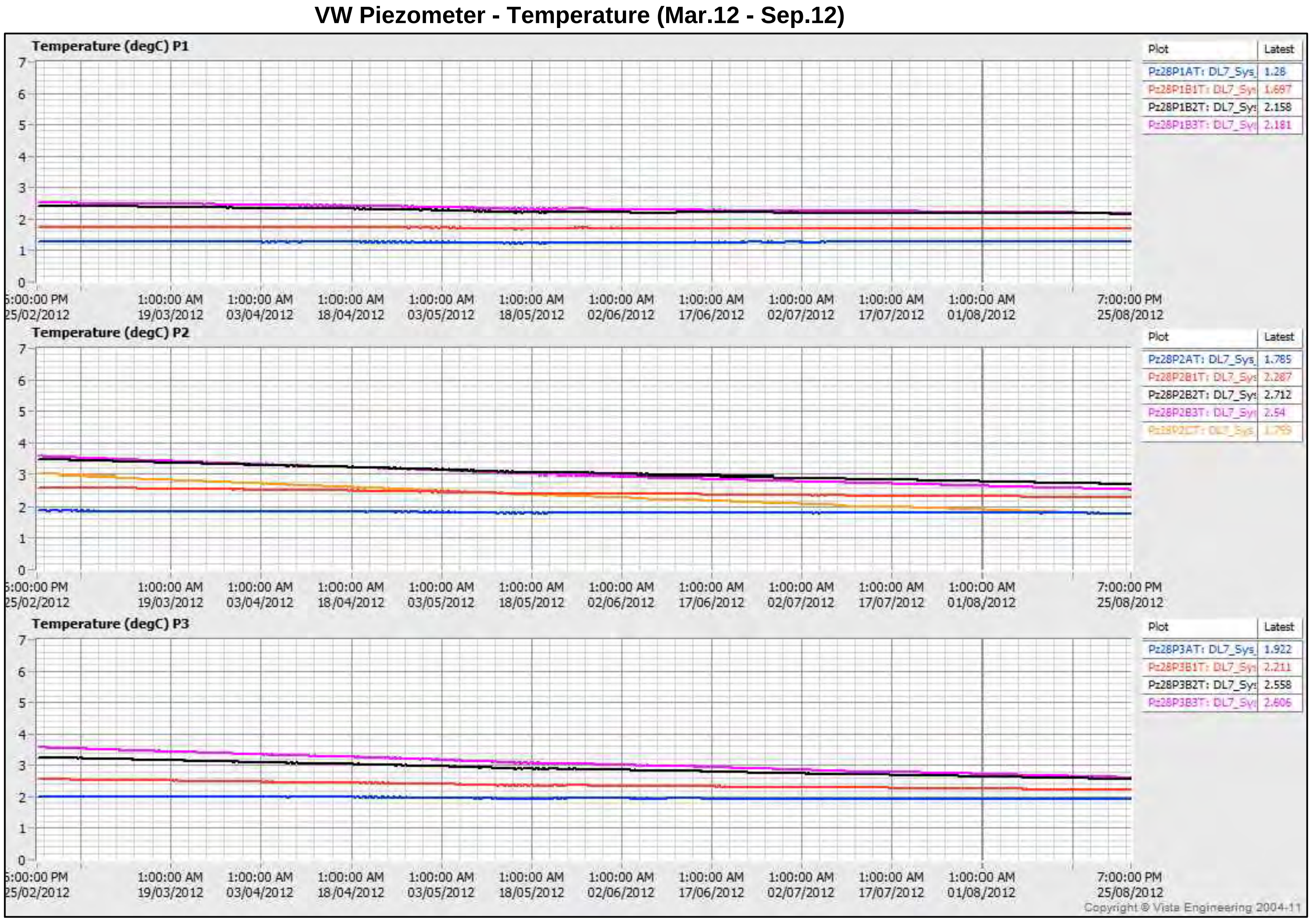
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	FIGURE C3-21	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Mar.12 - Sep.12)



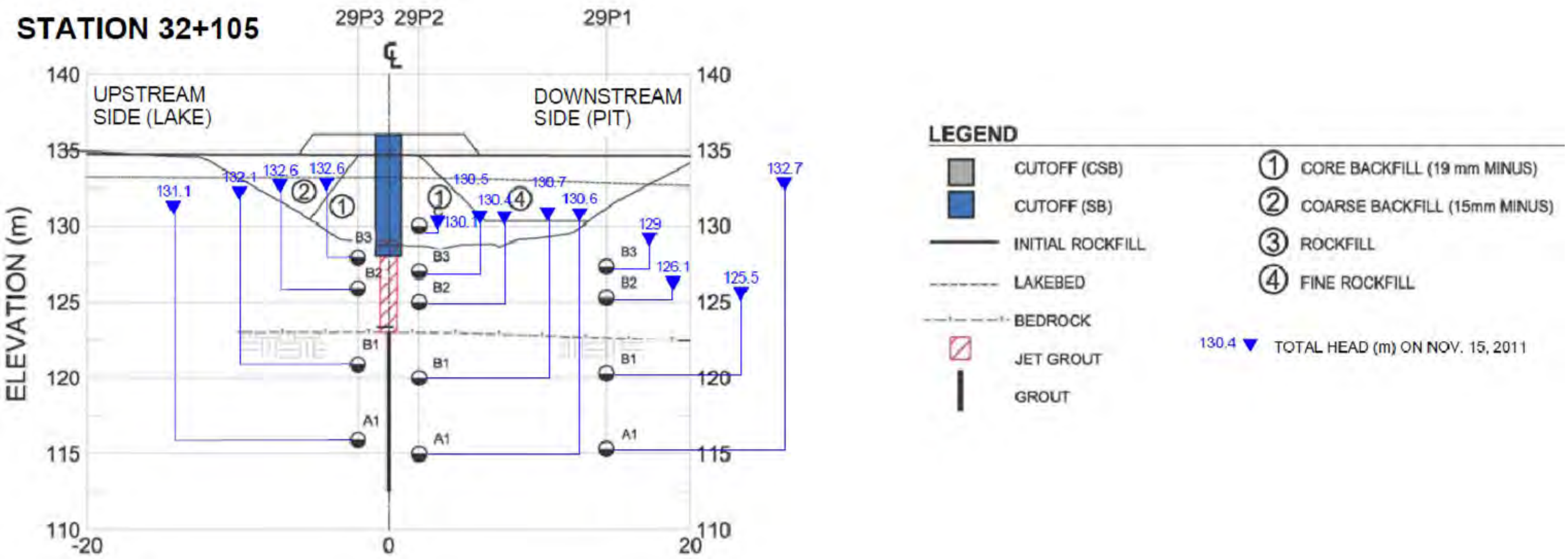
VW Piezometer - Temperature (Mar.12 - Sep.12)



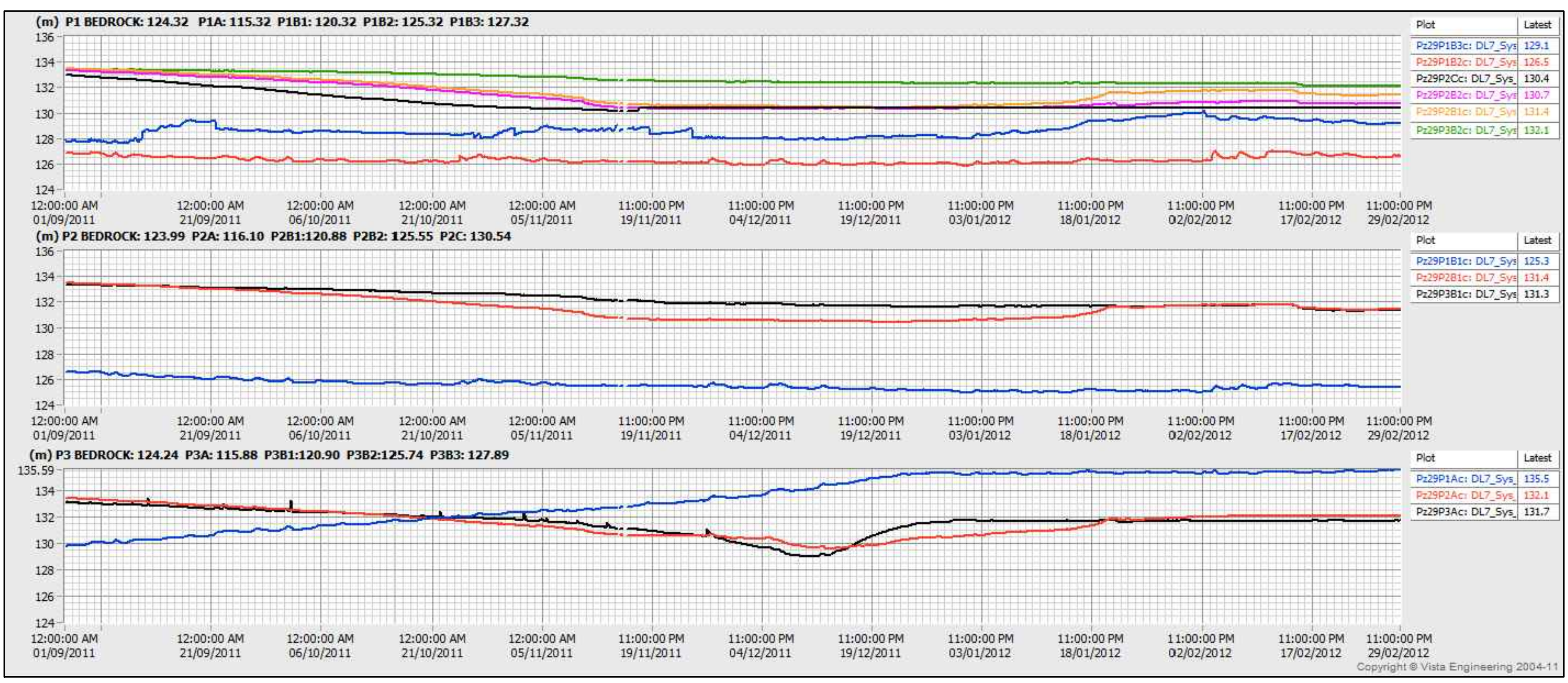
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**BAY-GOOSE DIKE - SECTION 32+065** **PIEZOMETRIC DATA (MAR.2012 - SEP.2012)**

Golder Associates
Montréal, Québec

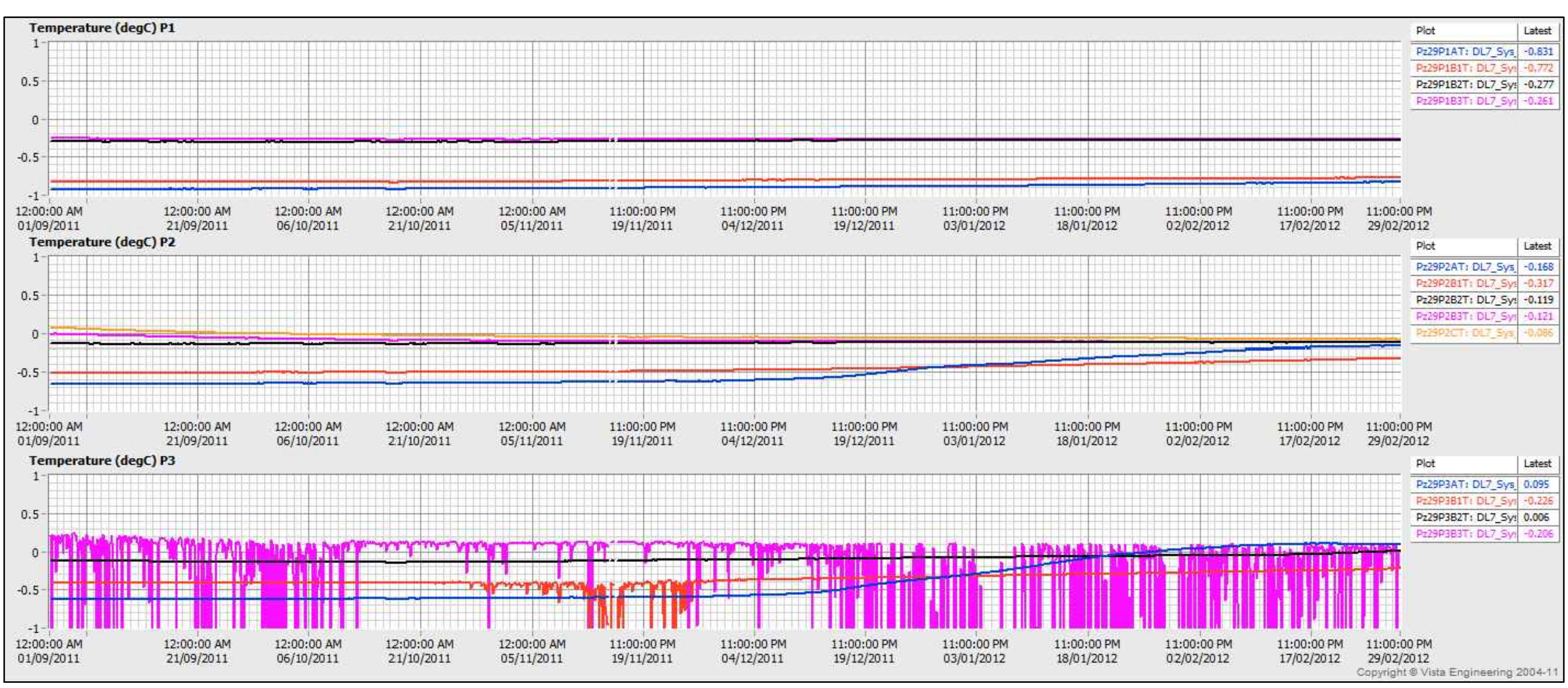
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-22**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Total Head (Sep.11 - Mar.12)



VW Piezometer - Temperature (Sep.11 - Mar.12)



PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

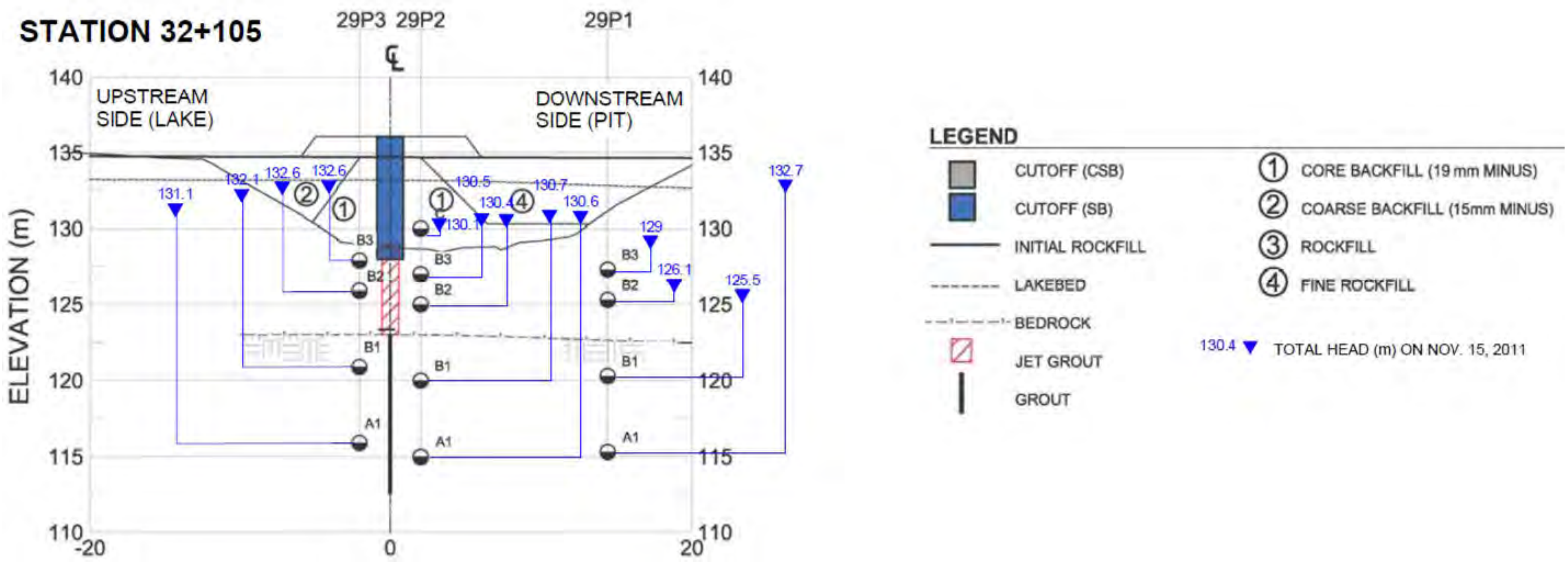
TITLE

BAY-GOOSE DIKE - SECTION 32+105
PIEZOMETRIC DATA (SEP.2011 - MAR.2012)

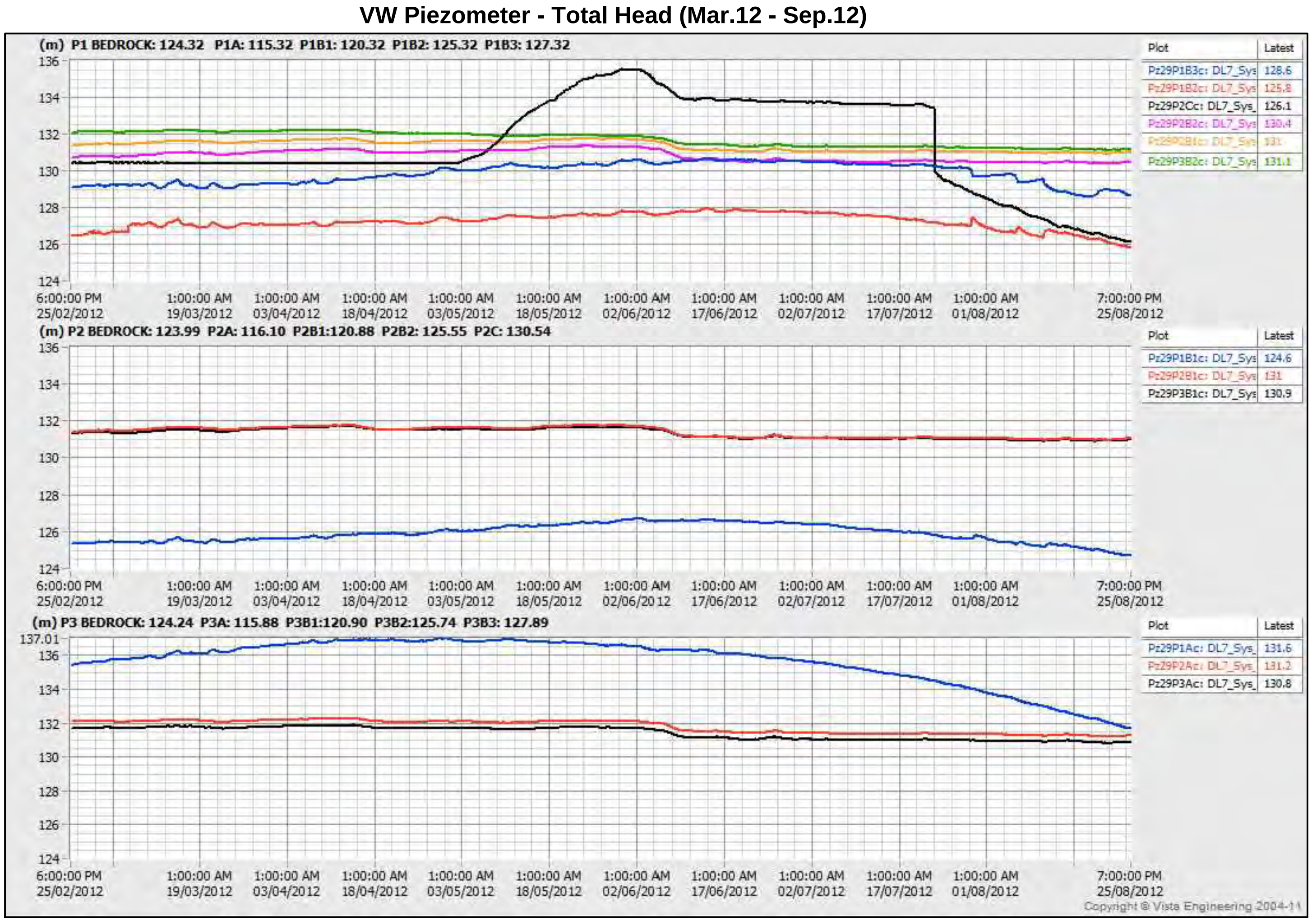
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

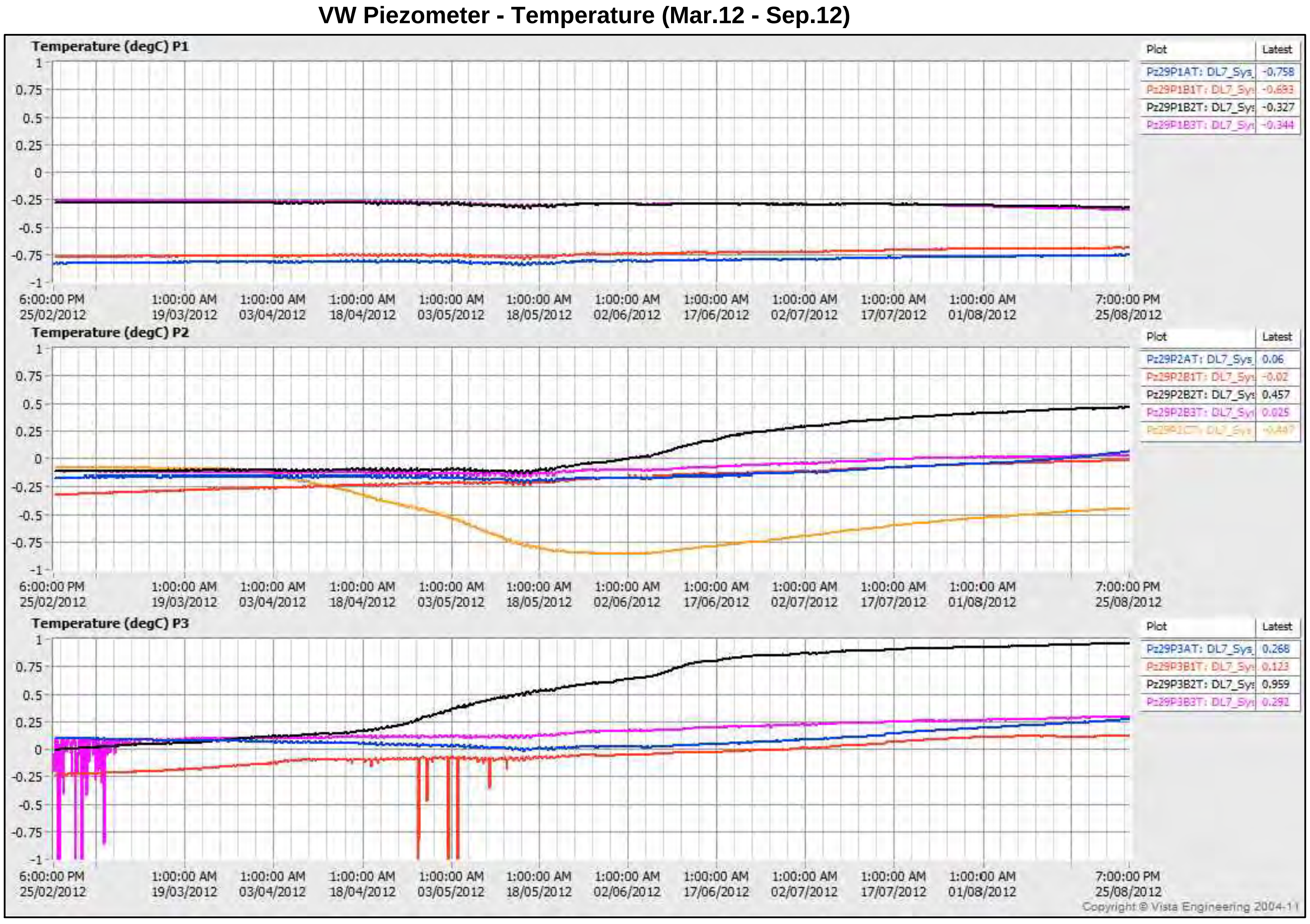
FIGURE C3-23



VW Piezometer - Total Head (Mar.12 - Sep.12)



VW Piezometer - Temperature (Mar.12 - Sep.12)



PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

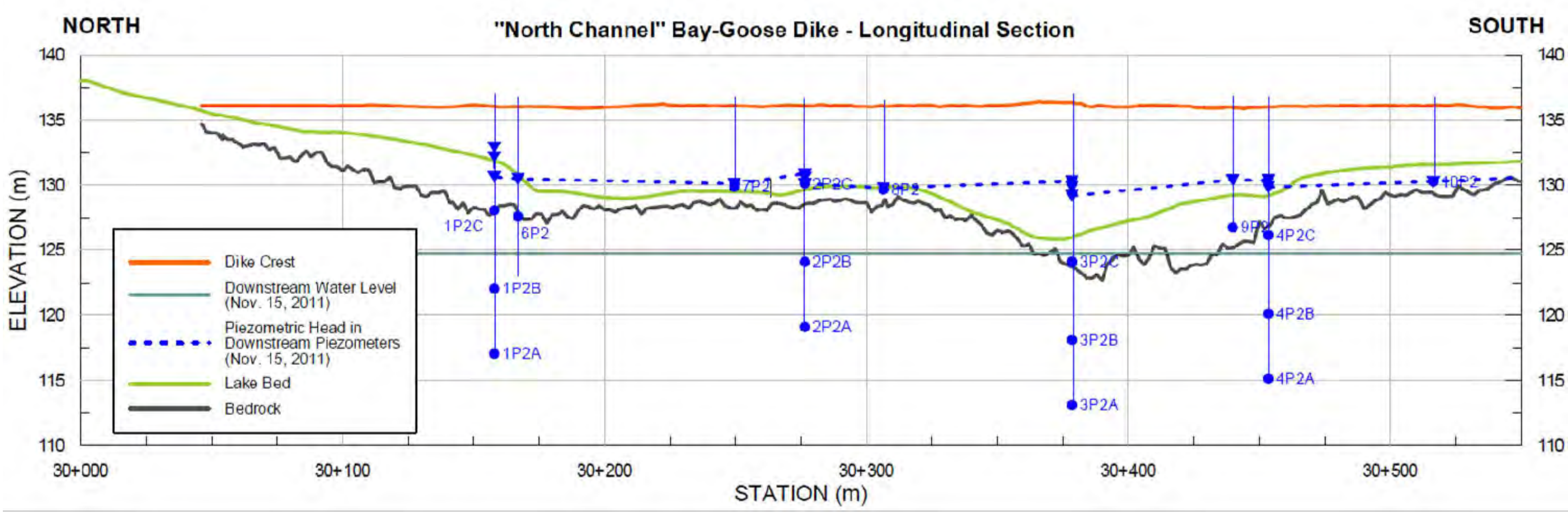
TITLE

BAY-GOOSE DIKE - SECTION 32+105
PIEZOMETRIC DATA (MAR.2012 - SEP.2012)

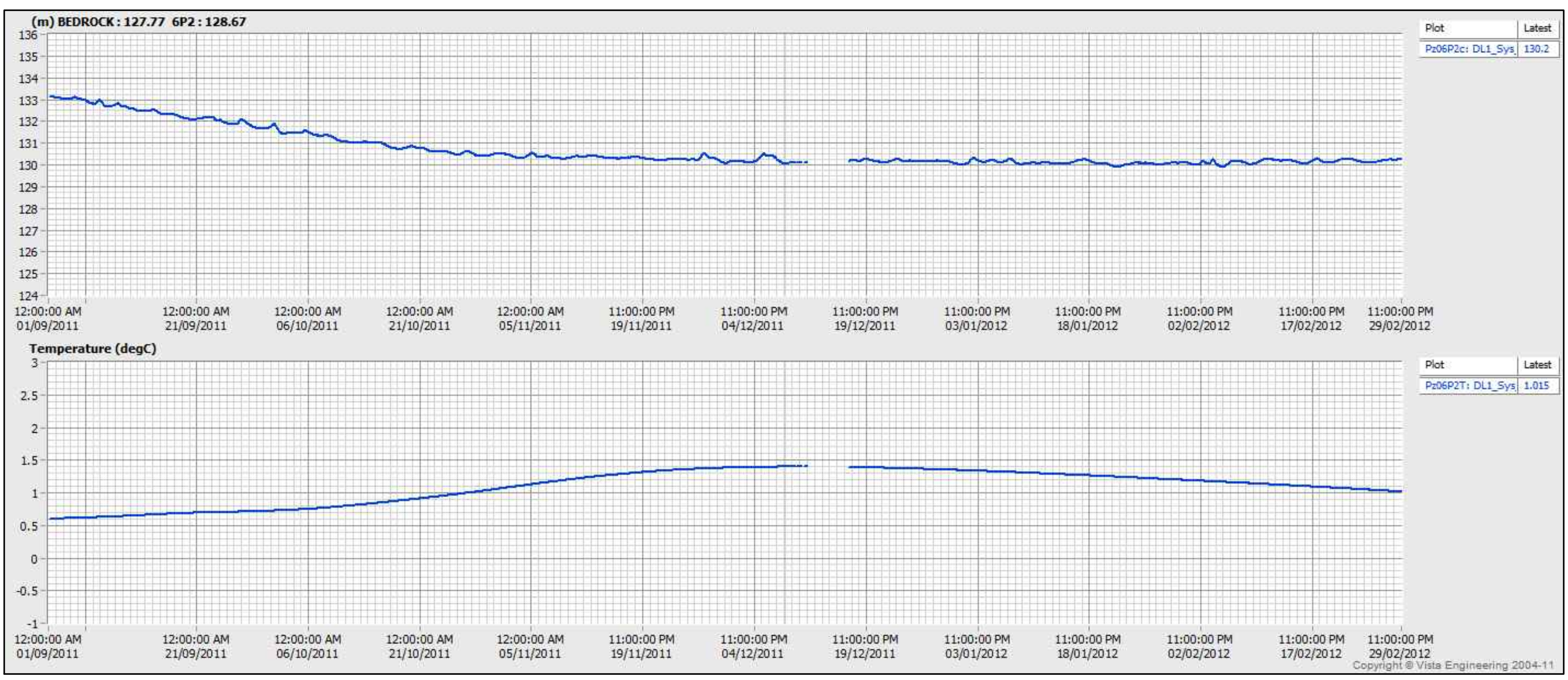
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

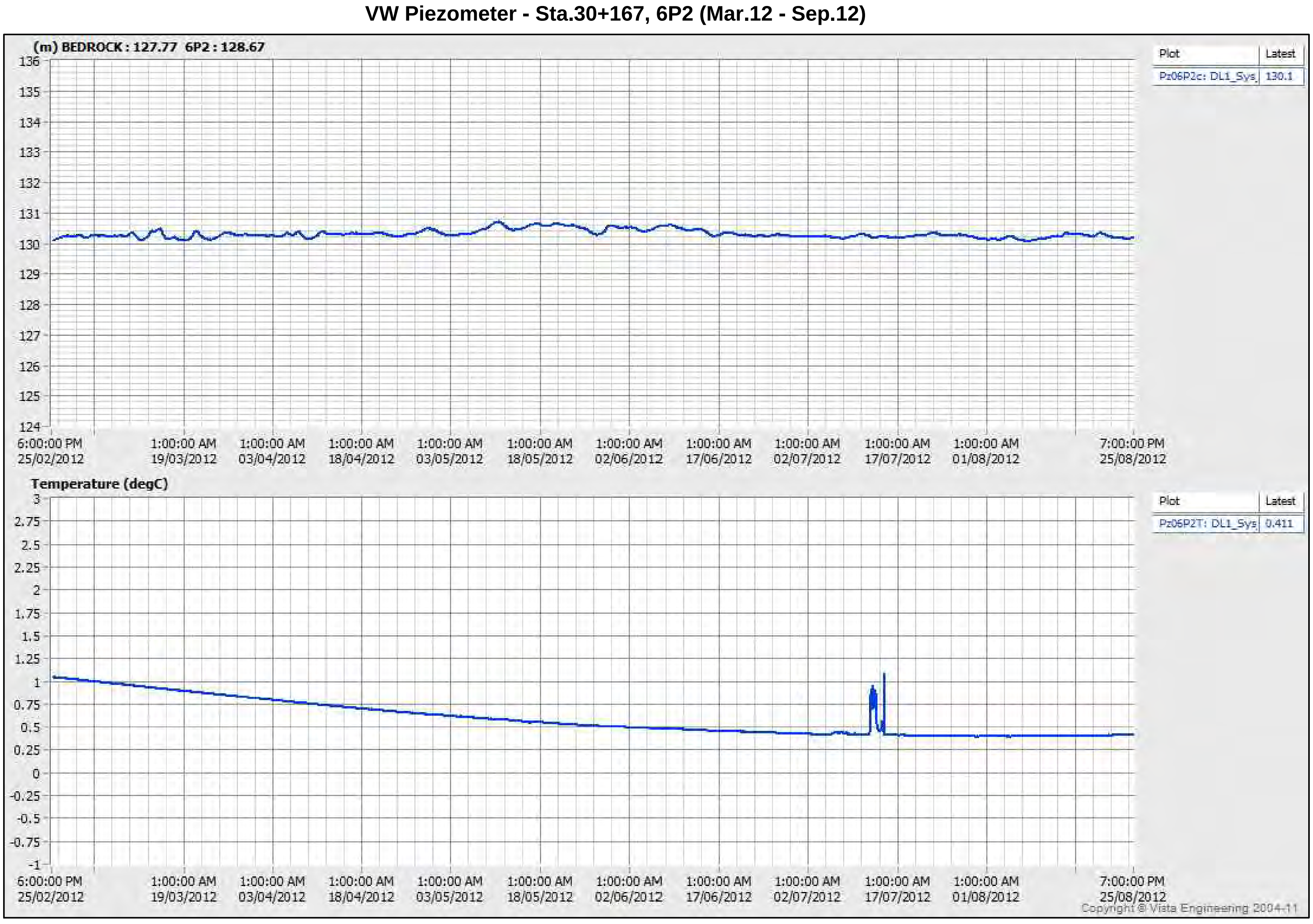
FIGURE C3-24



VW Piezometer - Sta.30+167, 6P2 (Sep.11 - Mar.12)



VW Piezometer - Sta.30+167, 6P2 (Mar.12 - Sep.12)

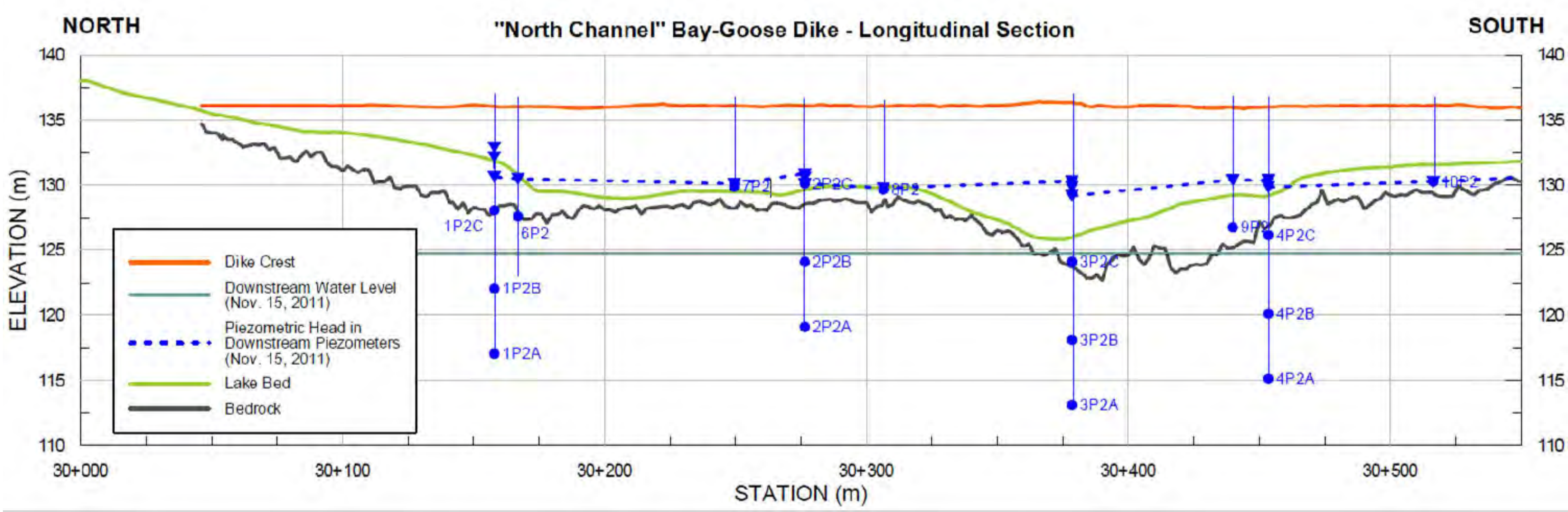


PROJECT
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

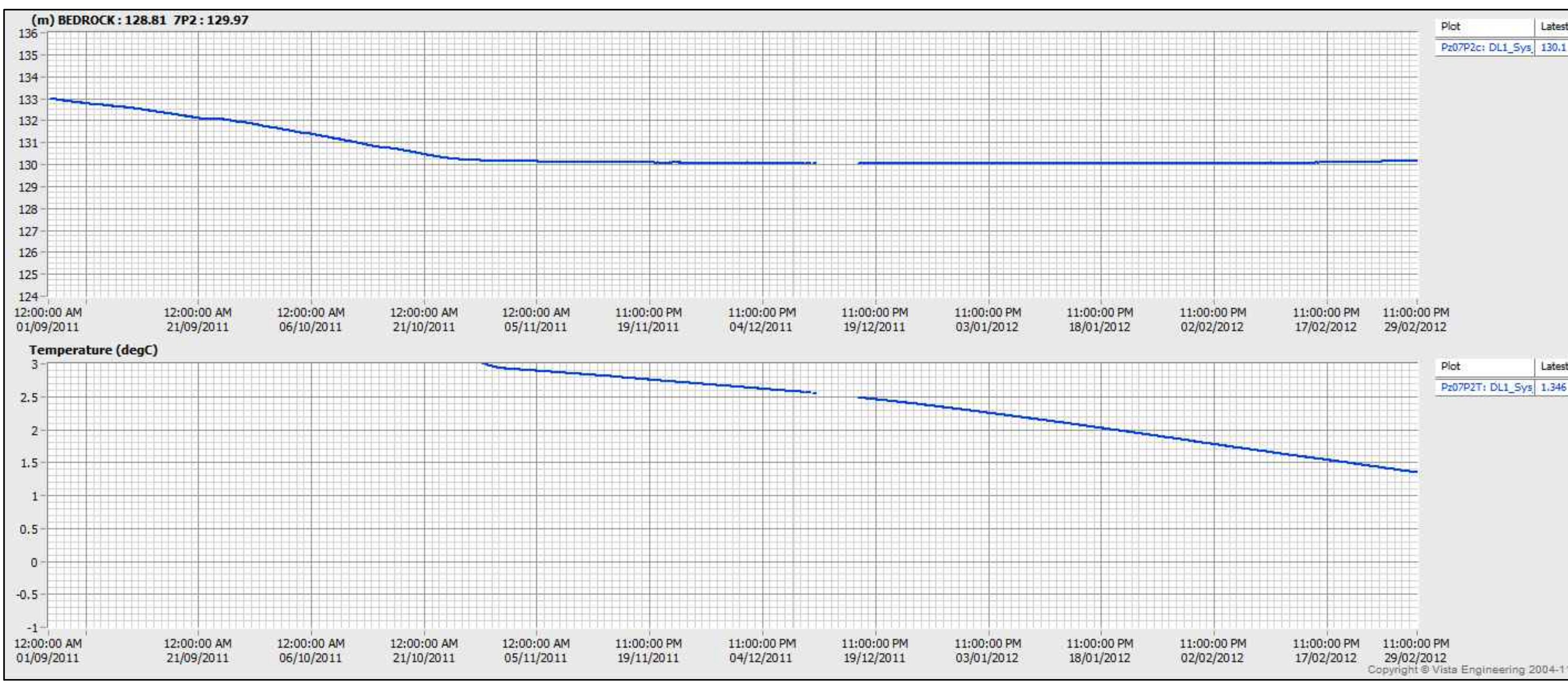
TITLE
BAY-GOOSE DIKE - NORTH CHANNEL
30+167 - PIEZOMETRIC DATA
(SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

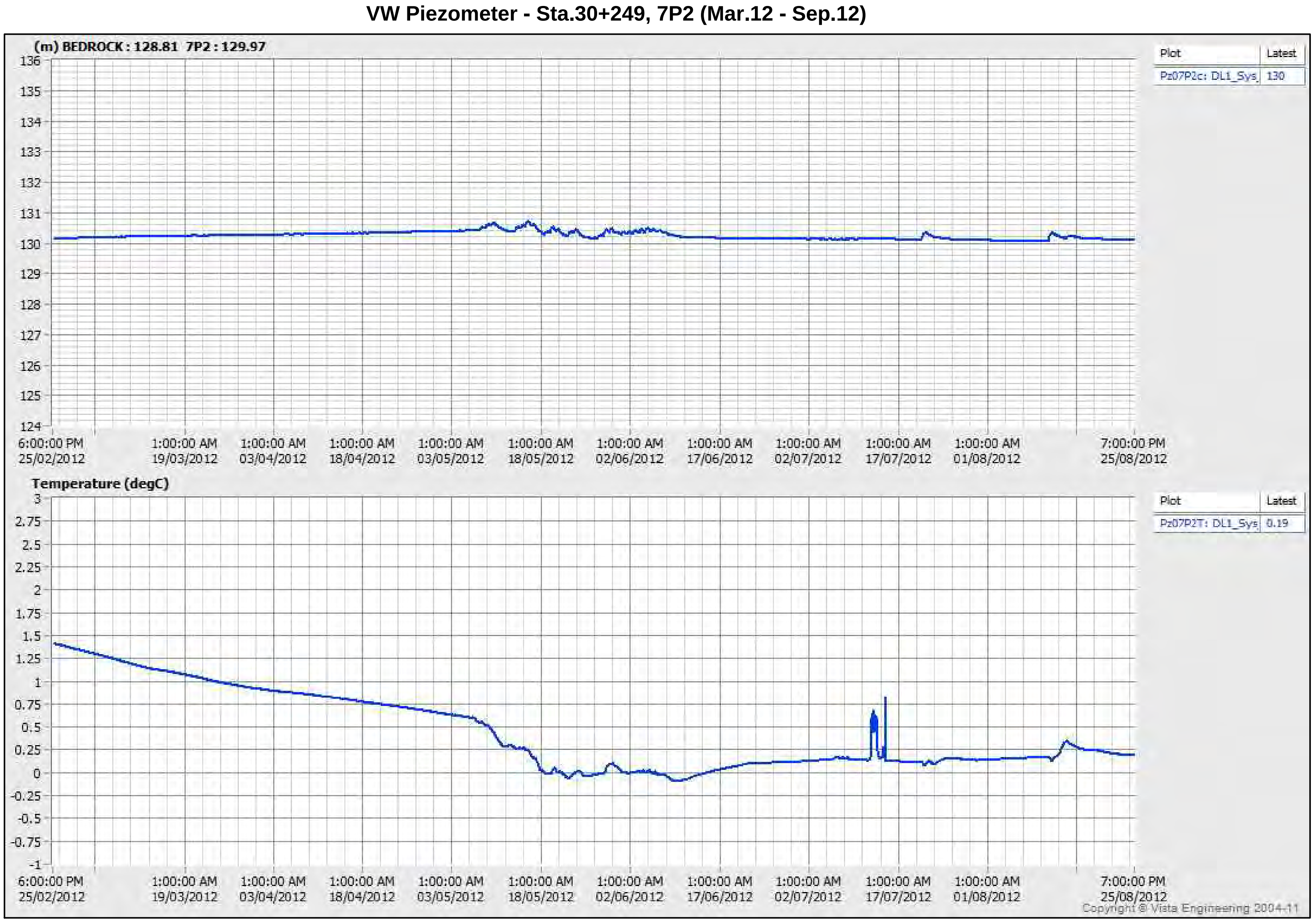
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C3-25**	
REVIEW	FE	11/15/2012		



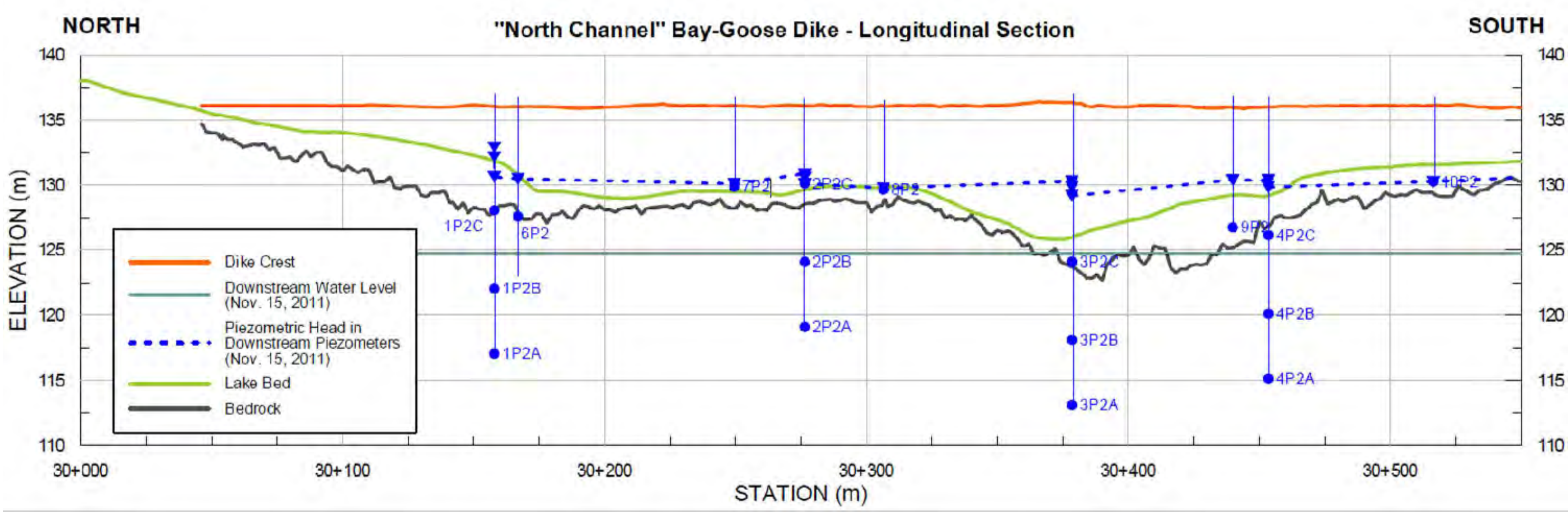
VW Piezometer - Sta.30+249, 7P2 (Sep.11 - Mar.12)



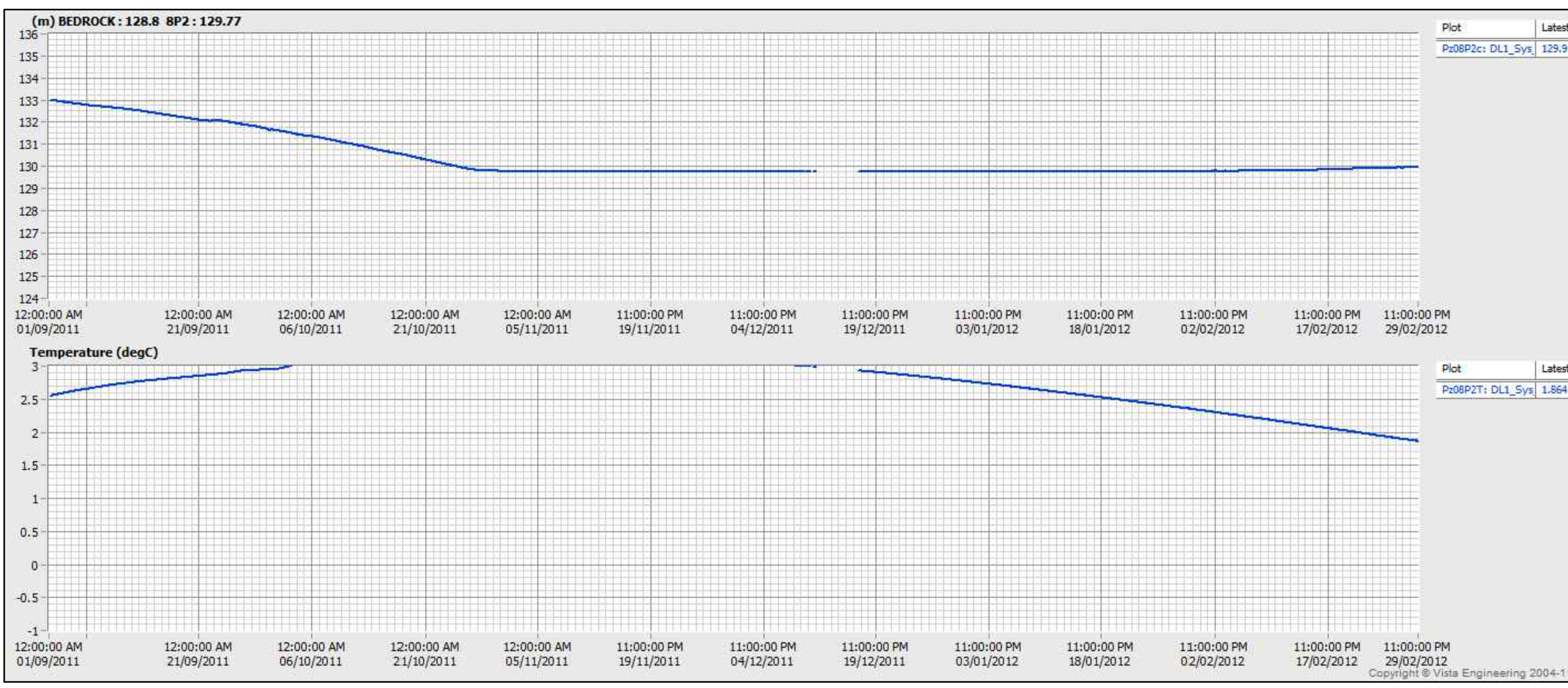
VW Piezometer - Sta.30+249, 7P2 (Mar.12 - Sep.12)



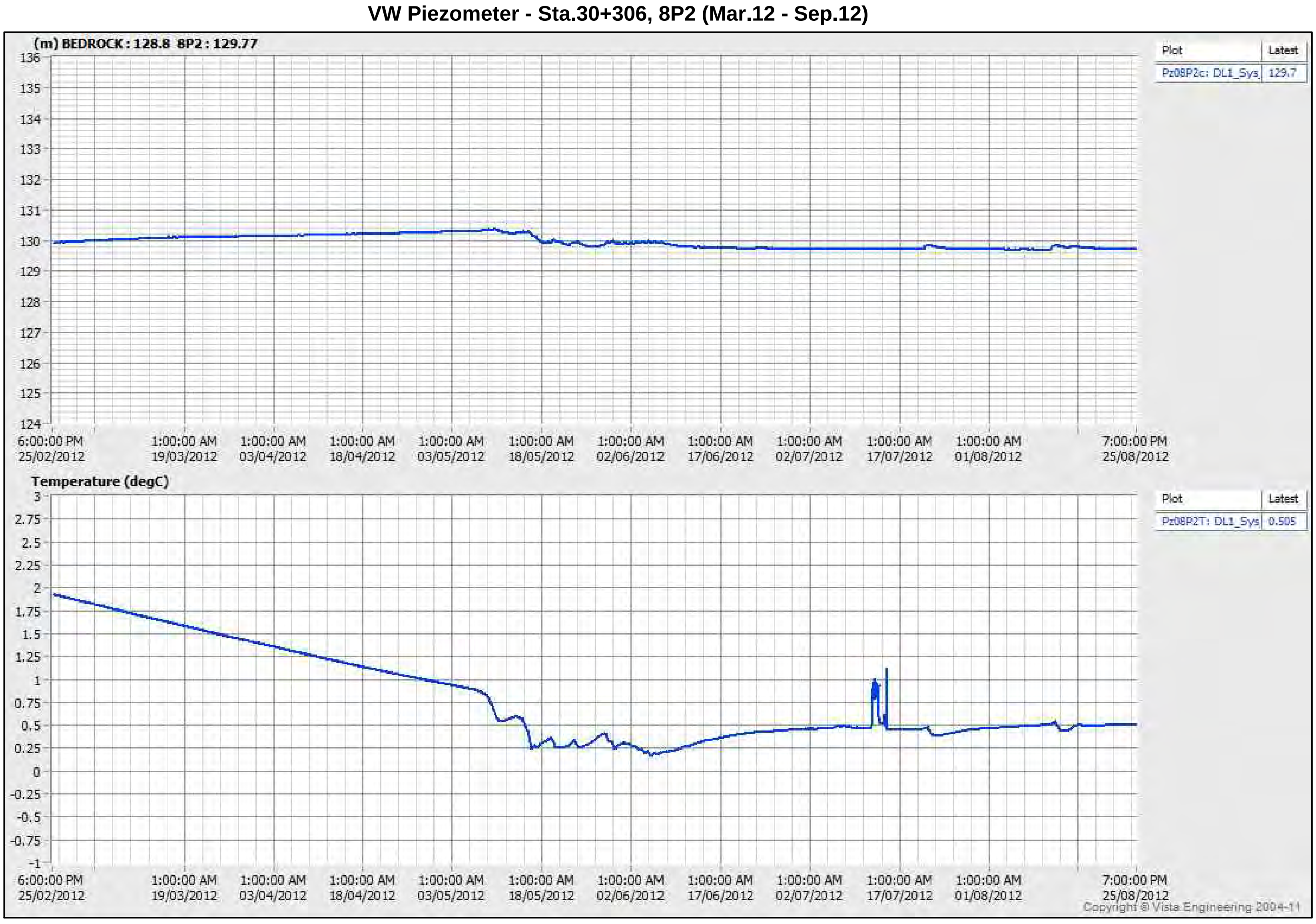
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT		
TITLE	BAY-GOOSE DIKE - NORTH CHANNEL 30+249 - PIEZOMETRIC DATA (SEP.2011 - SEP.2012)		
Golder Associates Montréal, Québec	PROJECT No. 12-1221-0073	PHASE No. 3000	
	DESIGN AEM 09/19/2012	SCALE	REV. -
	CADD FLB 10/19/2012	FIGURE C3-26	
	CHECK YB 11/08/2012		
	REVIEW FE 11/15/2012		



VW Piezometer - Sta.30+306, 8P2 (Sep.11 - Mar.12)

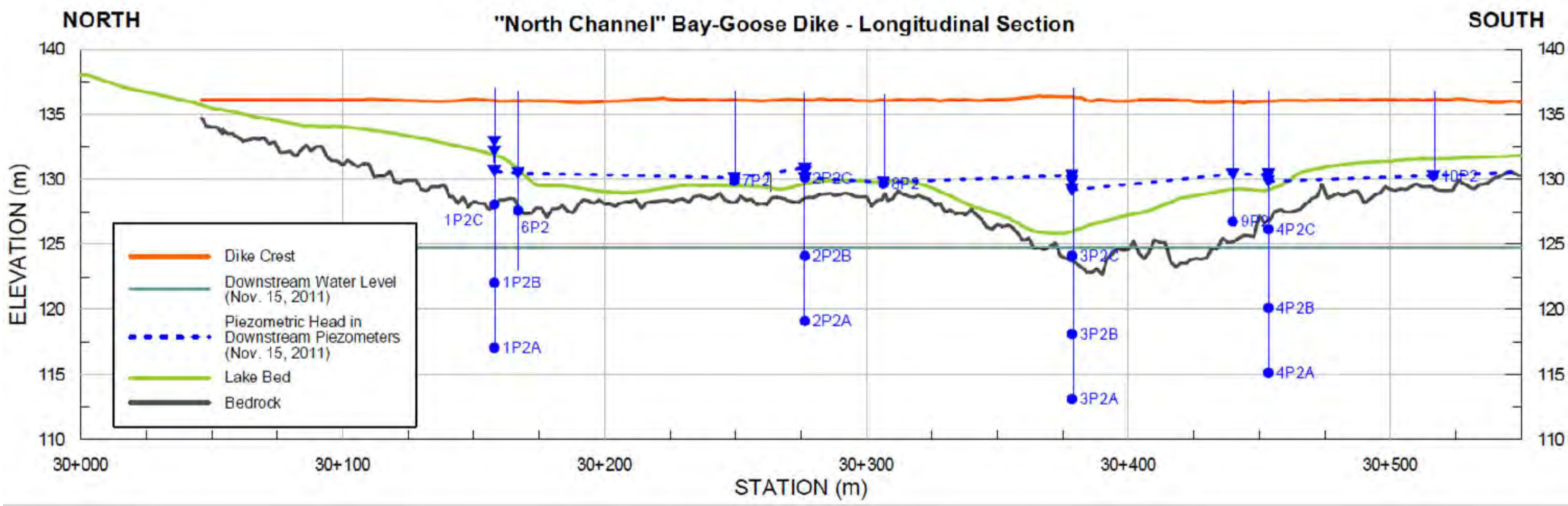


VW Piezometer - Sta.30+306, 8P2 (Mar.12 - Sep.12)

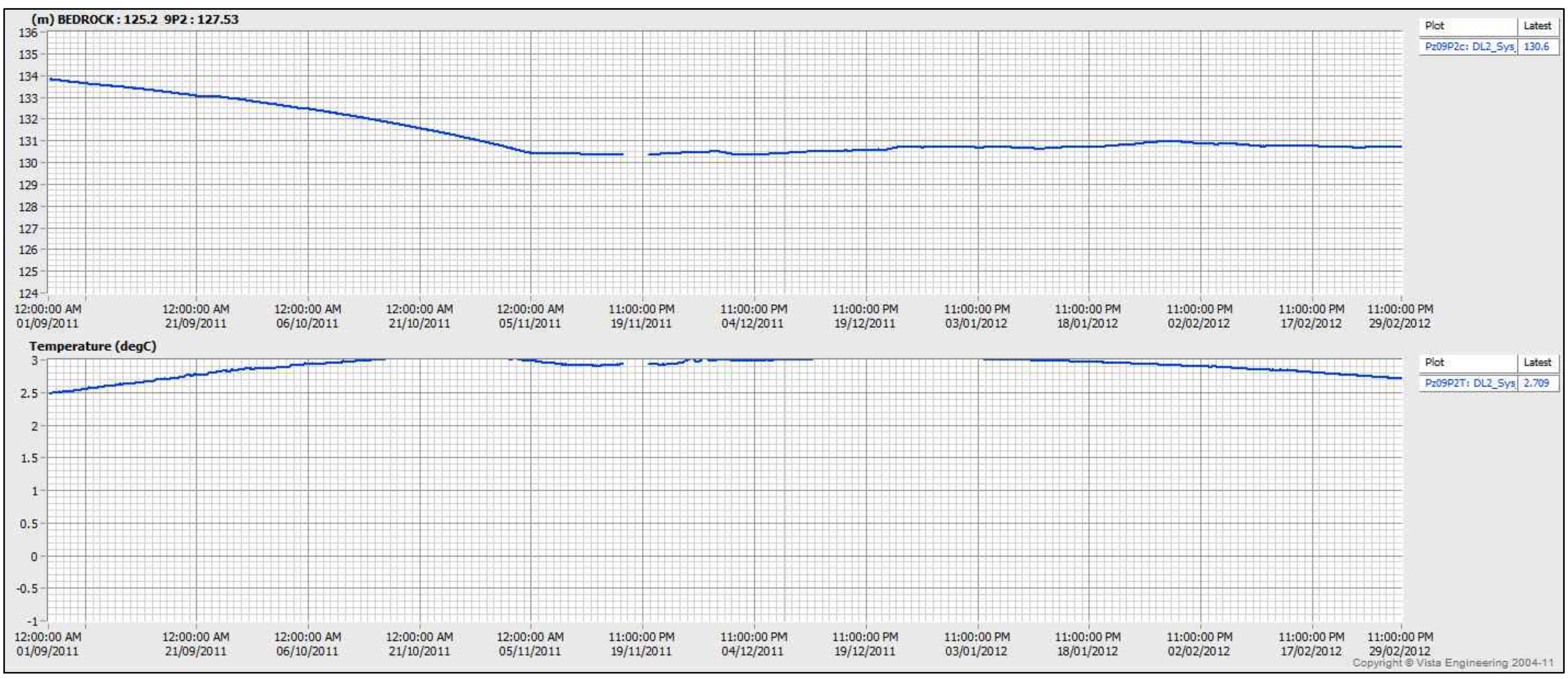


PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT				
TITLE	BAY-GOOSE DIKE - NORTH CHANNEL 30+306 - PIEZOMETRIC DATA (SEP.2011 - SEP.2012)				
	PROJECT No.		12-1221-0073	PHASE No.	3000
	DESIGN	AEM	09/19/2012	SCALE	REV. -
	CADD	FLB	10/19/2012	FIGURE C3-27	
	CHECK	YB	11/08/2012		
	REVIEW	FE	11/15/2012		

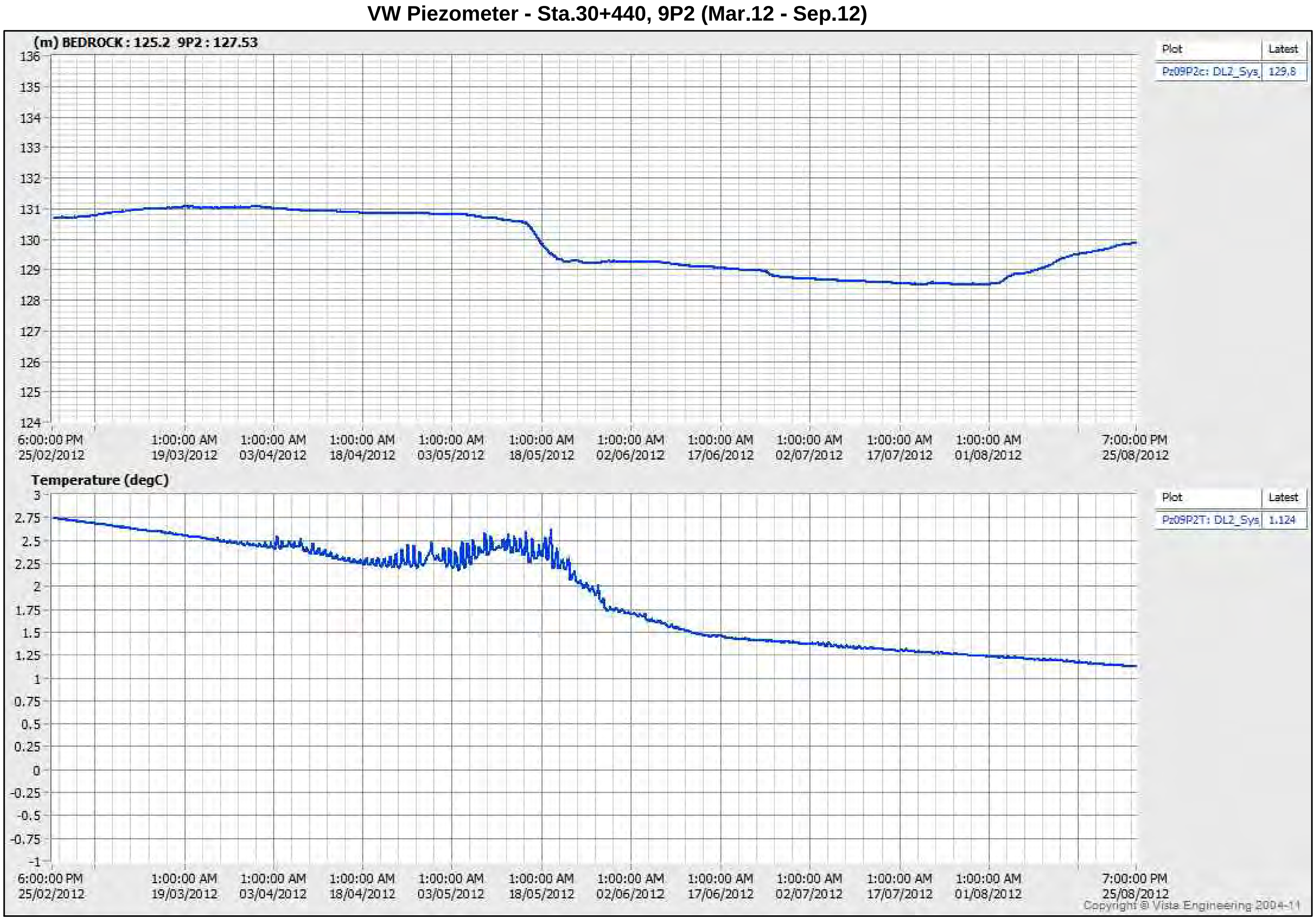
Golder Associates
Montréal, Québec



VW Piezometer - Sta.30+440, 9P2 (Sep.11 - Mar.12)



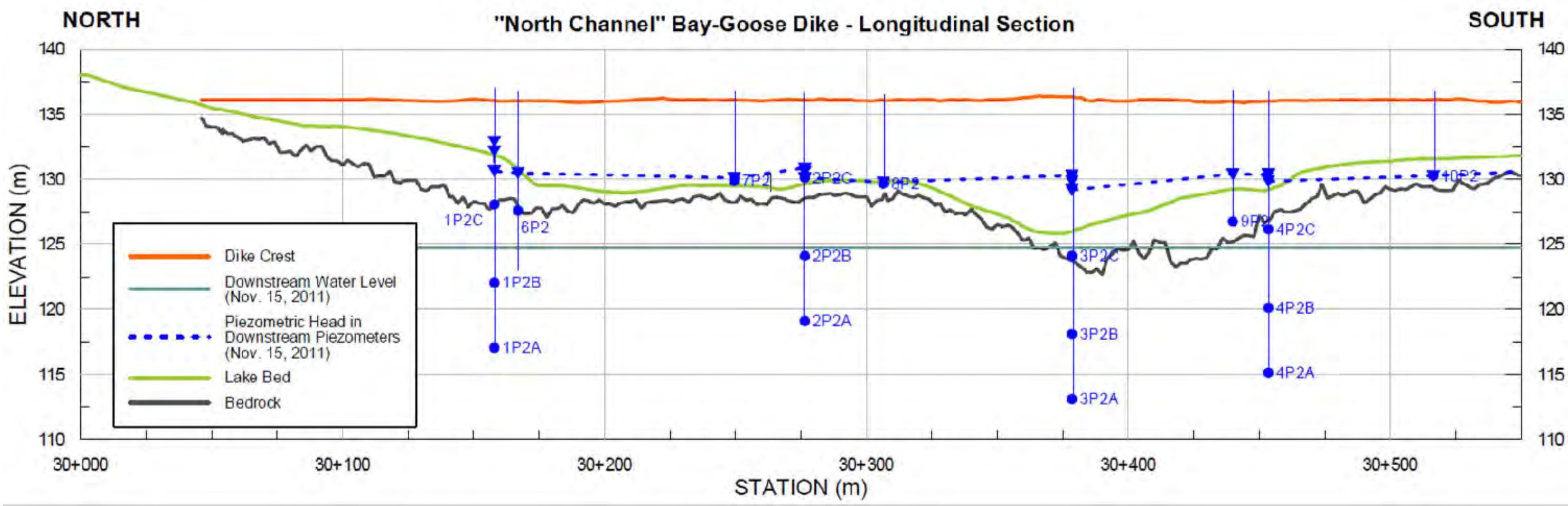
VW Piezometer - Sta.30+440, 9P2 (Mar.12 - Sep.12)



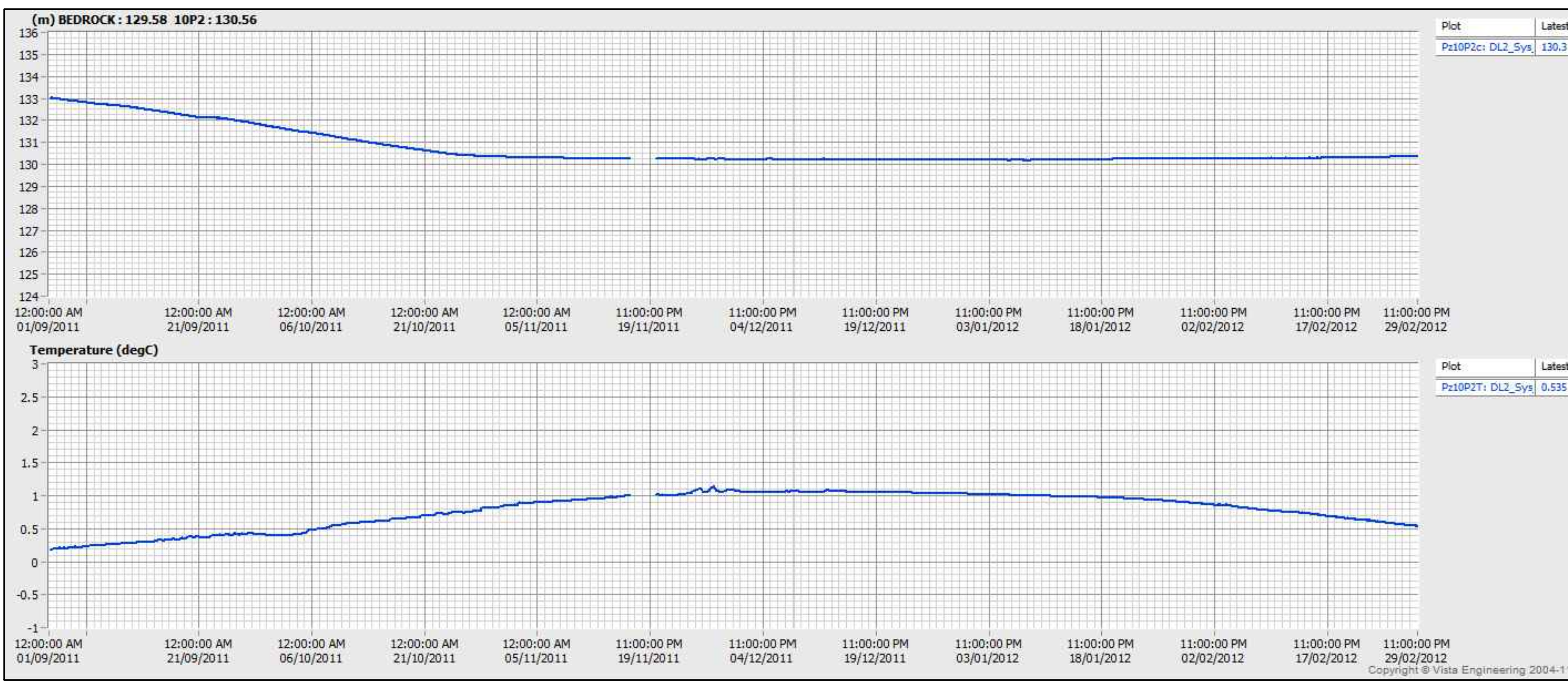
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**BAY-GOOSE DIKE - NORTH CHANNEL 30+440 - PIEZOMETRIC DATA (SEP.2011 - SEP.2012)**

Golder Associates
Montréal, Québec

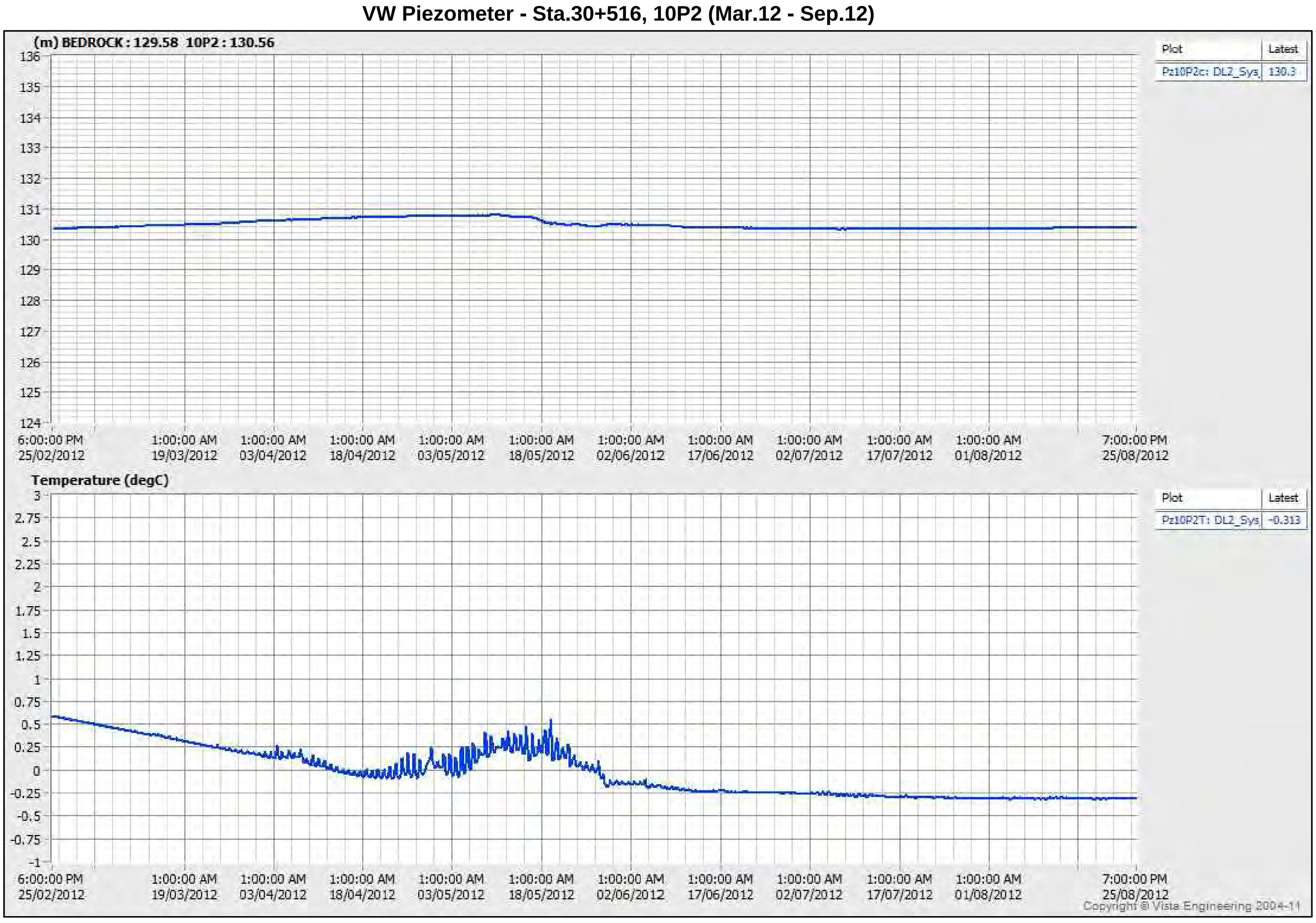
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-28**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.30+516, 10P2 (Sep.11 - Mar.12)



VW Piezometer - Sta.30+516, 10P2 (Mar.12 - Sep.12)

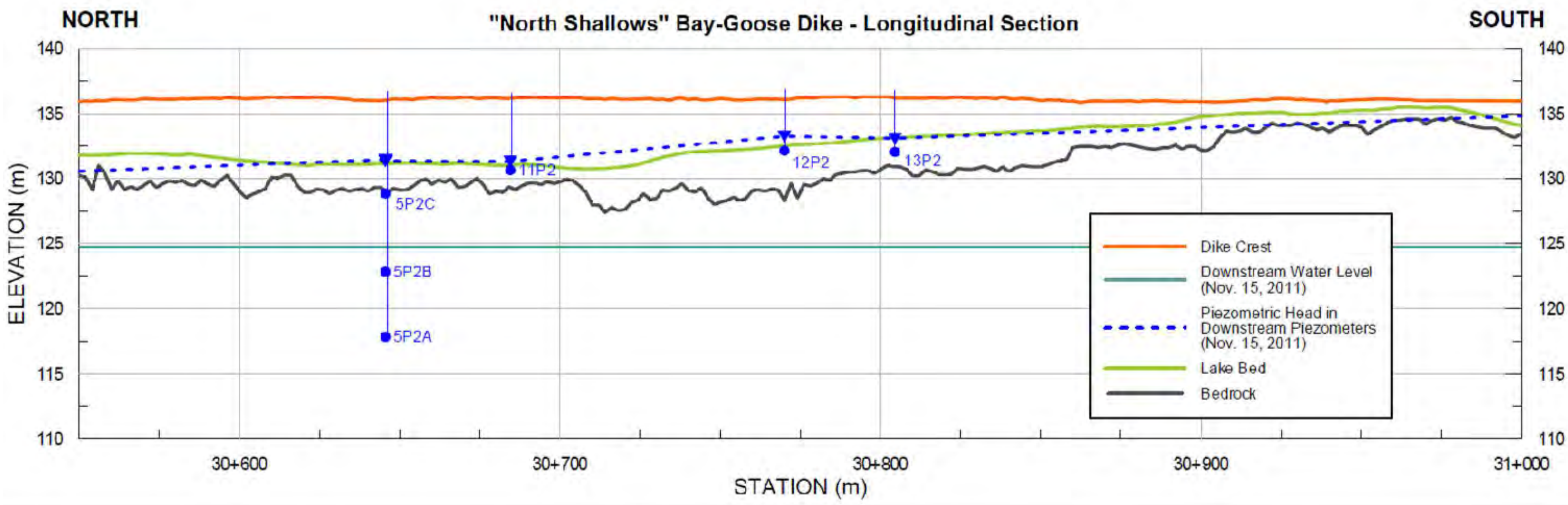


PROJECT
AEM
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

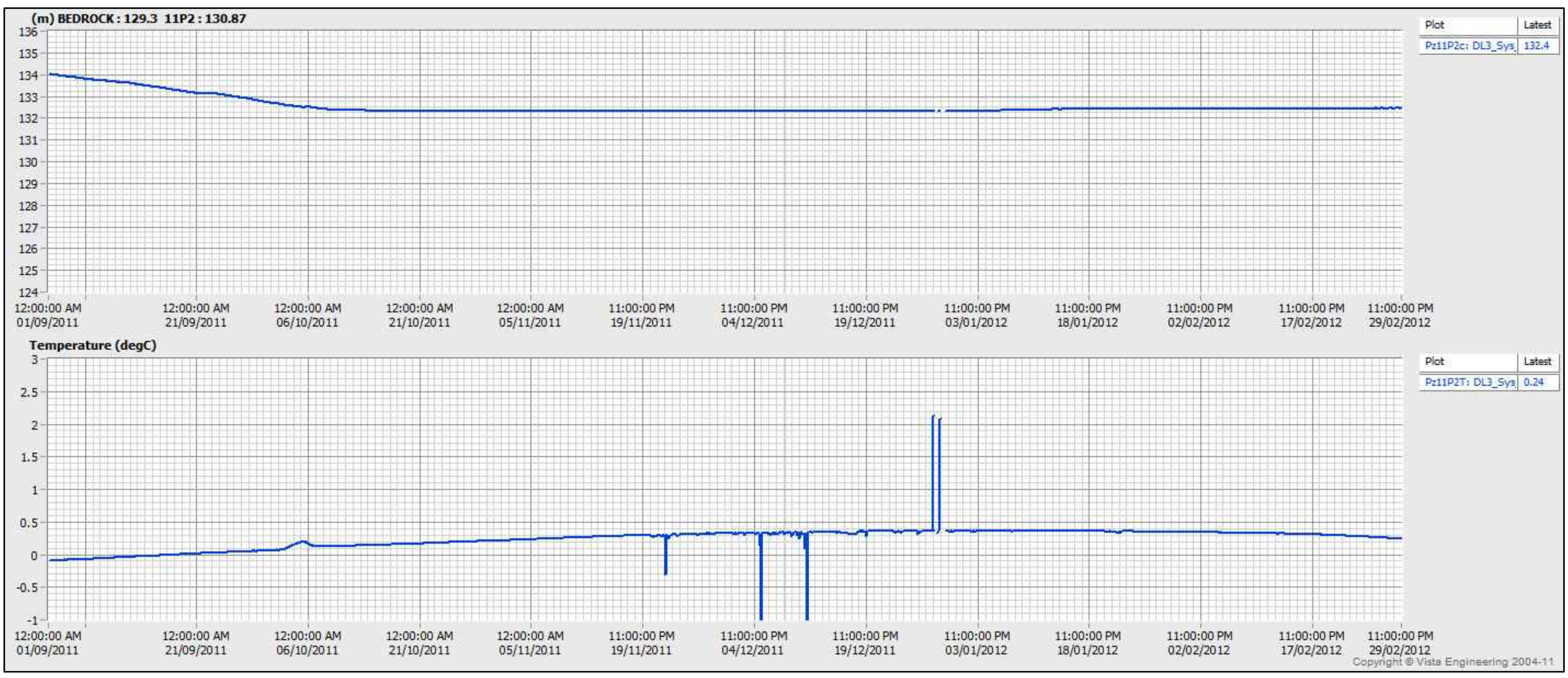
TITLE
BAY-GOOSE DIKE - NORTH CHANNEL
30+516 - PIEZOMETRIC DATA
(SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

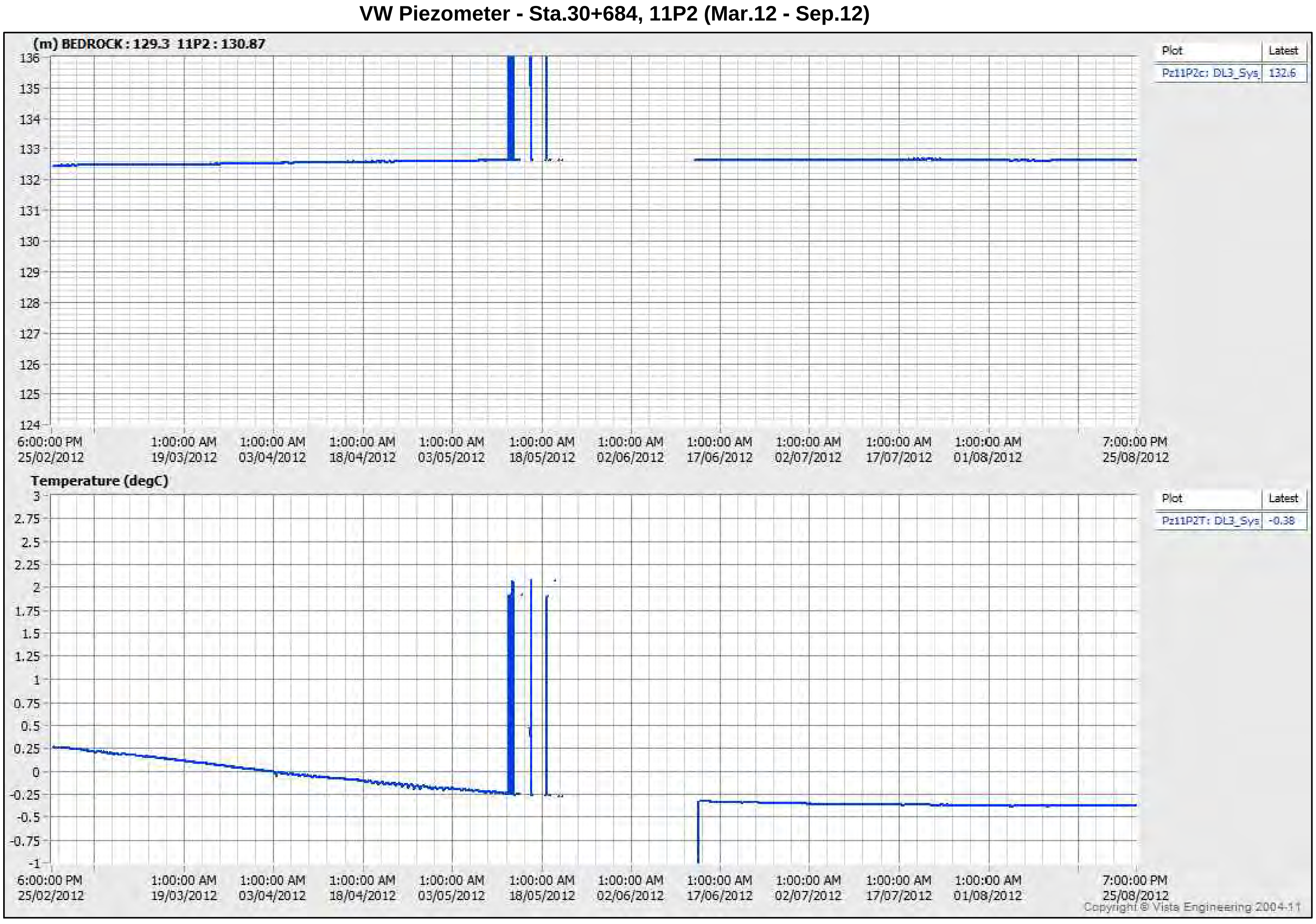
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-29**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.30+684, 11P2 (Sep.11 - Mar.12)



VW Piezometer - Sta.30+684, 11P2 (Mar.12 - Sep.12)



PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

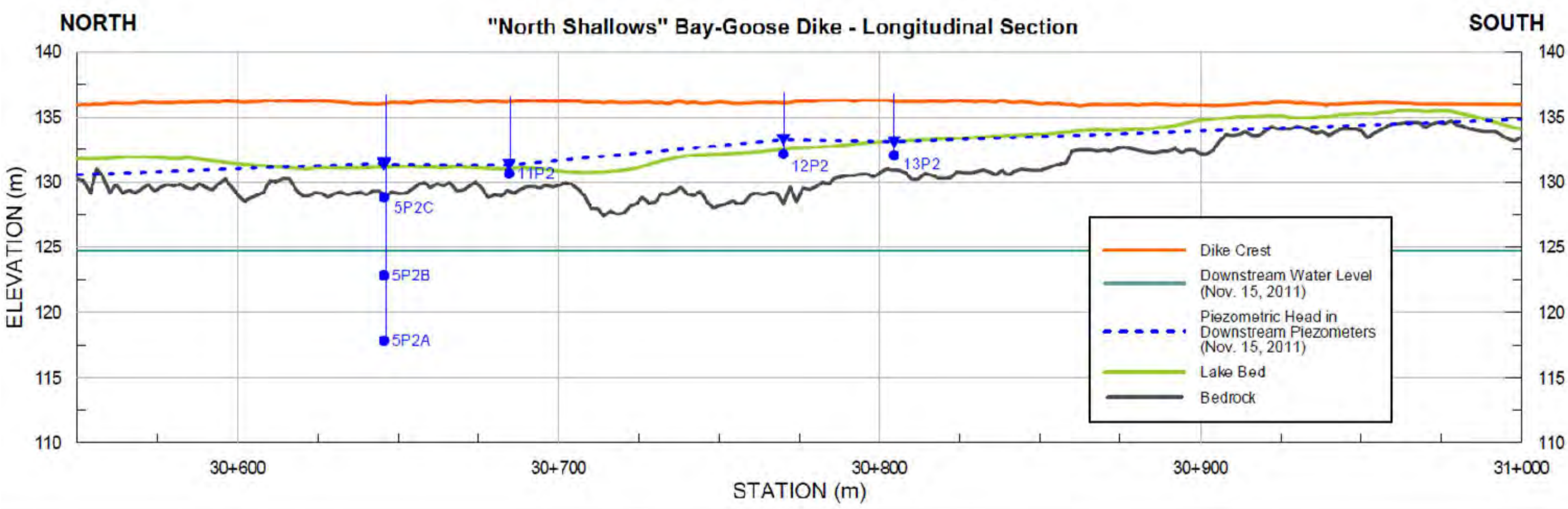
TITLE

BAY-GOOSE DIKE - NORTH SHALLOWS 30+684 - PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

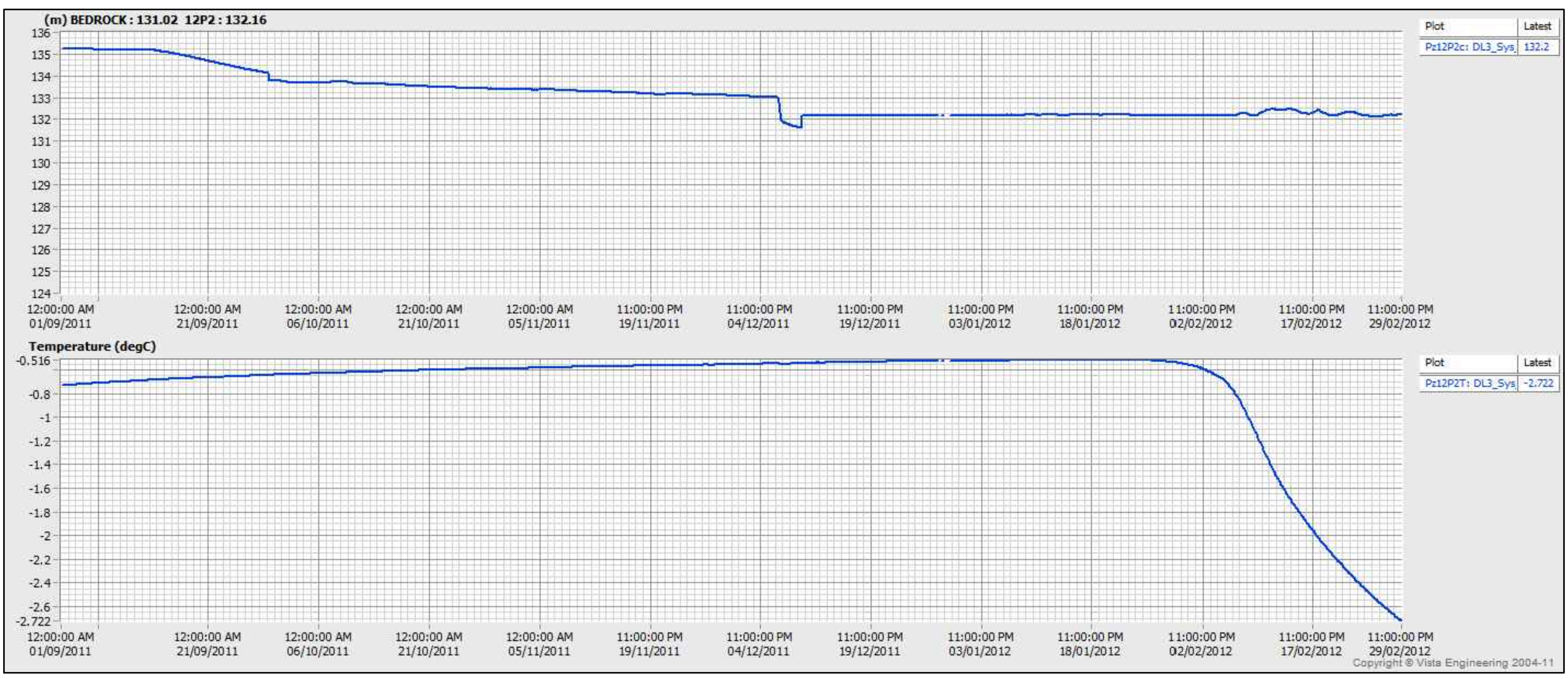
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

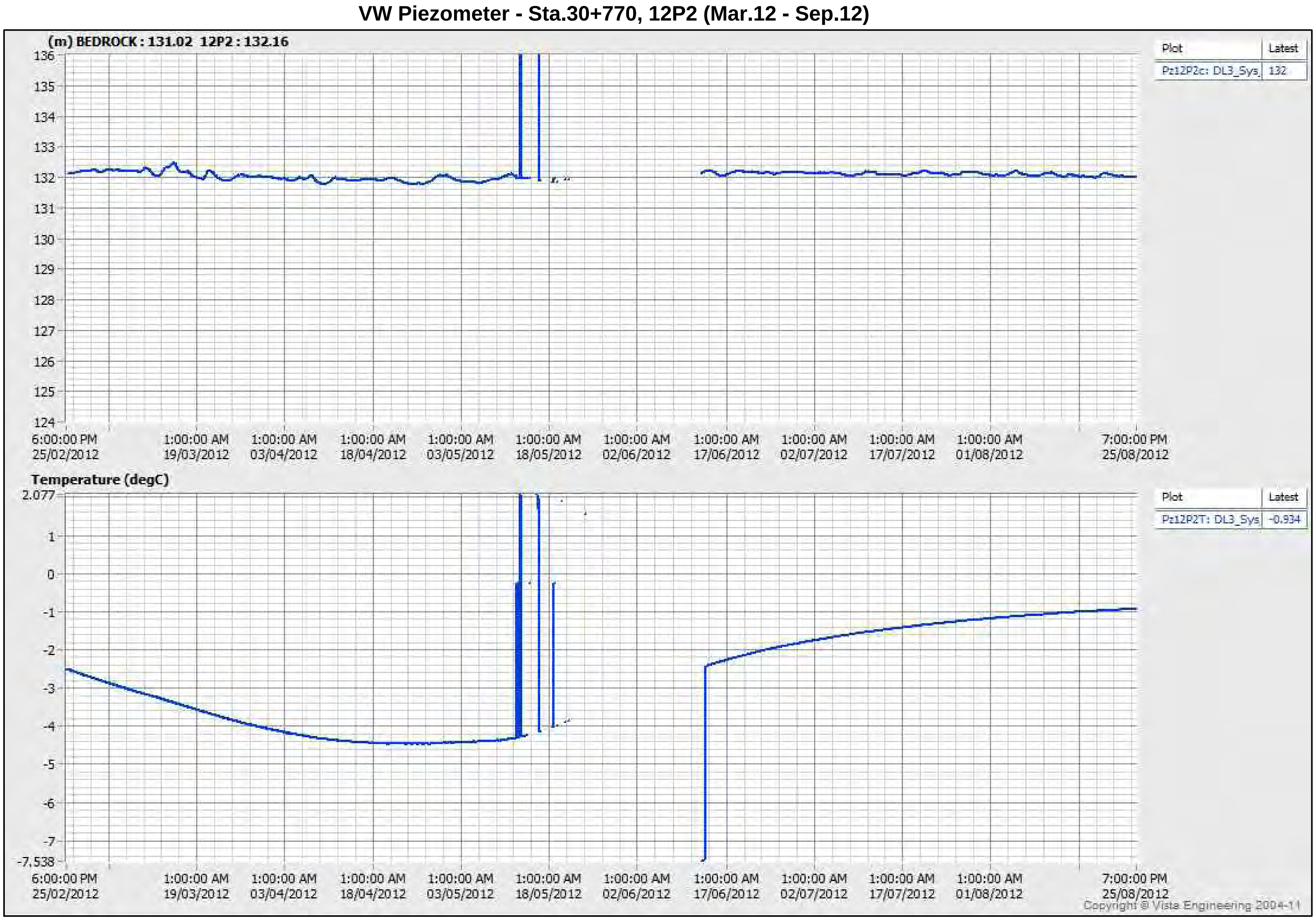
FIGURE C3-30



VW Piezometer - Sta.30+770, 12P2 (Sep.11 - Mar.12)



VW Piezometer - Sta.30+770, 12P2 (Mar.12 - Sep.12)



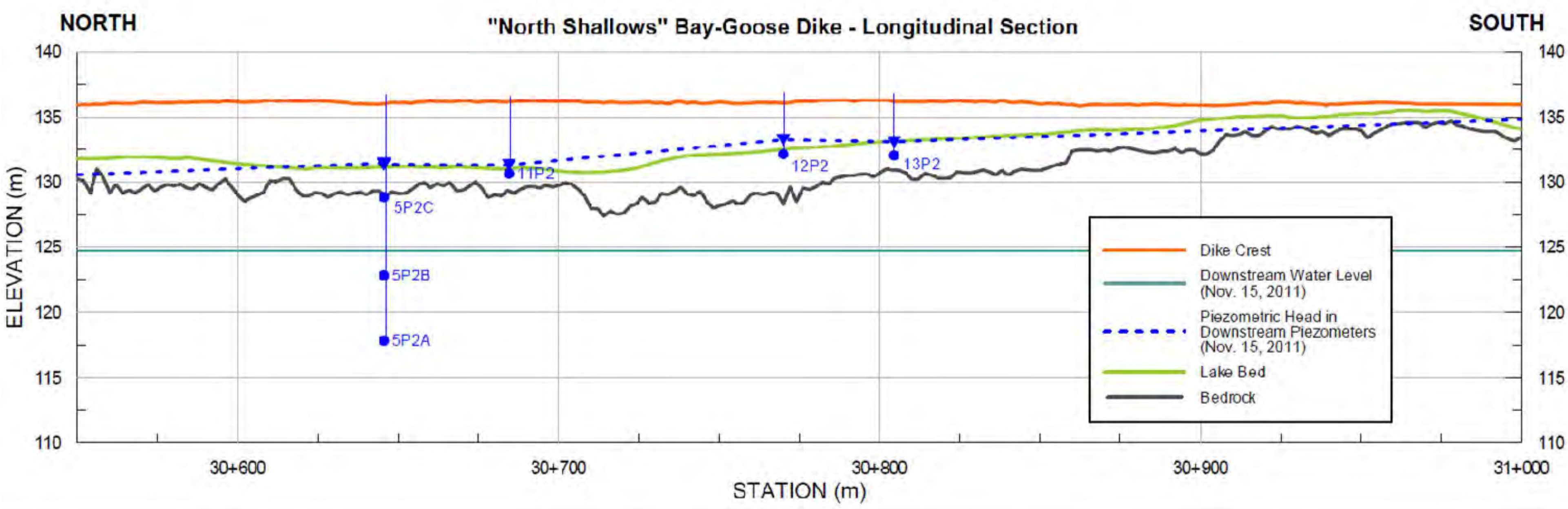
PROJECT
AEM
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE
BAY-GOOSE DIKE - NORTH SHALLOWS
30+770 - PIEZOMETRIC DATA
(SEP.2011 - SEP.2012)

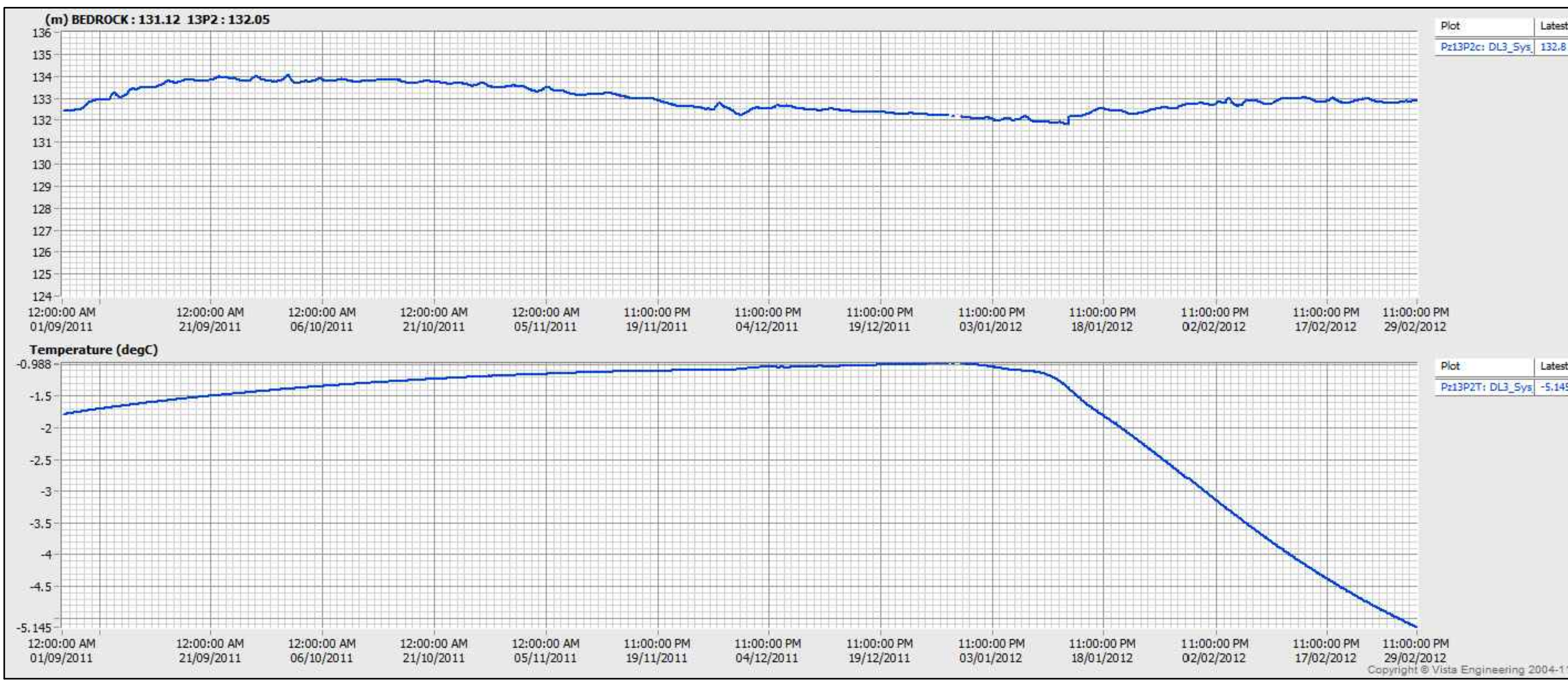
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

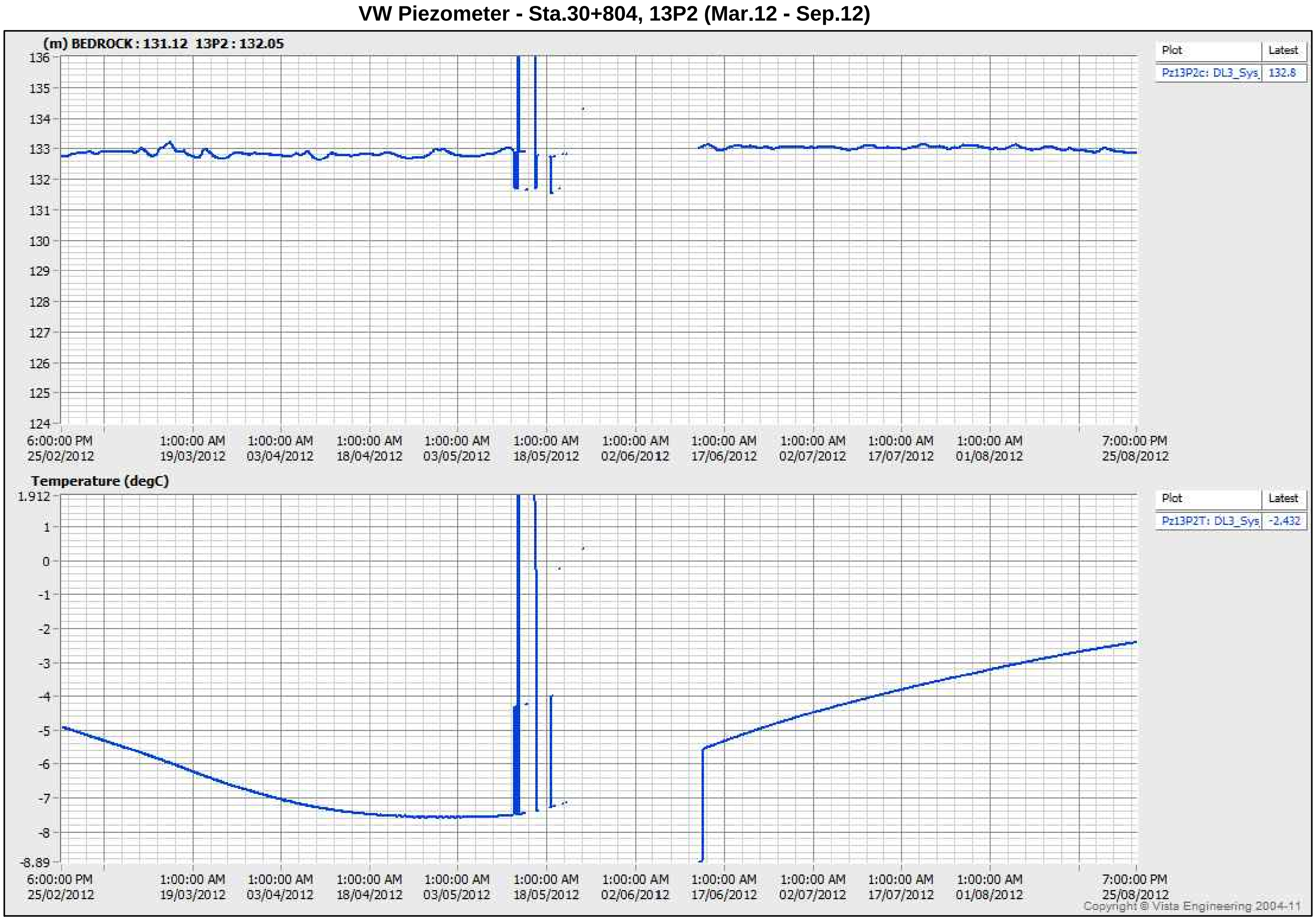
FIGURE C3-31



VW Piezometer - Sta.30+804, 13P2 (Sep.11 - Mar.12)



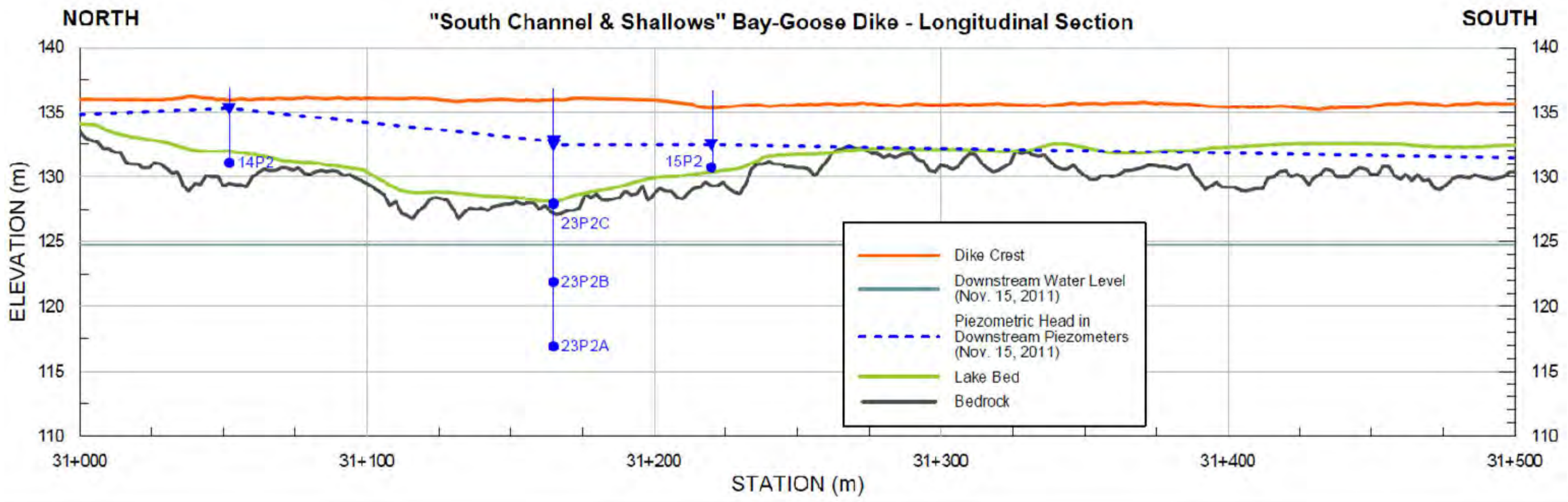
VW Piezometer - Sta.30+804, 13P2 (Mar.12 - Sep.12)



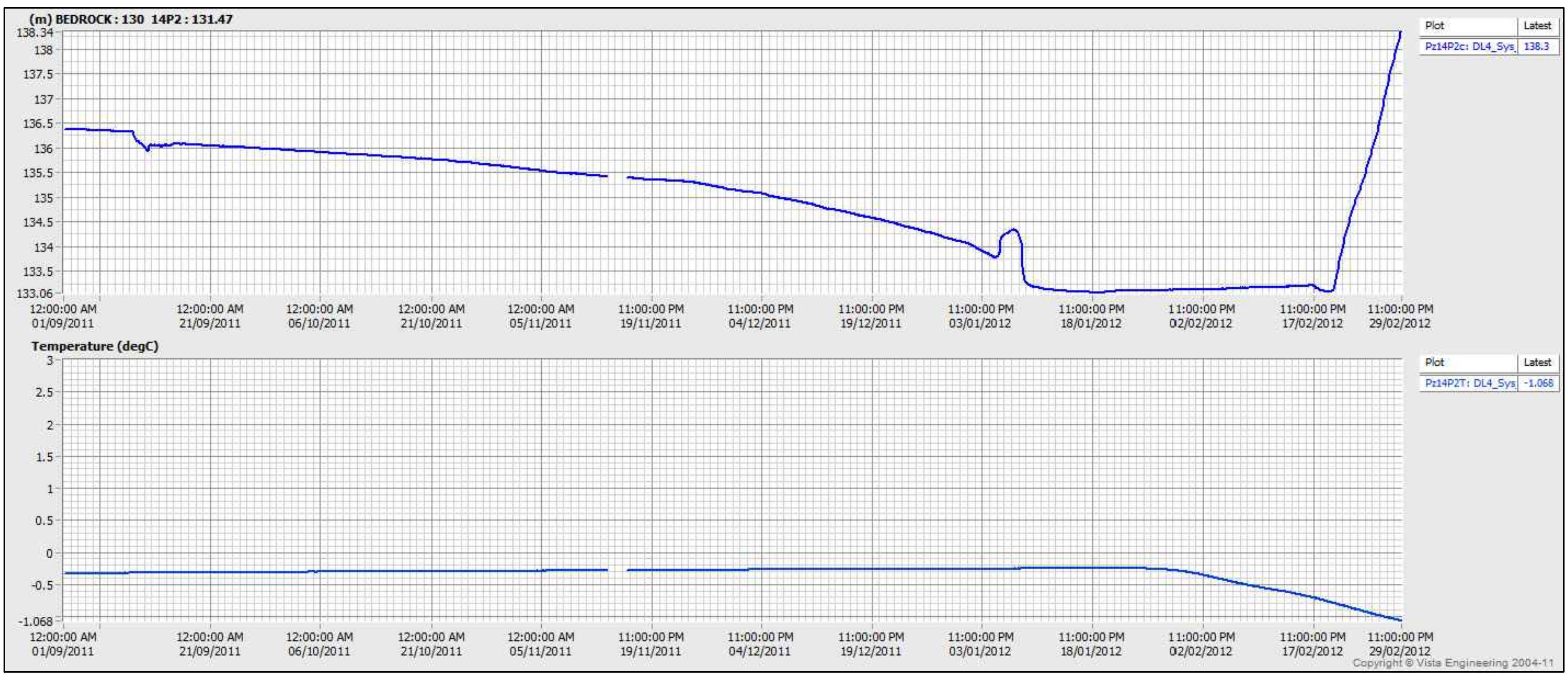
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**BAY-GOOSE DIKE - NORTH SHALLOWS 30+804 - PIEZOMETRIC DATA (SEP.2011 - SEP.2012)**

Golder Associates
Montréal, Québec

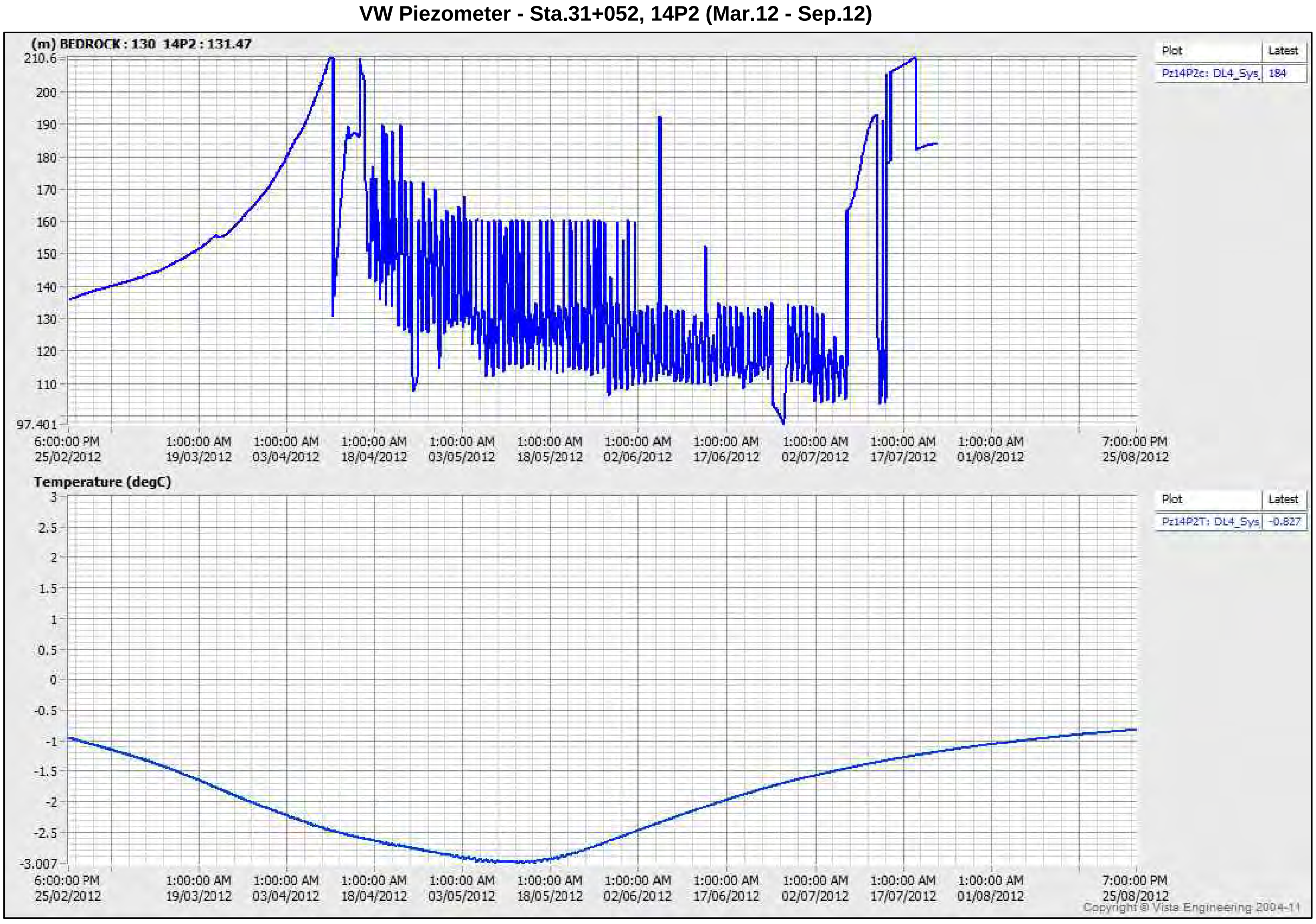
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-32**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.31+052, 14P2 (Sep.11 - Mar.12)



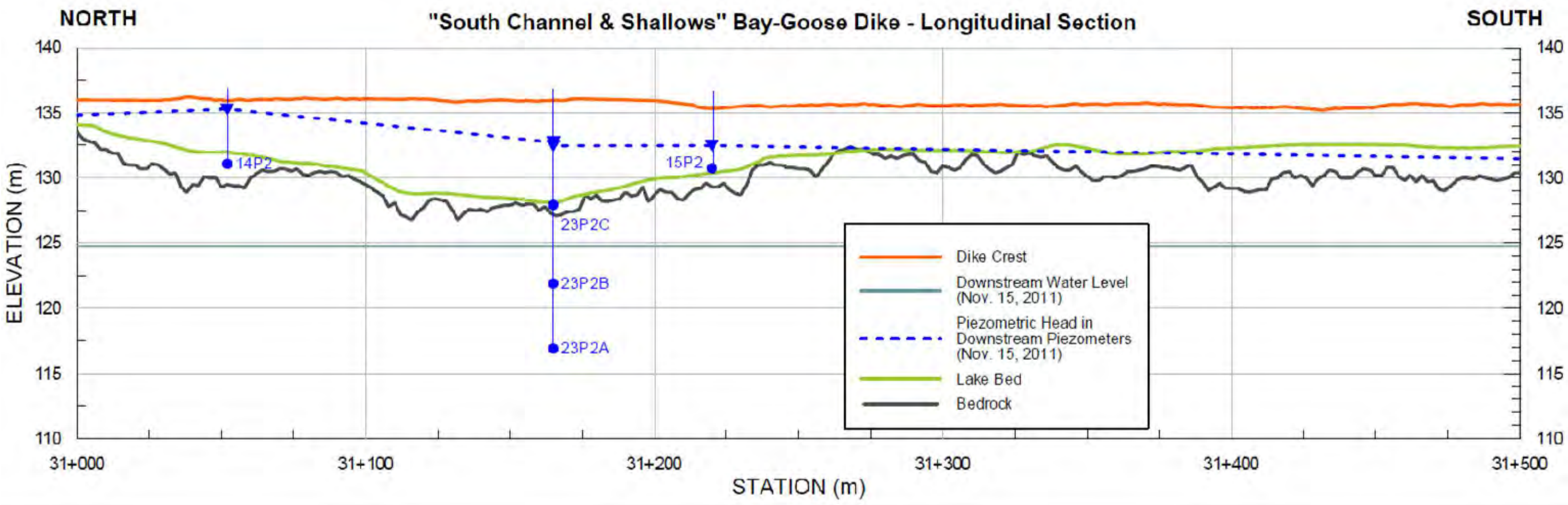
VW Piezometer - Sta.31+052, 14P2 (Mar.12 - Sep.12)



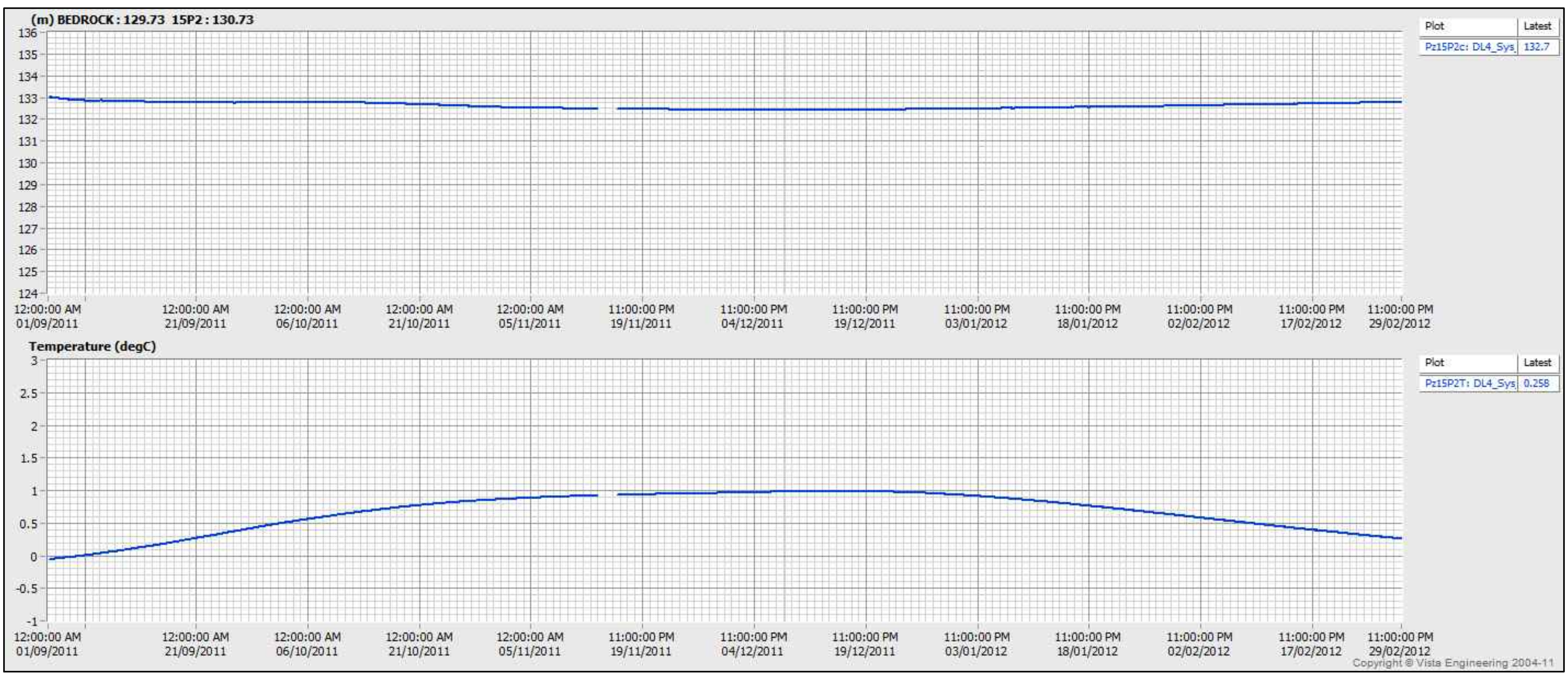
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**BAY-GOOSE DIKE SOUTH CHANNEL & SHALLOWS - 31+052 PIEZOMETRIC DATA (SEP.2011 - SEP.2012)**

Golder Associates
Montréal, Québec

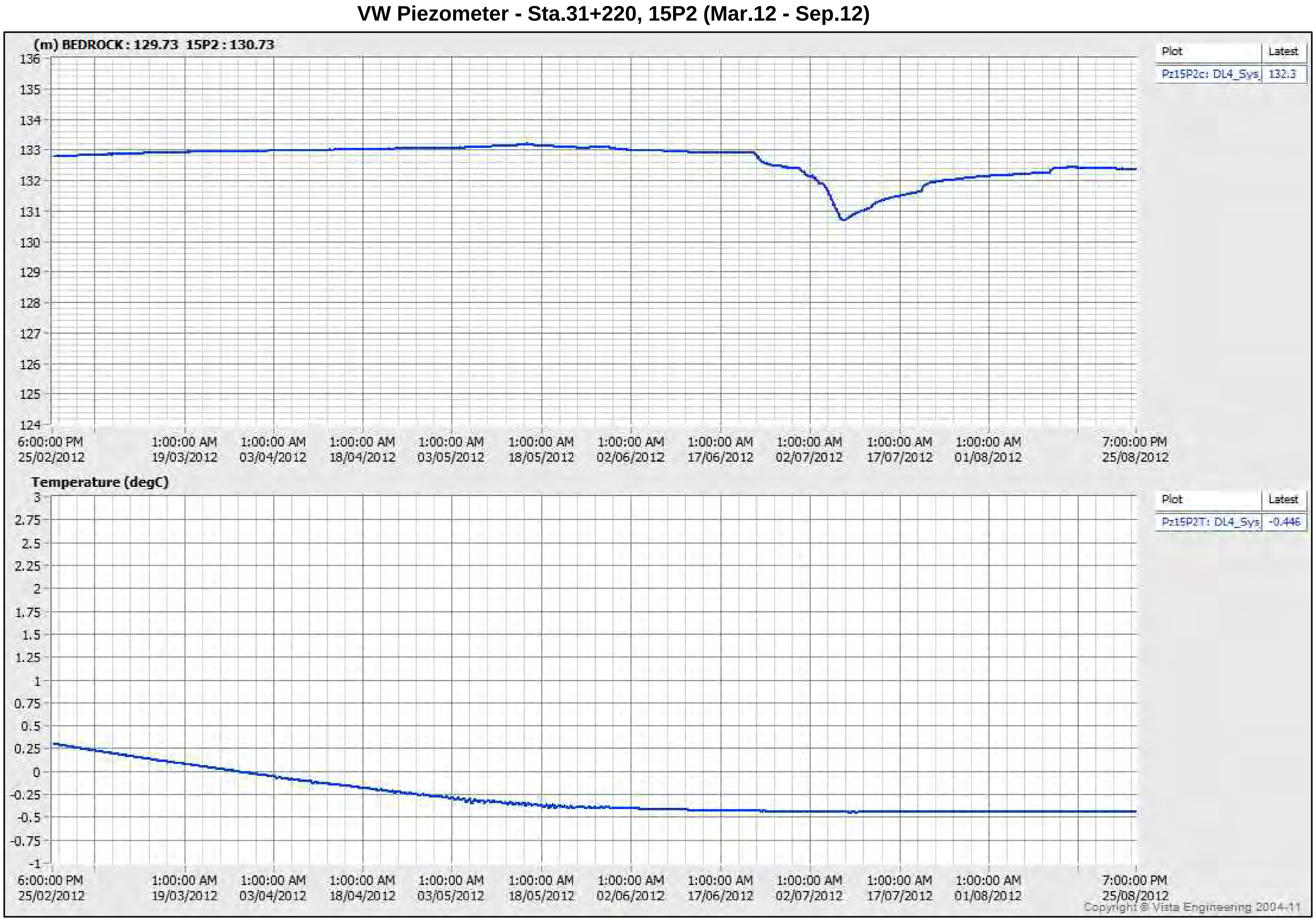
PROJECT No.	12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-33**
CHECK	YB	11/08/2012	
REVIEW	FE	11/15/2012	



VW Piezometer - Sta.31+220, 15P2 (Sep.11 - Mar.12)



VW Piezometer - Sta.31+220, 15P2 (Mar.12 - Sep.12)

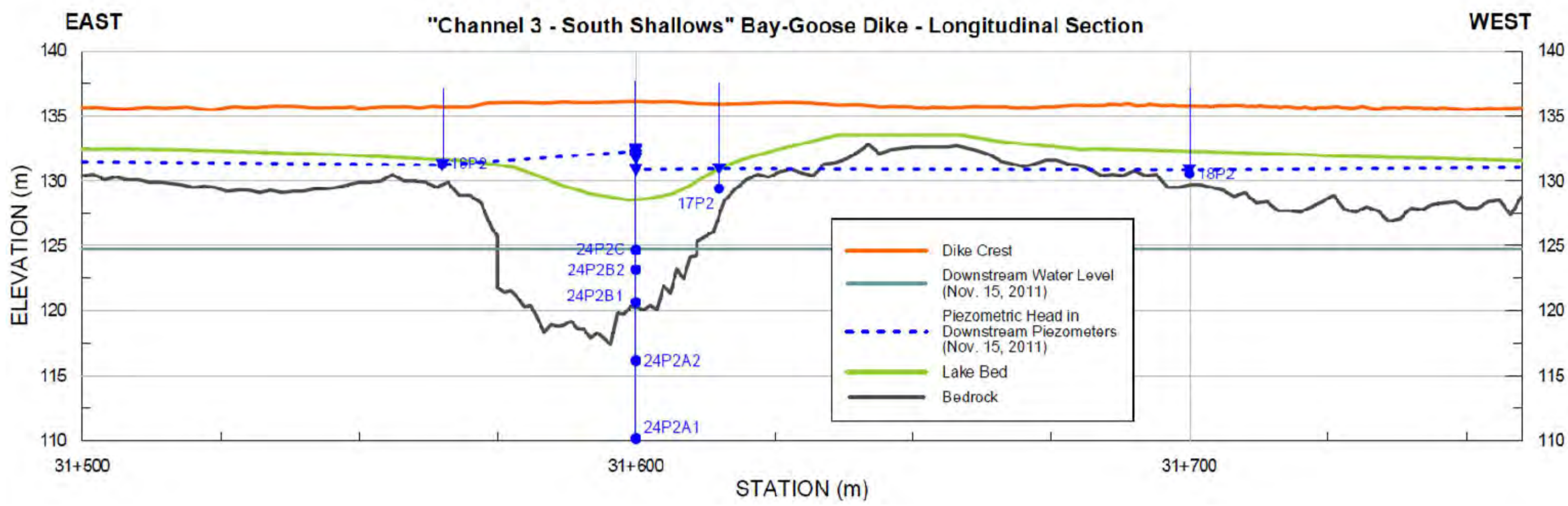


PROJECT
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

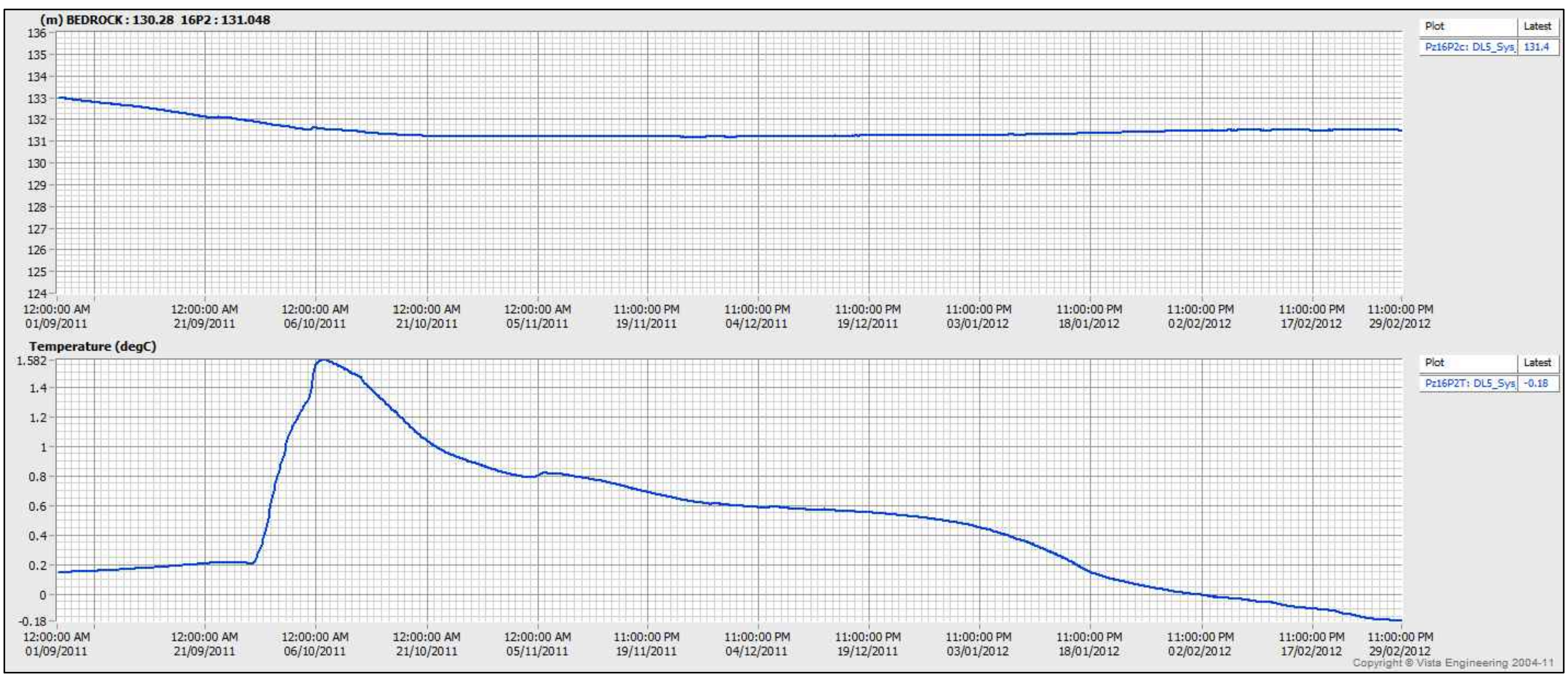
TITLE
BAY-GOOSE DIKE
SOUTH CHANNEL & SHALLOWS - 31+220
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

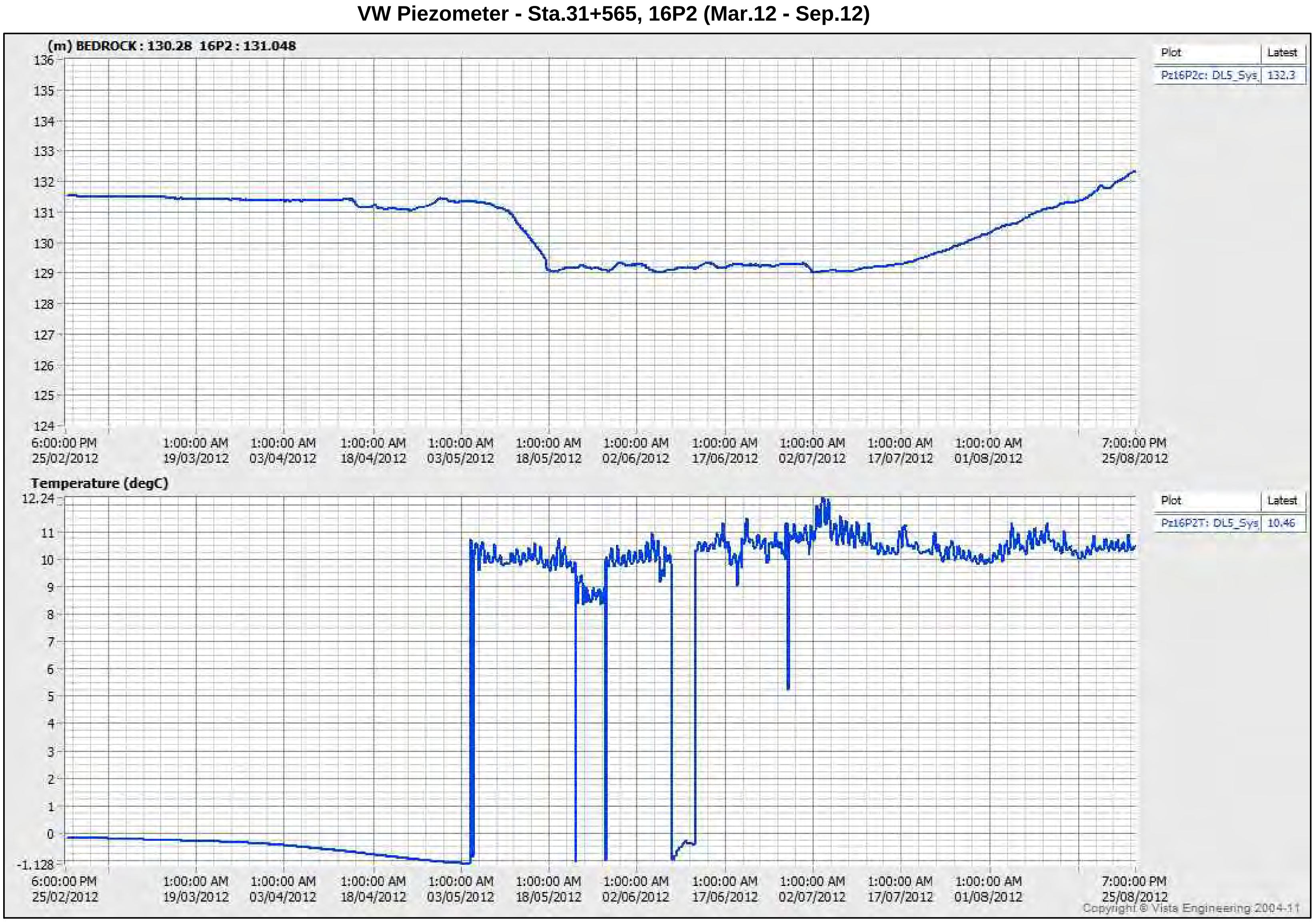
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-34**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.31+565, 16P2 (Sep.11 - Mar.12)



VW Piezometer - Sta.31+565, 16P2 (Mar.12 - Sep.12)



PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

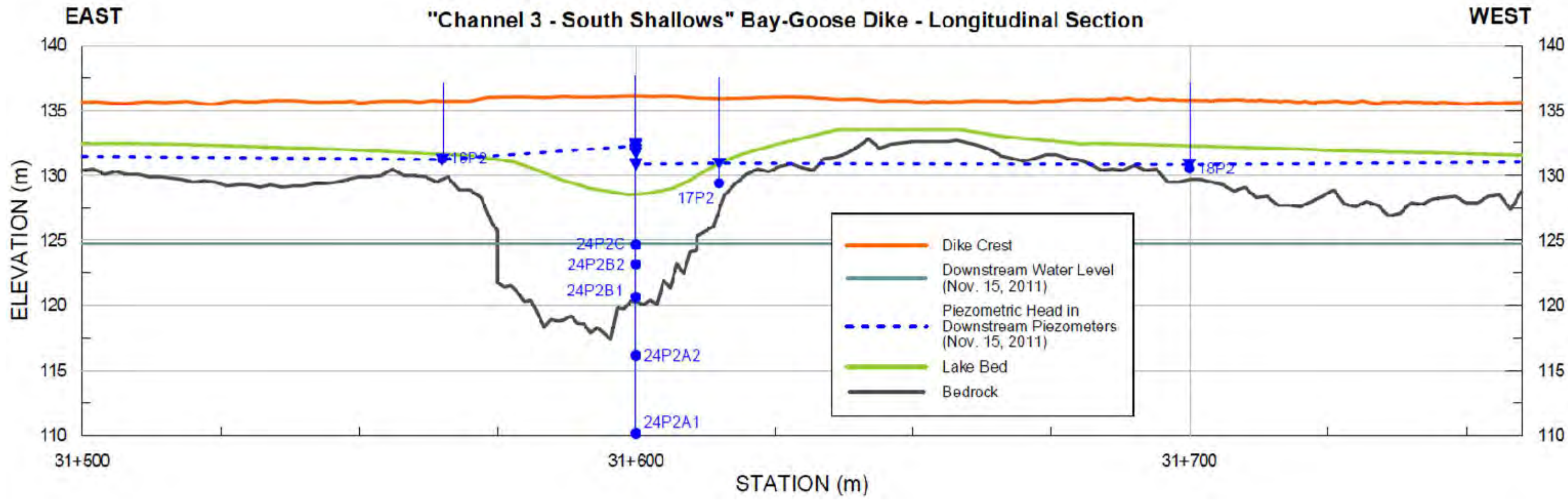
TITLE

BAY-GOOSE DIKE
CHANNEL 3 SOUTH SHALLOWS - 31+565
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

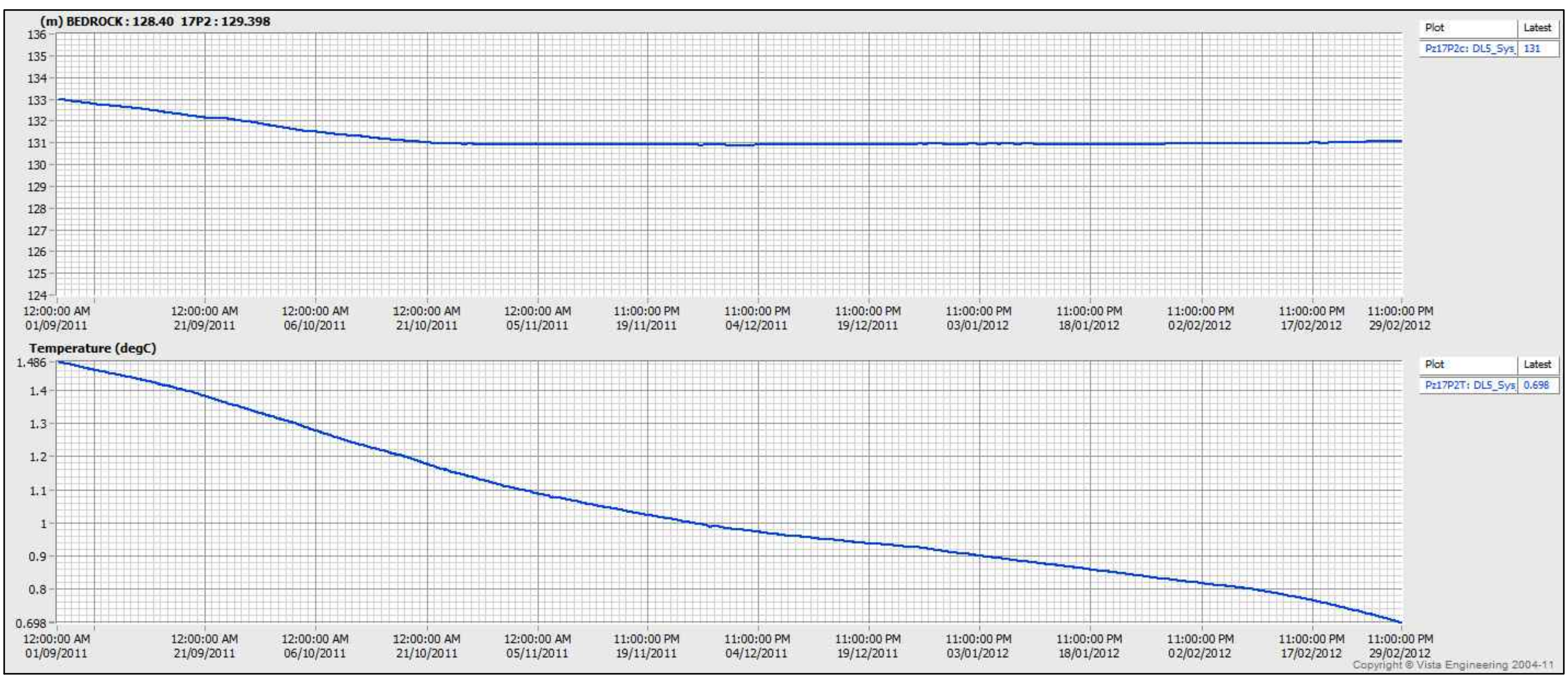
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

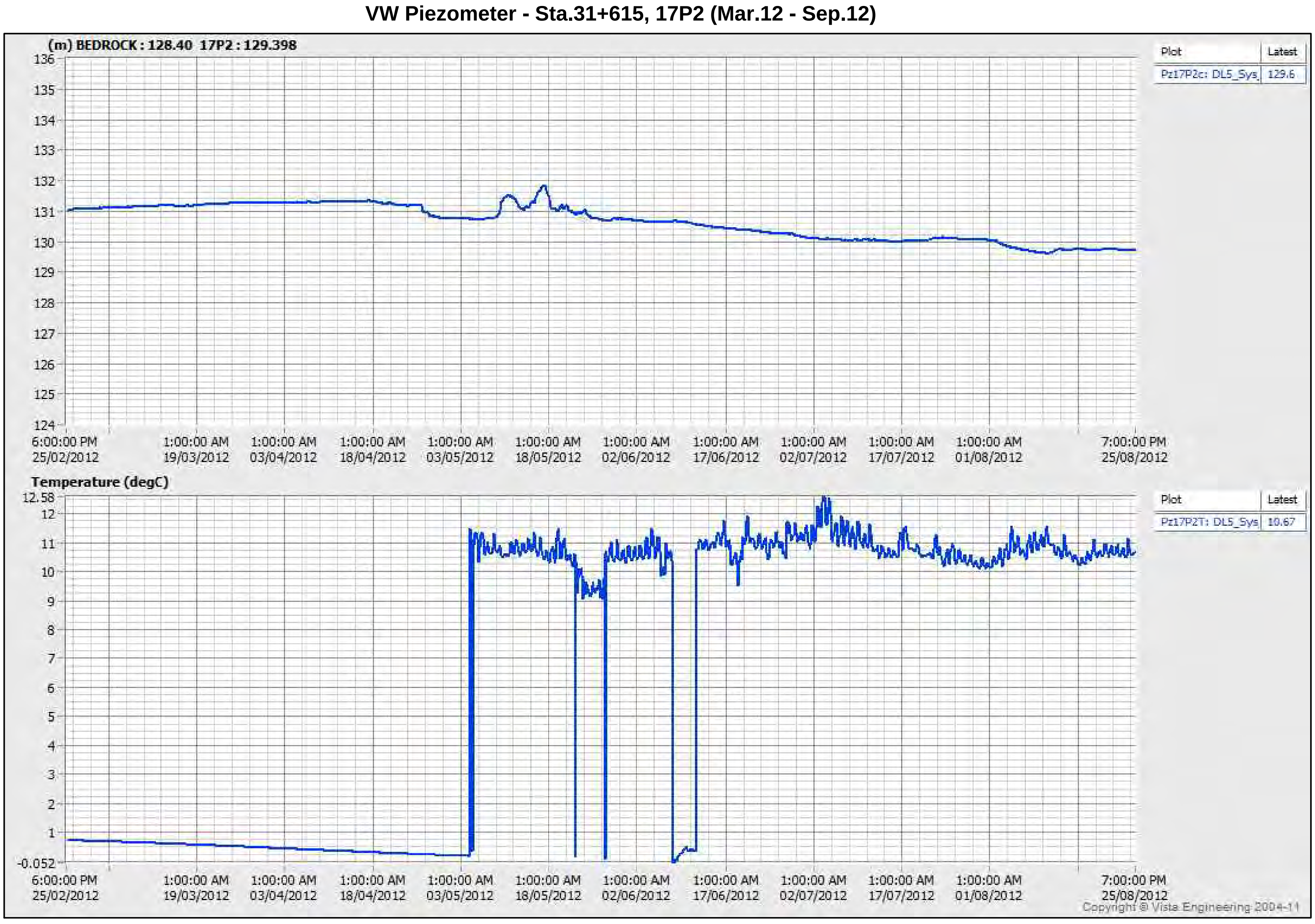
FIGURE C3-35



VW Piezometer - Sta.31+615, 17P2 (Sep.11 - Mar.12)



VW Piezometer - Sta.31+615, 17P2 (Mar.12 - Sep.12)



PROJECT

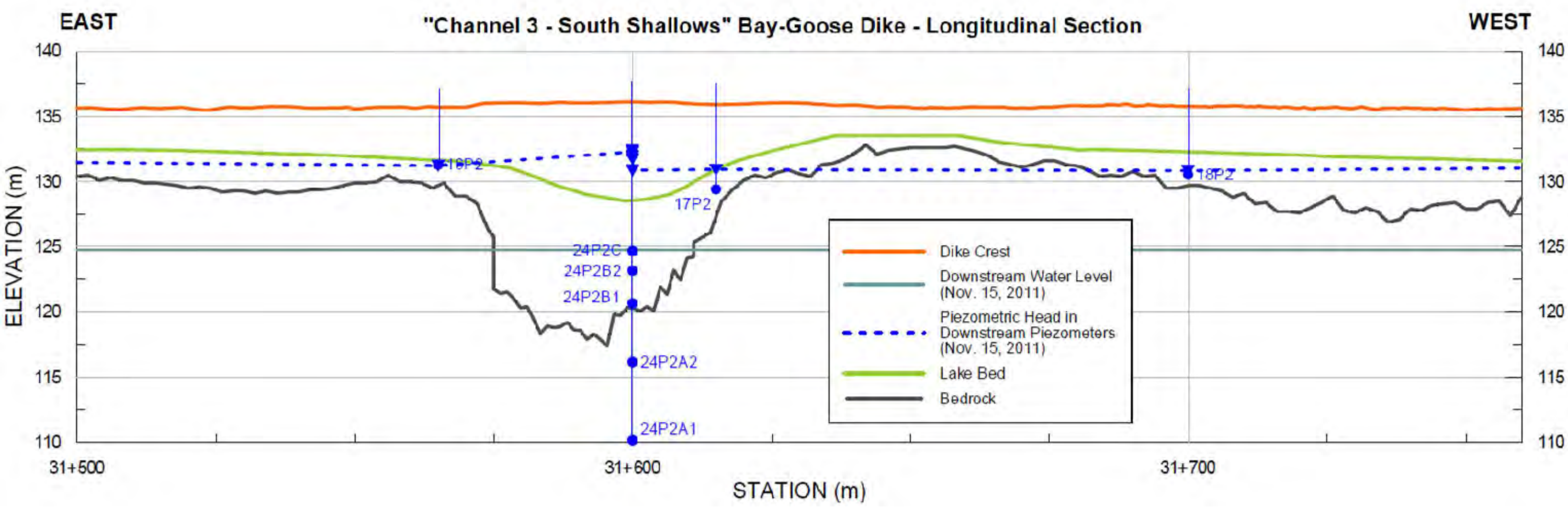
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

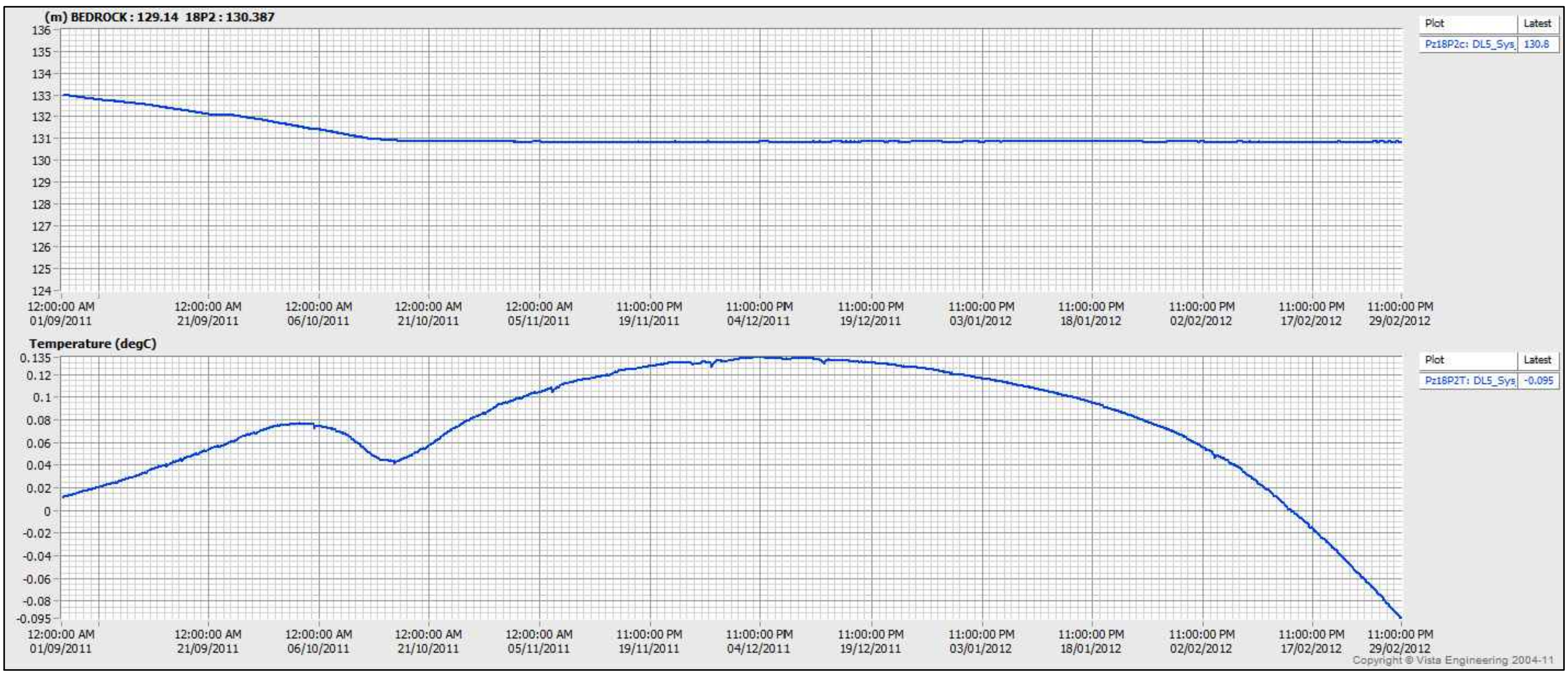
BAY-GOOSE DIKE
CHANNEL 3 SOUTH SHALLOWS - 31+615
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

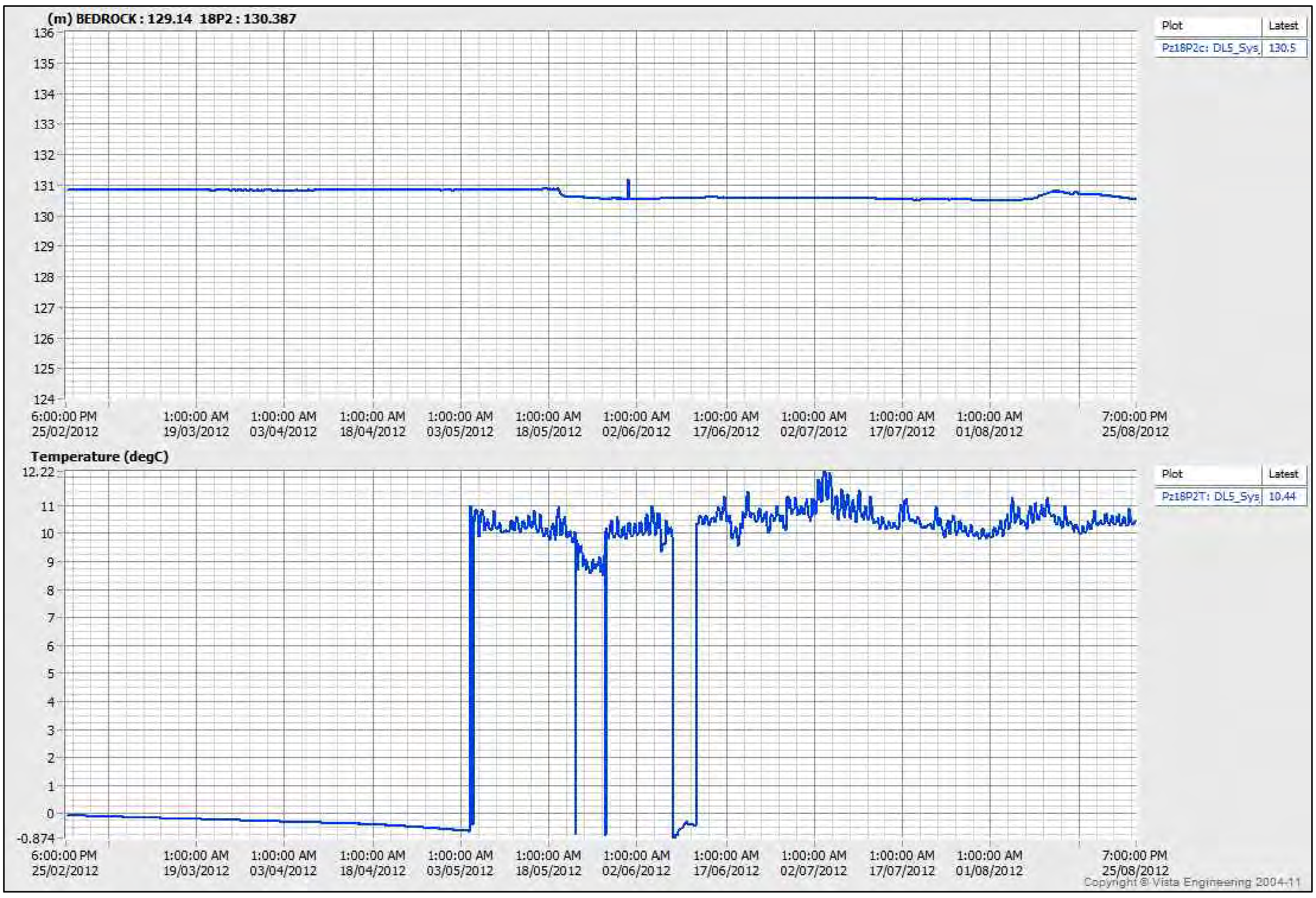
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C3-36**	
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.31+700, 18P2 (Sep.11 - Mar.12)



VW Piezometer - Sta.31+700, 18P2 (Mar.12 - Sep.12)



PROJECT

AEM

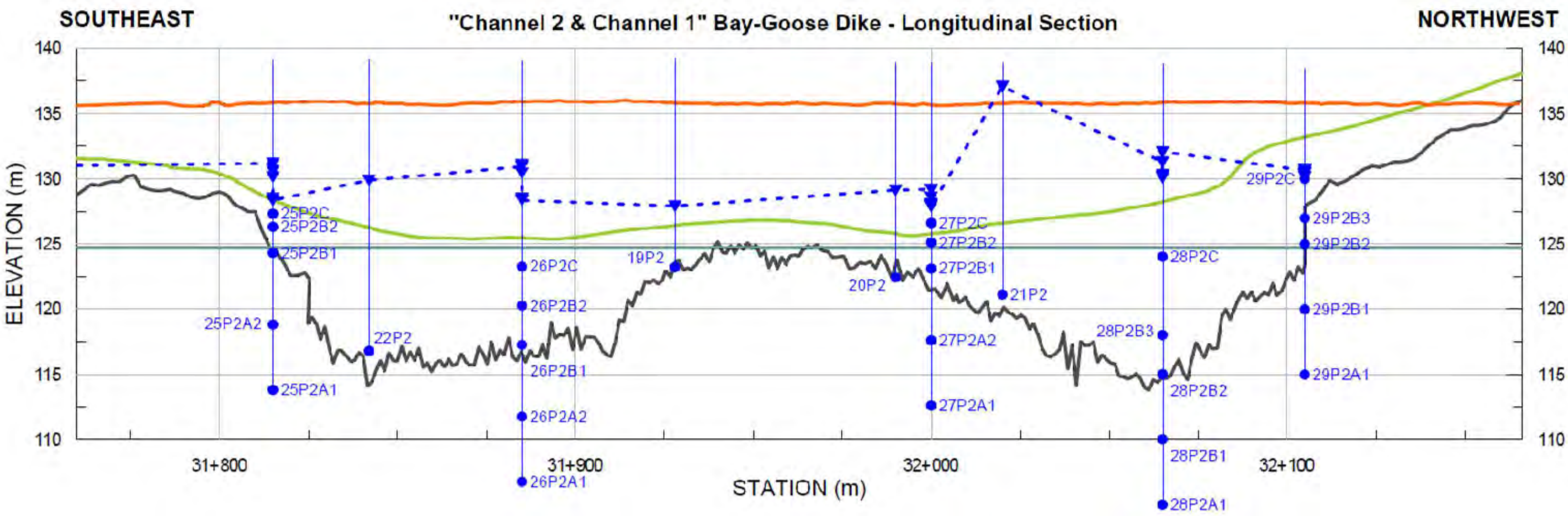
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

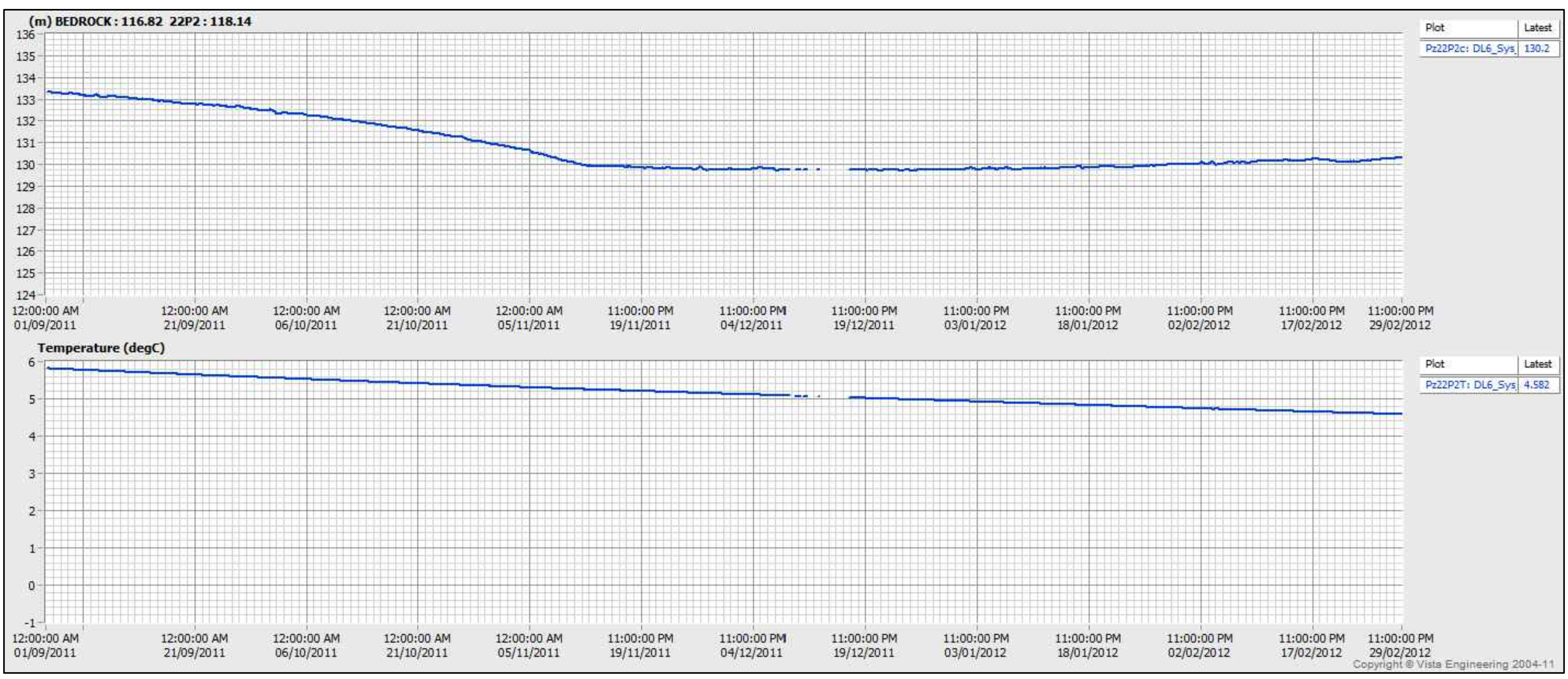
BAY-GOOSE DIKE
CHANNEL 3 SOUTH SHALLOWS - 31+700
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

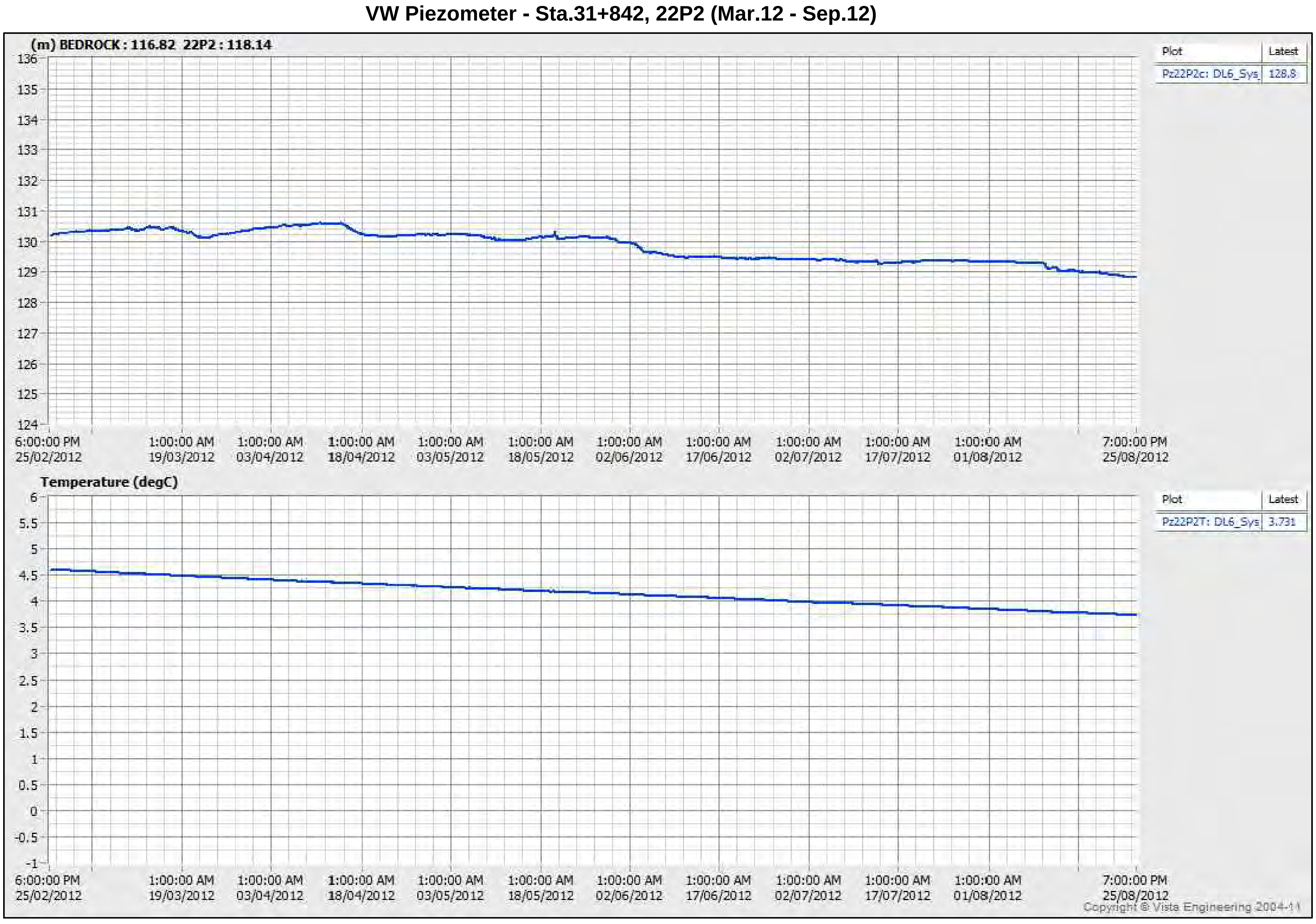
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C3-37**	
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.31+842, 22P2 (Sep.11 - Mar.12)



VW Piezometer - Sta.31+842, 22P2 (Mar.12 - Sep.12)



PROJECT

AEM

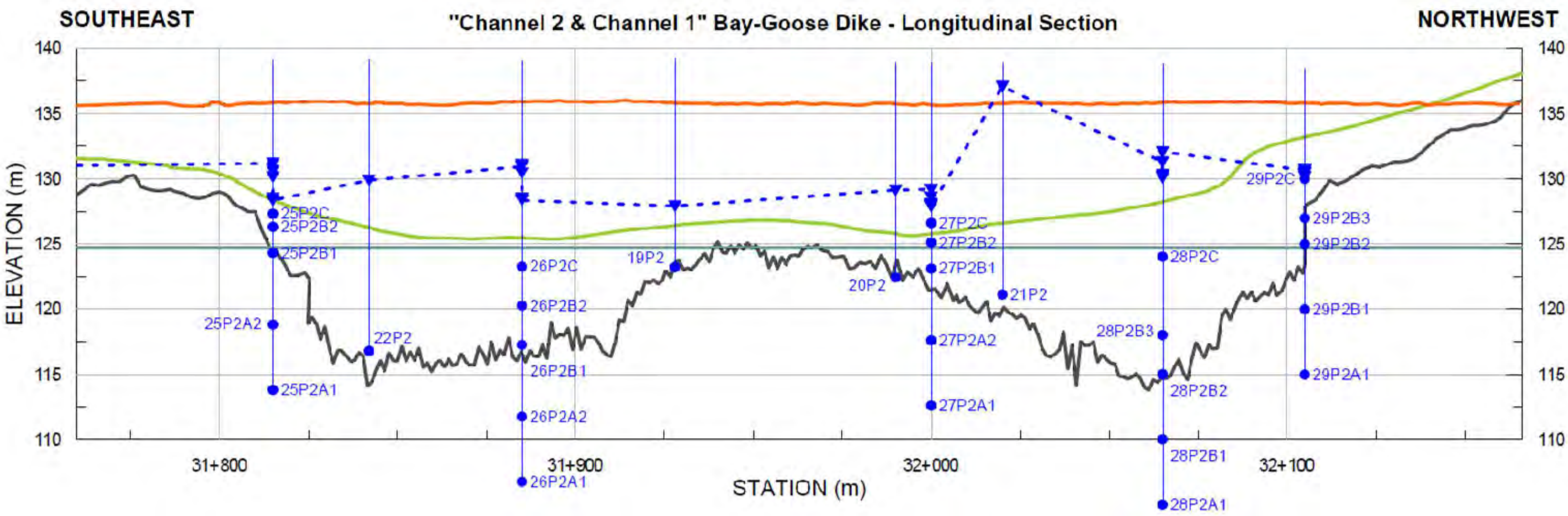
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

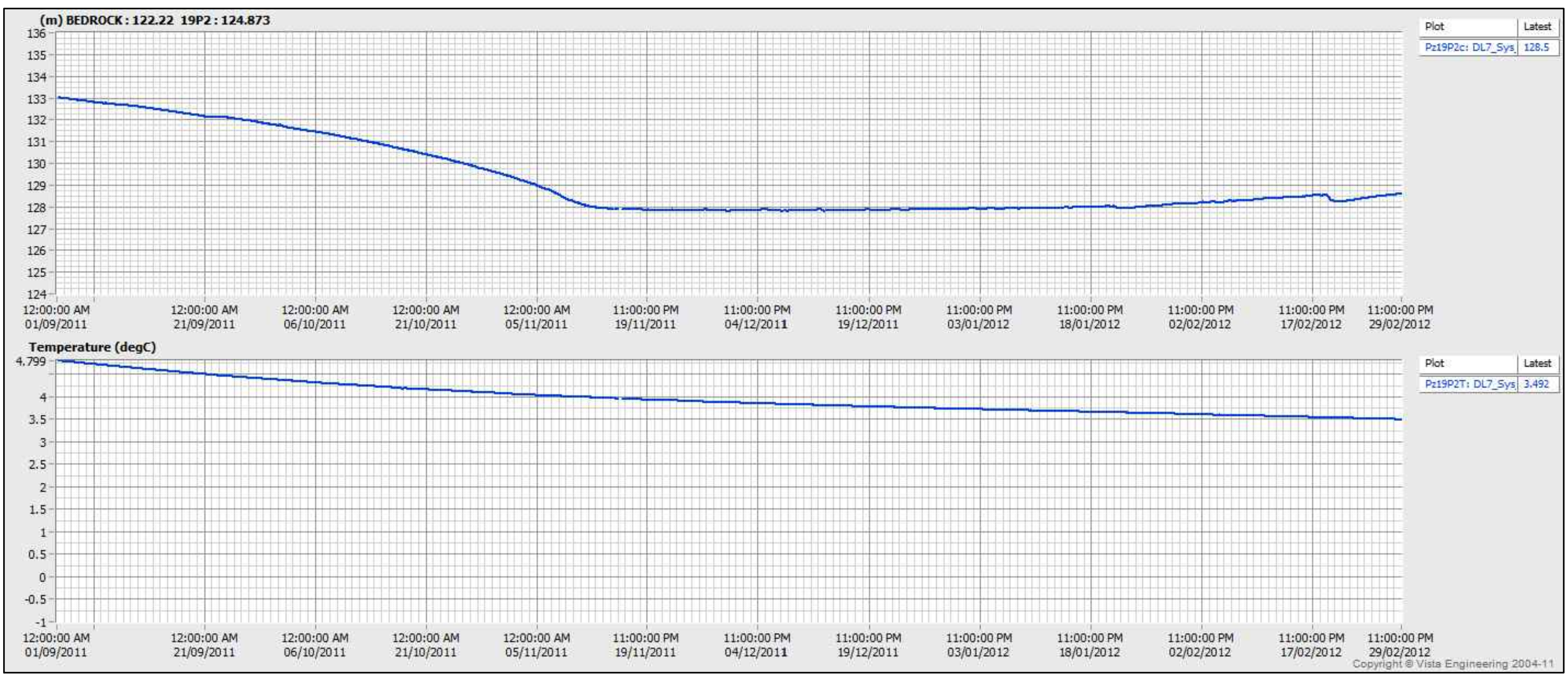
BAY-GOOSE DIKE
CHANNEL 2 & CHANNEL 1 - 31+842
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

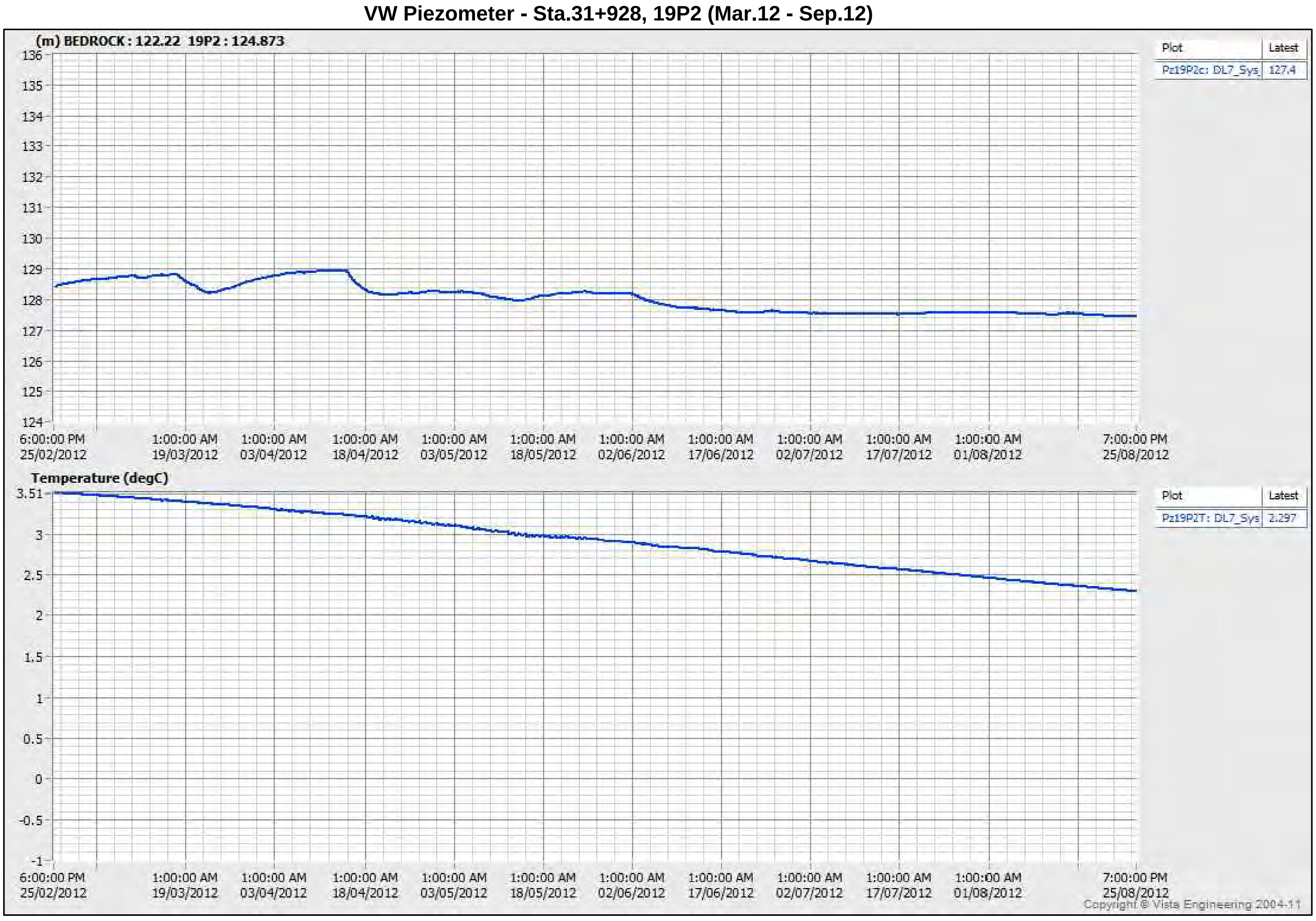
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C3-38**	
REVIEW	FE	11/15/2012		



VW Piezometer - Sta.31+928, 19P2 (Sep.11 - Mar.12)



VW Piezometer - Sta.31+928, 19P2 (Mar.12 - Sep.12)



PROJECT
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

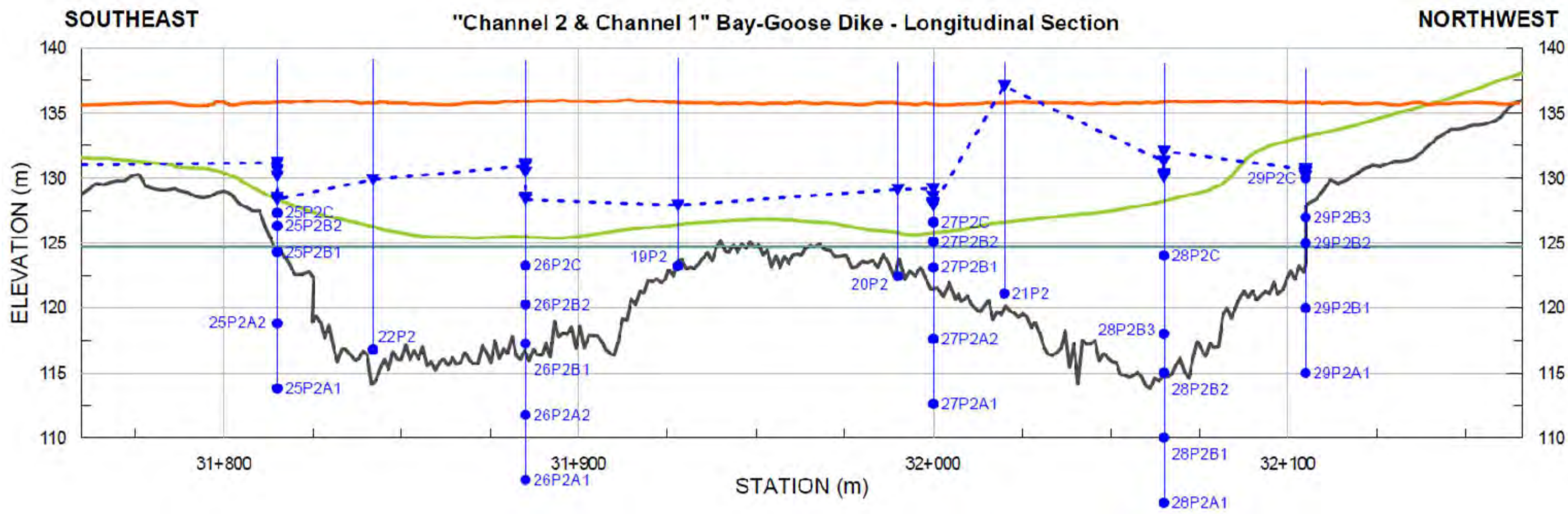
TITLE
BAY-GOOSE DIKE
CHANNEL 2 & CHANNEL 1 - 31+928
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

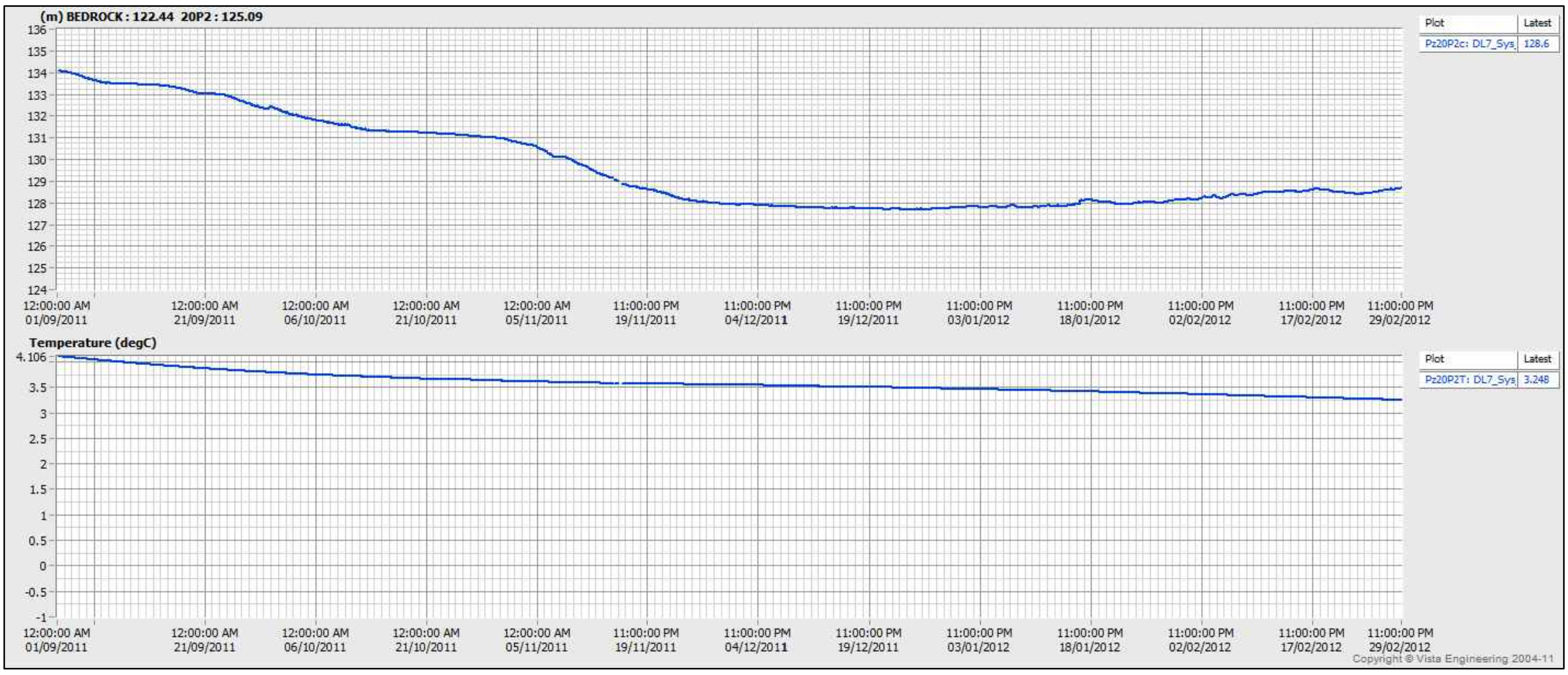
PROJECT No.		12-1221-0073
DESIGN	AEM	09/19/2012
CADD	FLB	10/19/2012
CHECK	YB	11/08/2012
REVIEW	FE	11/15/2012

PHASE No. 3000
SCALE
REV. -

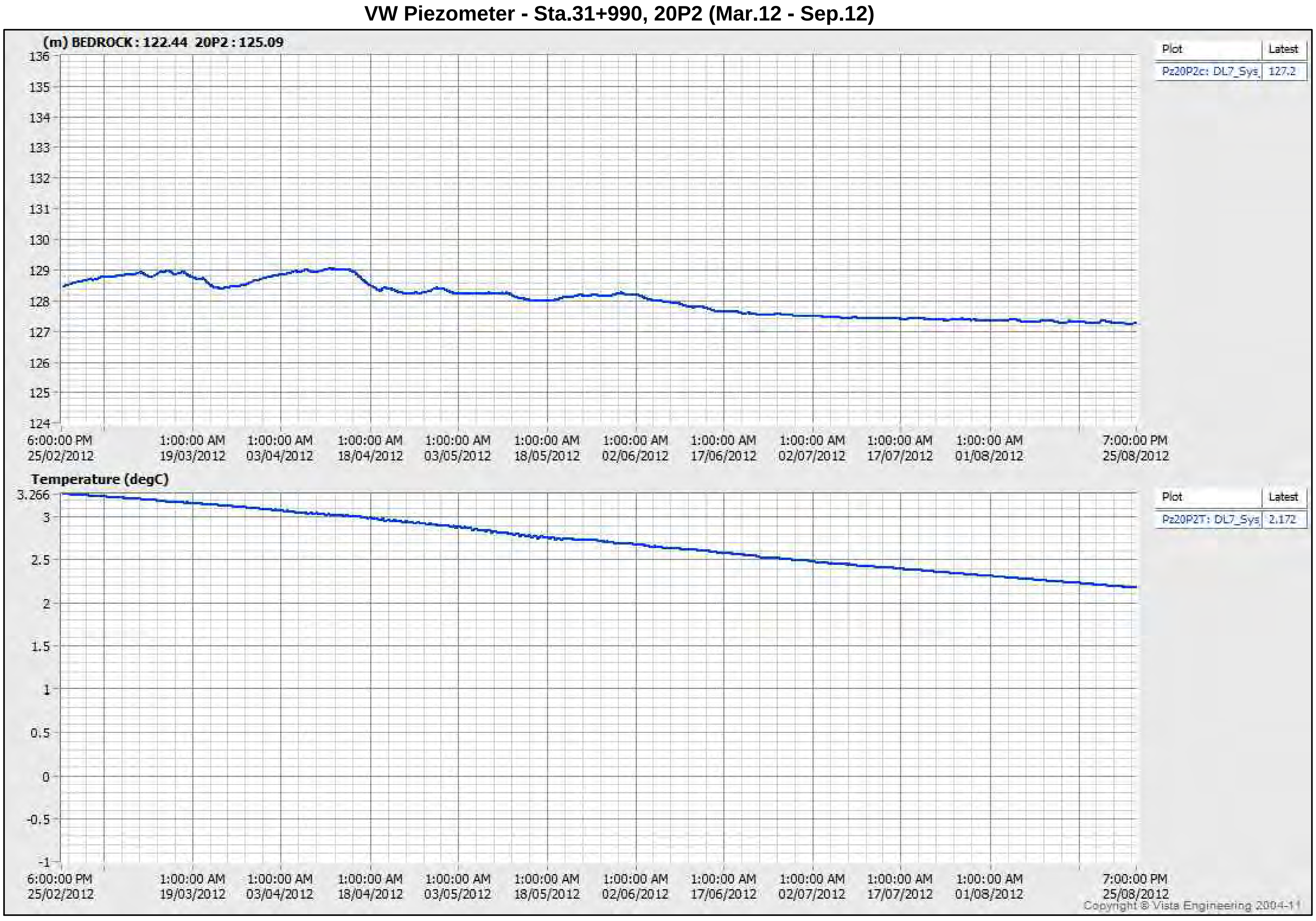
FIGURE C3-39



VW Piezometer - Sta.31+990, 20P2 (Sep.11 - Mar.12)



VW Piezometer - Sta.31+990, 20P2 (Mar.12 - Sep.12)



PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

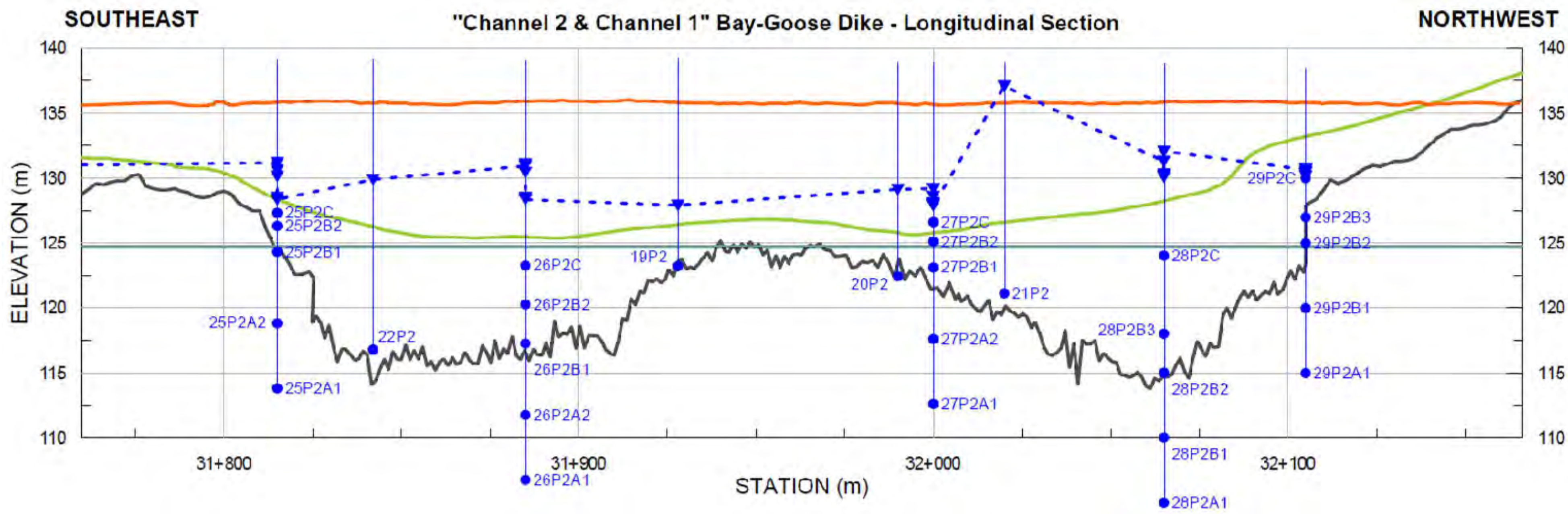
TITLE

BAY-GOOSE DIKE
CHANNEL 2 & CHANNEL 1 - 31+990
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

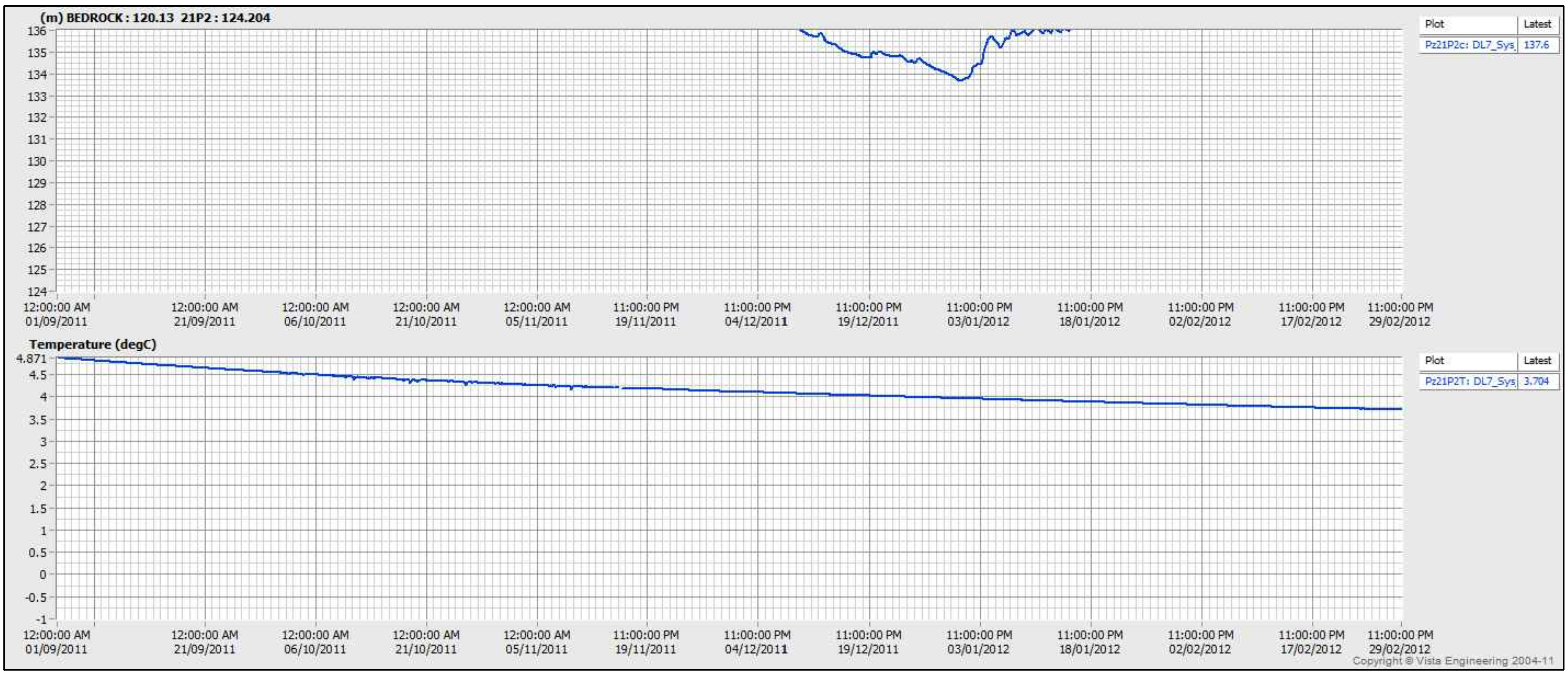
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

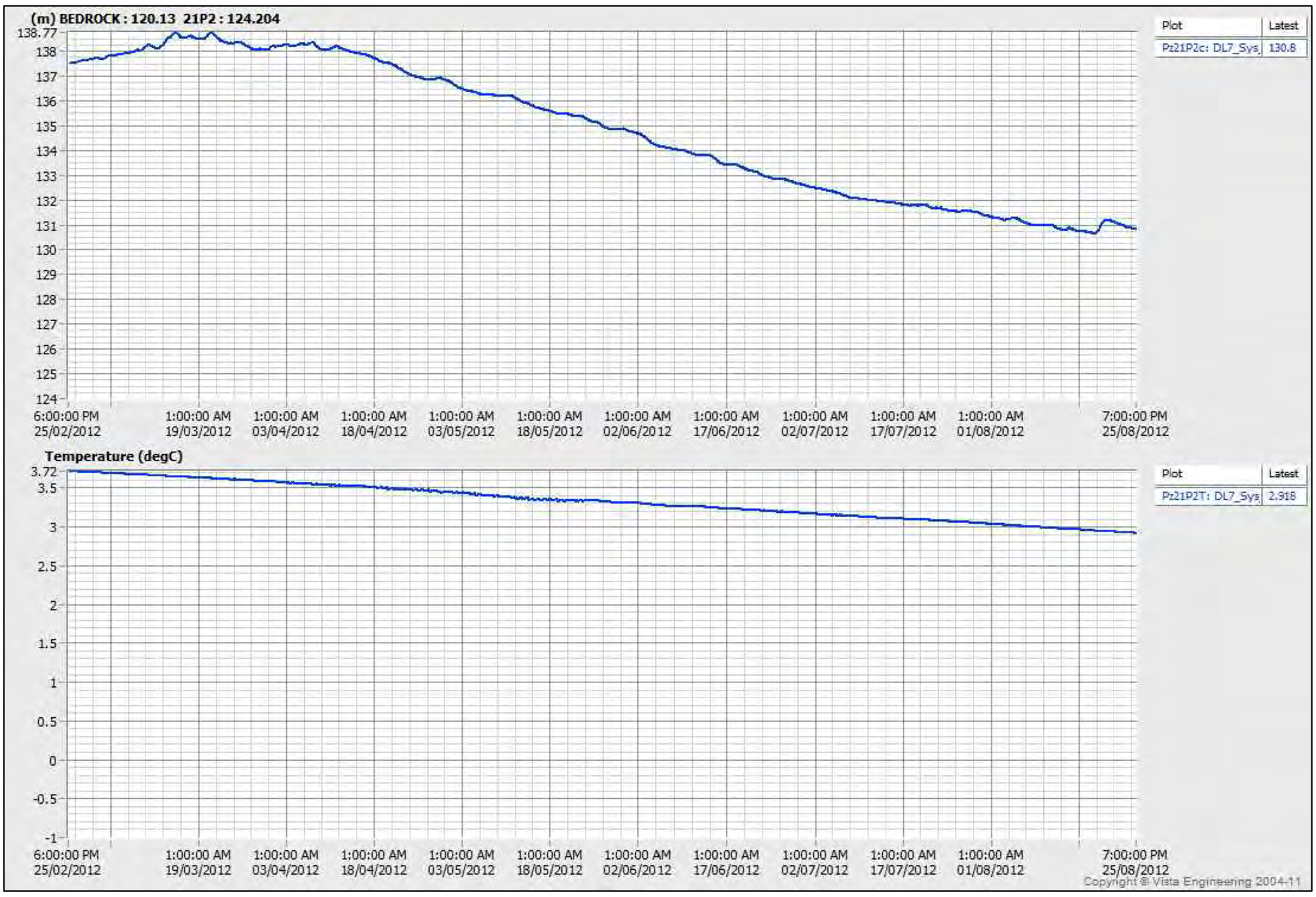
FIGURE C3-40



VW Piezometer - Sta.32+020, 21P2 (Sep.11 - Mar.12)



VW Piezometer - Sta.32+020, 21P2 (Mar.12 - Sep.12)



PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

BAY-GOOSE DIKE
CHANNEL 2 & CHANNEL 1 - 32+020
PIEZOMETRIC DATA (SEP.2011 - SEP.2012)

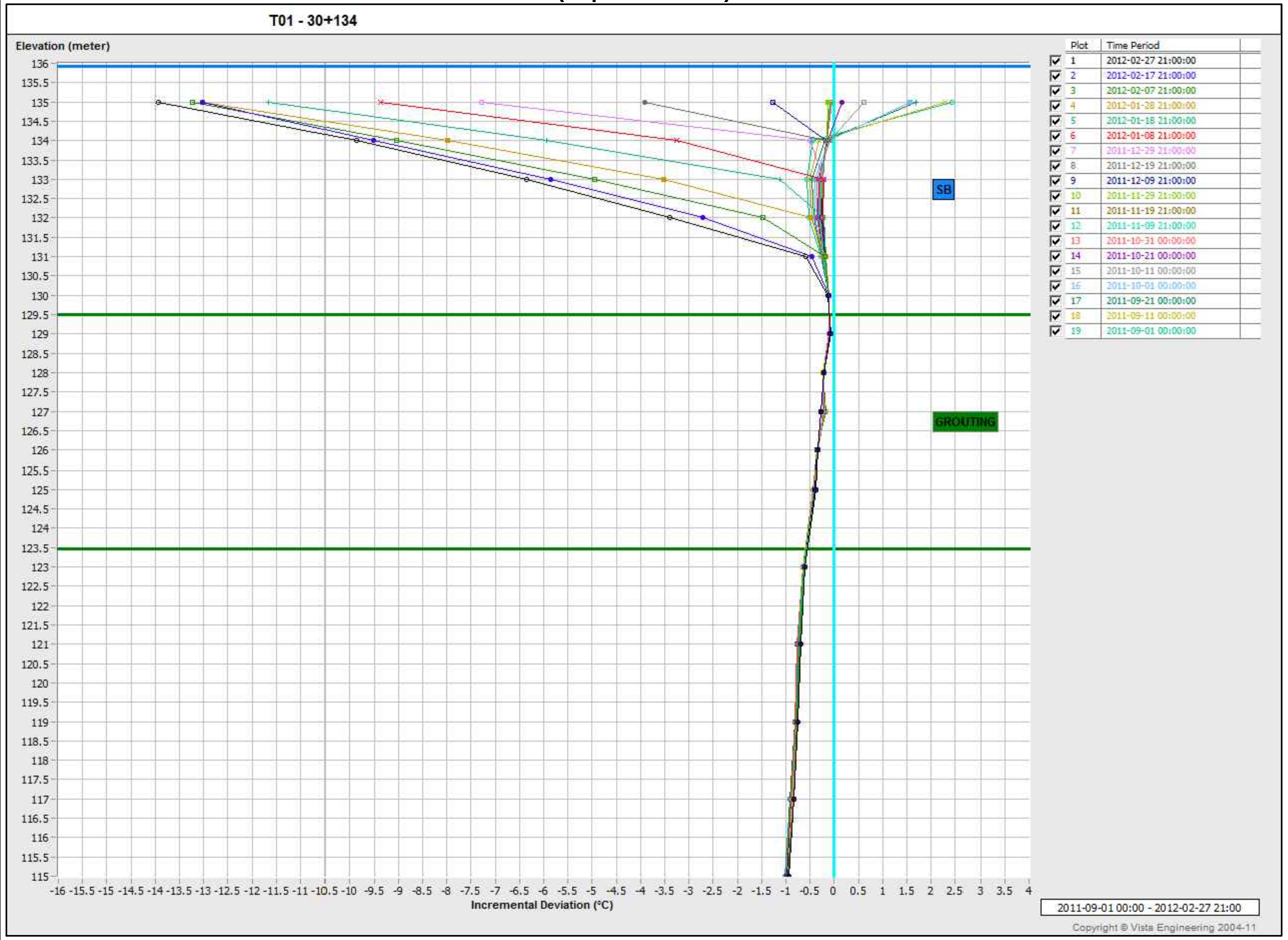
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073
DESIGN	AEM	09/19/2012
CADD	FLB	10/19/2012
CHECK	YB	11/08/2012
REVIEW	FE	11/15/2012

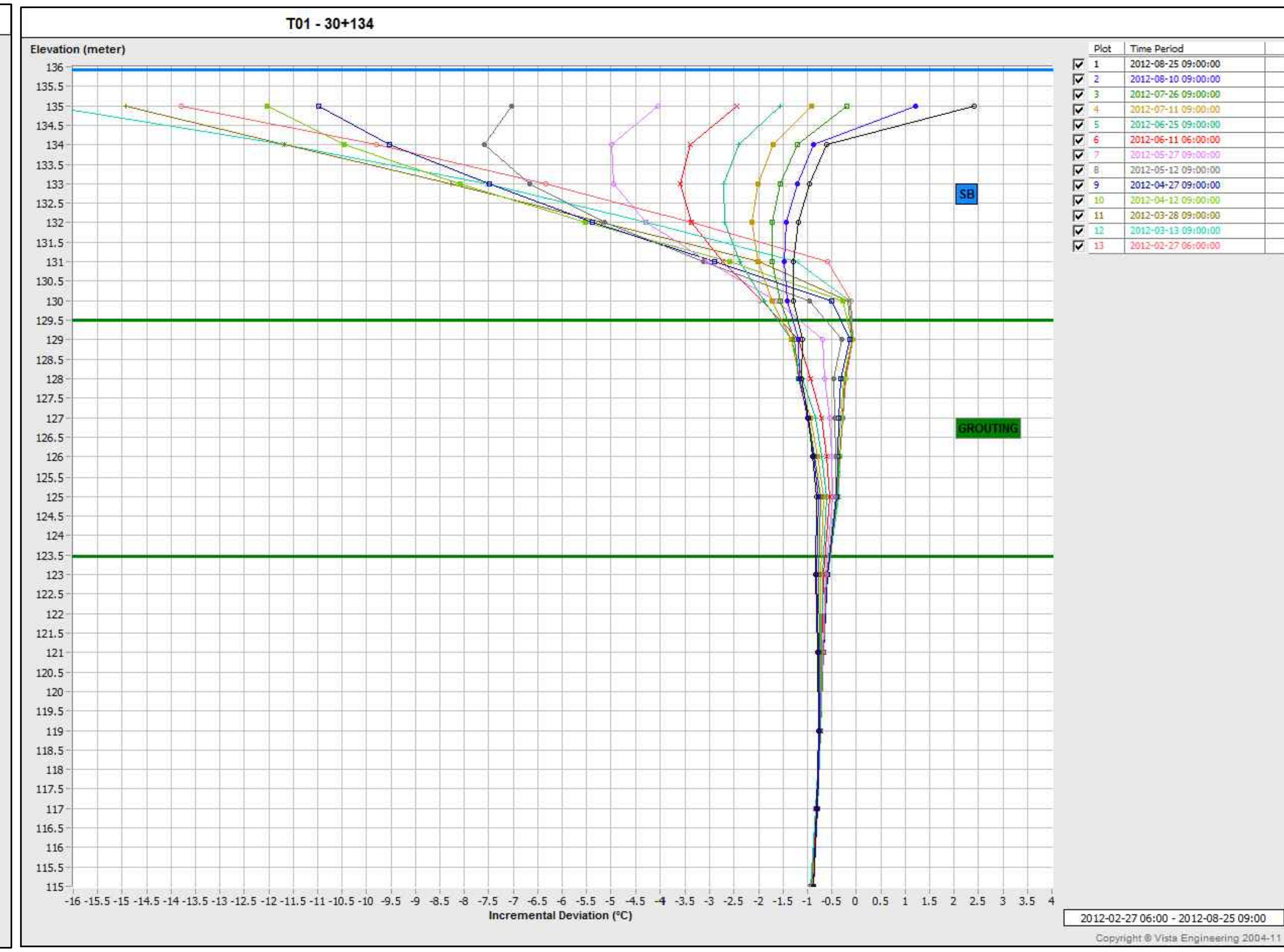
PHASE No. 3000
SCALE
REV. -

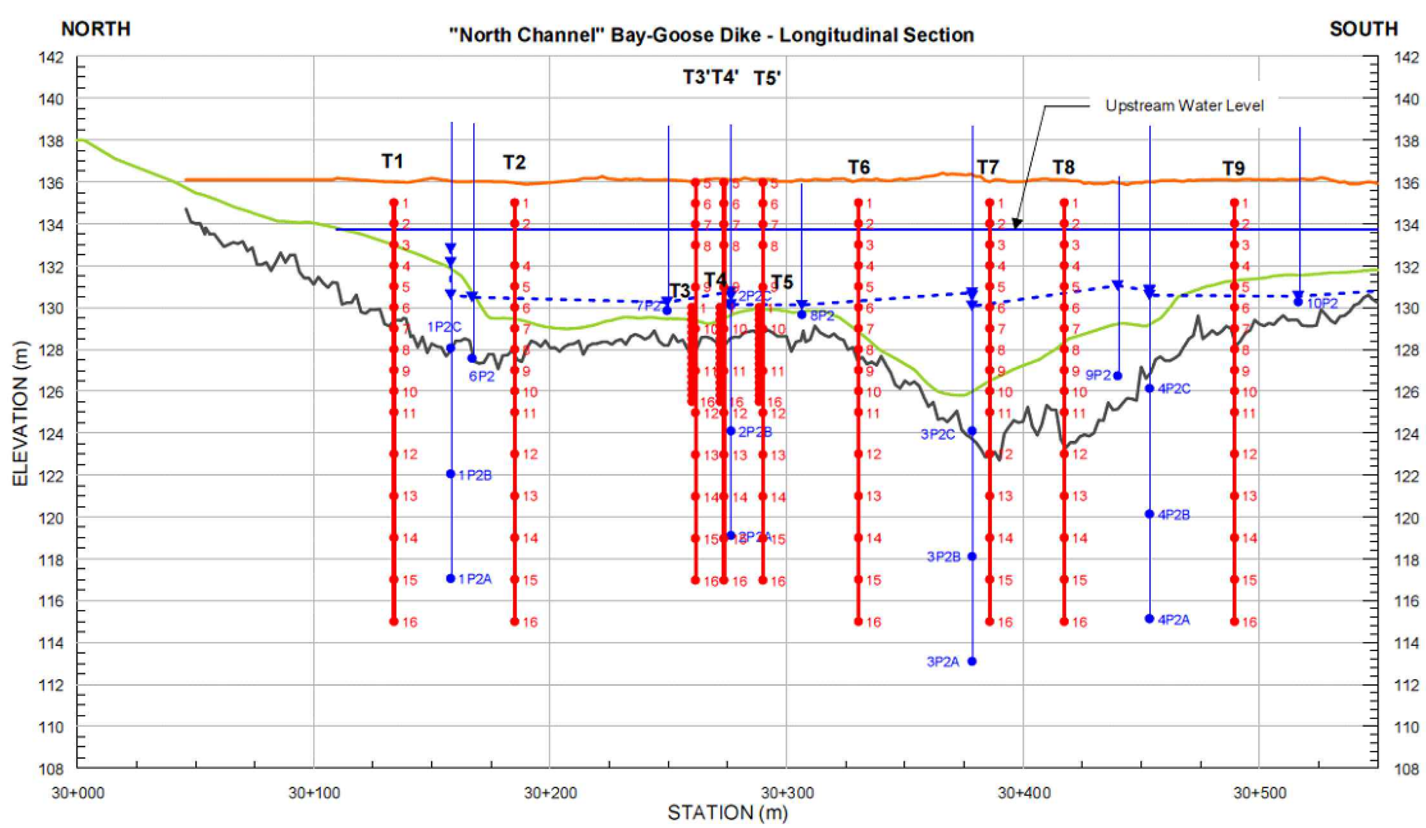
FIGURE C3-41

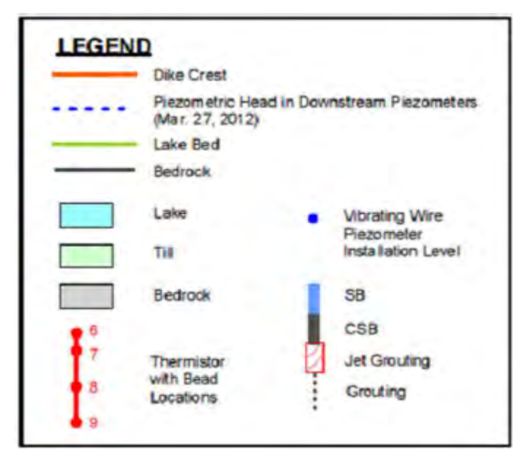
T1 - Sta.30+134 (Sep.11 - Mar.12)



T1 - Sta.30+134 (Mar.12 - Sep.12)







PROJECT

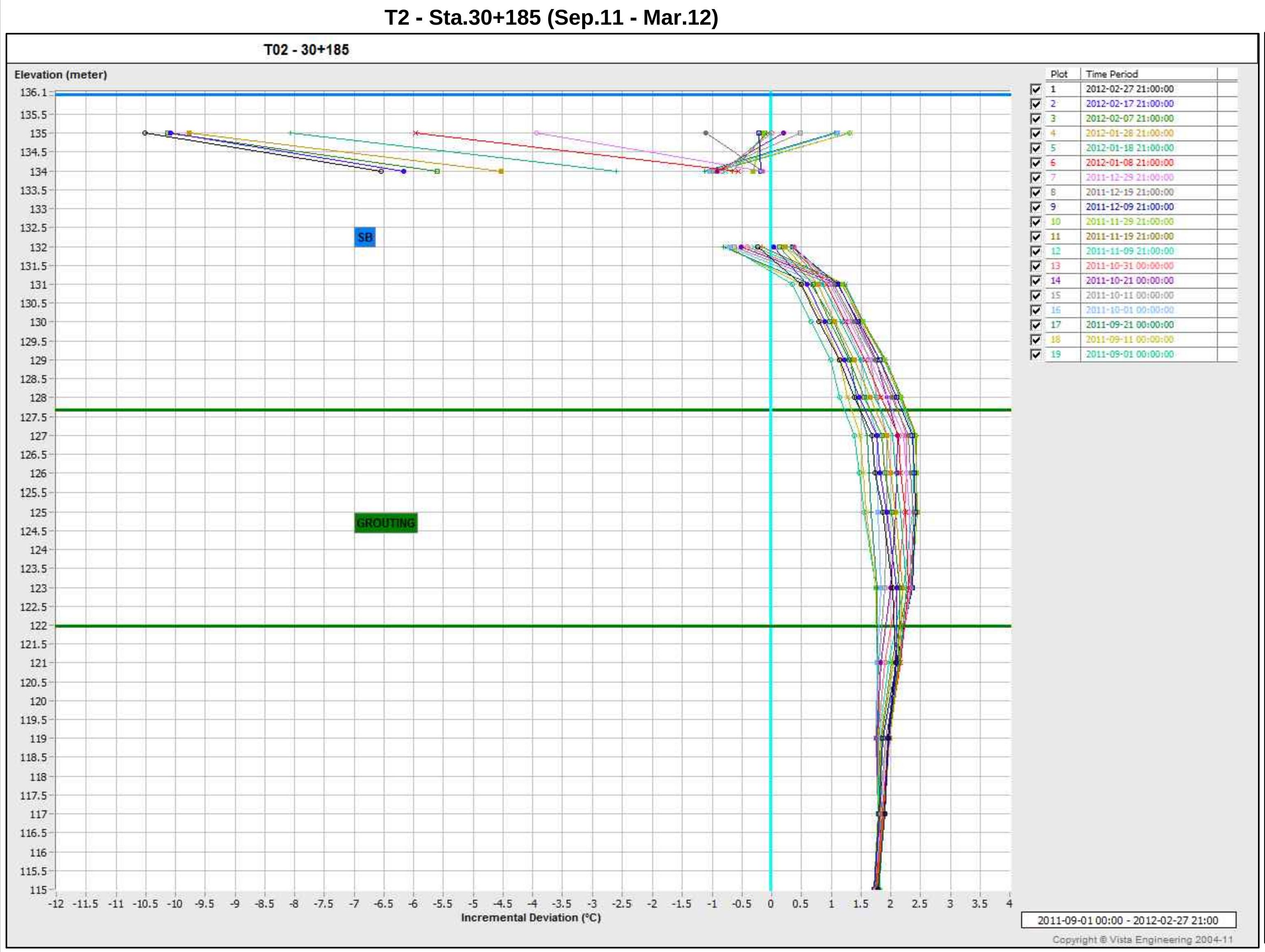
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

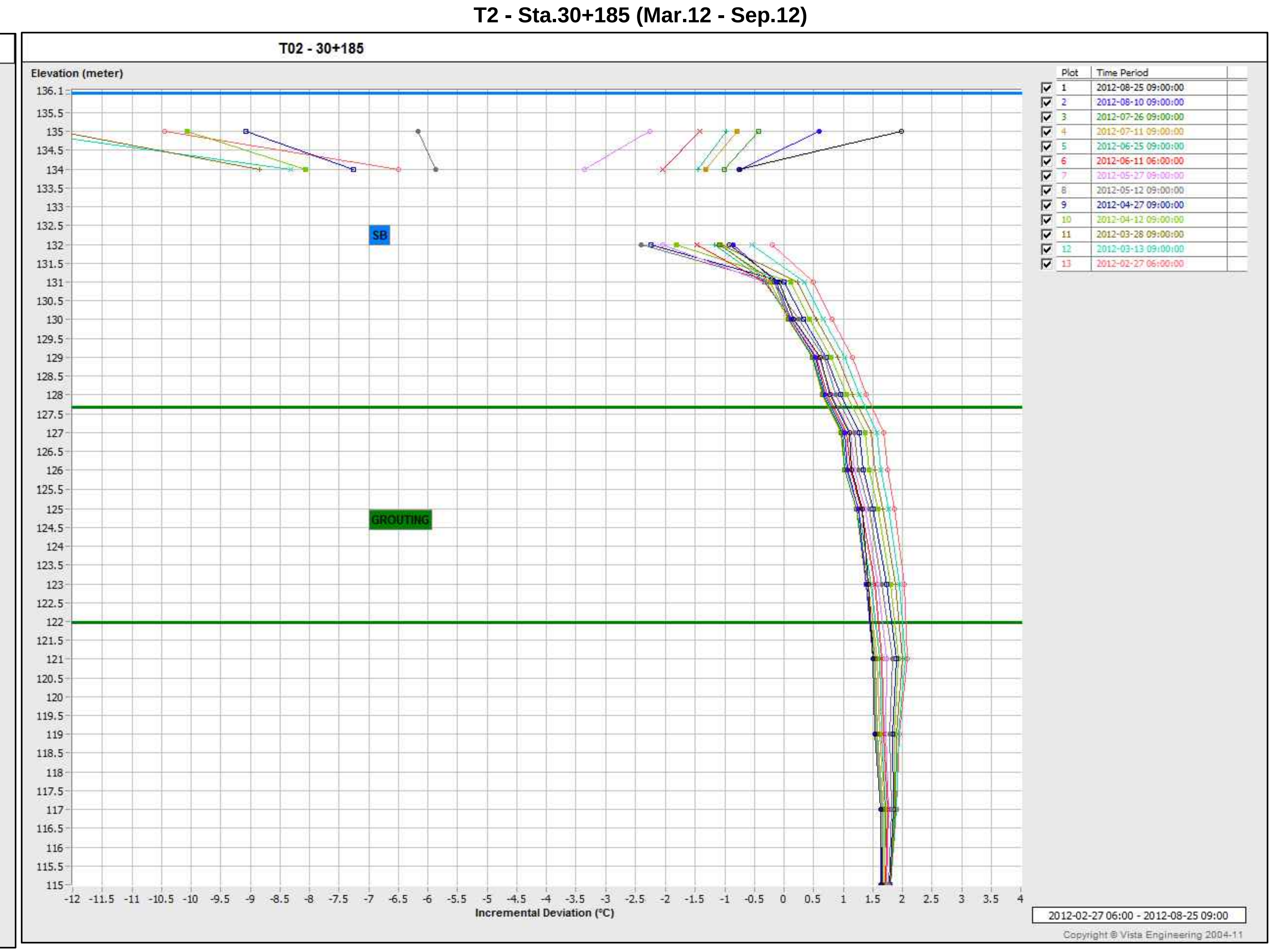
TITLE

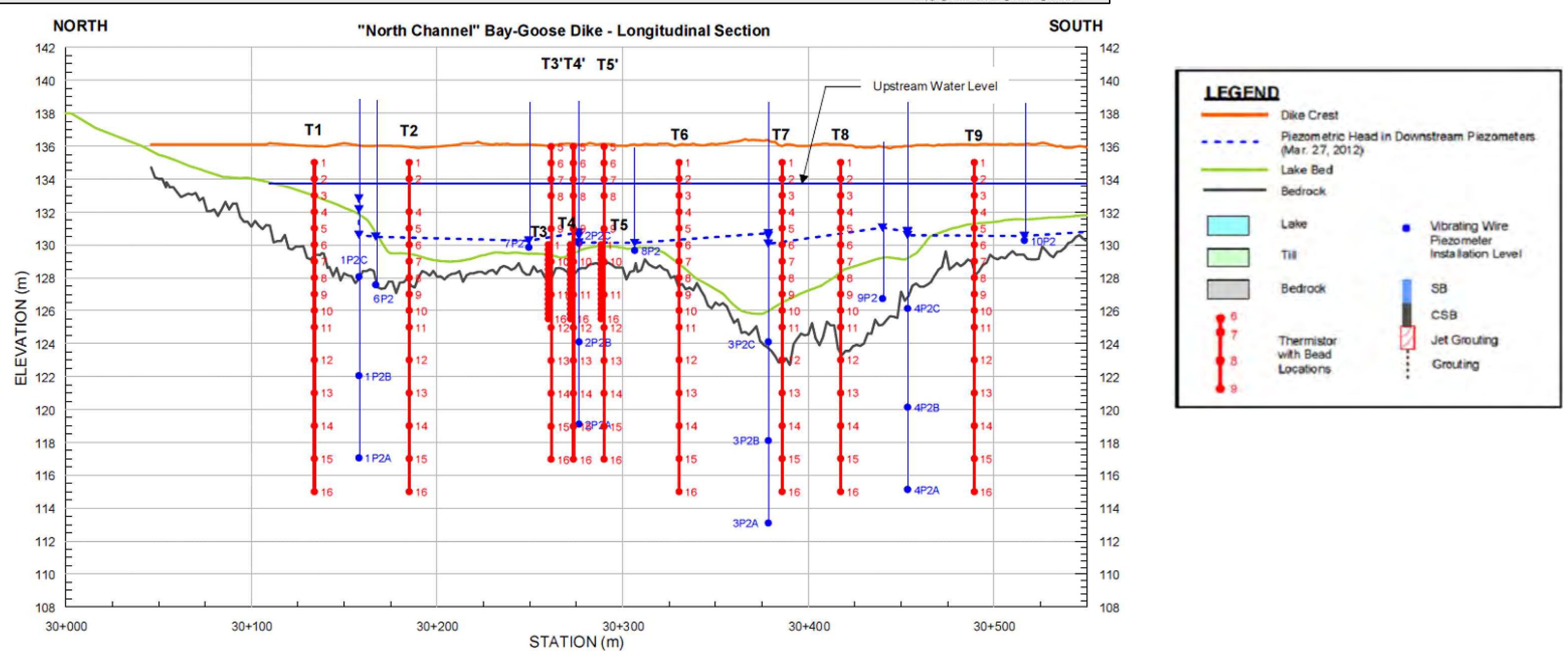
BAY-GOOSE DIKE - T1 - 30+134
THERMISTOR DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C3-42**	
REVIEW	FE	11/15/2012		







PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

BAY-GOOSE DIKE - T2 - 30+185
THERMISTOR DATA (SEP.2011 - SEP.2012)

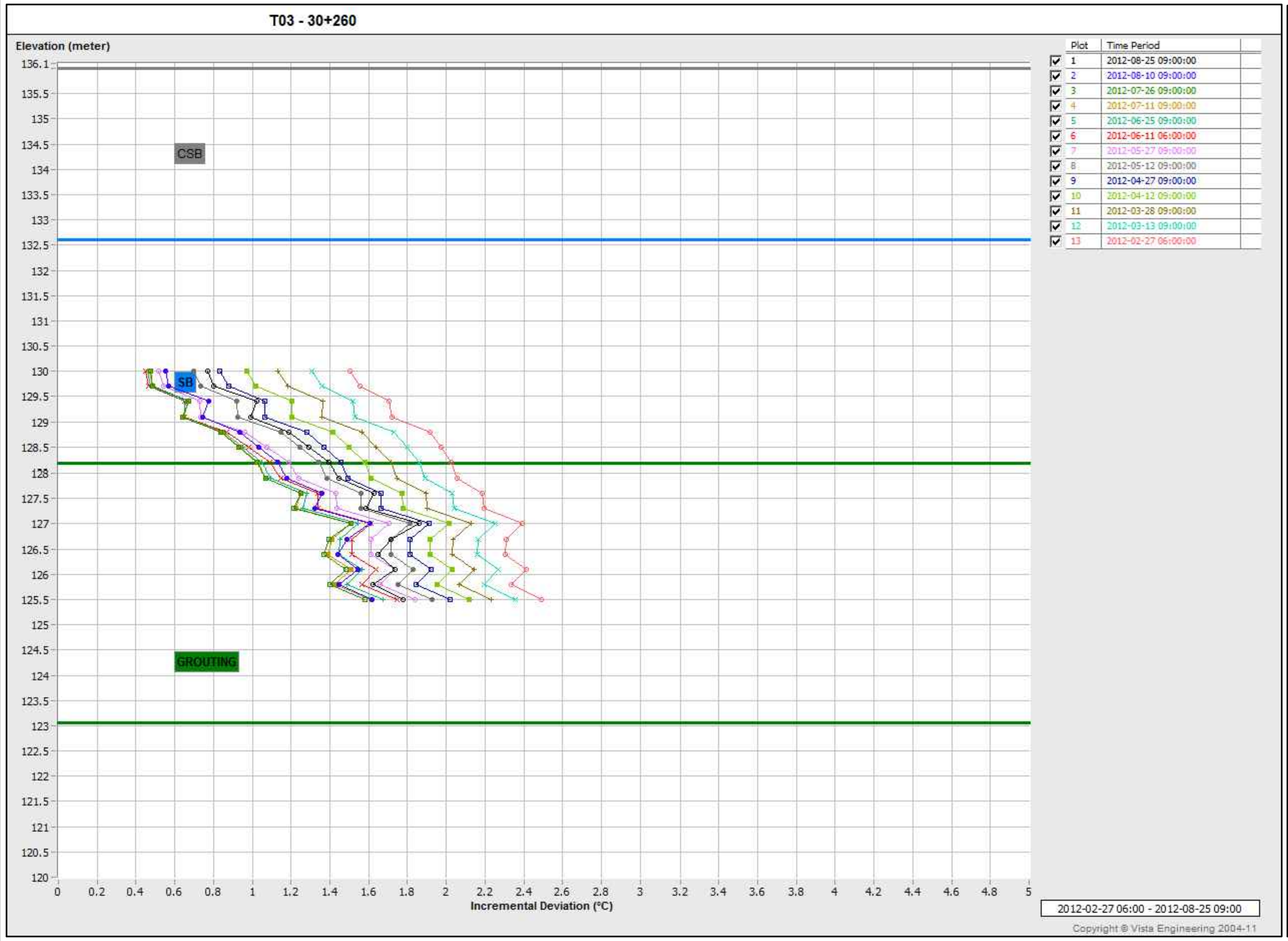
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073
DESIGN	AEM	09/19/2012
CADD	FLB	10/19/2012
CHECK	YB	11/08/2012
REVIEW	FE	11/15/2012

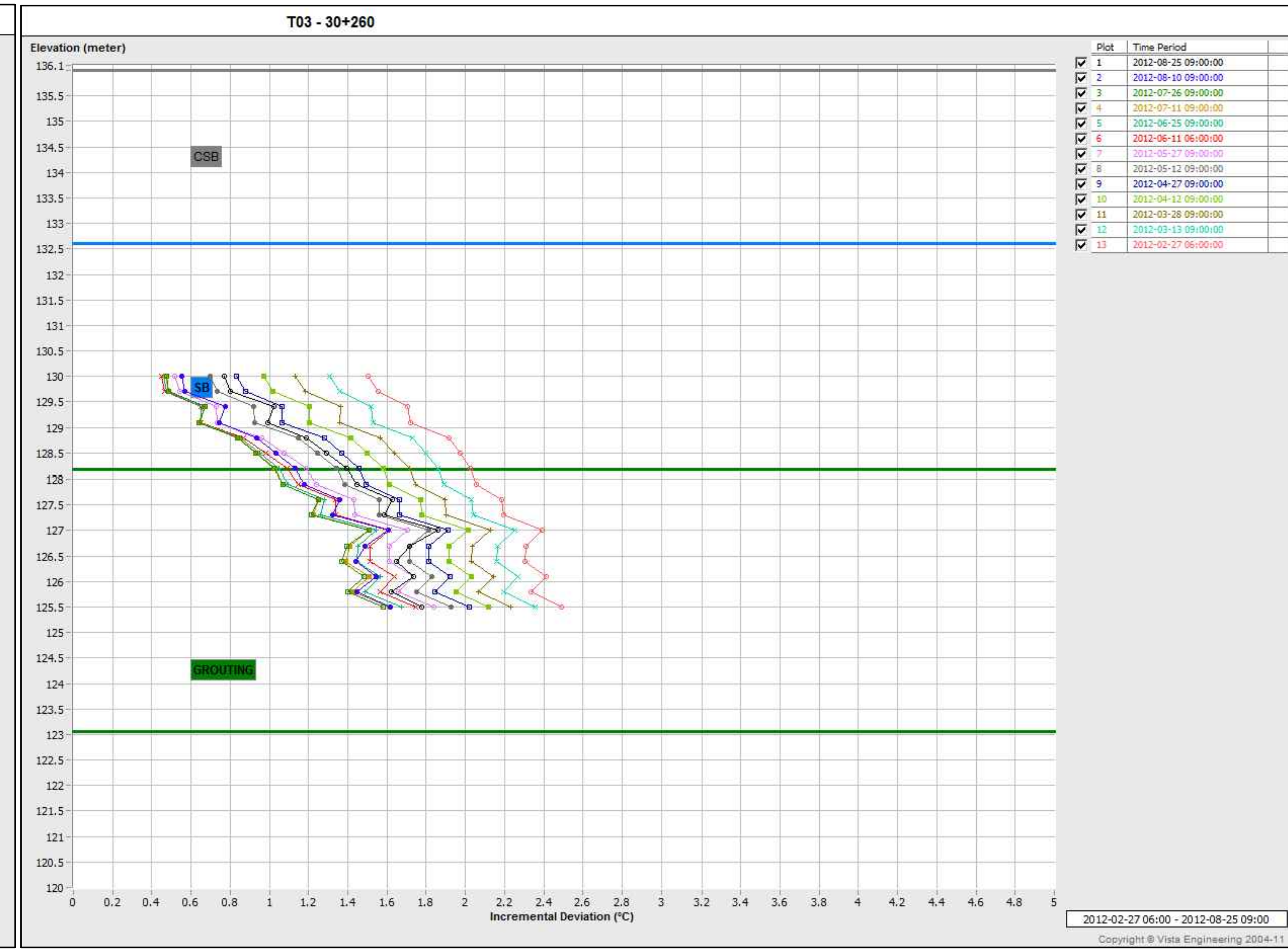
PHASE No. 3000
SCALE
REV. -

FIGURE C3-43

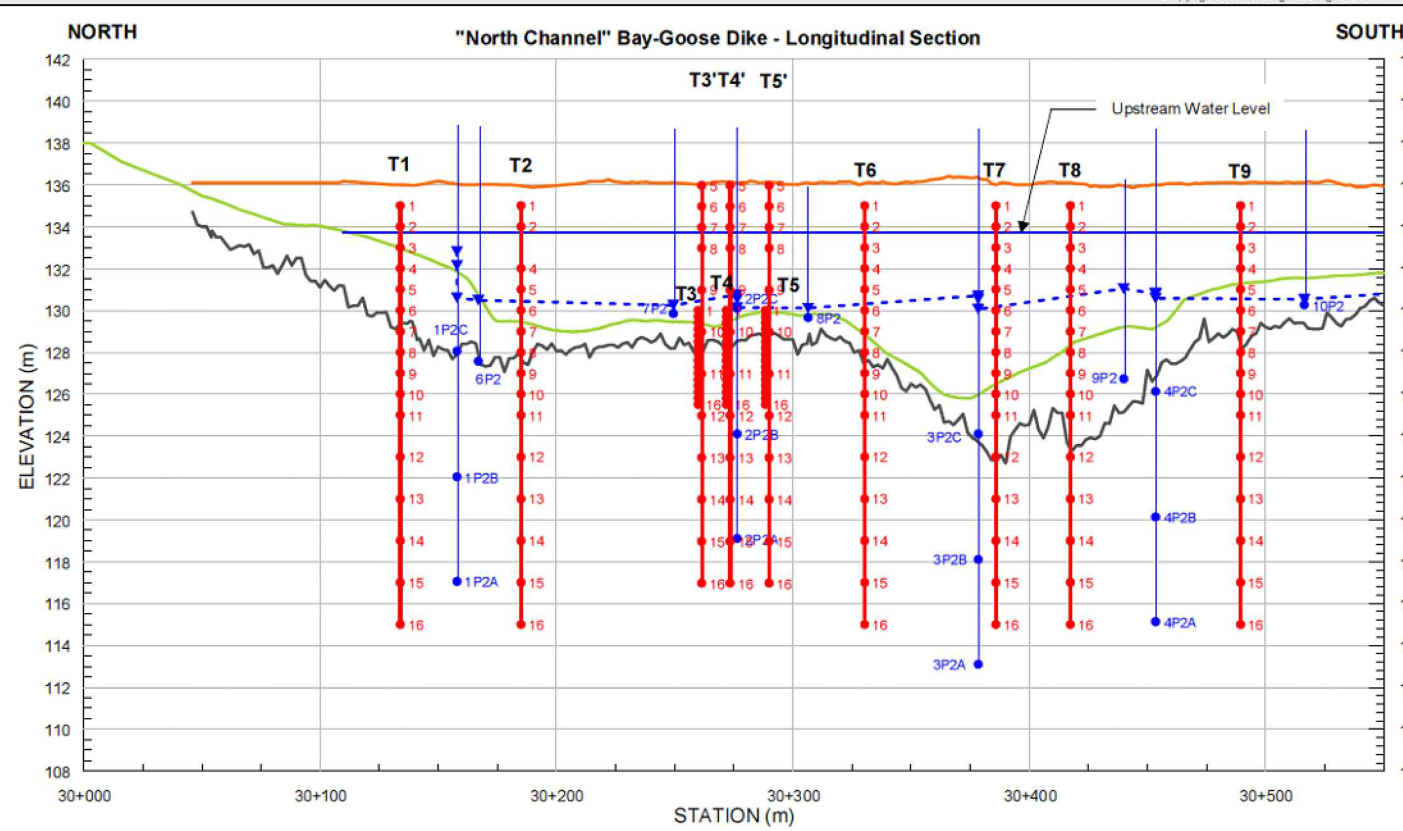
T3 - Sta.30+260 (Sep.11 - Mar.12)

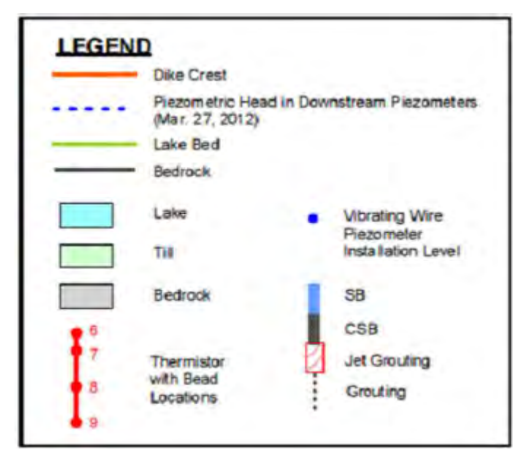


T3 - Sta.30+260 (Mar.12 - Sep.12)



"North Channel" Bay-Goose Dike - Longitudinal Section





PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

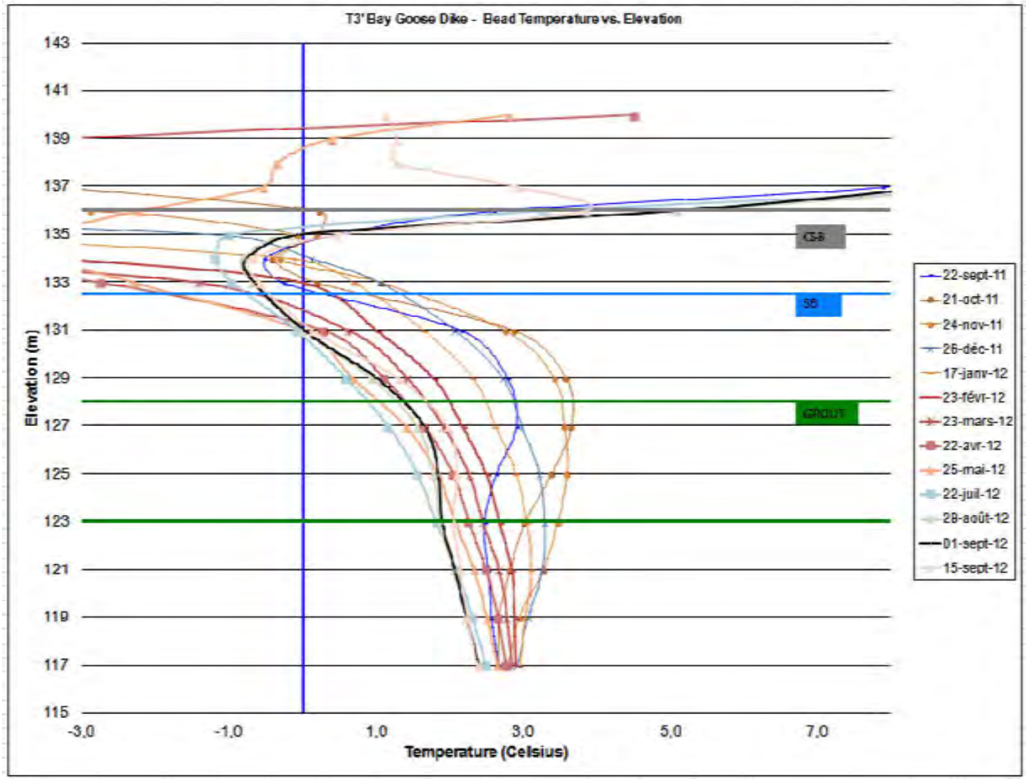
TITLE

BAY-GOOSE DIKE - T3 - 30+260
THERMISTOR DATA (SEP.2011 - SEP.2012)

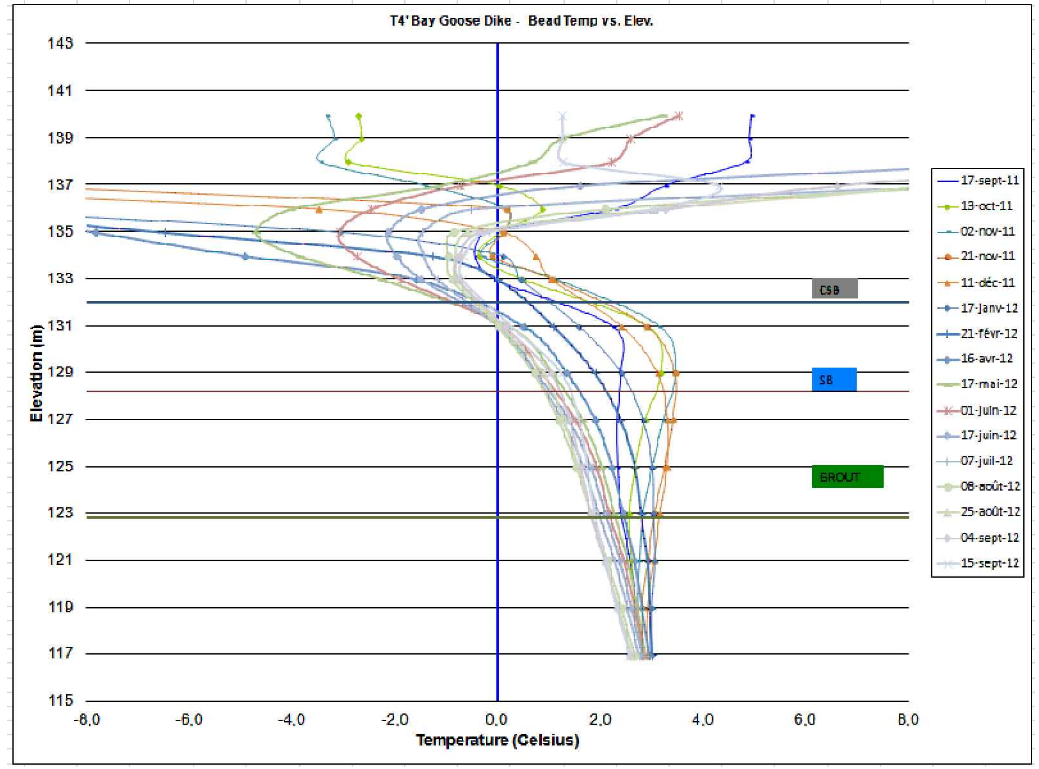
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C3-44	
REVIEW	FE	11/15/2012		

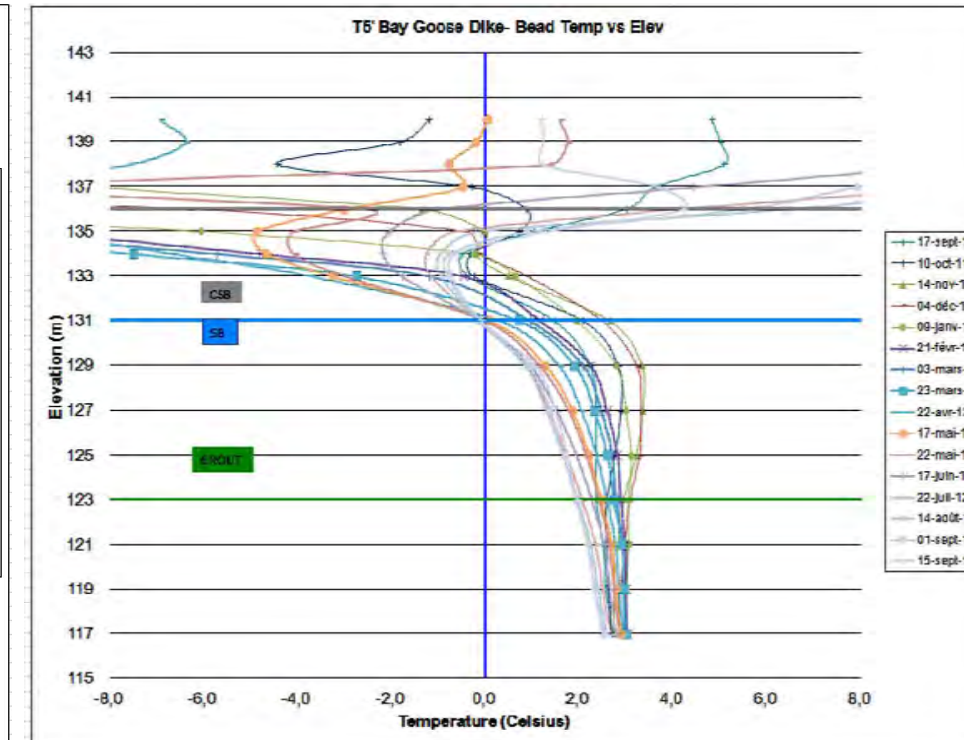
T3' - Sta.30+261.5 (Sep.11 - Sep.12)

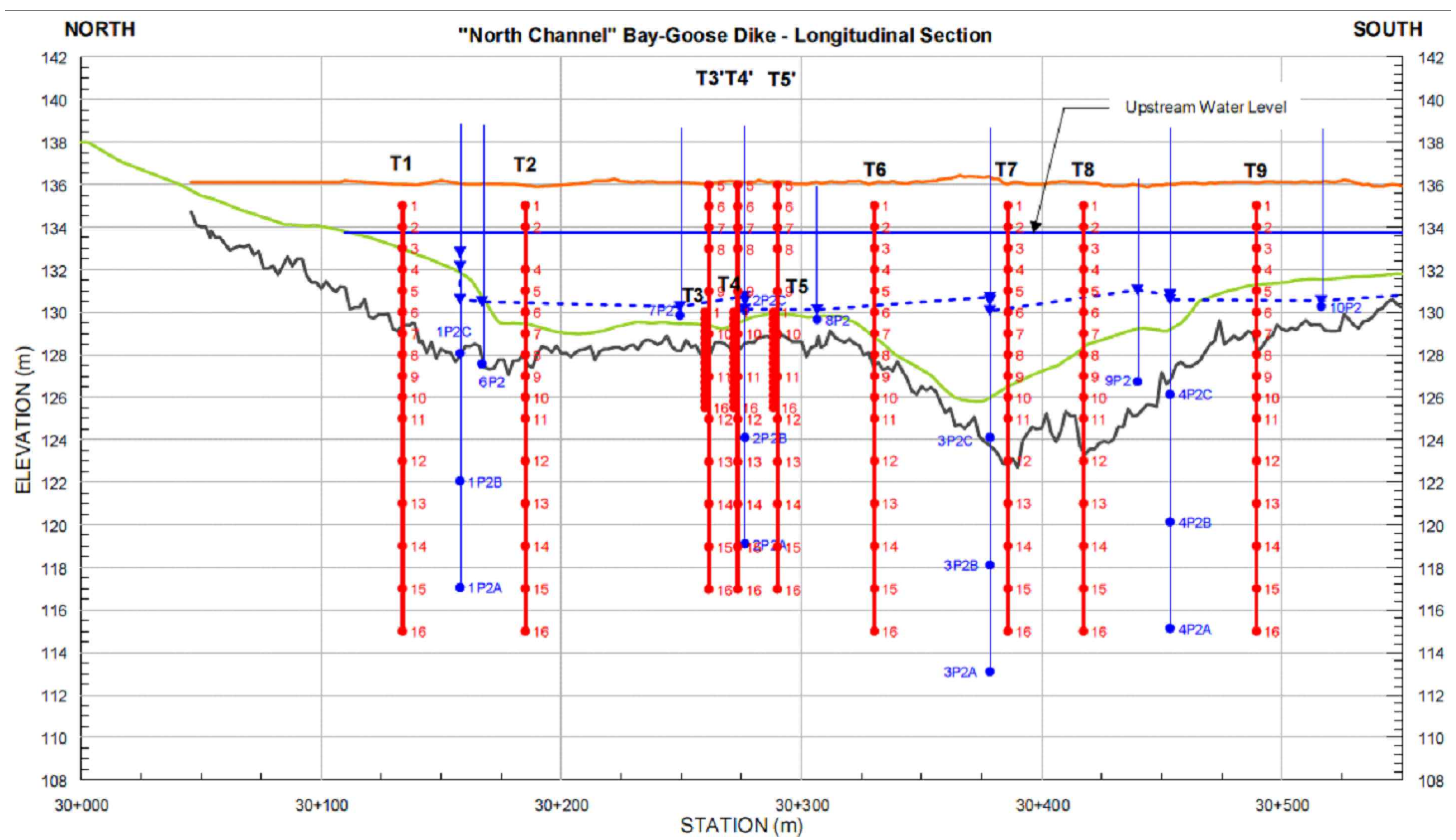


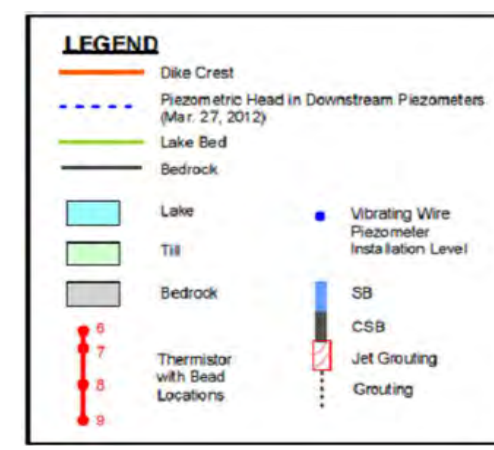
T4' - Sta.30+273.5 (Sep.11 - Sep.12)



T5' - Sta.30+290 (Sep.11 - Sep.12)







PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

BAY-GOOSE DIKE - T3',T4',T5'
MANUAL THERMISTOR DATA
(SEP.2011 - SEP.2012)

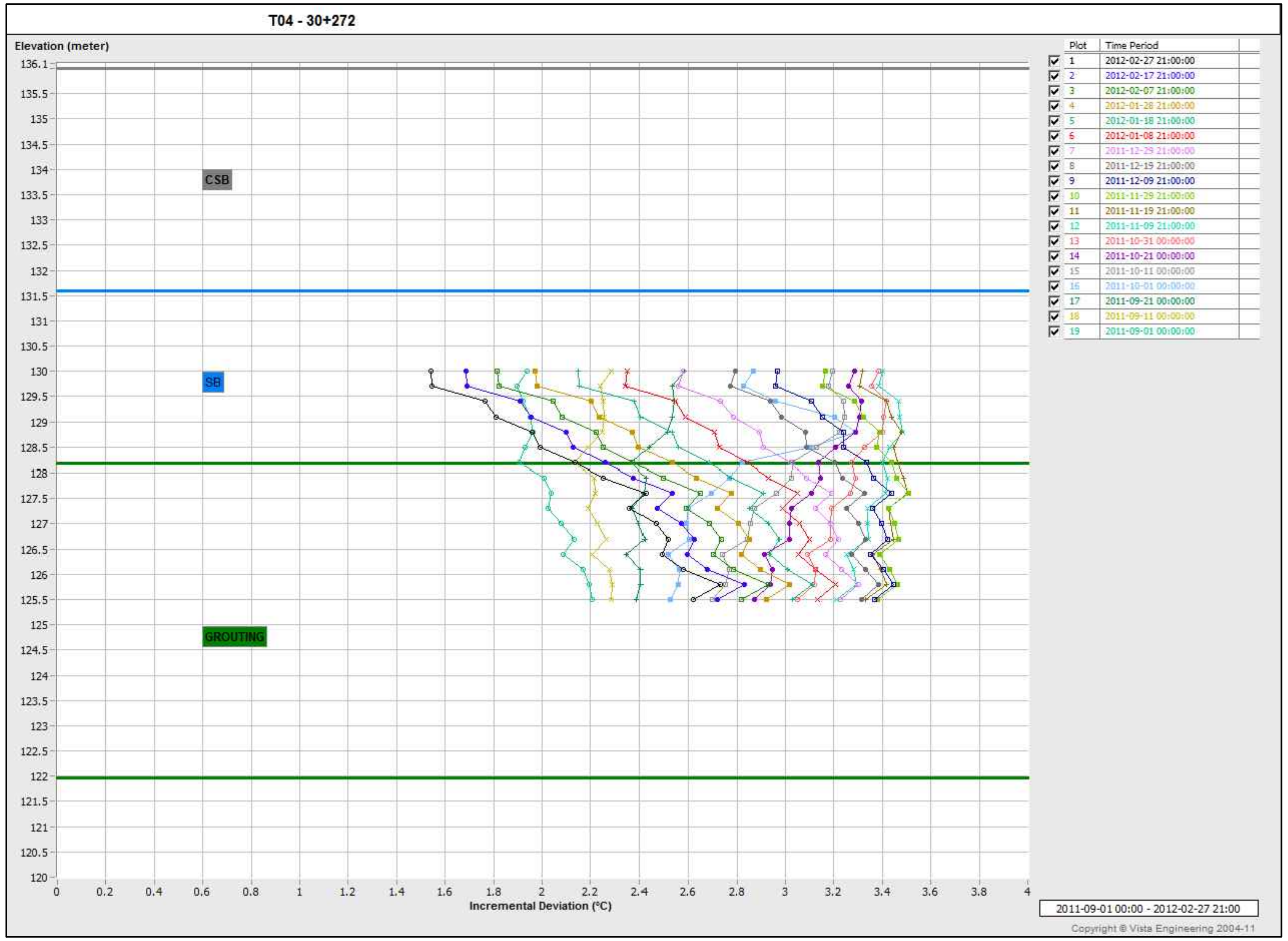
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073
DESIGN	AEM	09/19/2012
CADD	FLB	10/19/2012
CHECK	YB	11/08/2012
REVIEW	FE	11/15/2012

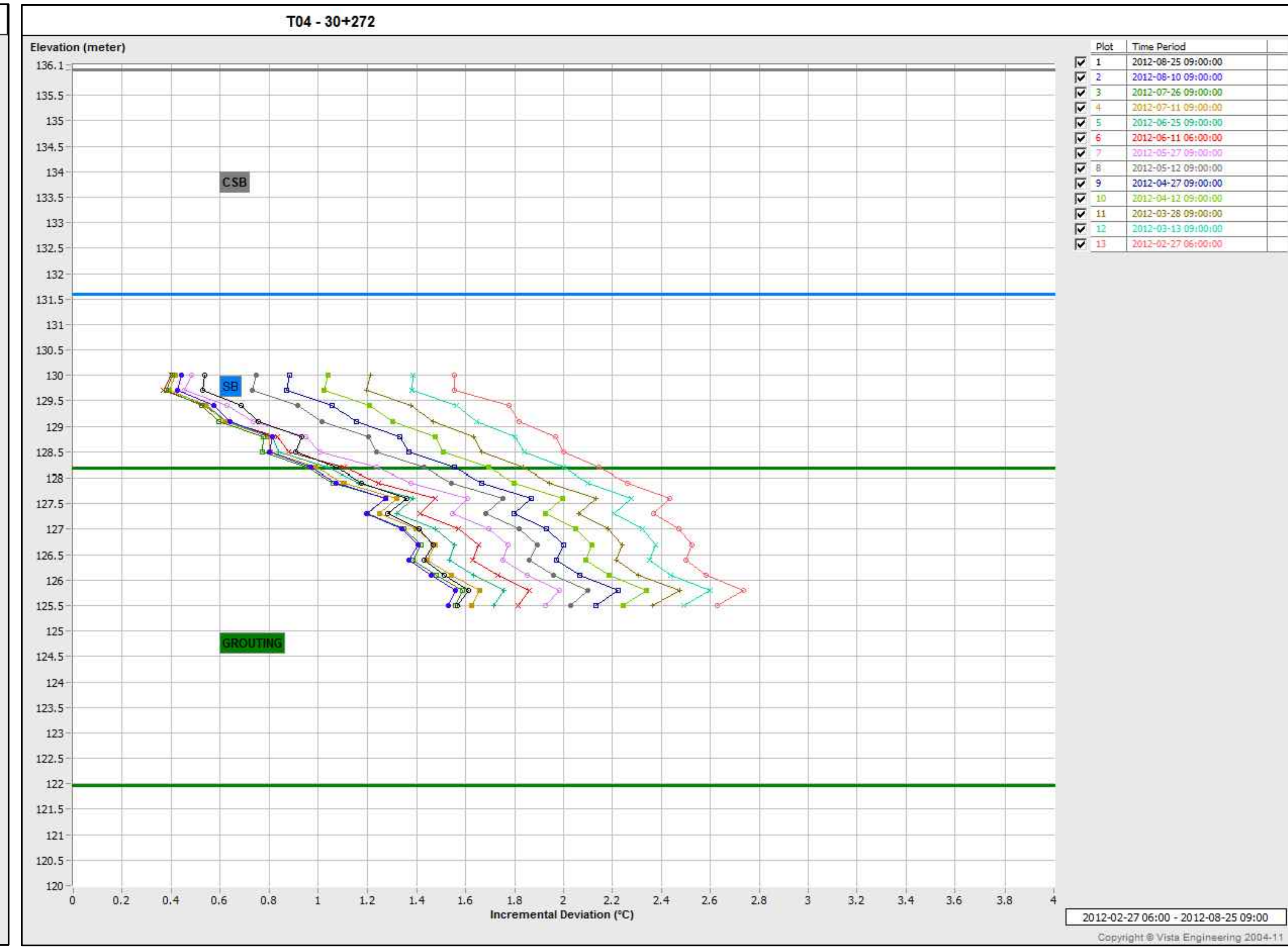
PHASE No.	3000
SCALE	REV. -

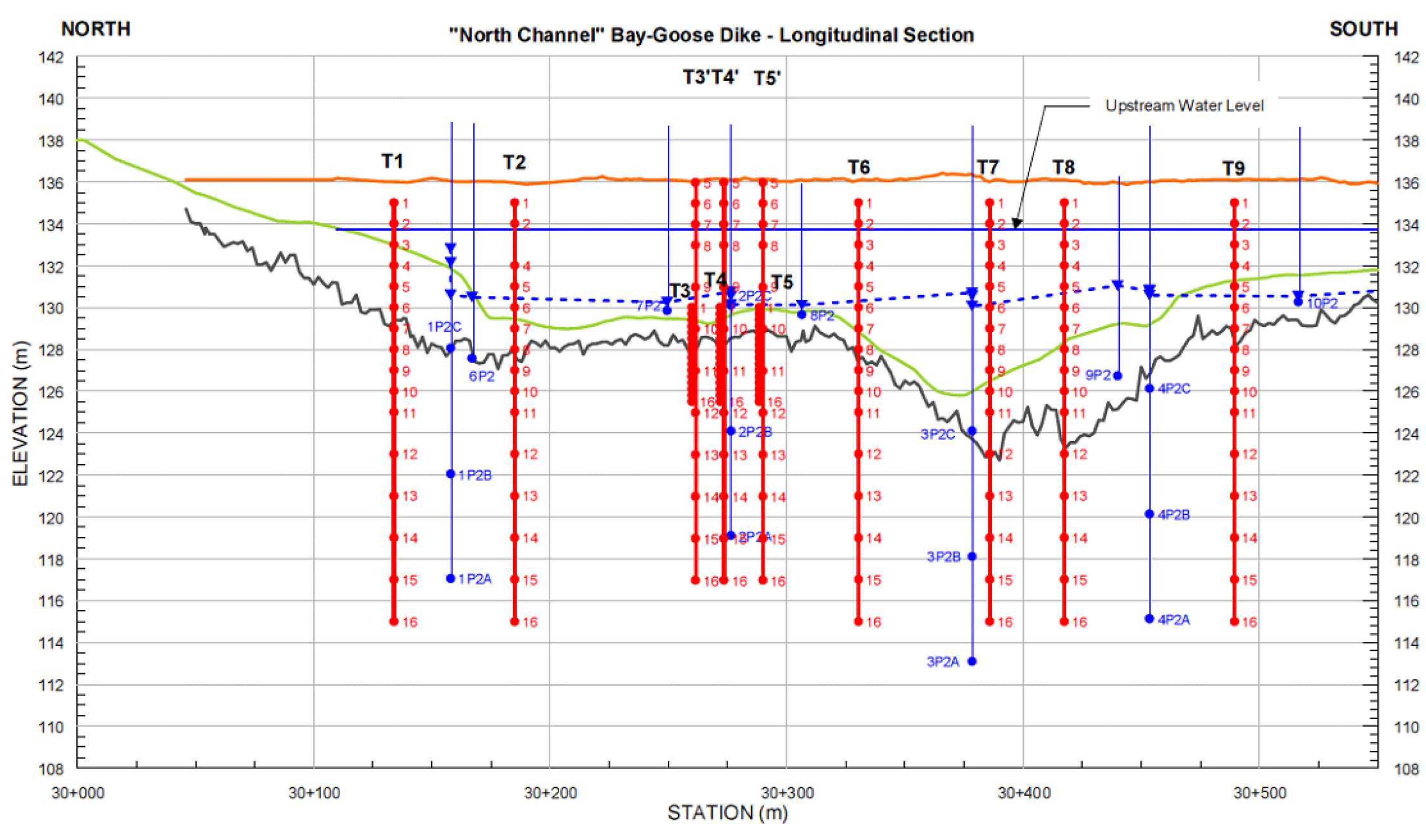
FIGURE C3-45

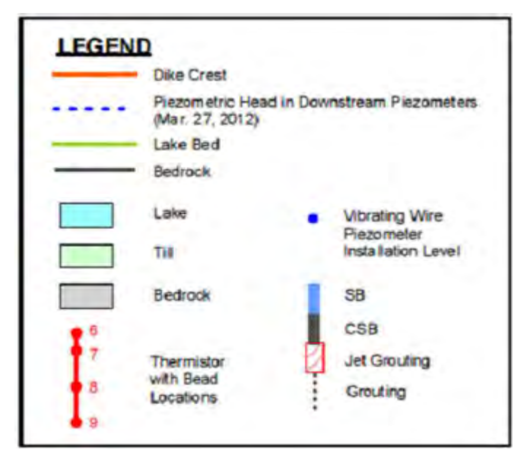
T4 - Sta.30+272 (Sep.11 - Mar.12)



T4 - Sta.30+272 (Mar.12 - Sep.12)







PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

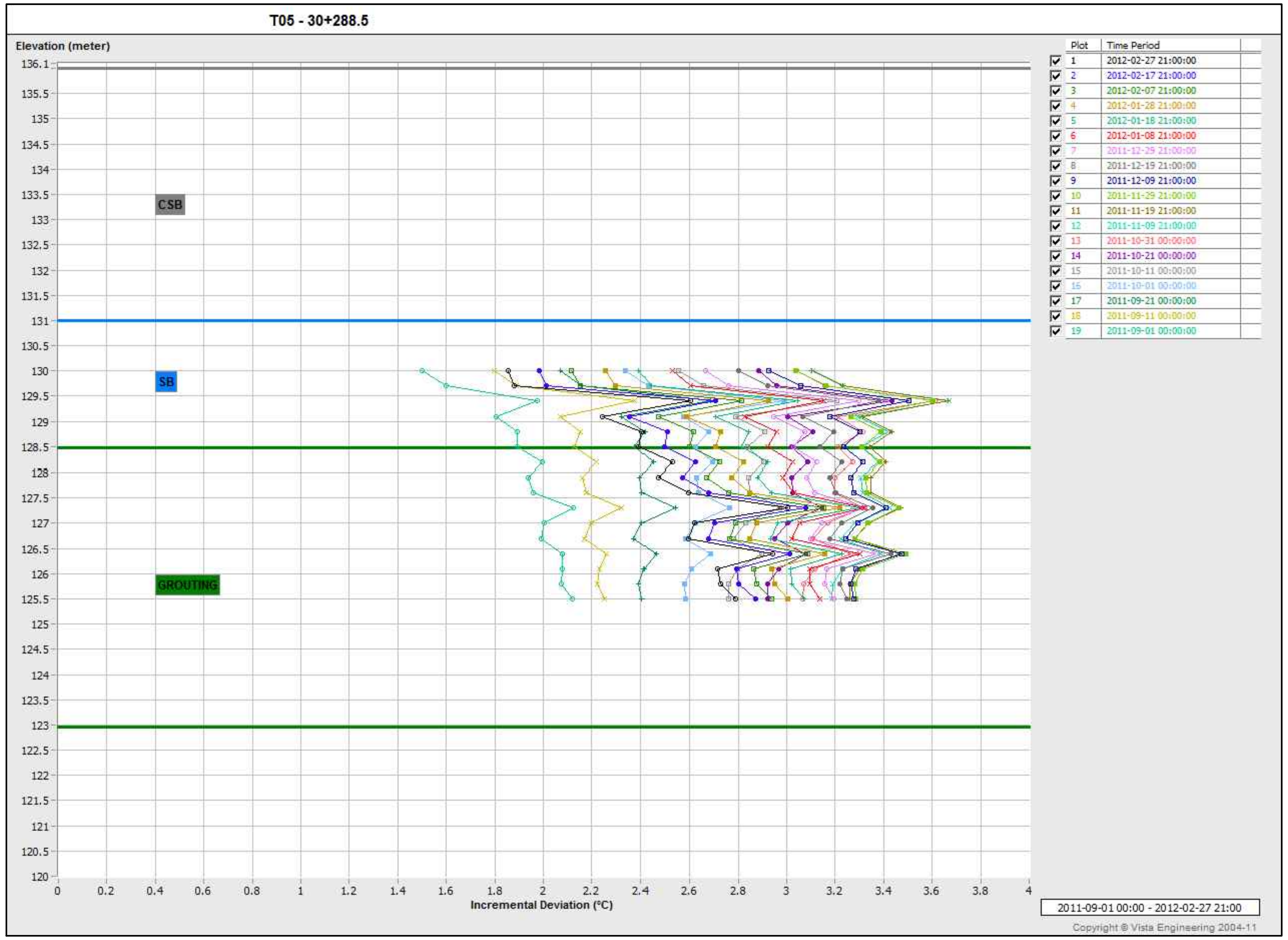
TITLE

BAY-GOOSE DIKE - T4 - 30+272
THERMISTOR DATA (SEP.2011 - SEP.2012)

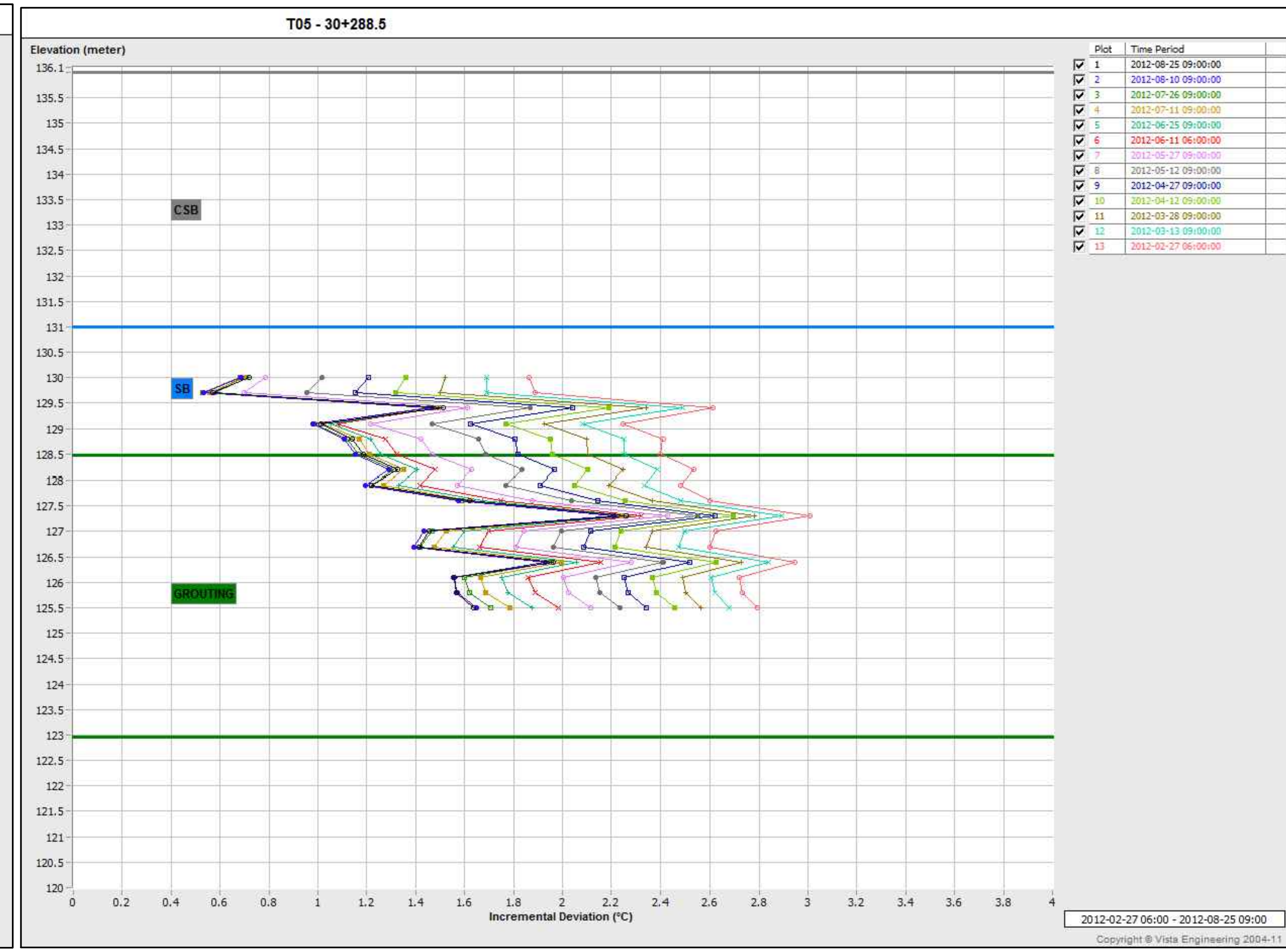
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	FIGURE C3-46	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

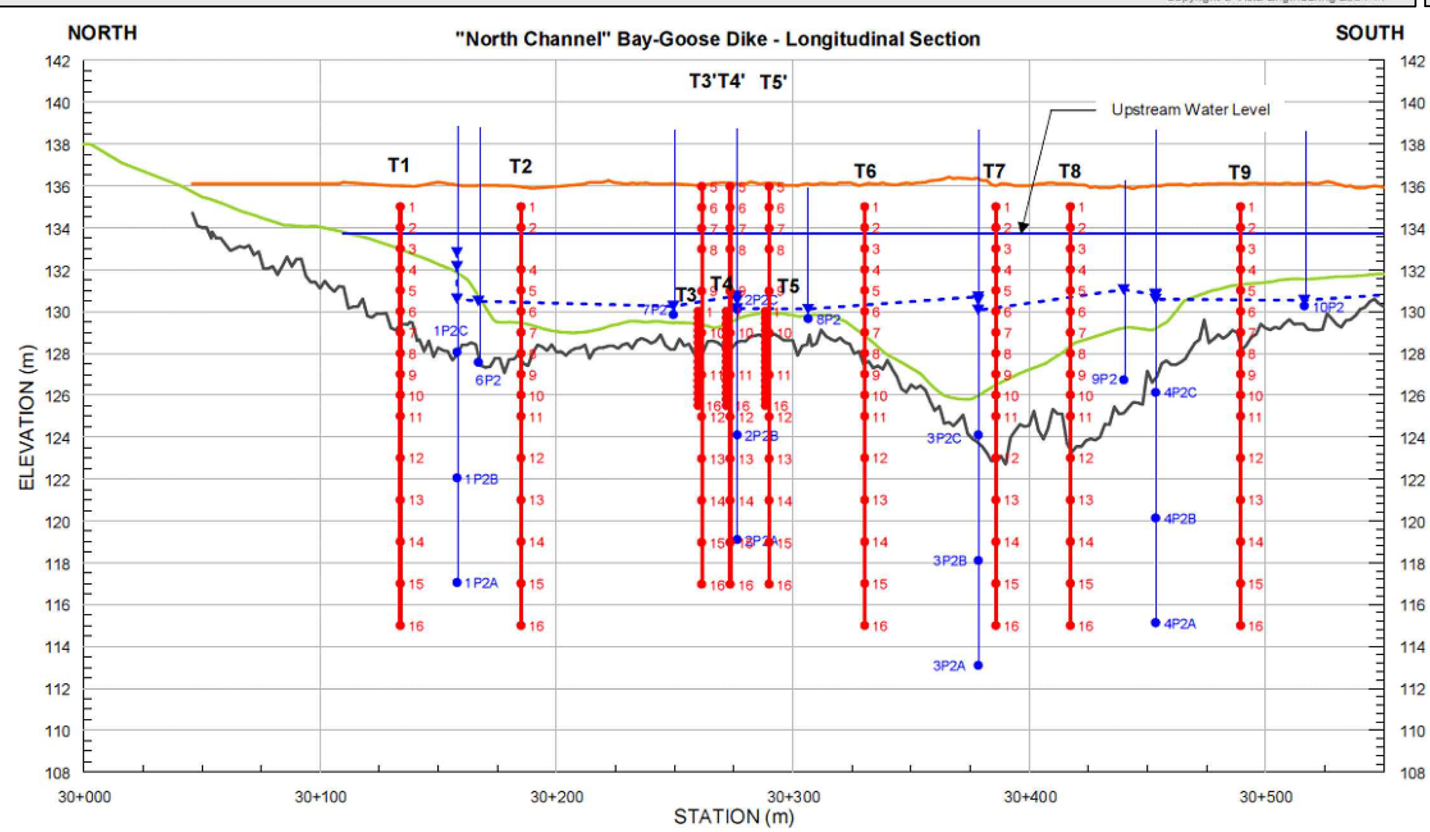
T5 - Sta.30+288.5 (Sep.11 - Mar.12)

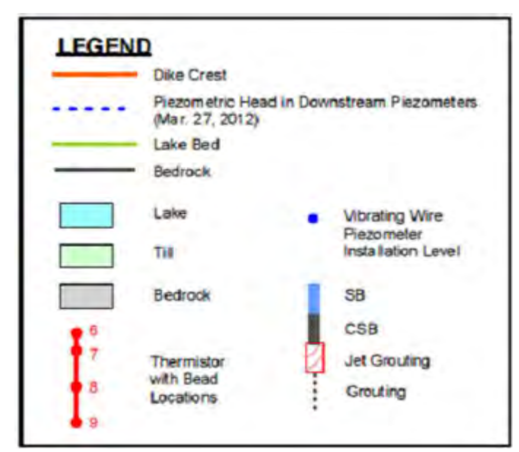


T5 - Sta.30+288.5 (Mar.12 - Sep.12)



"North Channel" Bay-Goose Dike - Longitudinal Section

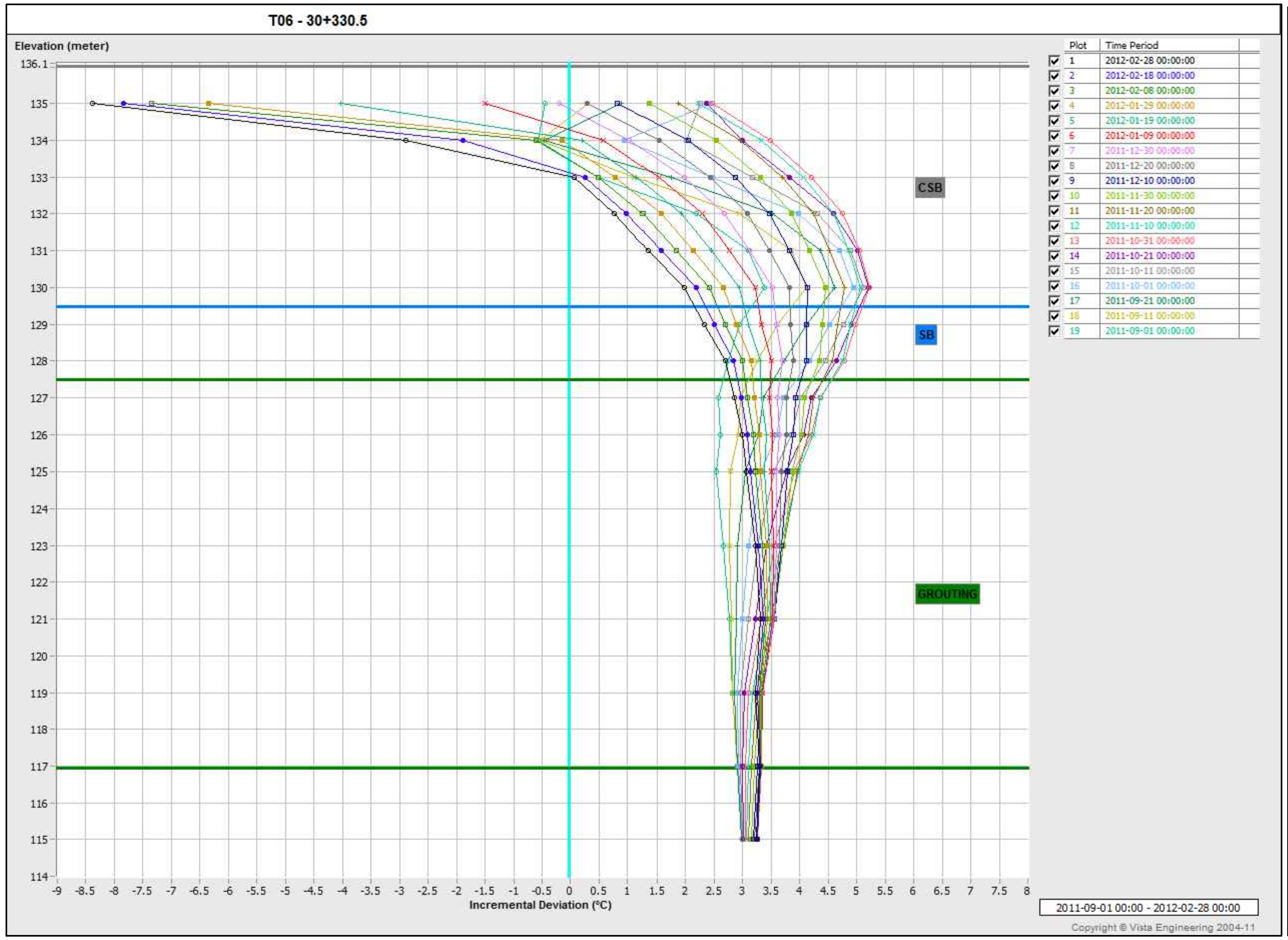




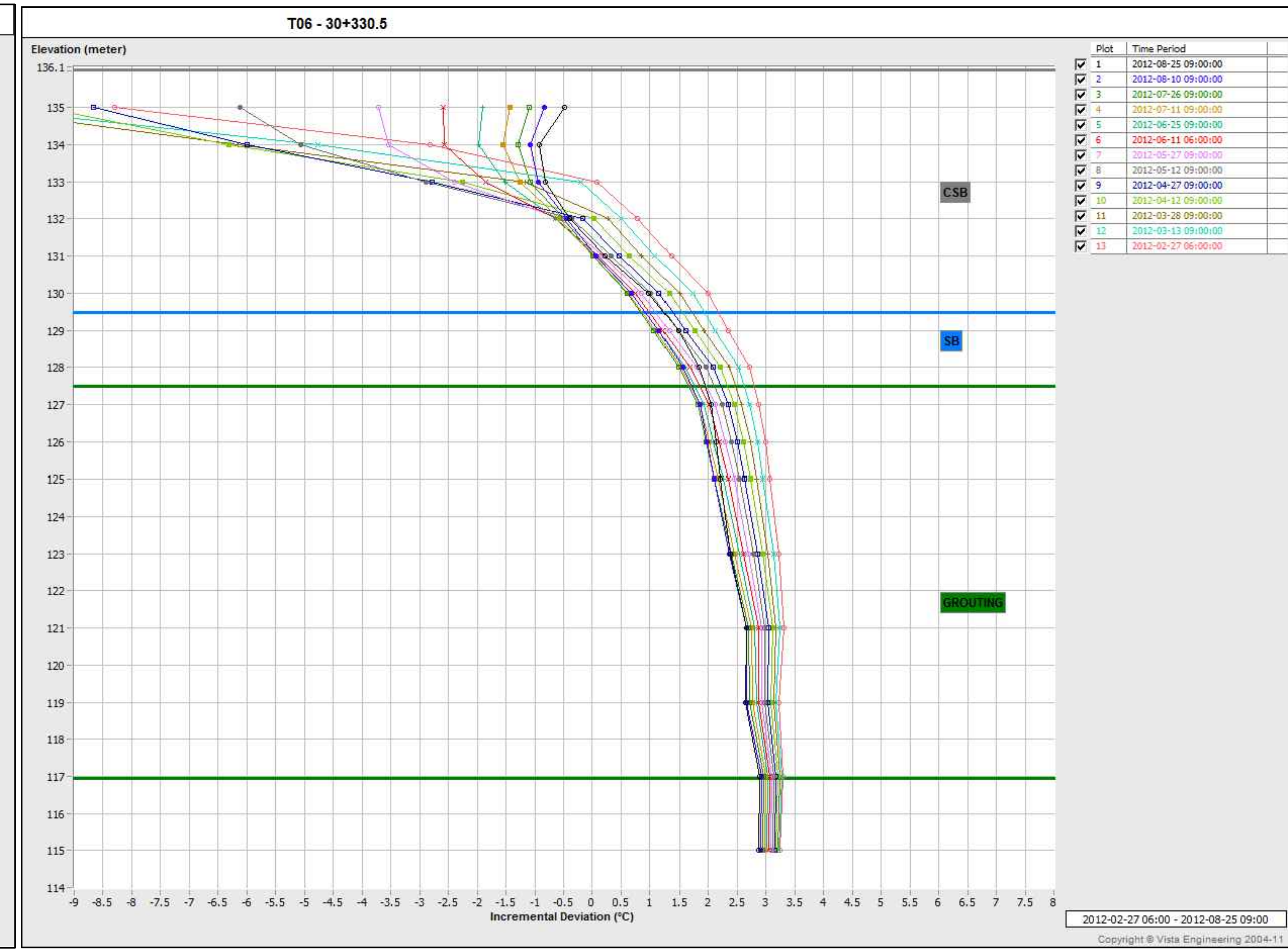
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	BAY-GOOSE DIKE - T5 - 30+288.5 THERMISTOR DATA (SEP.2011 - SEP.2012)

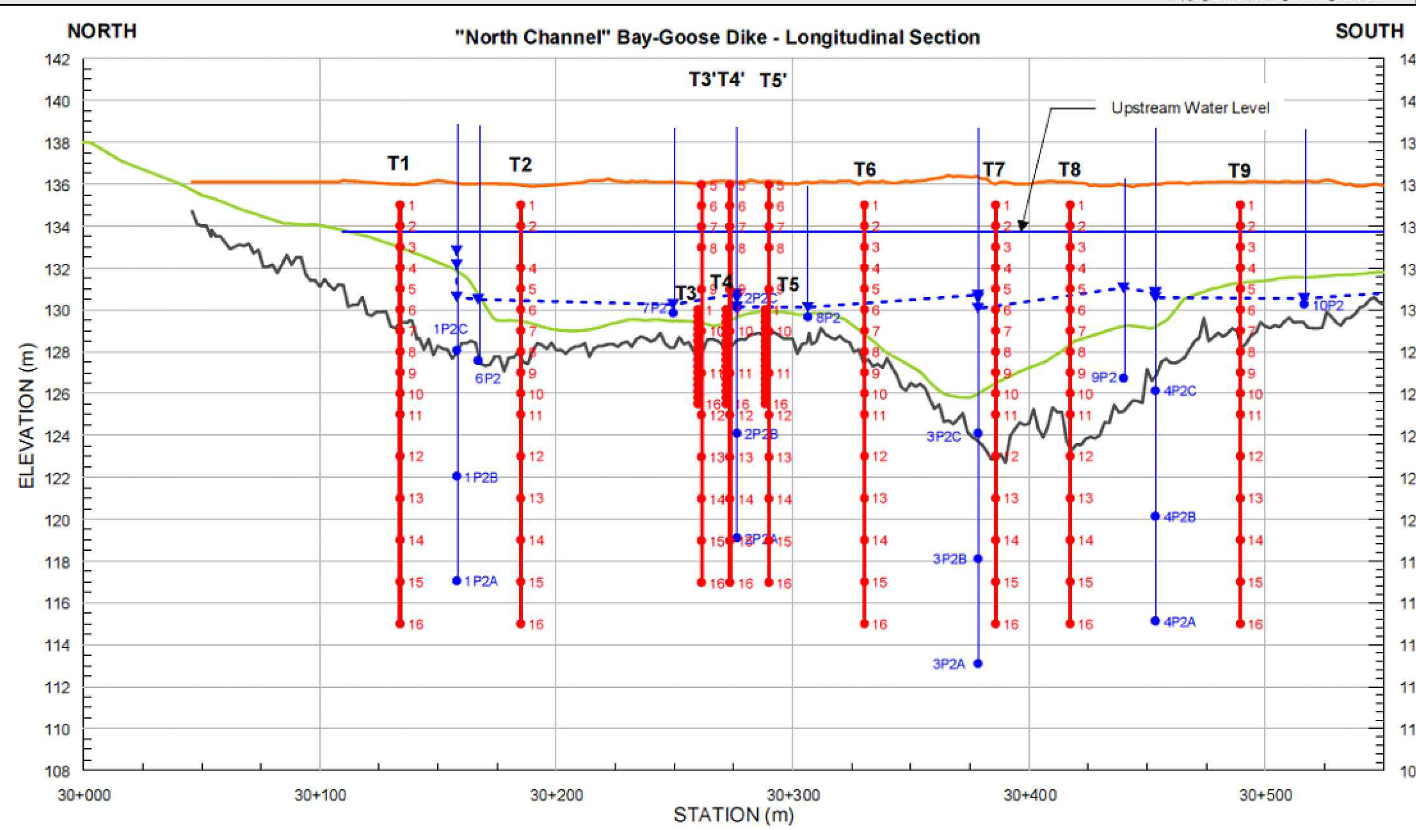
Golder Associates, Montréal, Québec			
PROJECT No.		12-1221-0073	PHASE No. 3000
DESIGN	AEM	09/19/2012	SCALE
CADD	FLB	10/19/2012	REV. -
CHECK	YB	11/08/2012	FIGURE C3-47
REVIEW	FE	11/15/2012	

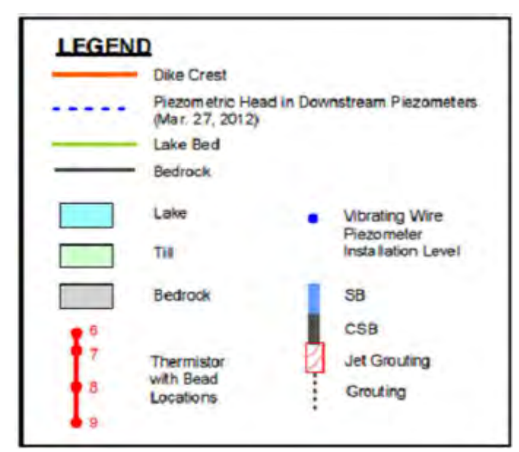
T6 - Sta.30+330.5 (Sep.11 - Mar.12)



T6 - Sta.30+330.5 (Mar.12 - Sep.12)

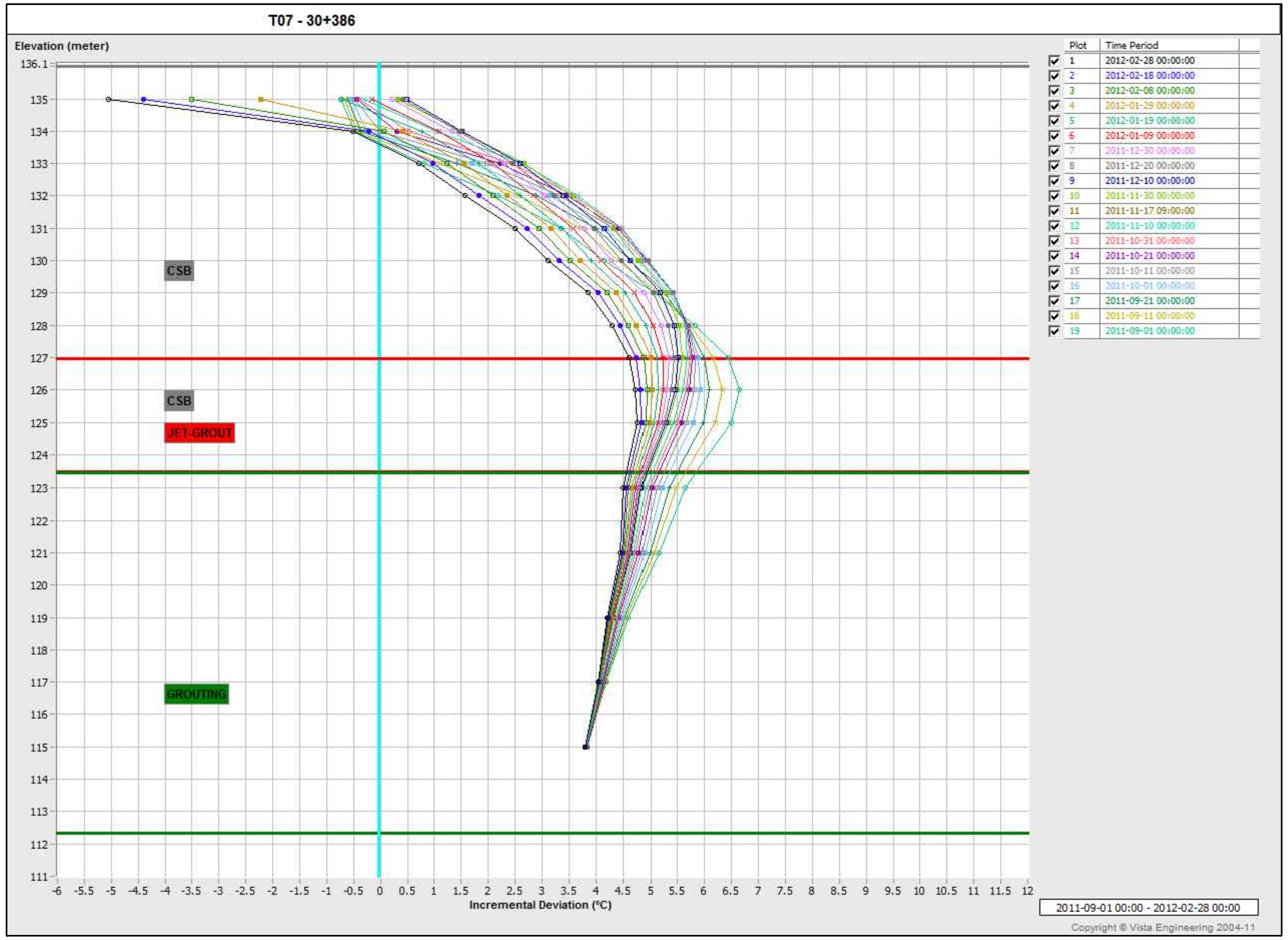




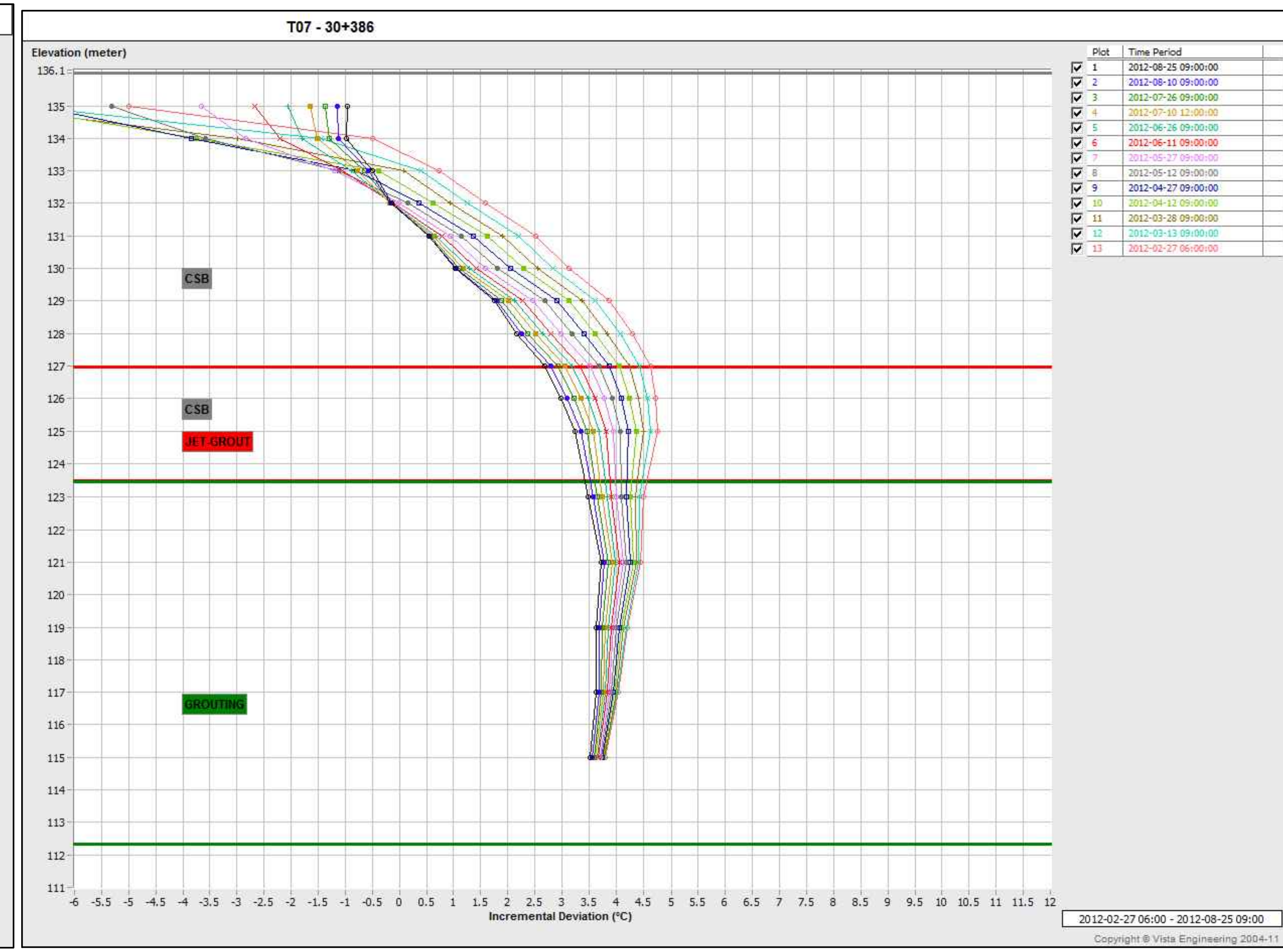


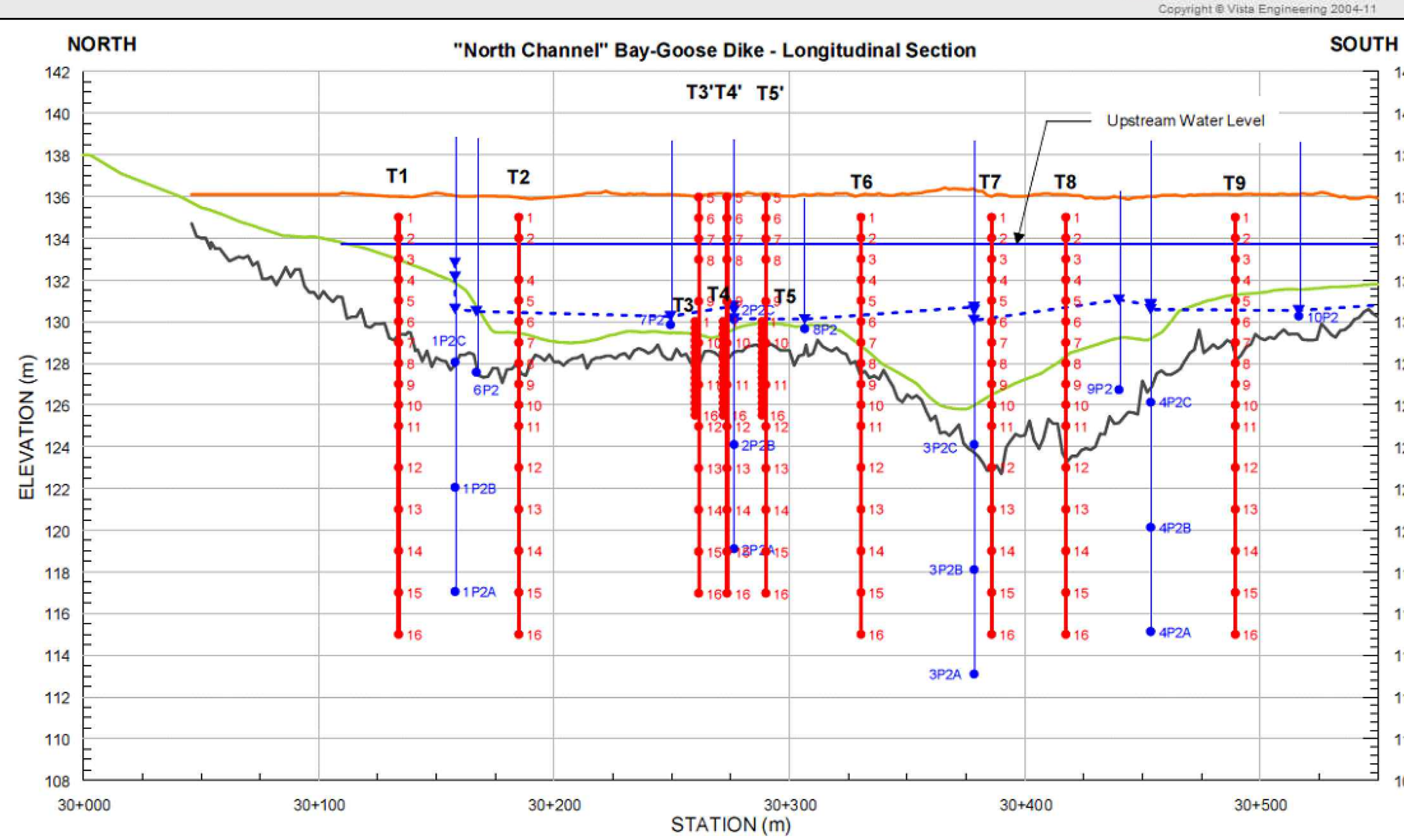
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT				
TITLE	BAY-GOOSE DIKE - T6 - 30+330.5 THERMISTOR DATA (SEP.2011 - SEP.2012)				
Golder Associates Montréal, Québec	PROJECT No.		12-1221-0073	PHASE No.	3000
	DESIGN	AEM	09/19/2012	SCALE	REV. -
	CADD	FLB	10/19/2012	FIGURE C3-48	
	CHECK	YB	11/08/2012		
	REVIEW	FE	11/15/2012		

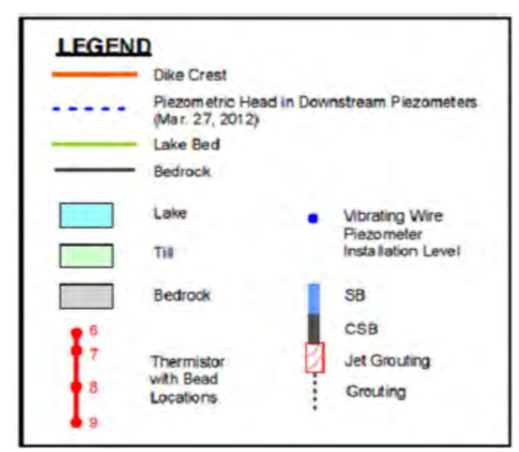
T7 - Sta.30+386 (Sep.11 - Mar.12)



T7 - Sta.30+386 (Mar.12 - Sep.12)







PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

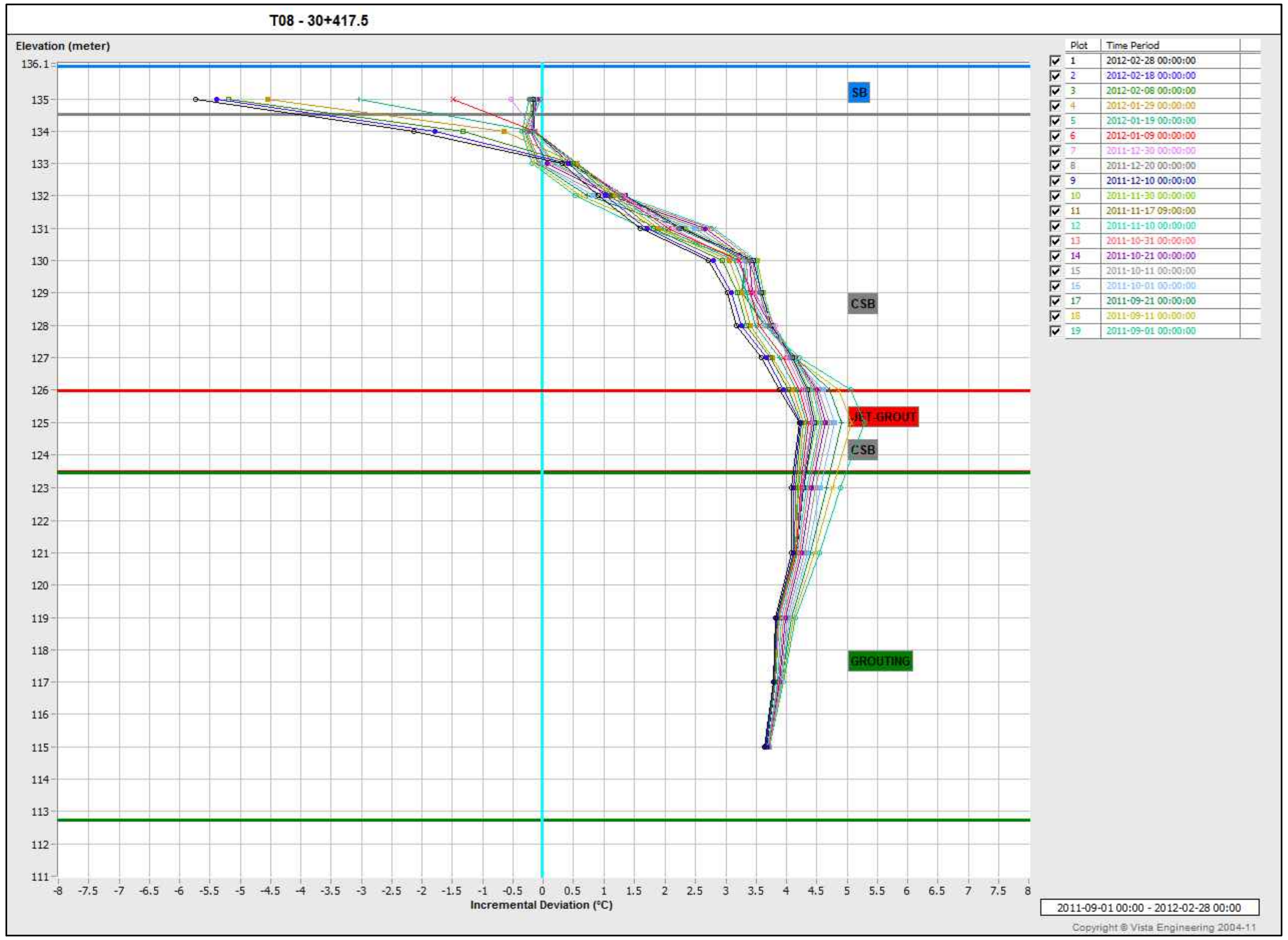
TITLE

BAY-GOOSE DIKE - T7 - 30+386
THERMISTOR DATA (SEP.2011 - SEP.2012)

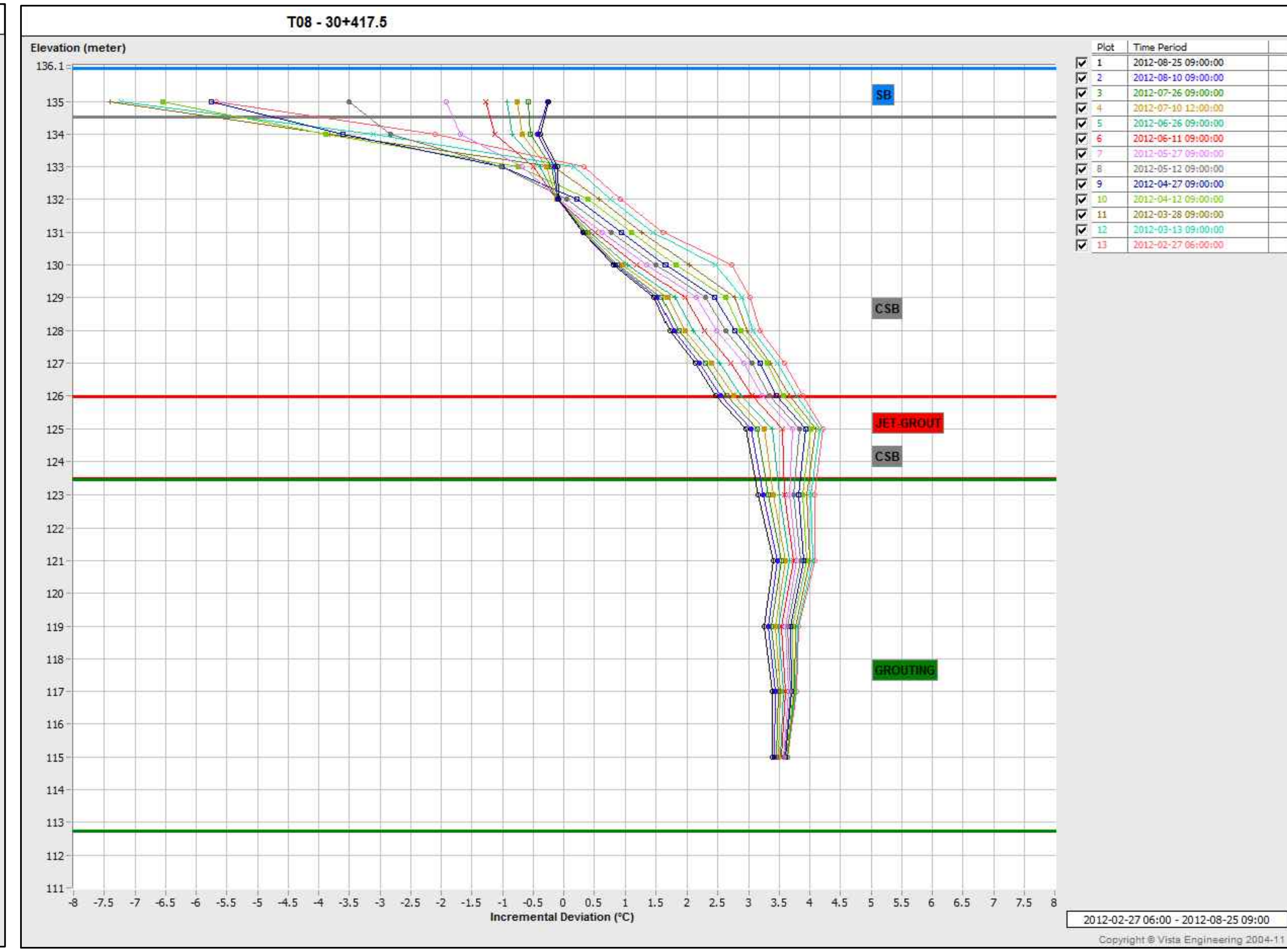
Golder Associates
Montréal, Québec

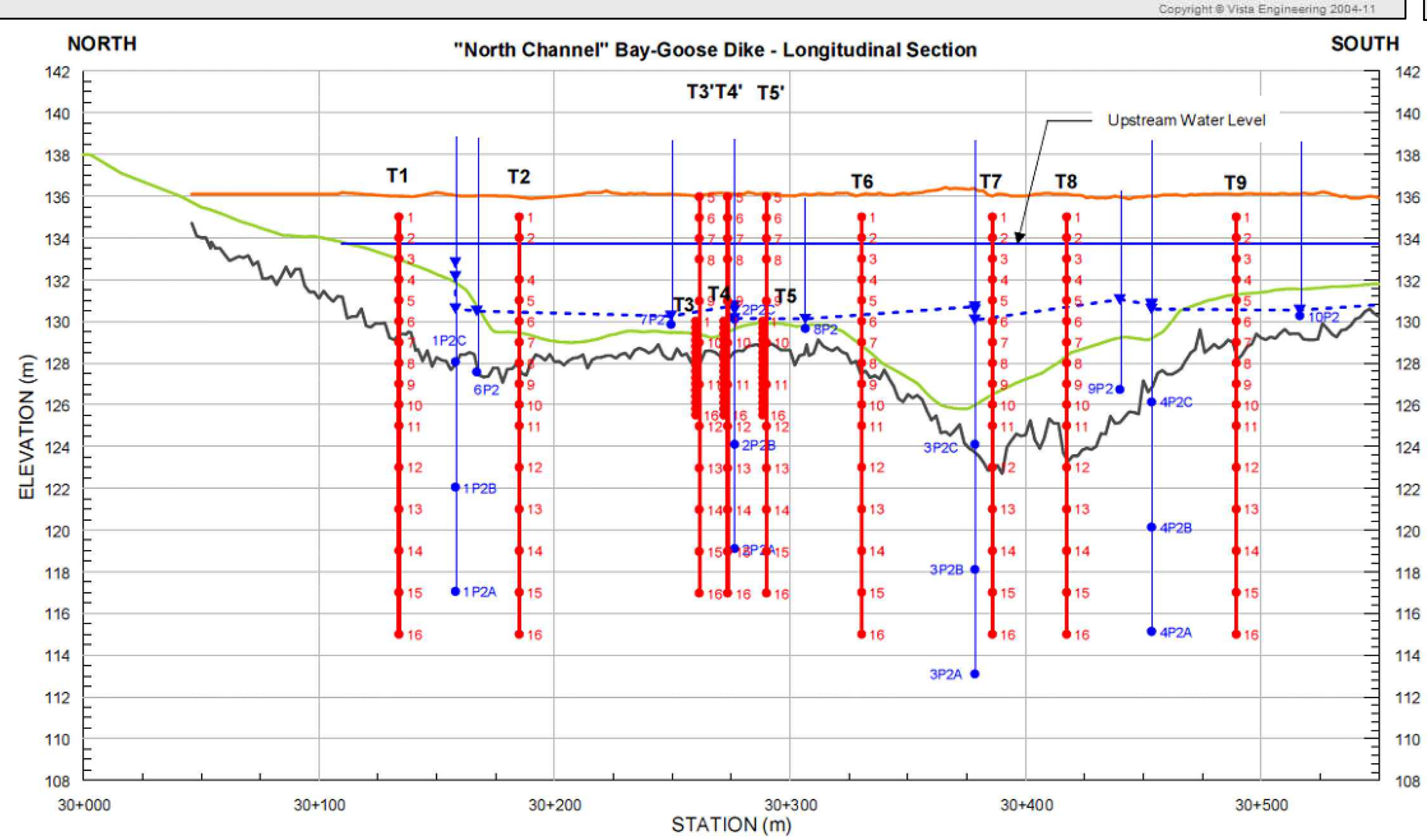
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C3-49**	
REVIEW	FE	11/15/2012		

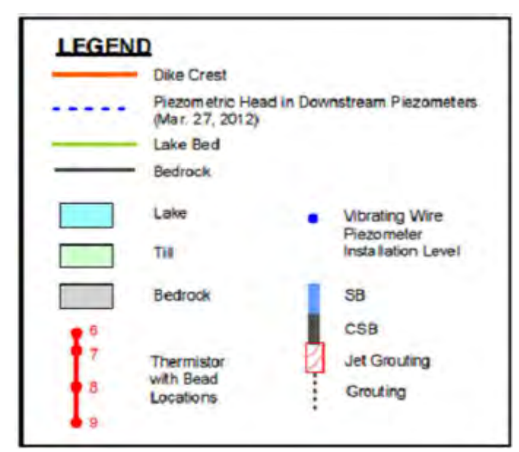
T8 - Sta.30+417.5 (Sep.11 - Mar.12)



T8 - Sta.30+417.5 (Mar.12 - Sep.12)







PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

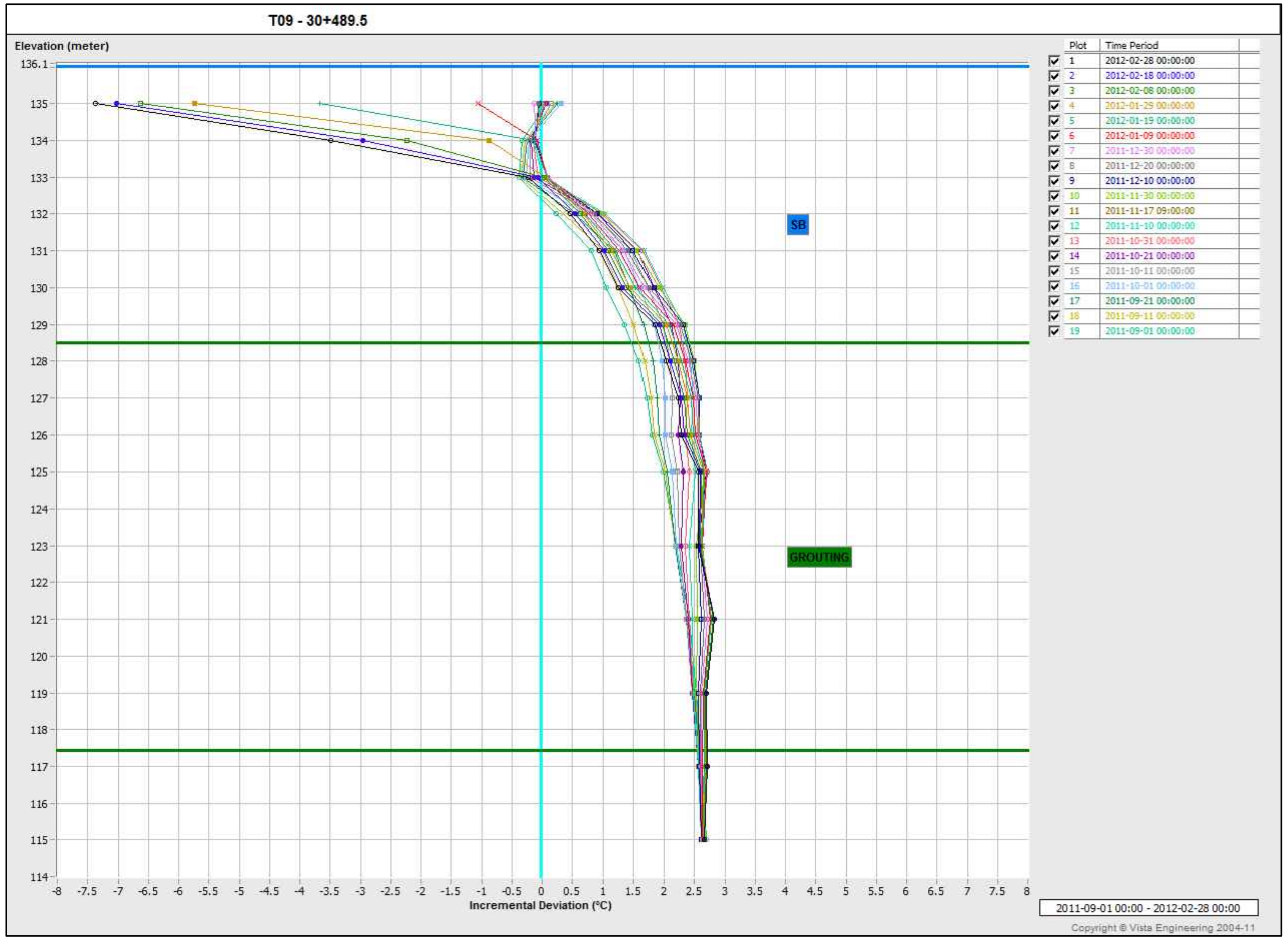
BAY-GOOSE DIKE - T8 - 30+417.5
THERMISTOR DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

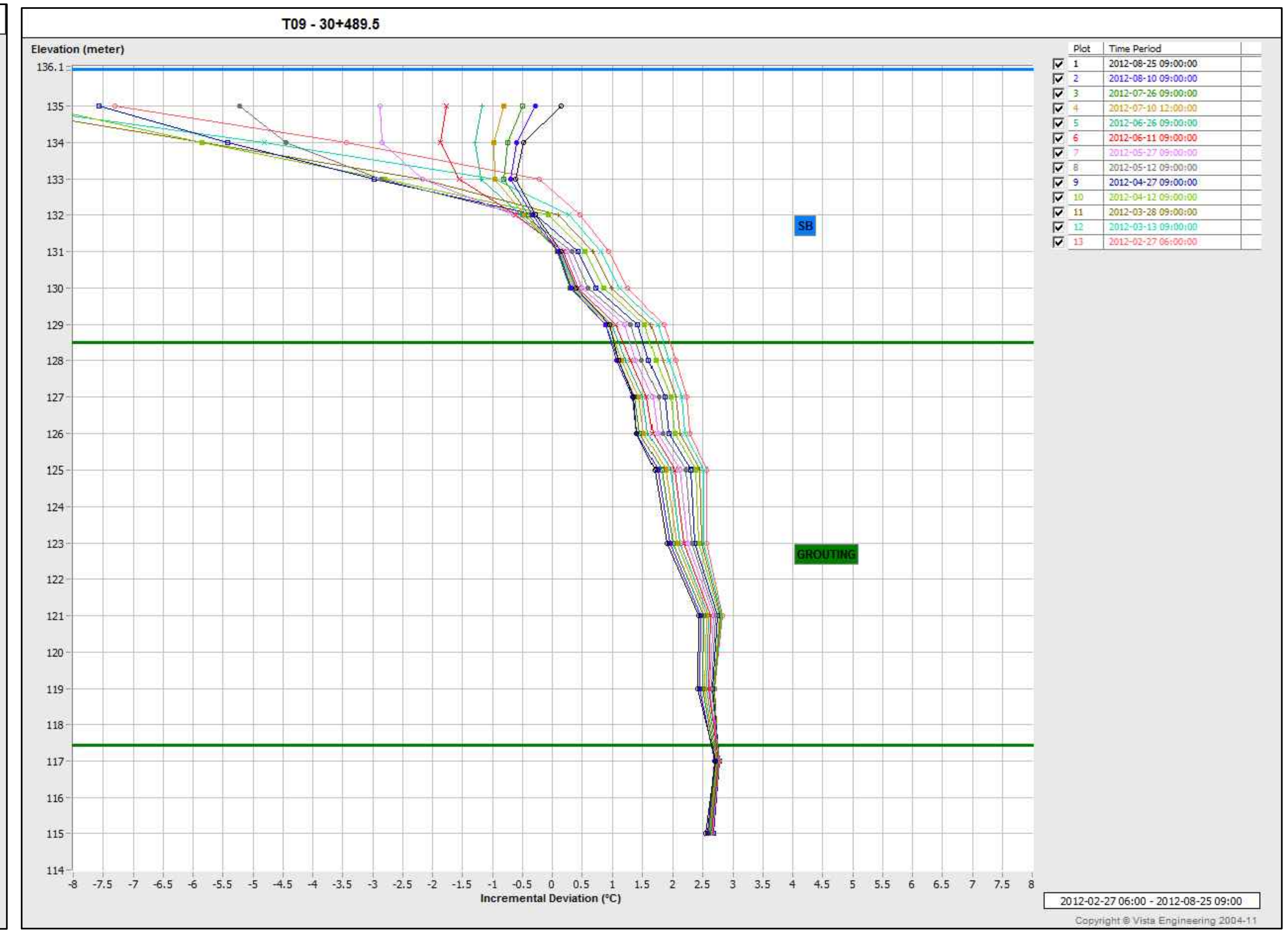
PROJECT No.		12-1221-0073	PHASE No. 3000
DESIGN	AEM	09/19/2012	SCALE
CADD	FLB	10/19/2012	REV. -
CHECK	YB	11/08/2012	
REVIEW	FE	11/15/2012	

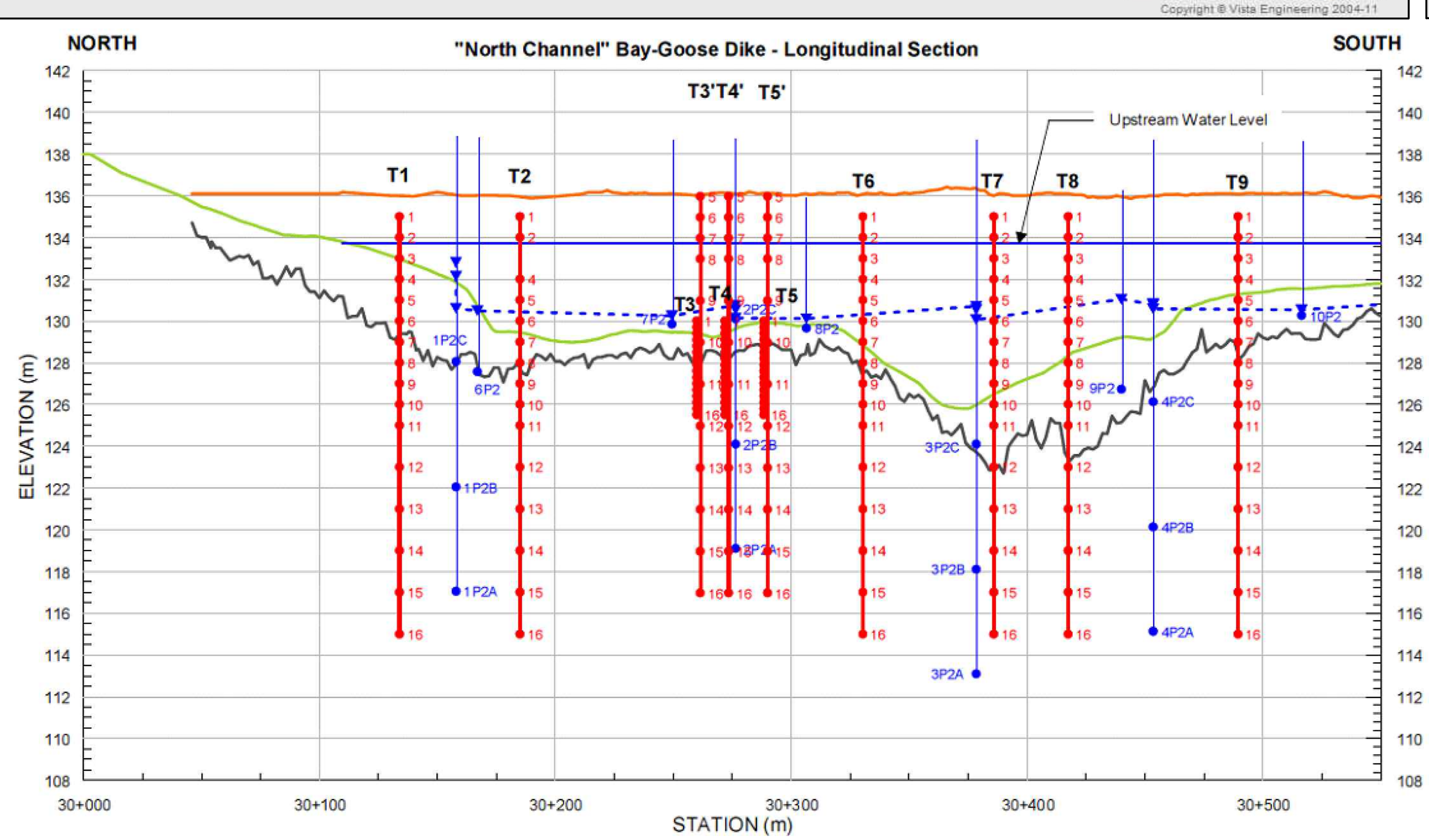
FIGURE C3-50

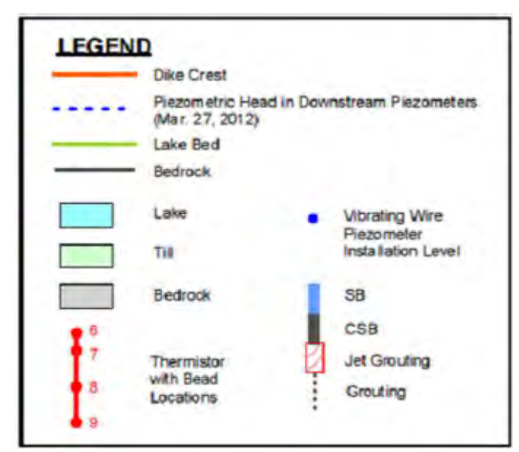
T9 - Sta.30+489.5 (Sep.11 - Mar.12)



T9 - Sta.30+489.5 (Mar.12 - Sep.12)





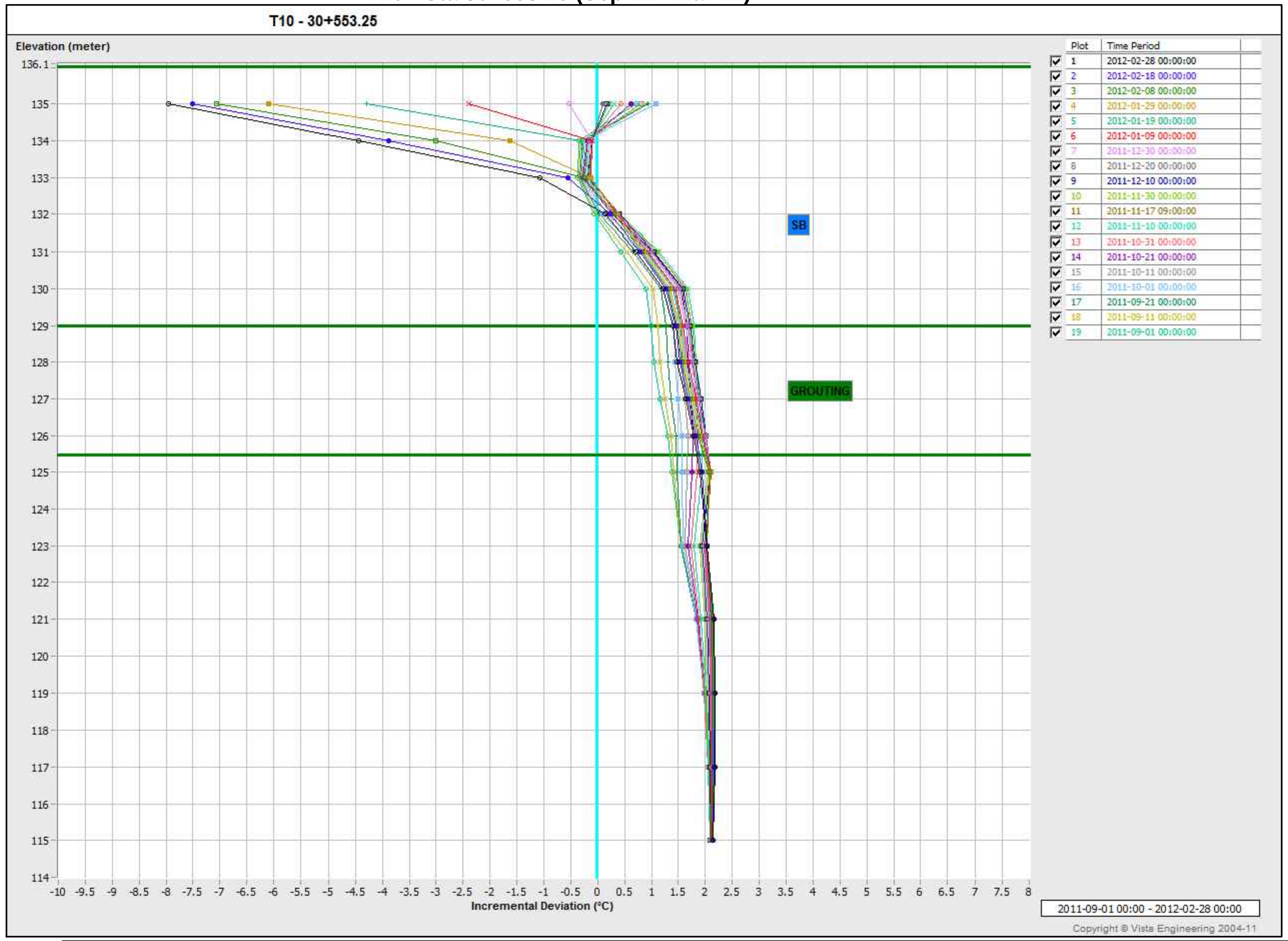


PROJECT	AEM AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**BAY-GOOSE DIKE - T9 - 30+489.5 THERMISTOR DATA (SEP.2011 - SEP.2012)**

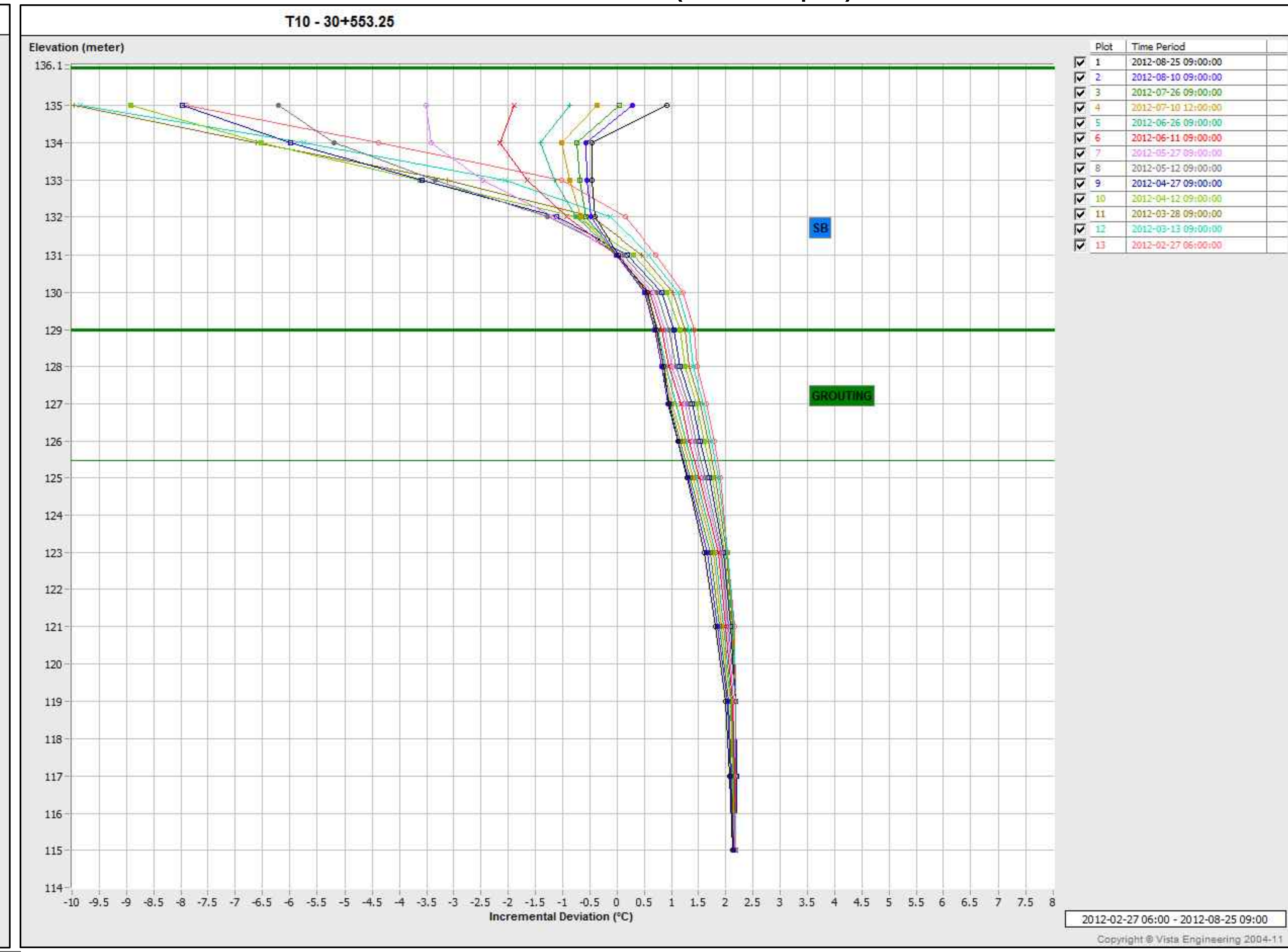
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-51**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

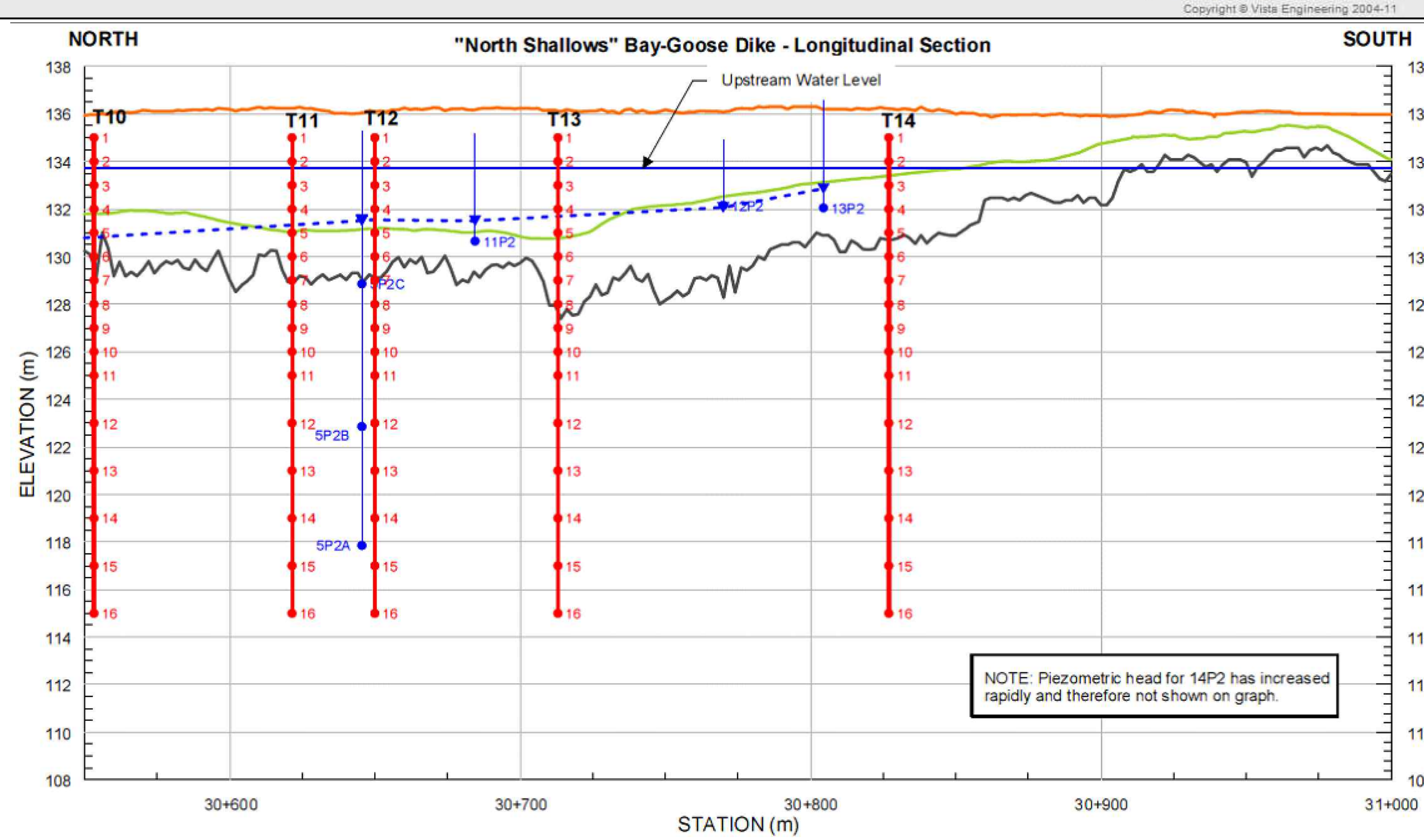
T10 - Sta.30+553.25 (Sep.11 - Mar.12)

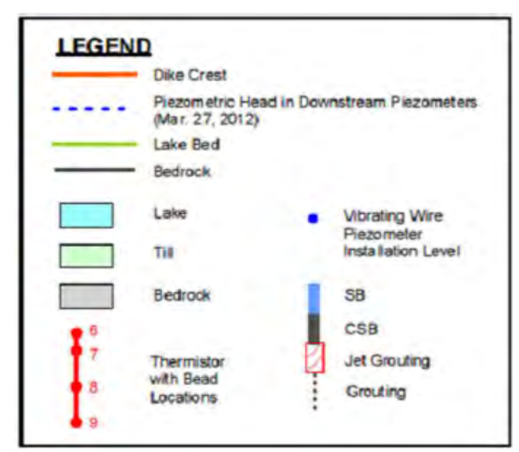


T10 - Sta.30+553.25 (Mar.12 - Sep.12)



"North Shallows" Bay-Goose Dike - Longitudinal Section



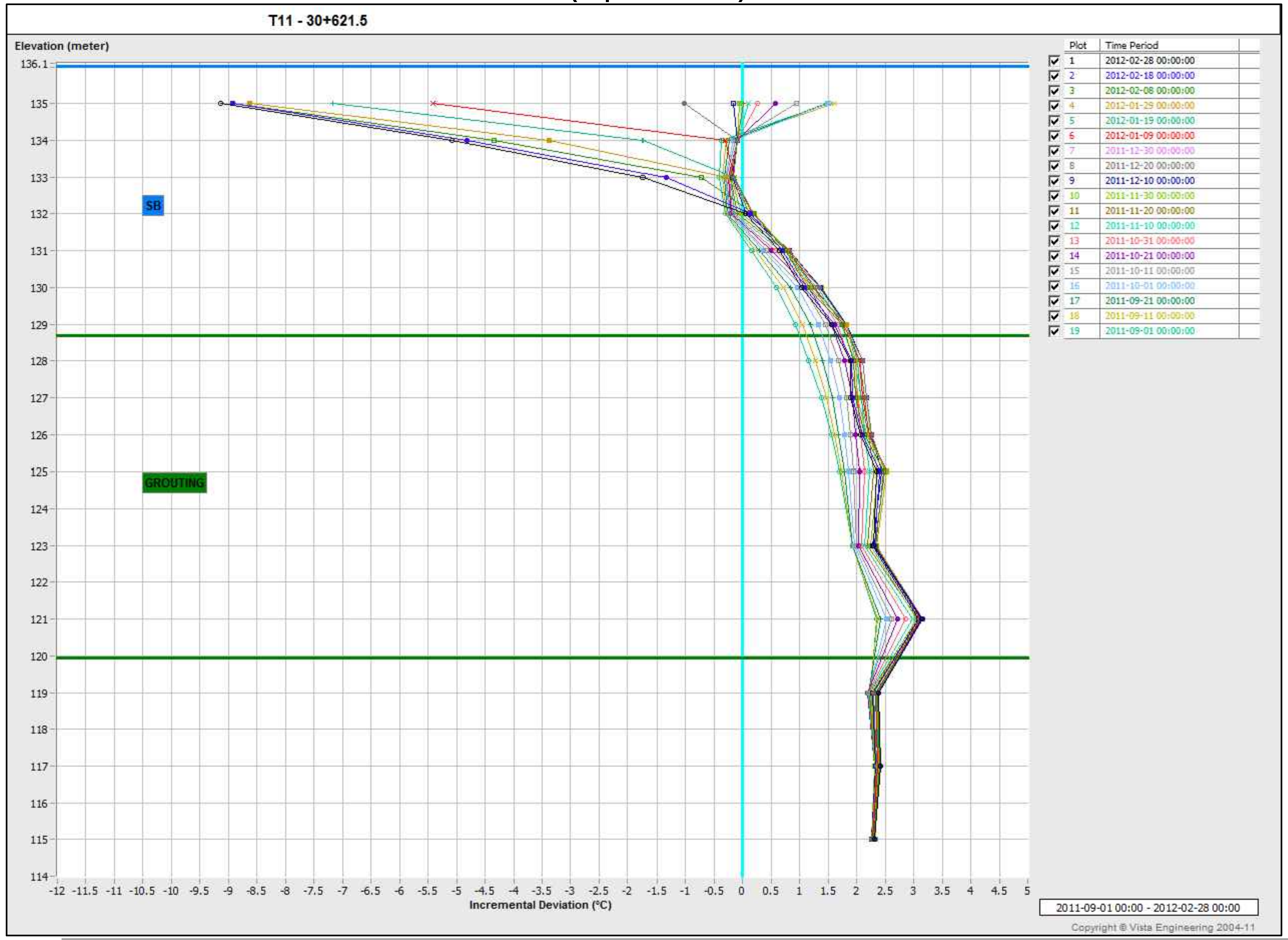


PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	BAY-GOOSE DIKE - T10 - 30+553.25 THERMISTOR DATA (SEP.2011 - SEP.2012)

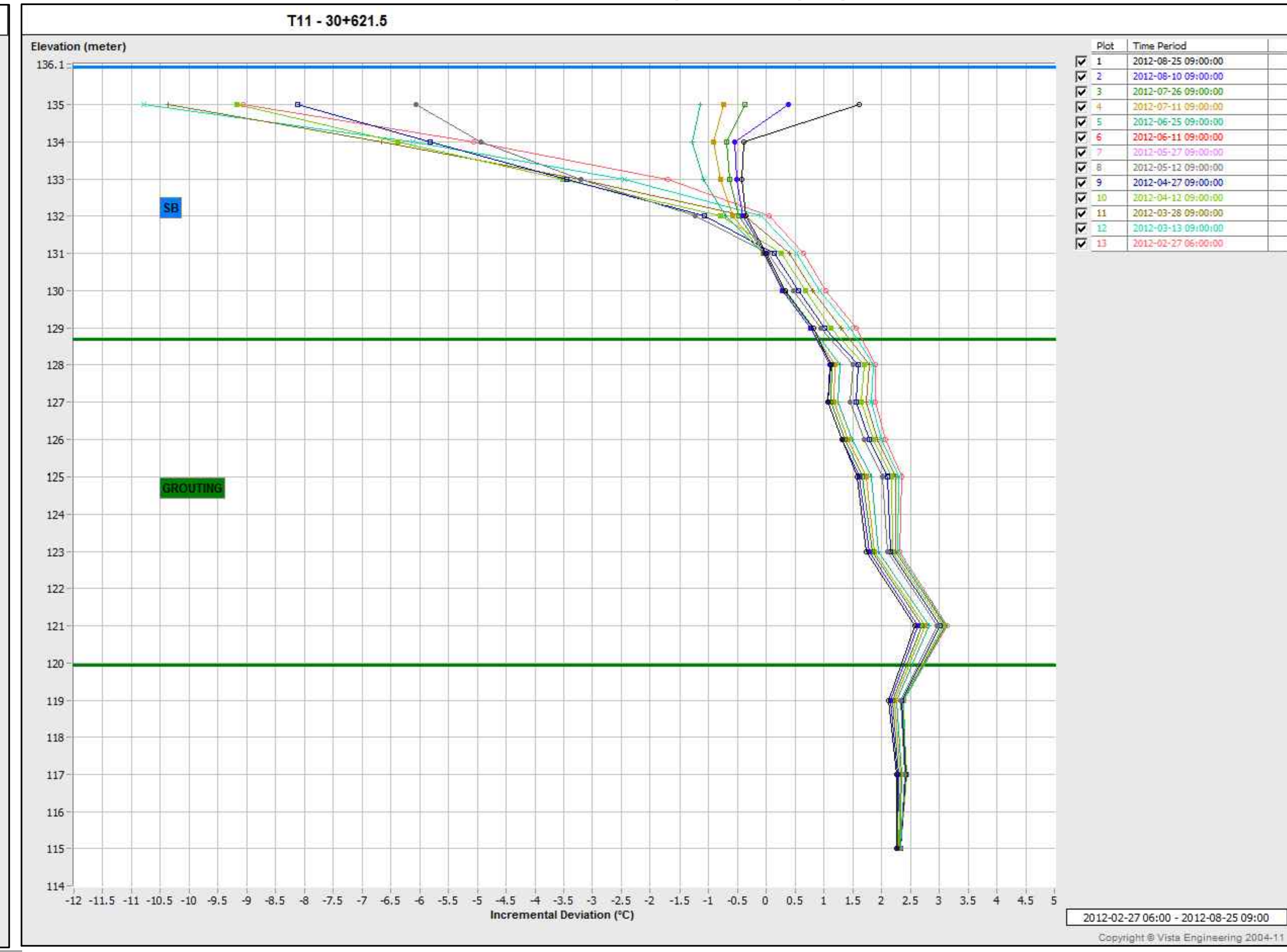
PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	FIGURE C3-52	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

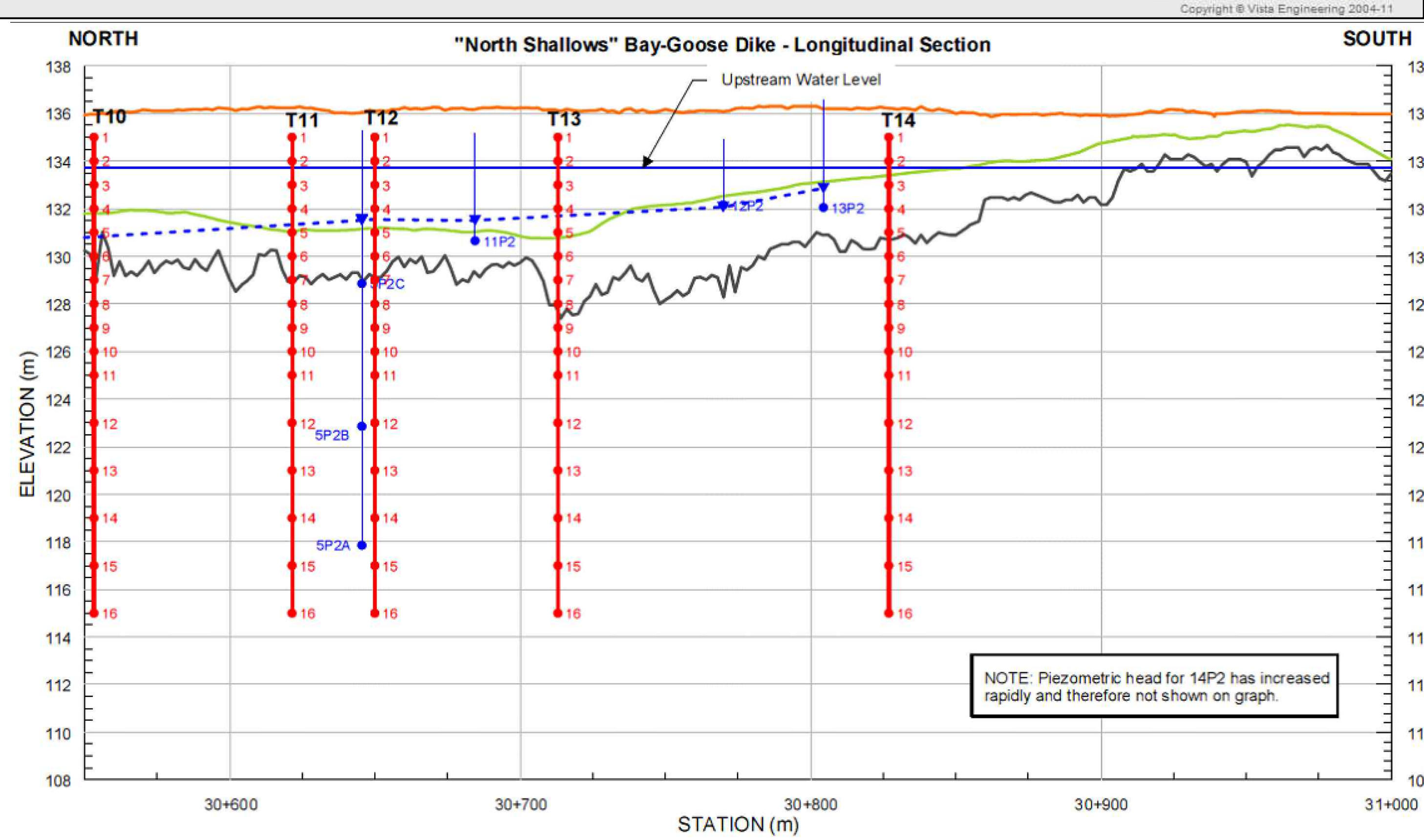
Golder Associates
Montréal, Québec

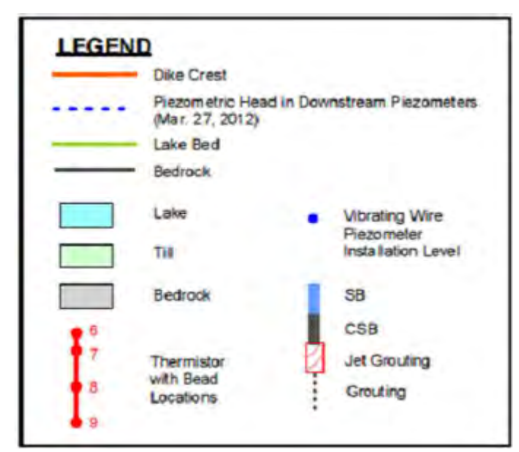
T11 - Sta.30+621.5 (Sep.11 - Mar.12)



T11 - Sta.30+621.5 (Mar.12 - Sep.12)







PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

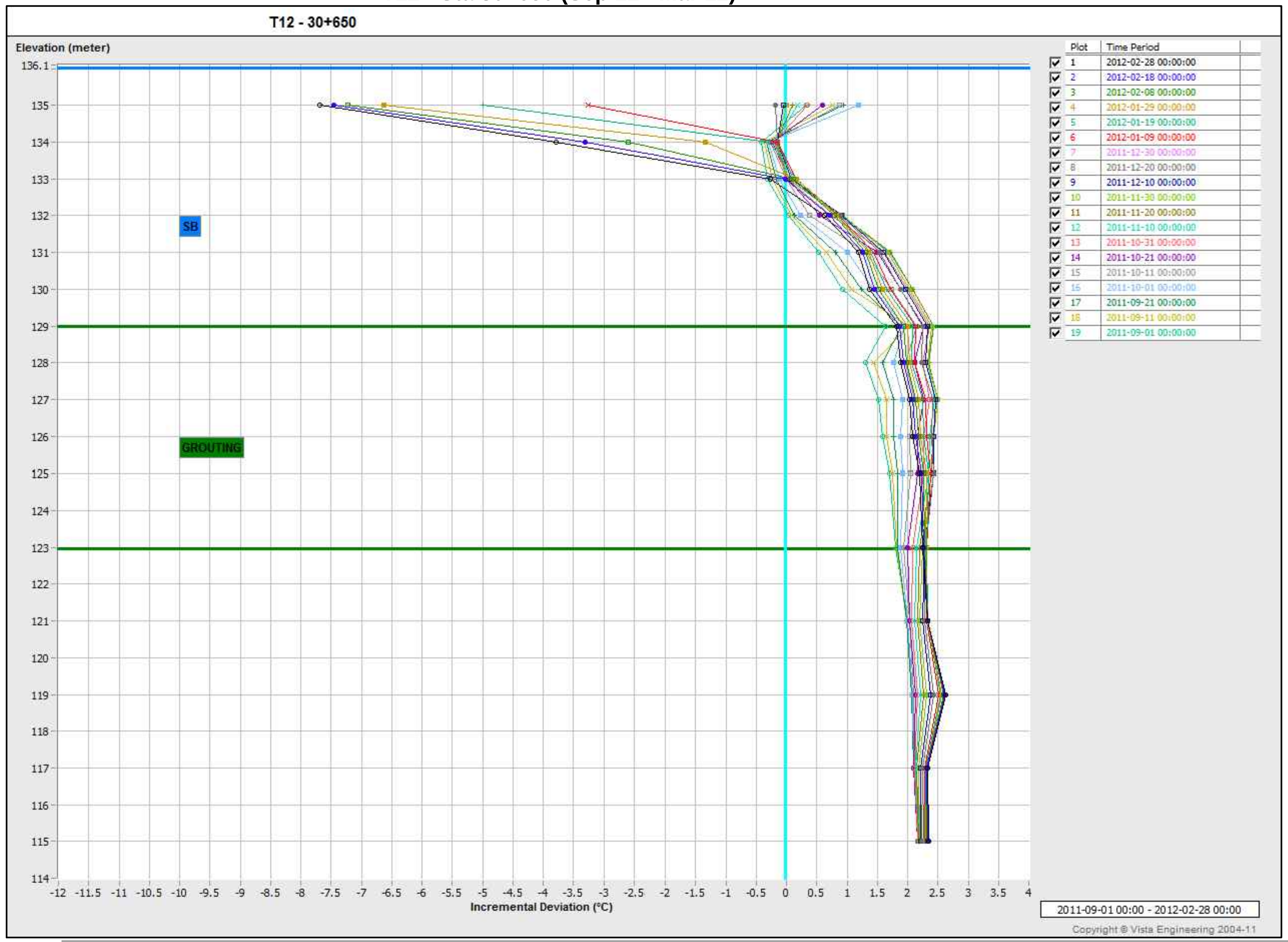
BAY-GOOSE DIKE - T11 - 30+621.5
THERMISTOR DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

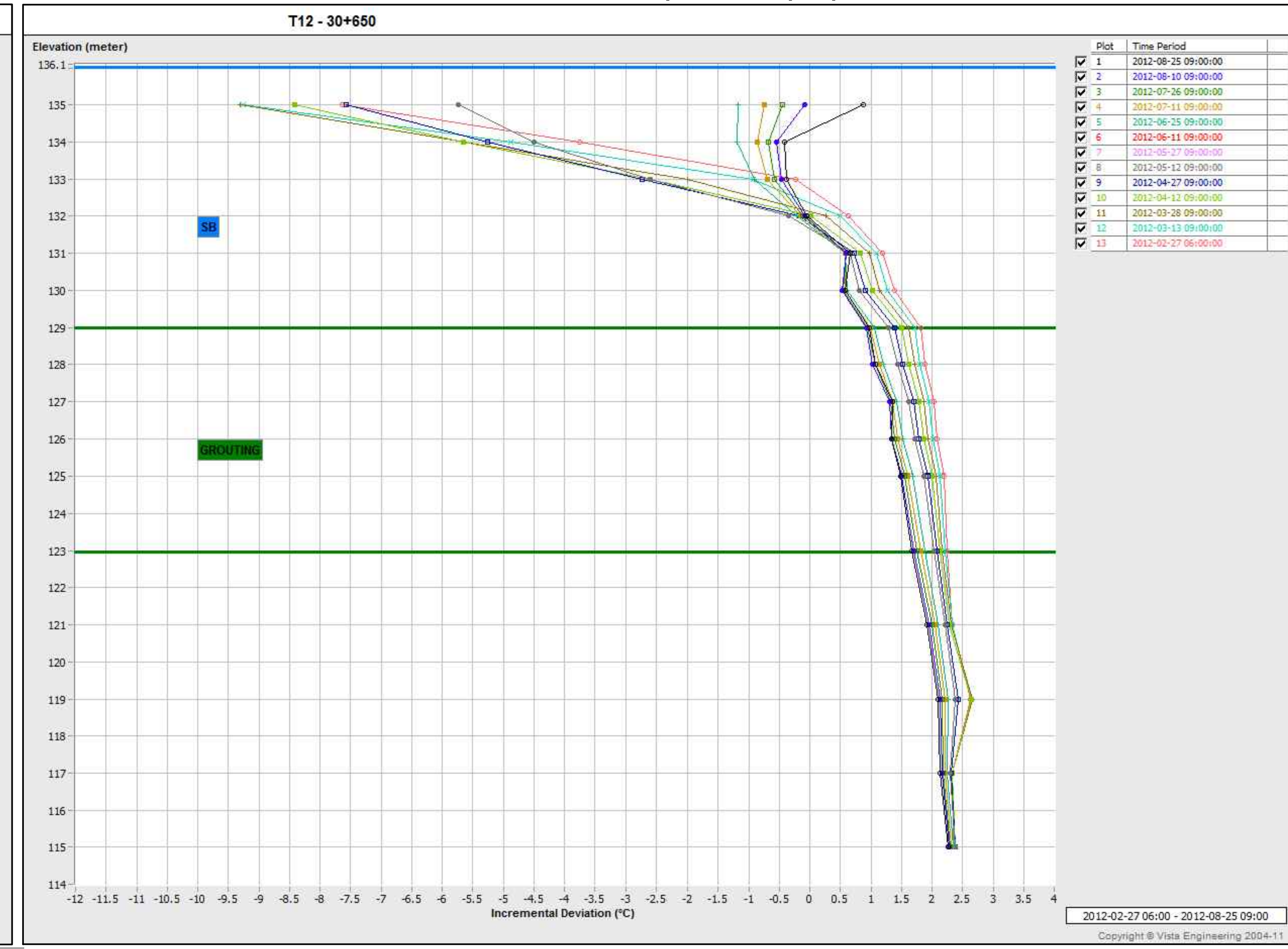
PROJECT No.		12-1221-0073	PHASE No. 3000
DESIGN	AEM	09/19/2012	SCALE
CADD	FLB	10/19/2012	REV. -
CHECK	YB	11/08/2012	
REVIEW	FE	11/15/2012	

FIGURE C3-53

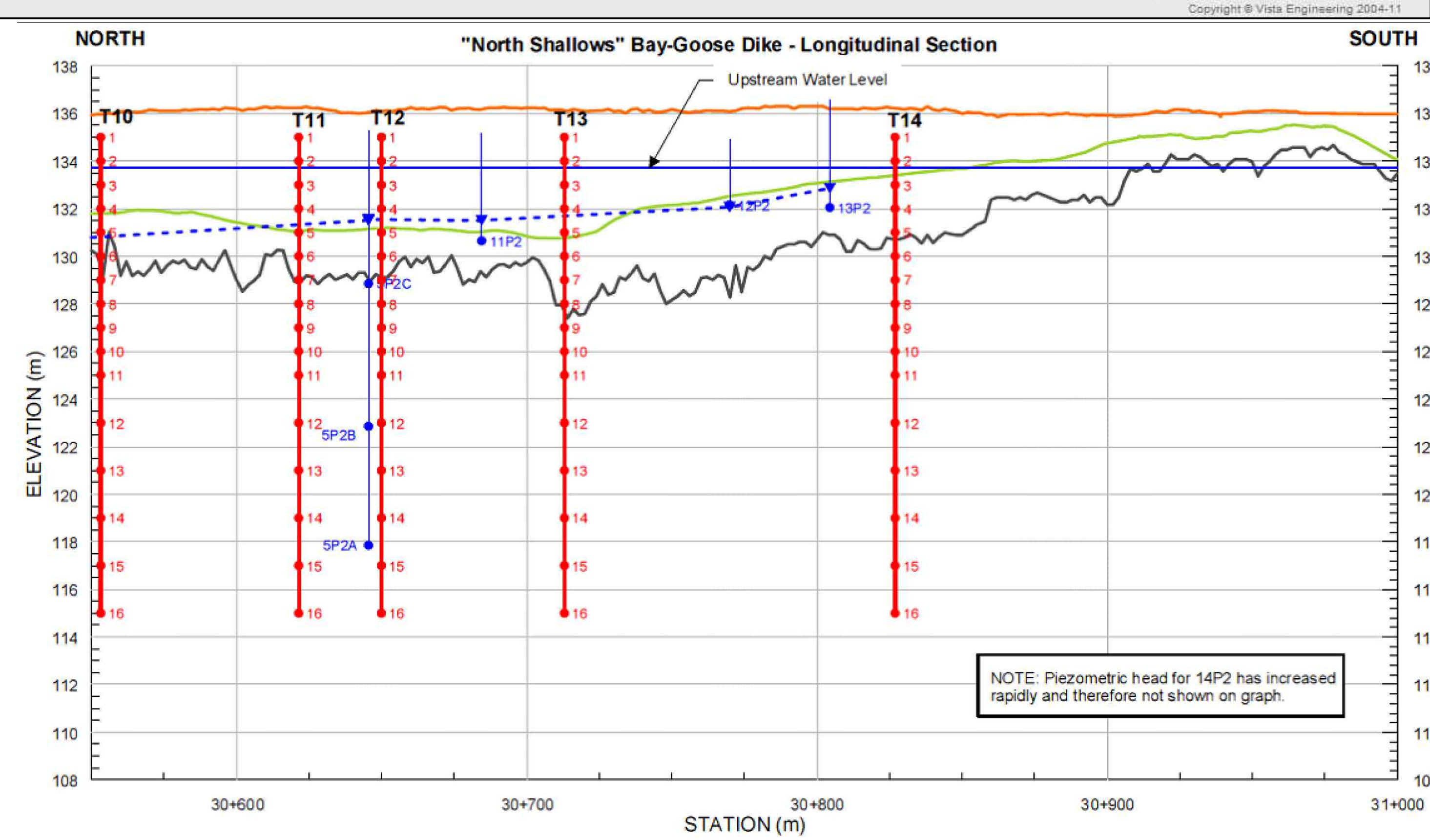
T12 - Sta.30+650 (Sep.11 - Mar.12)

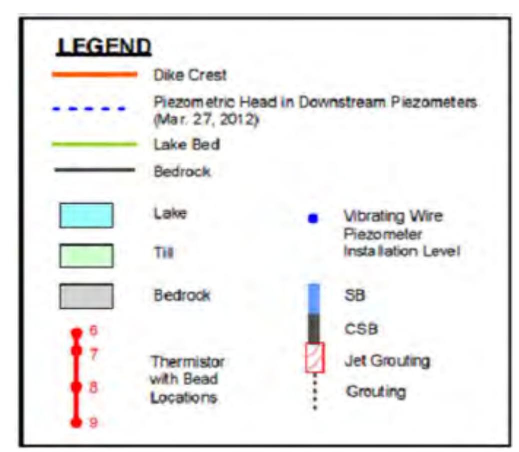


T12 - Sta.30+650 (Mar.12 - Sep.12)



"North Shallows" Bay-Goose Dike - Longitudinal Section





PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

BAY-GOOSE DIKE - T12 - 30+650
THERMISTOR DATA (SEP.2011 - SEP.2012)

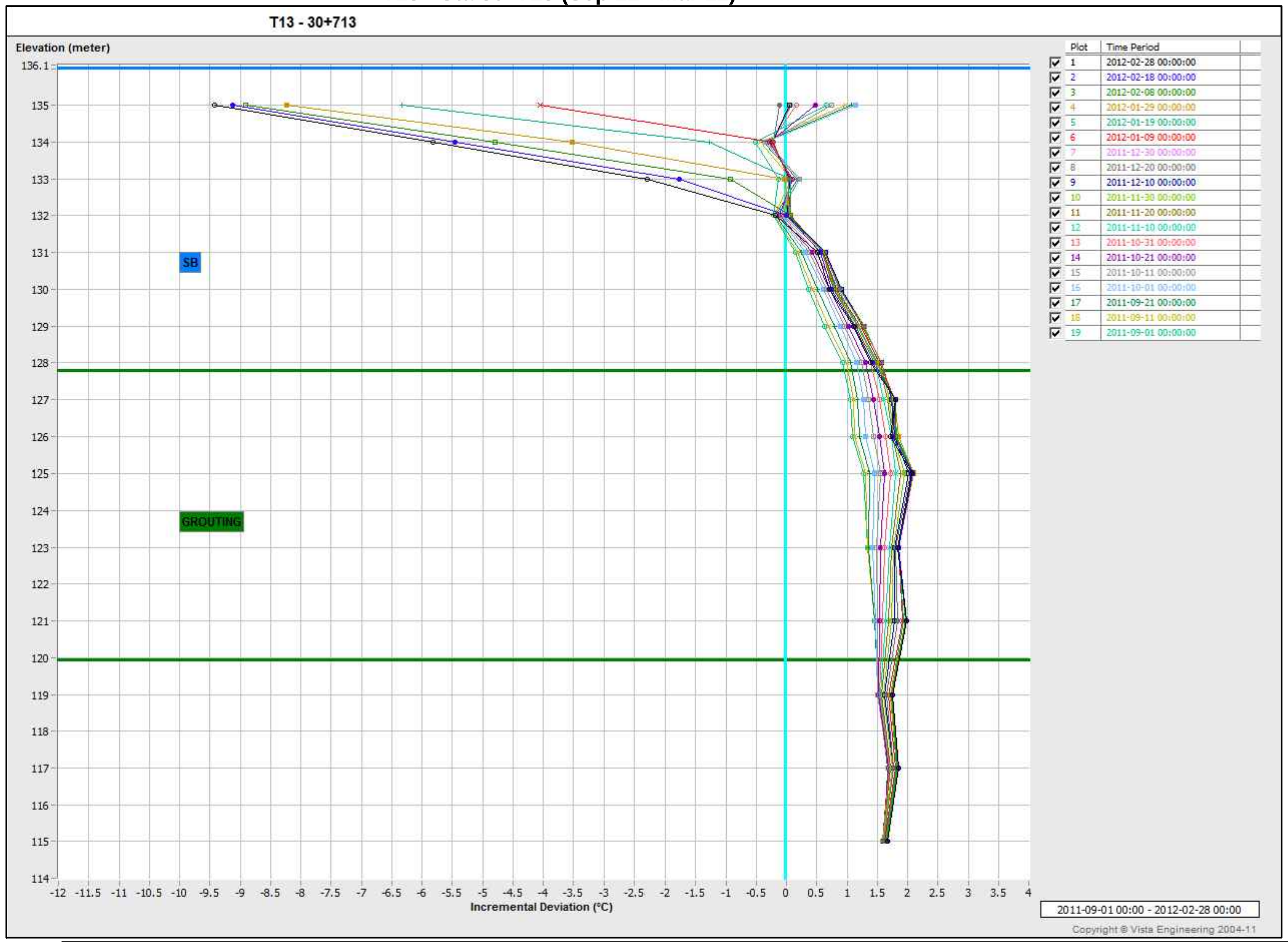
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073
DESIGN	AEM	09/19/2012
CADD	FLB	10/19/2012
CHECK	YB	11/08/2012
REVIEW	FE	11/15/2012

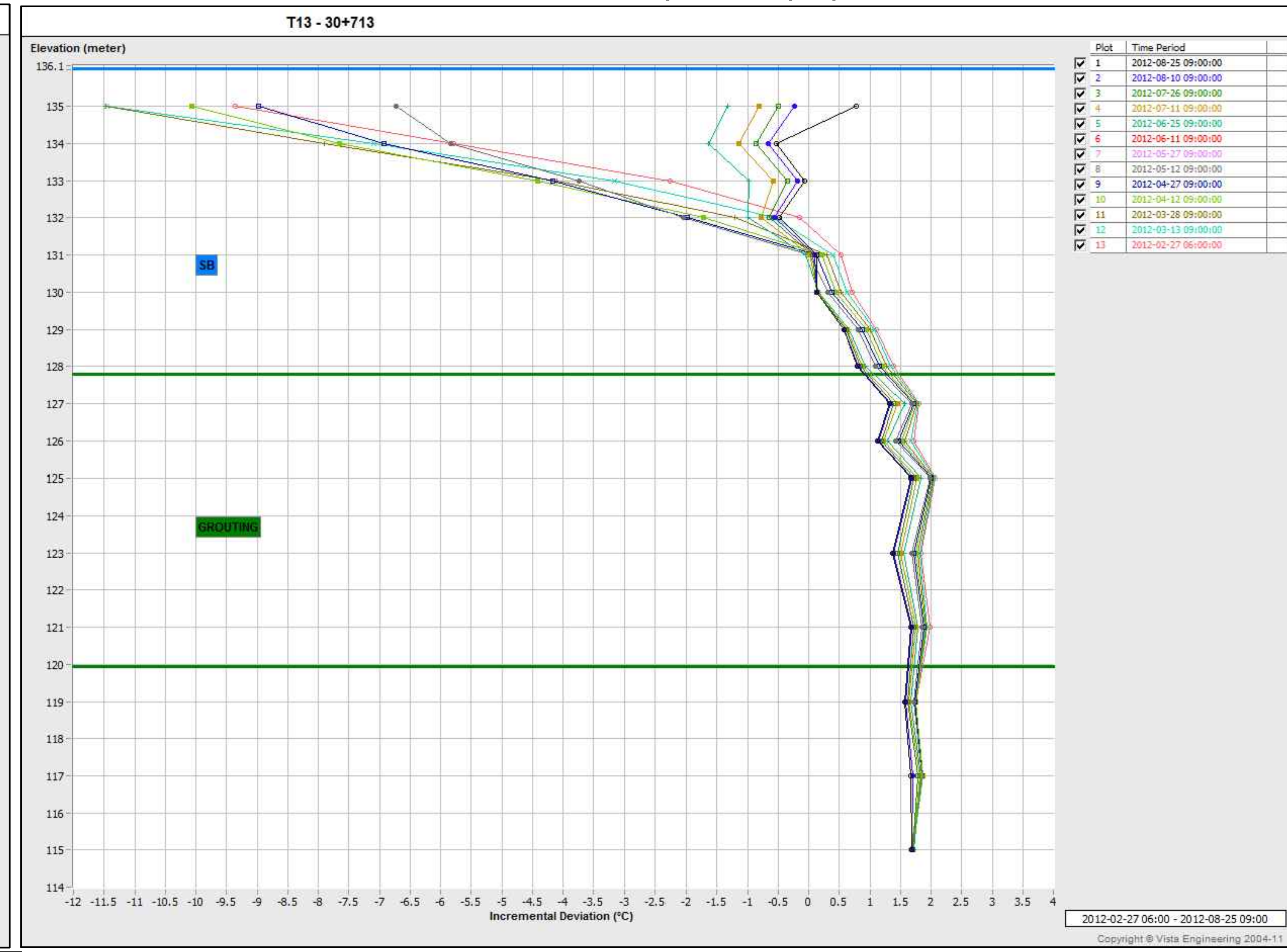
PHASE No. 3000
SCALE
REV. -

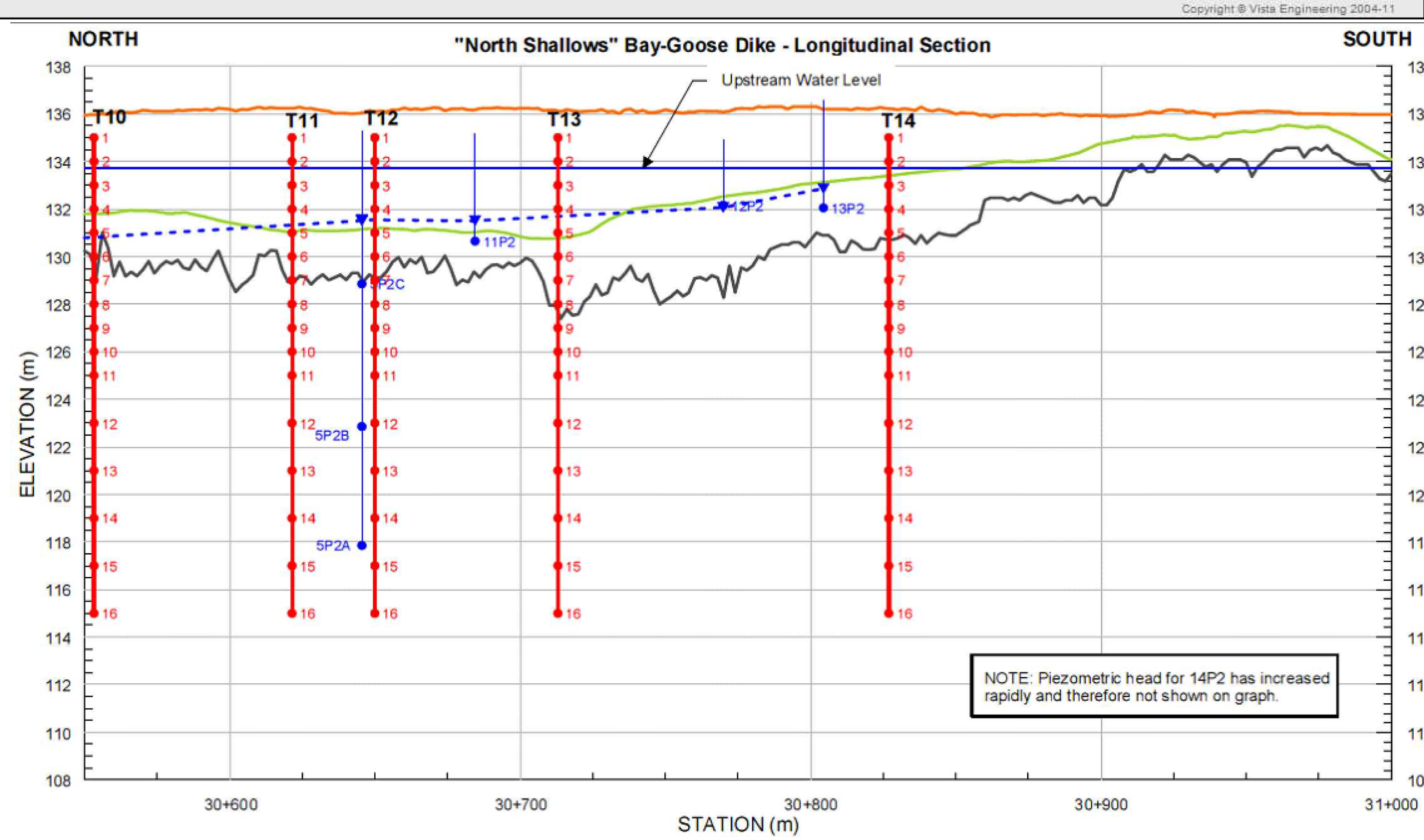
FIGURE C3-54

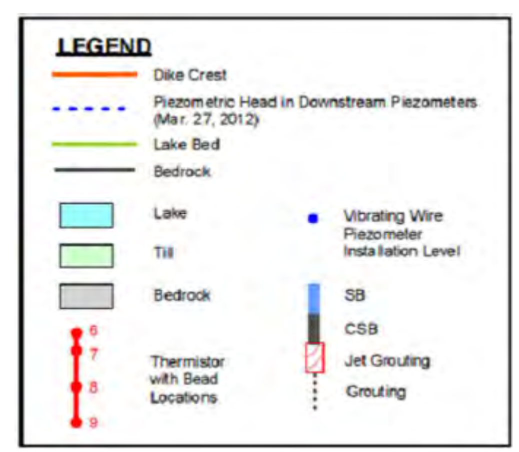
T13 - Sta.30+713 (Sep.11 - Mar.12)



T13 - Sta.30+713 (Mar.12 - Sep.12)







PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

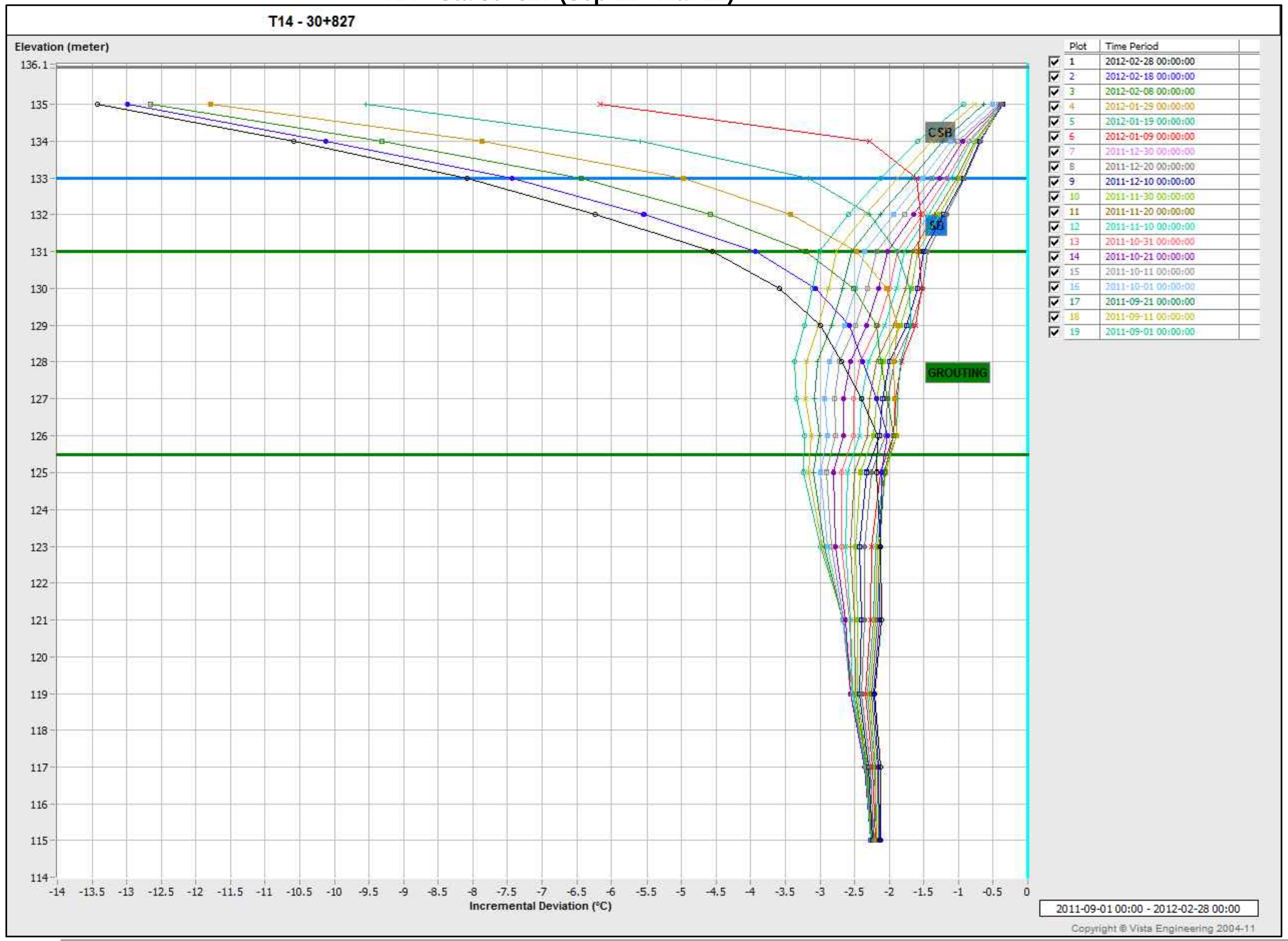
TITLE

BAY-GOOSE DIKE - T13 - 30+713
THERMISTOR DATA (SEP.2011 - SEP.2012)

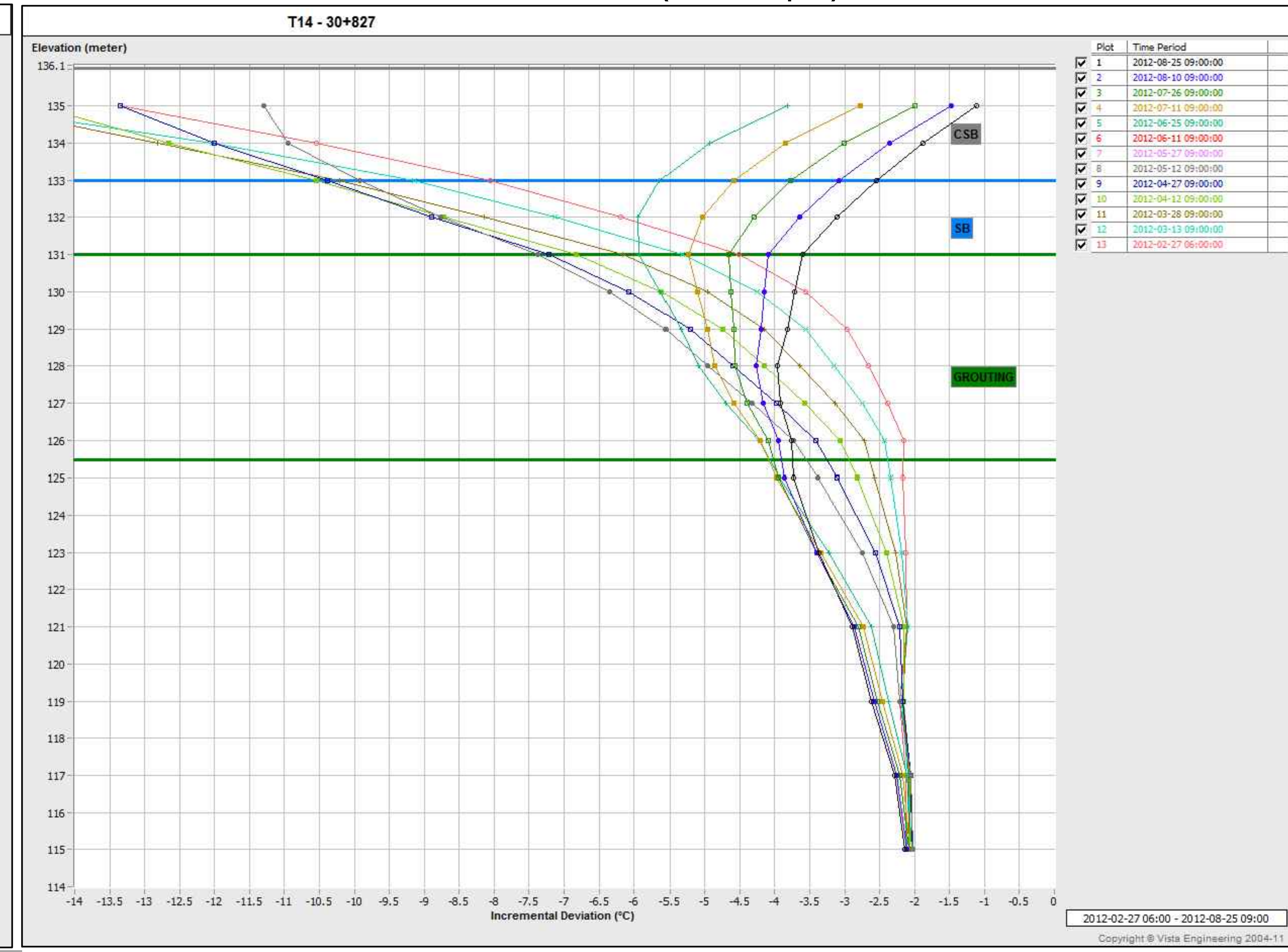
Golder Associates
Montréal, Québec

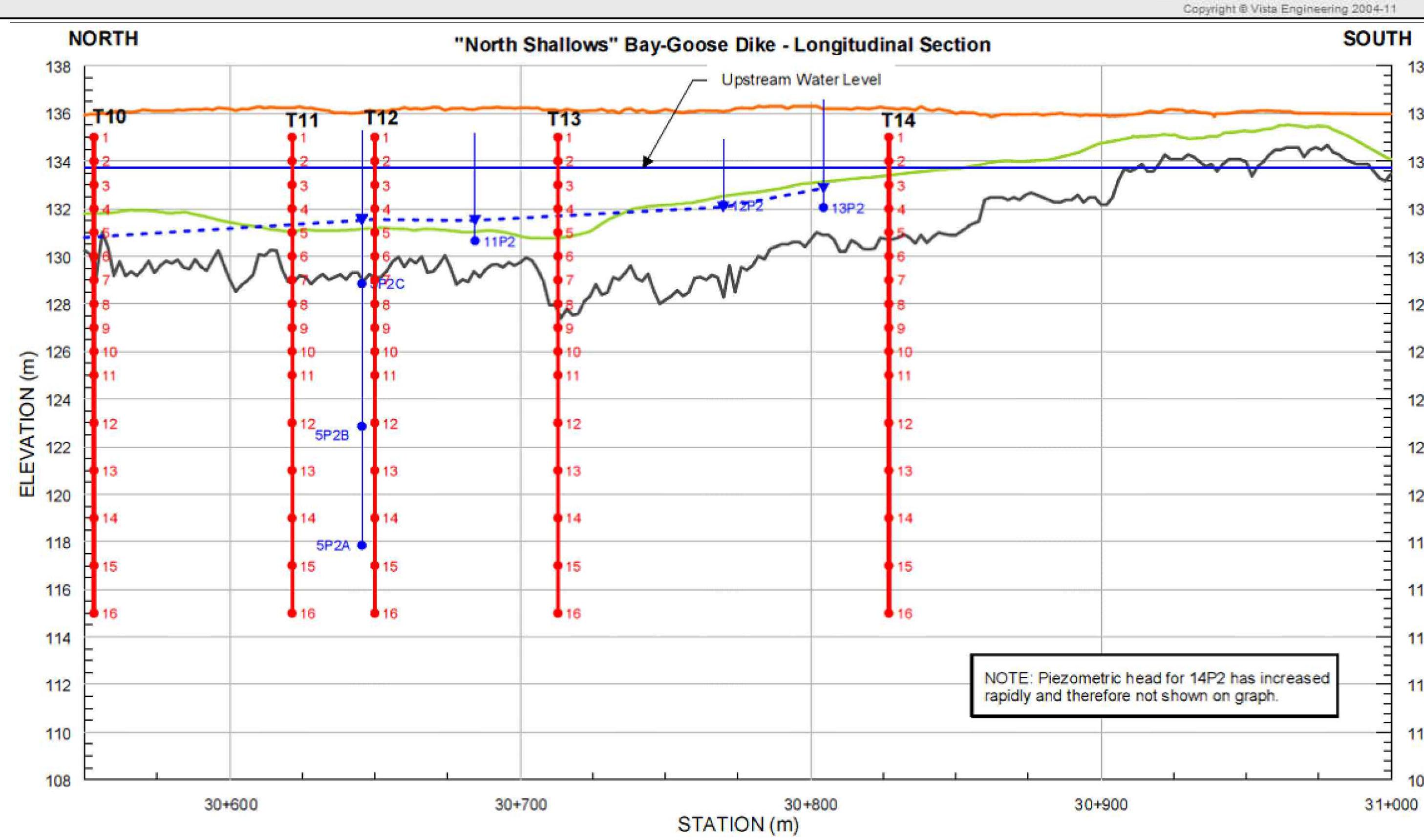
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C3-55	
REVIEW	FE	11/15/2012		

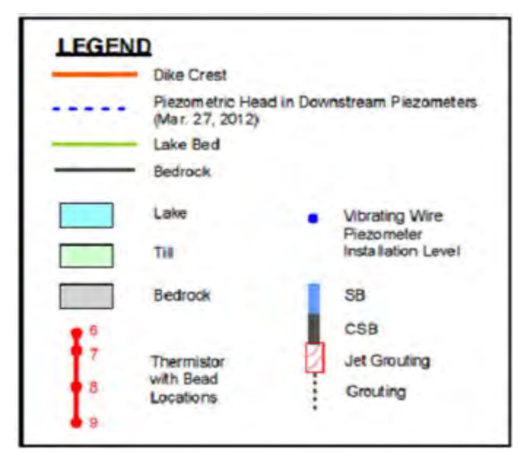
T14 - Sta.30+827 (Sep.11 - Mar.12)



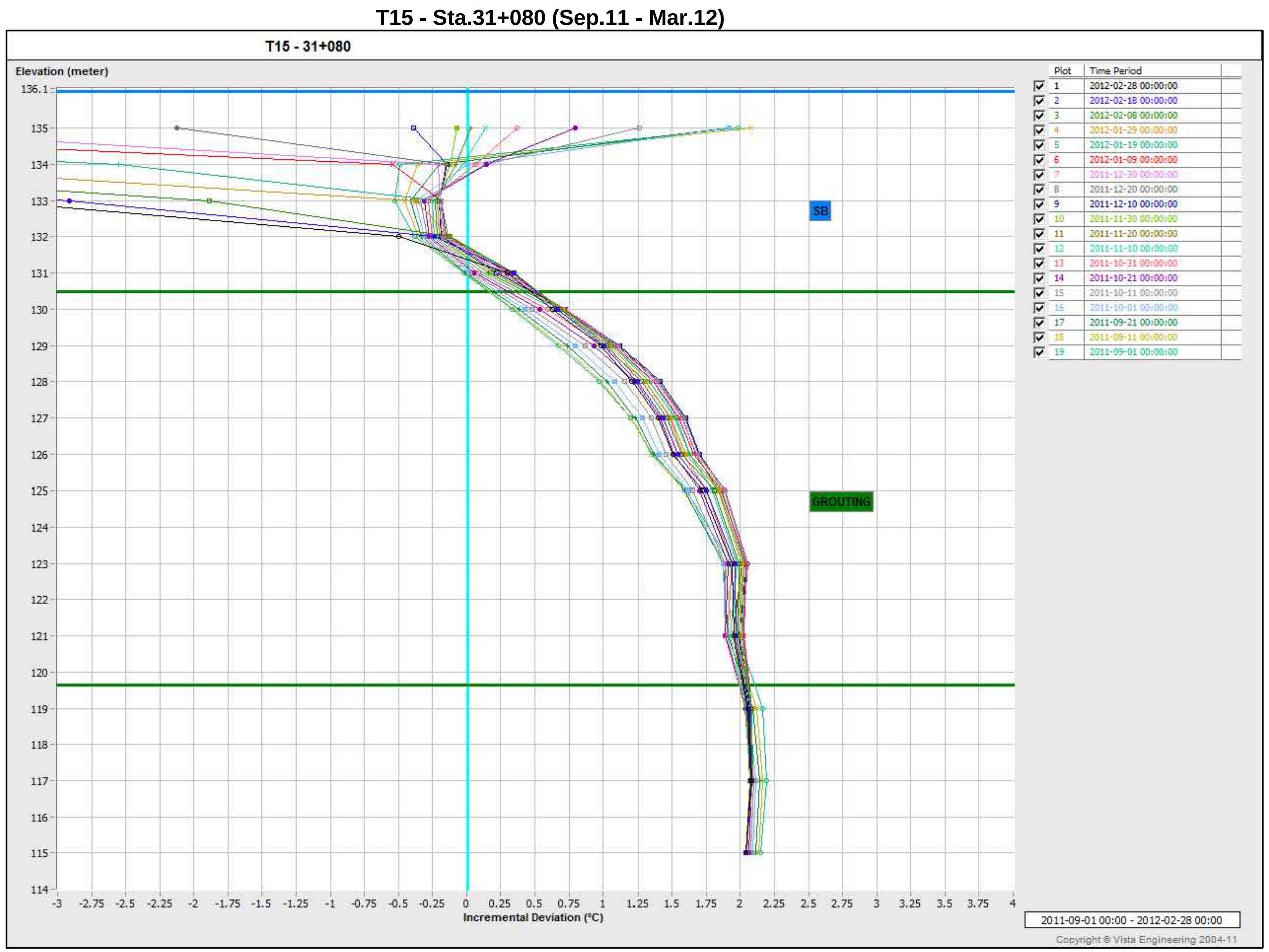
T14 - Sta.30+827 (Mar.12 - Sep.12)

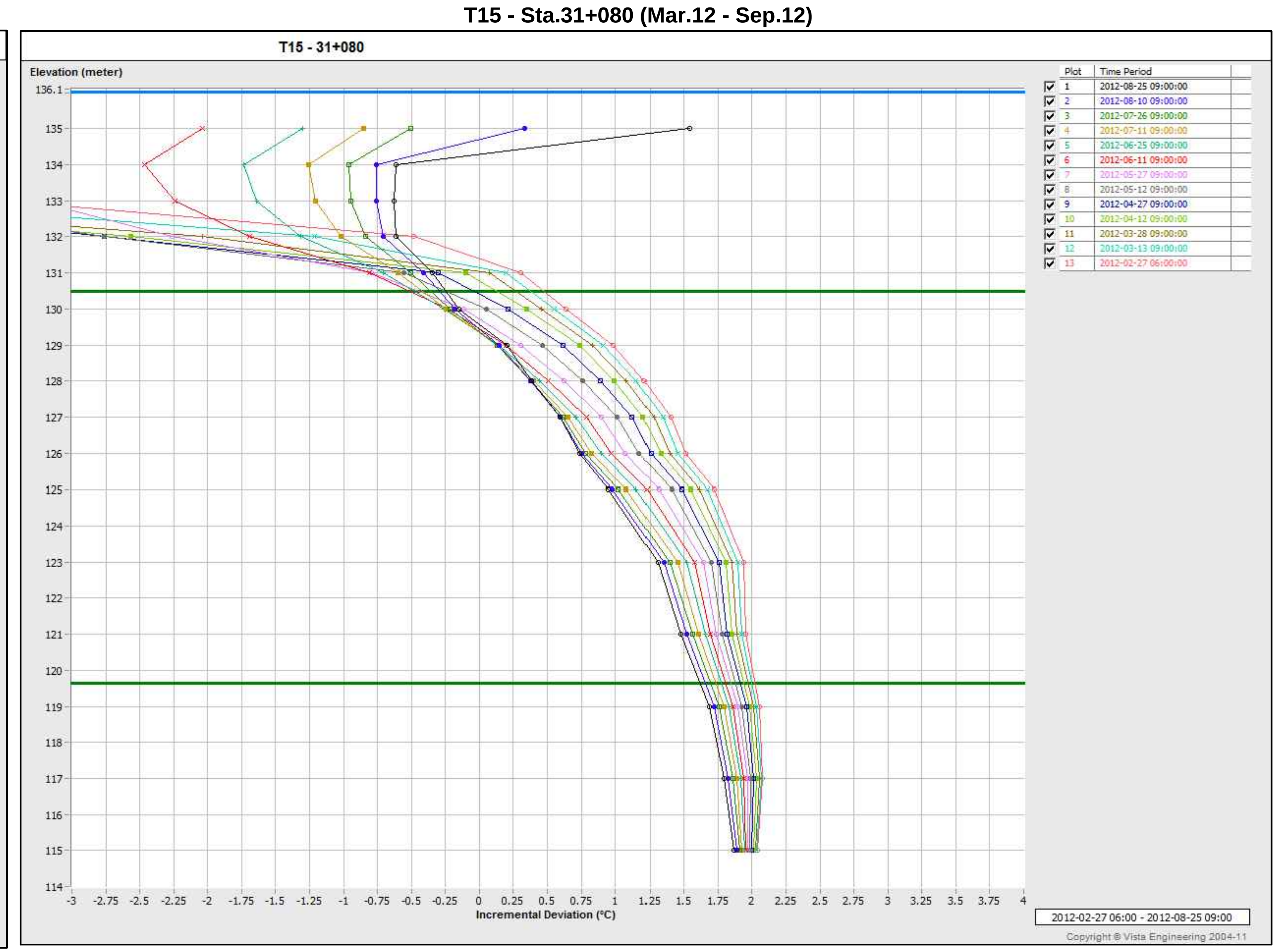


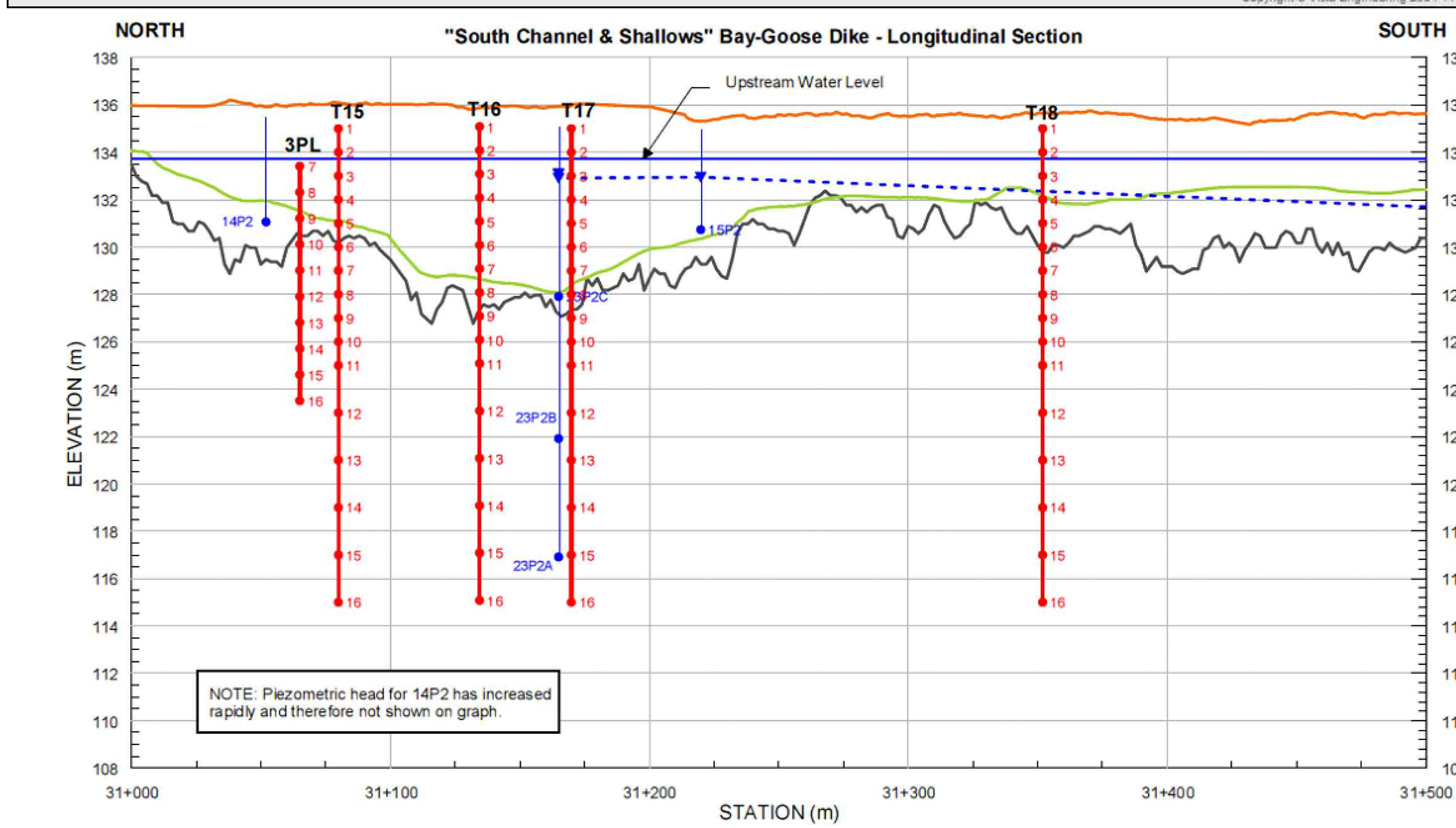


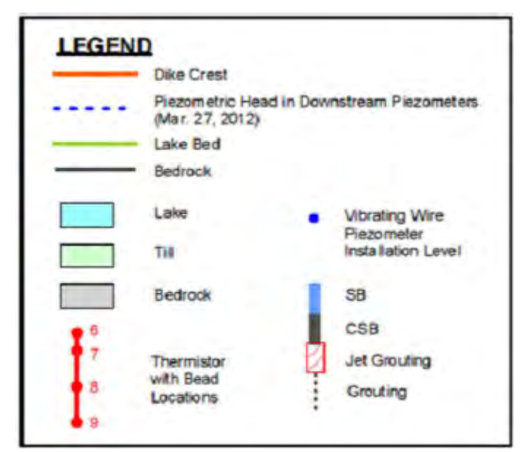


PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT				
TITLE	**BAY-GOOSE DIKE - T14 - 30+827 THERMISTOR DATA (SEP.2011 - SEP.2012)**				
Golder Associates, Montréal, Québec	PROJECT No.		12-1221-0073	PHASE No.	3000
	DESIGN	AEM	09/19/2012	SCALE	REV. -
	CADD	FLB	10/19/2012	**FIGURE C3-56**	
	CHECK	YB	11/08/2012		
	REVIEW	FE	11/15/2012		









PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

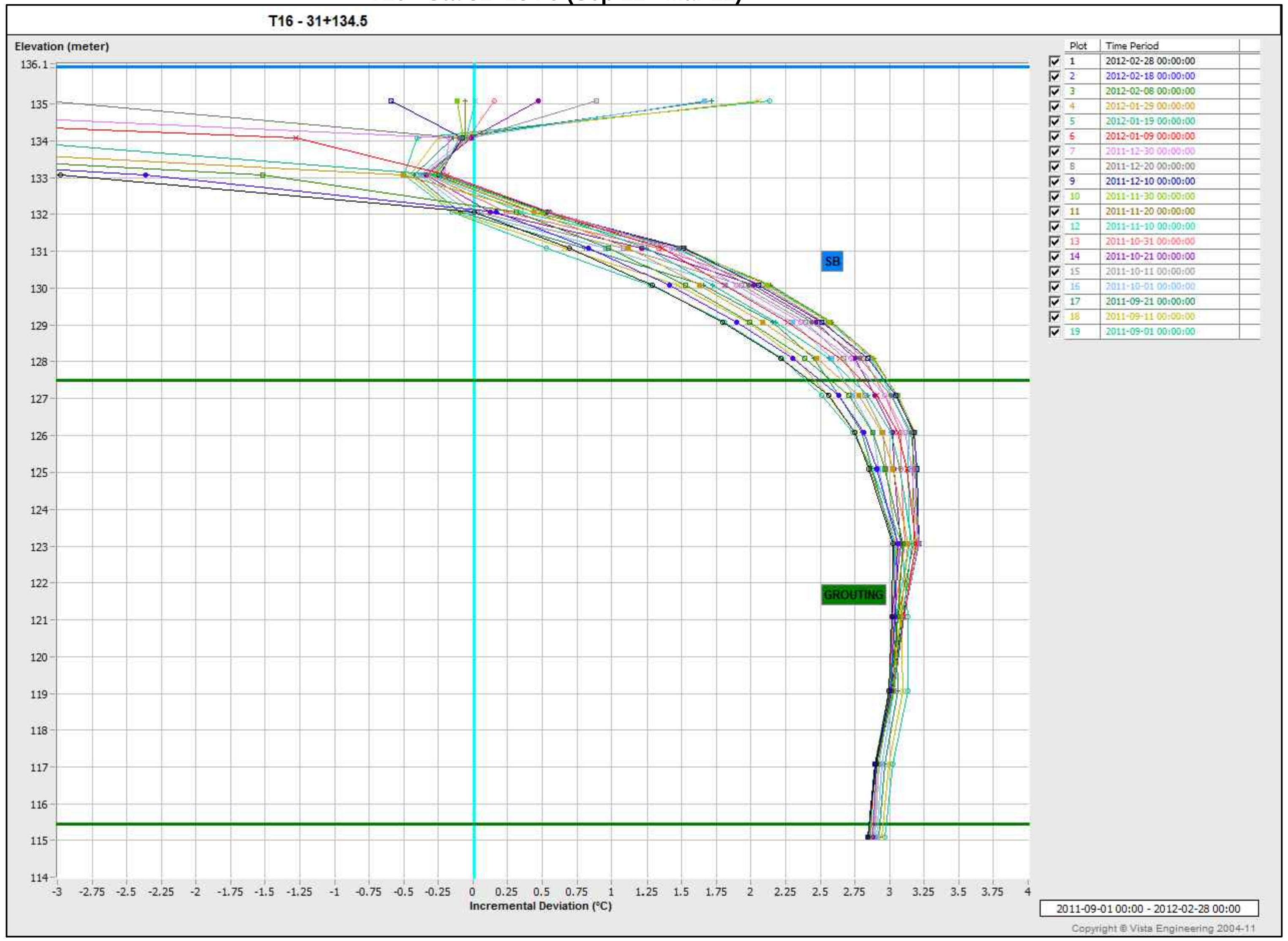
TITLE

BAY-GOOSE DIKE - T15 - 31+080
THERMISTOR DATA (SEP.2011 - SEP.2012)

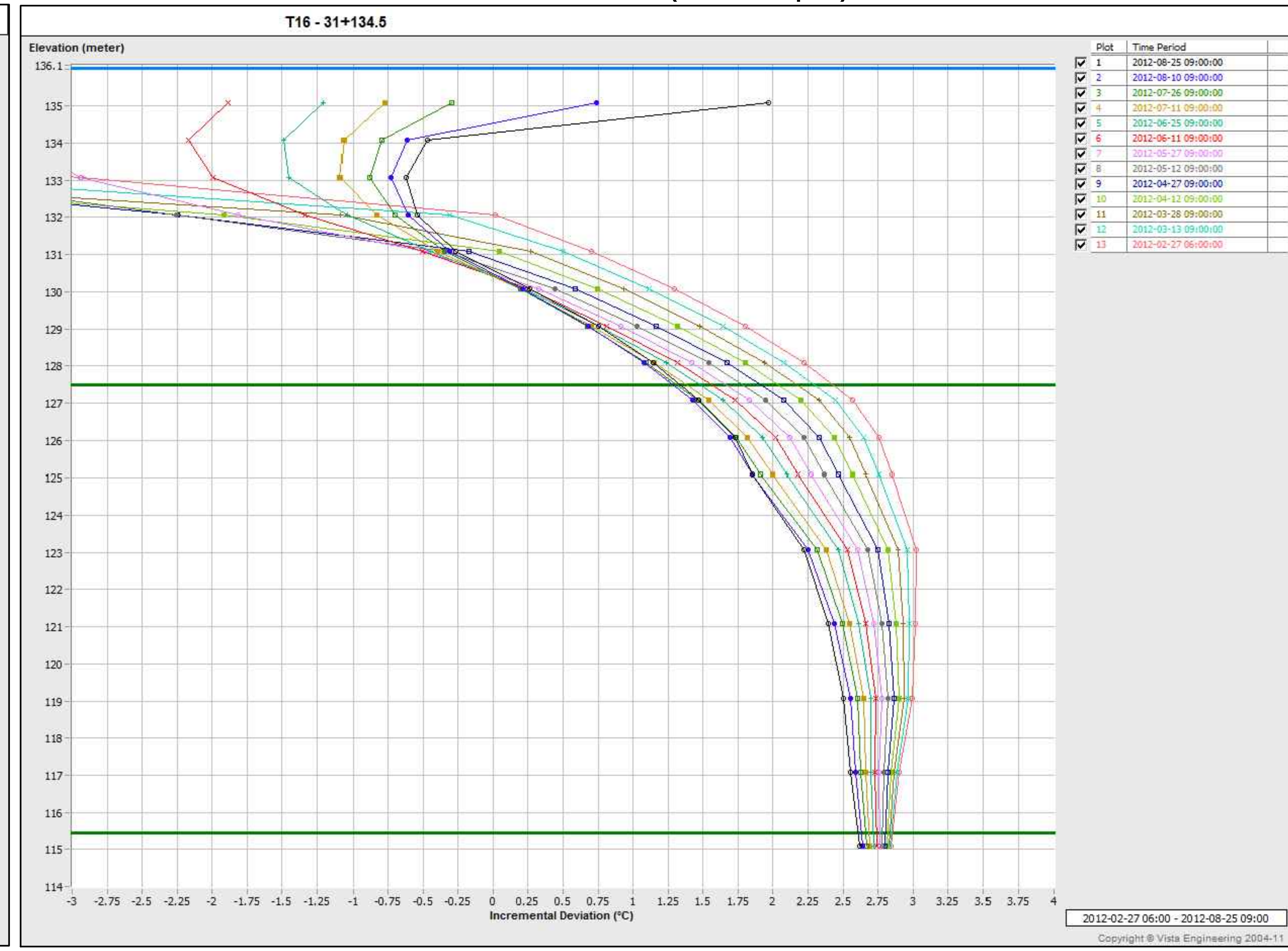
Golder Associates
Montréal, Québec

PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C3-57	
REVIEW	FE	11/15/2012		

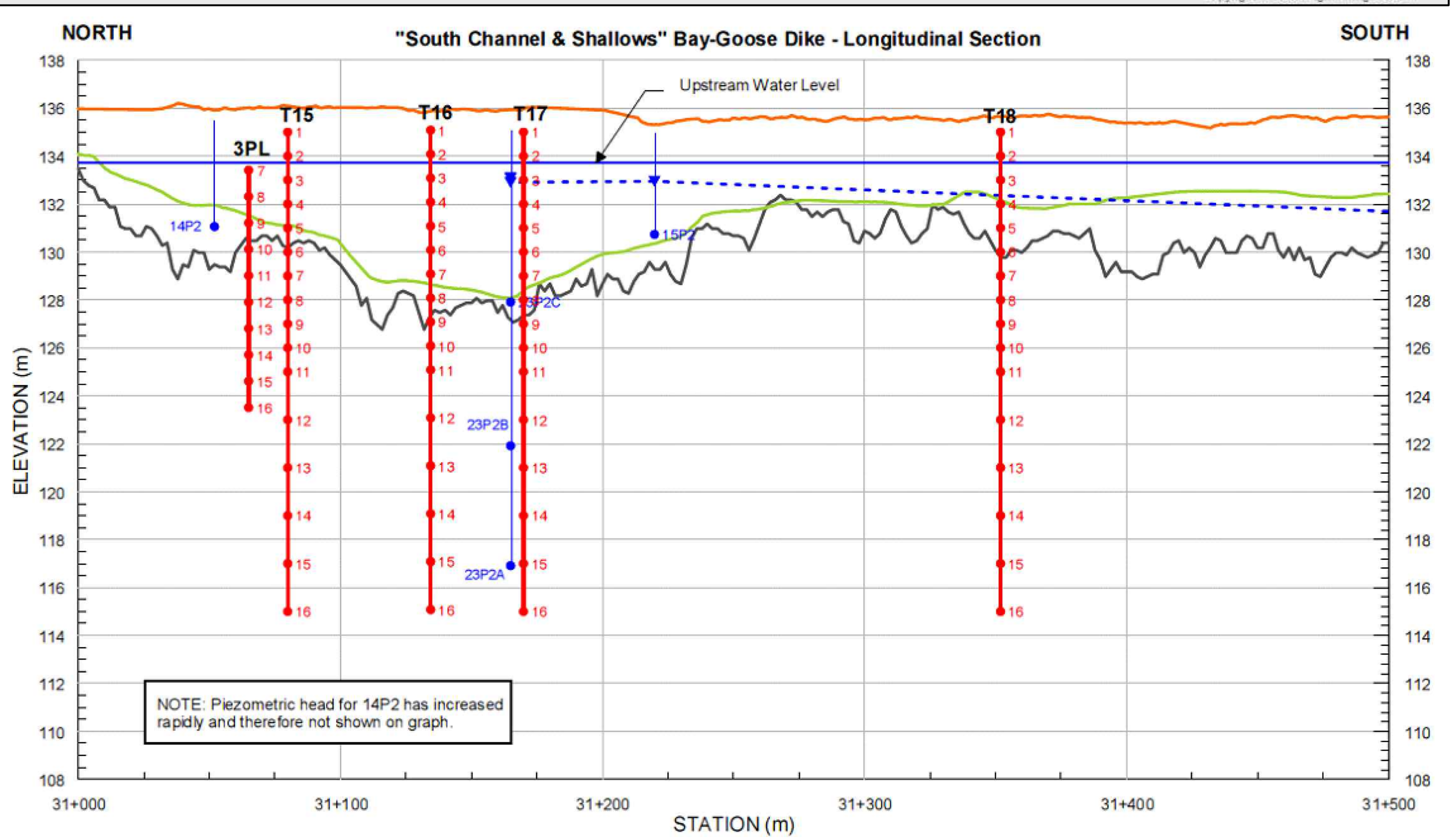
T16 - Sta.31+134.5 (Sep.11 - Mar.12)

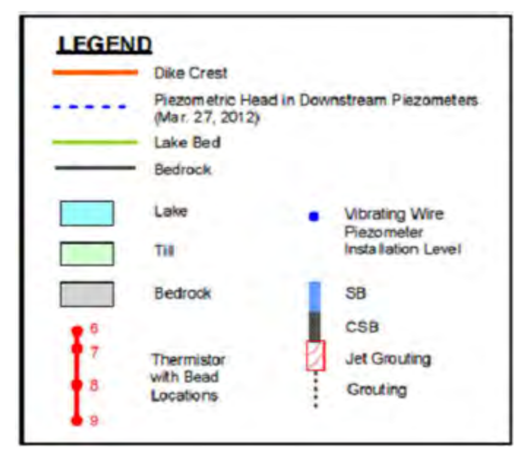


T16 - Sta.31+134.5 (Mar.12 - Sep.12)



"South Channel & Shallows" Bay-Goose Dike - Longitudinal Section





PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

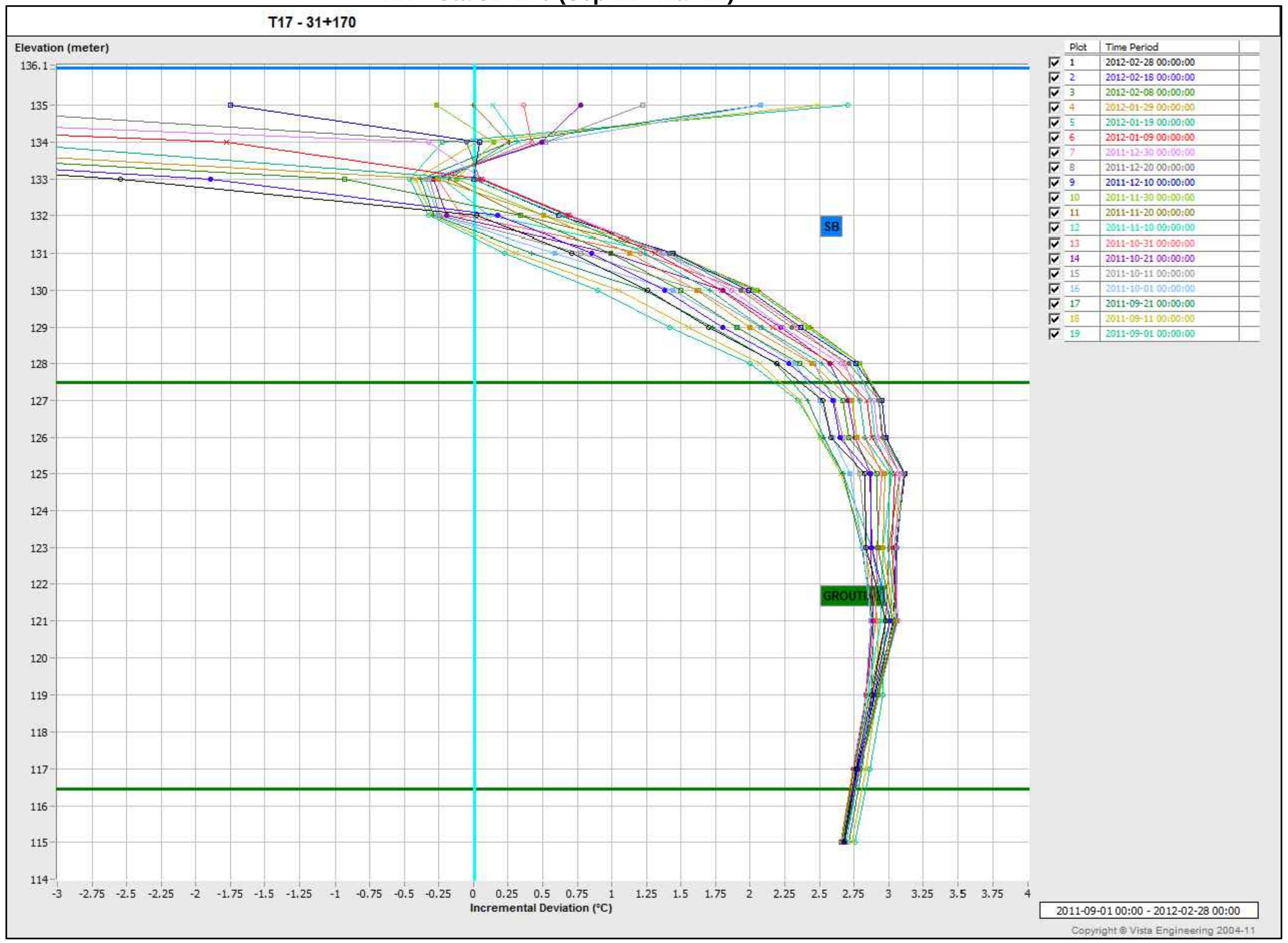
BAY-GOOSE DIKE - T16 - 31+134.5 THERMISTOR DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

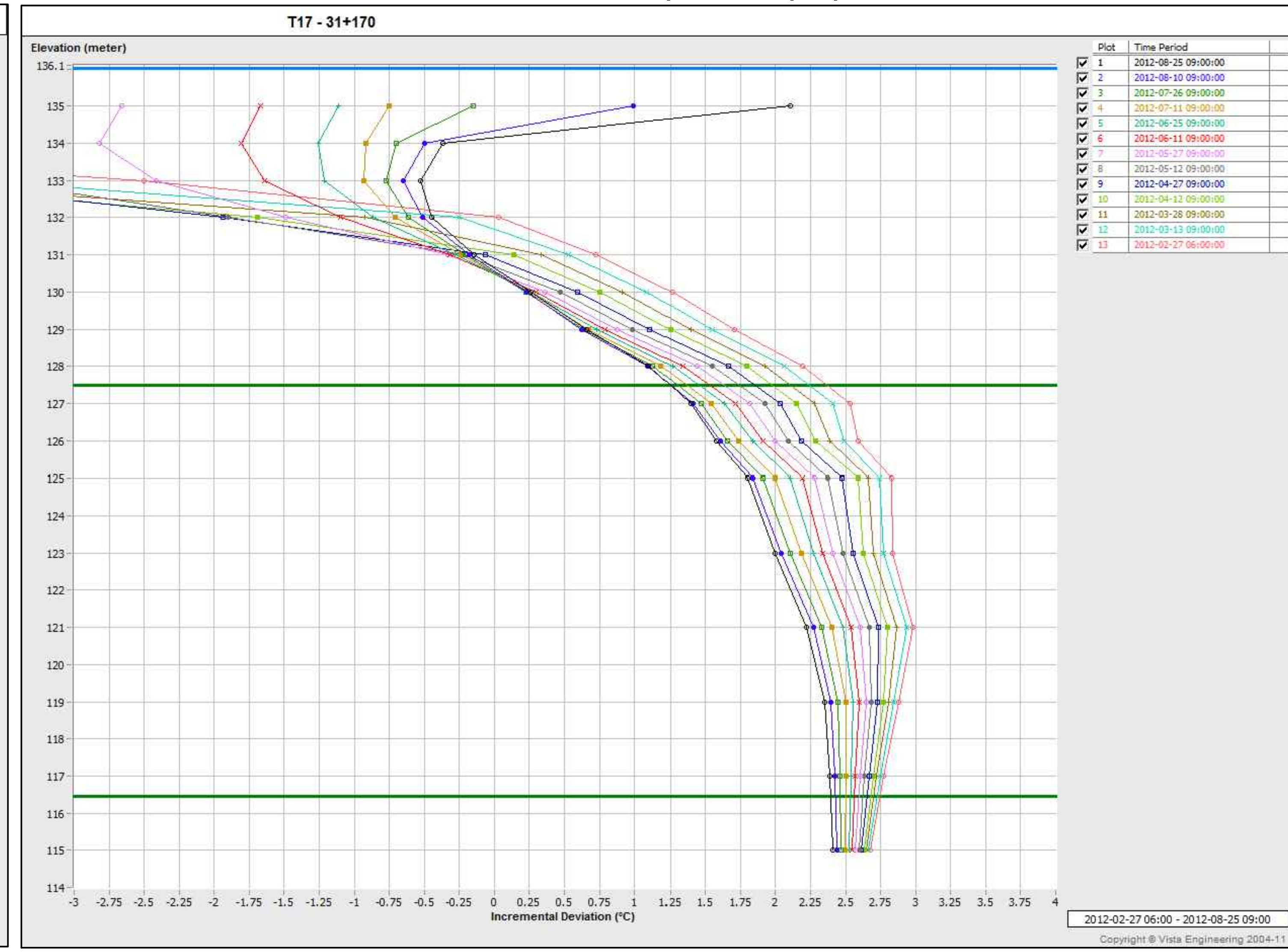
PROJECT No.		12-1221-0073	PHASE No. 3000
DESIGN	AEM	09/19/2012	SCALE / REV. -
CADD	FLB	10/19/2012	
CHECK	YB	11/08/2012	
REVIEW	FE	11/15/2012	

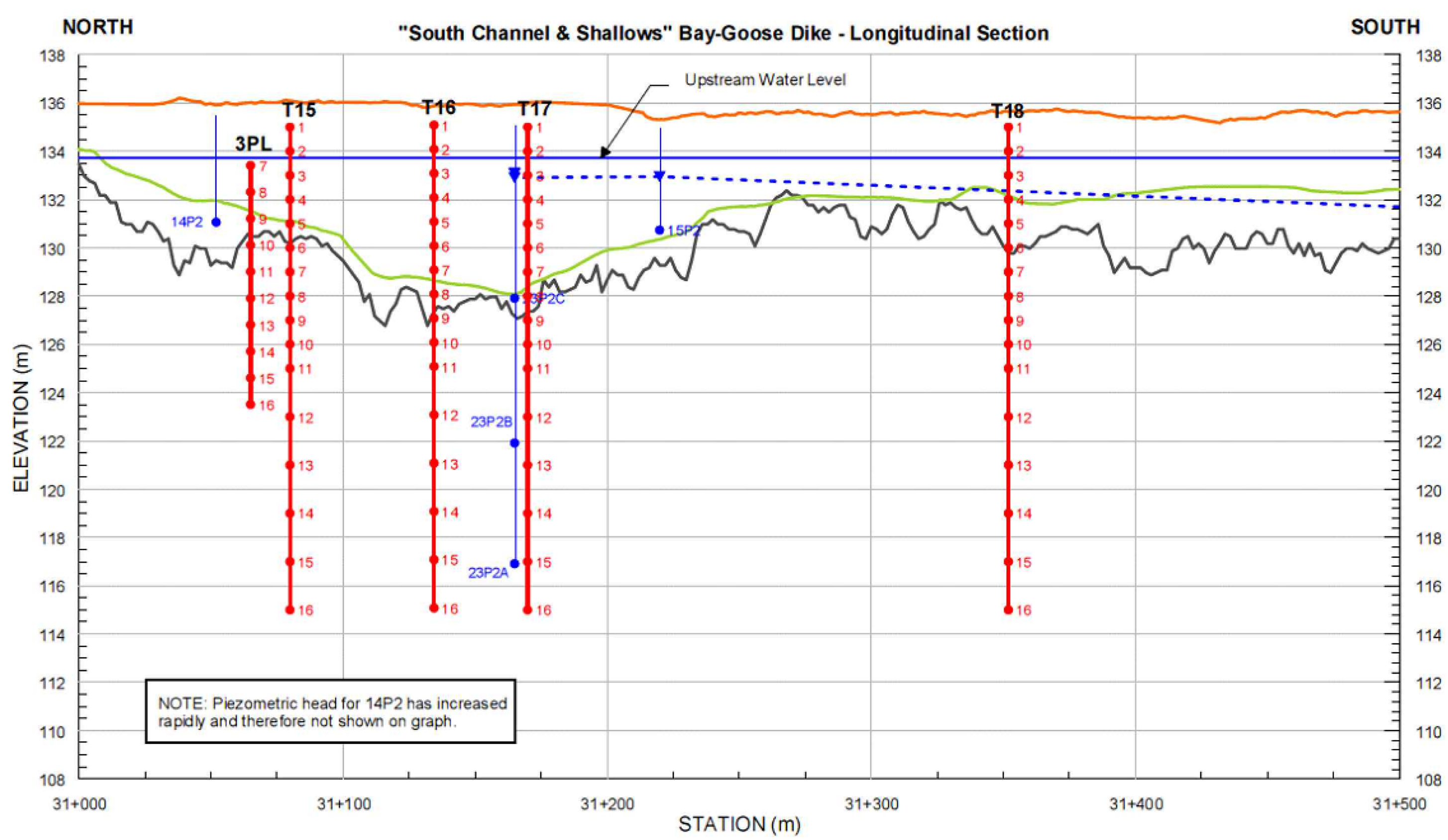
FIGURE C3-58

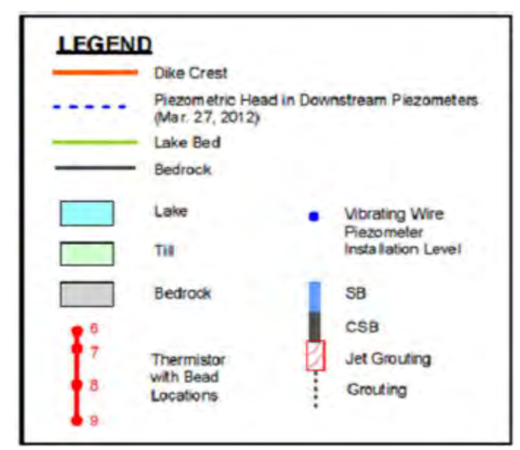
T17 - Sta.31+170 (Sep.11 - Mar.12)



T17 - Sta.31+170 (Mar.12 - Sep.12)







PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

BAY-GOOSE DIKE - T17 - 31+170
THERMISTOR DATA (SEP.2011 - SEP.2012)

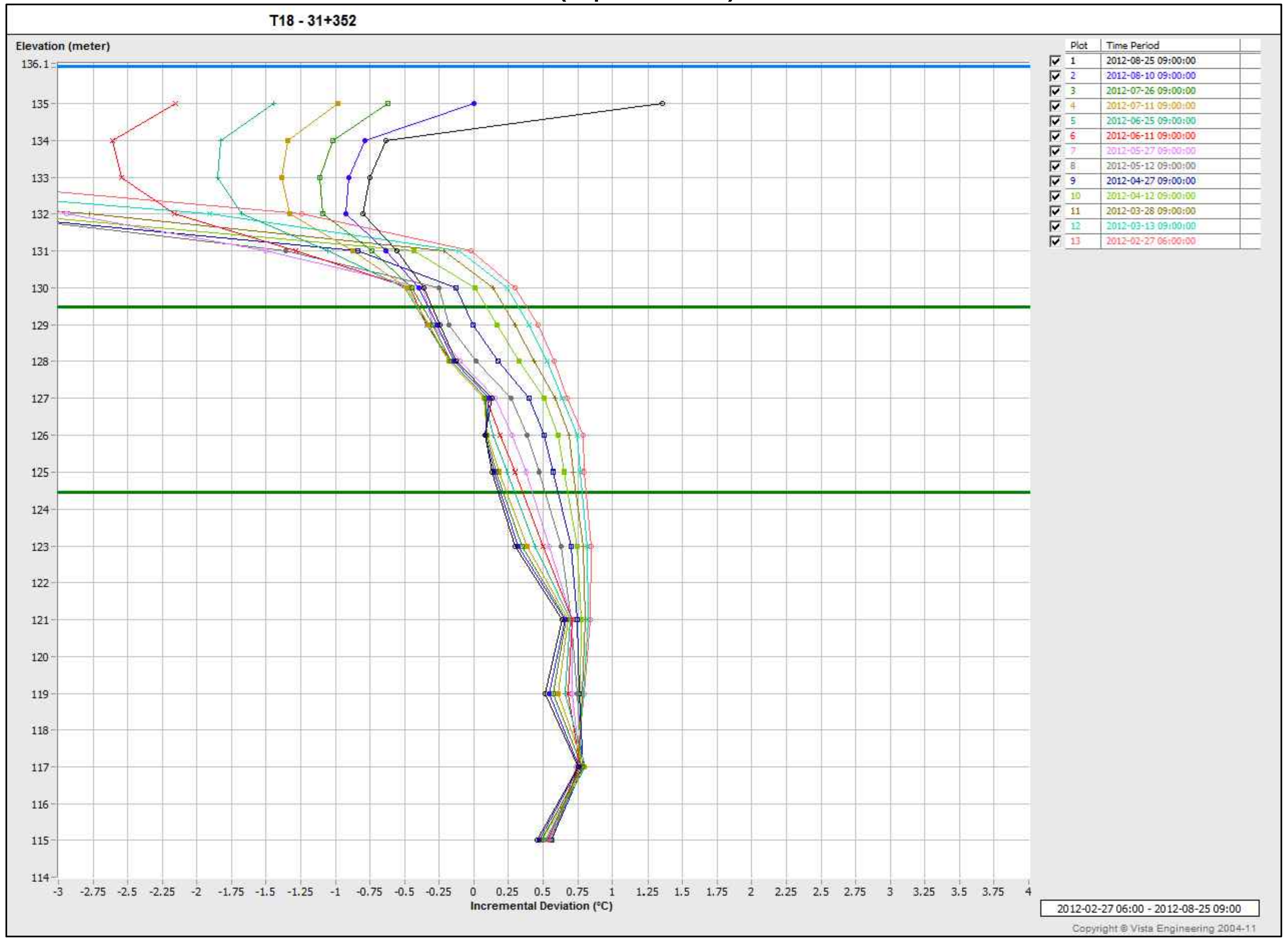
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073
DESIGN	AEM	09/19/2012
CADD	FLB	10/19/2012
CHECK	YB	11/08/2012
REVIEW	FE	11/15/2012

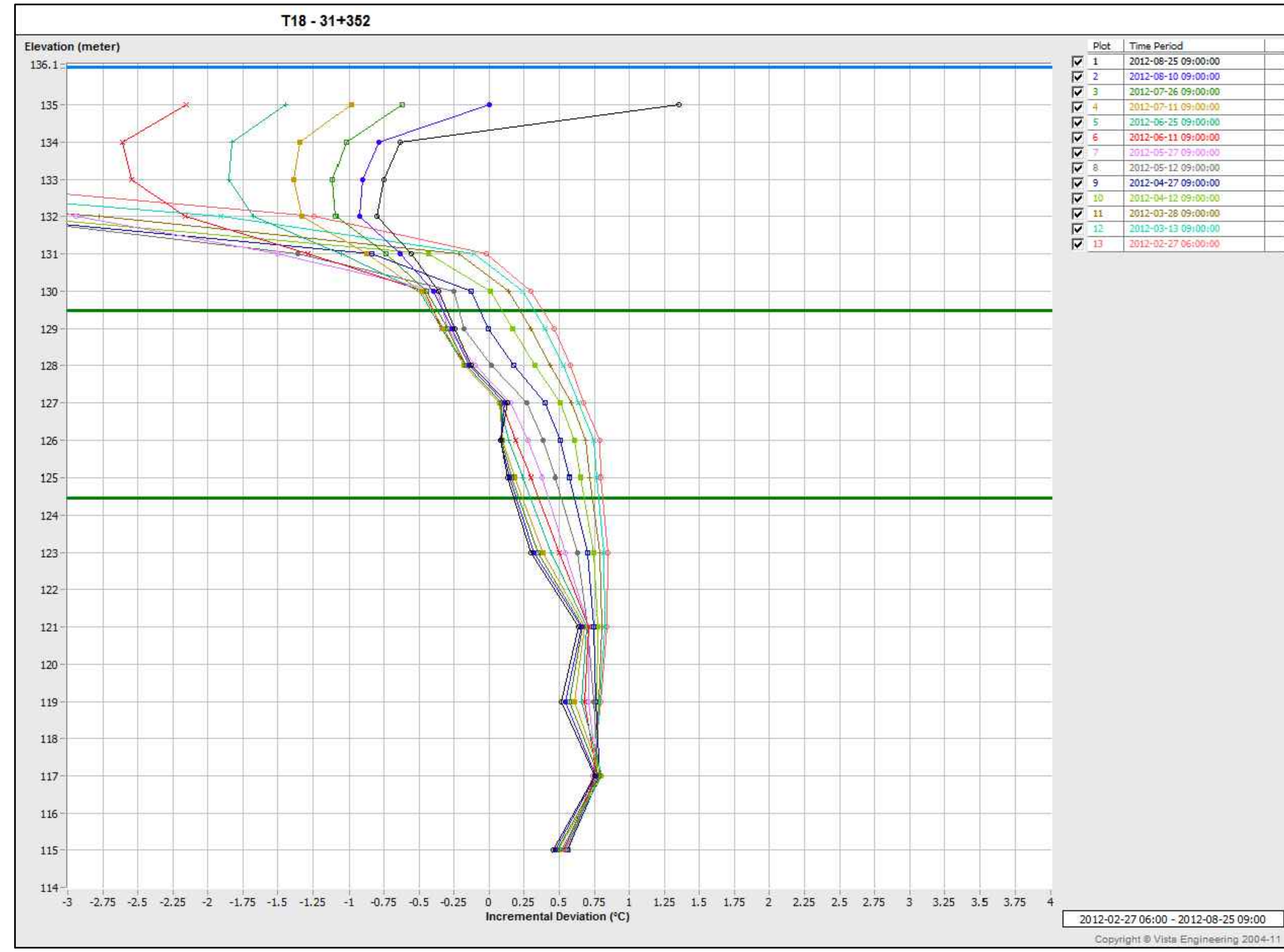
PHASE No. 3000
SCALE
REV. -

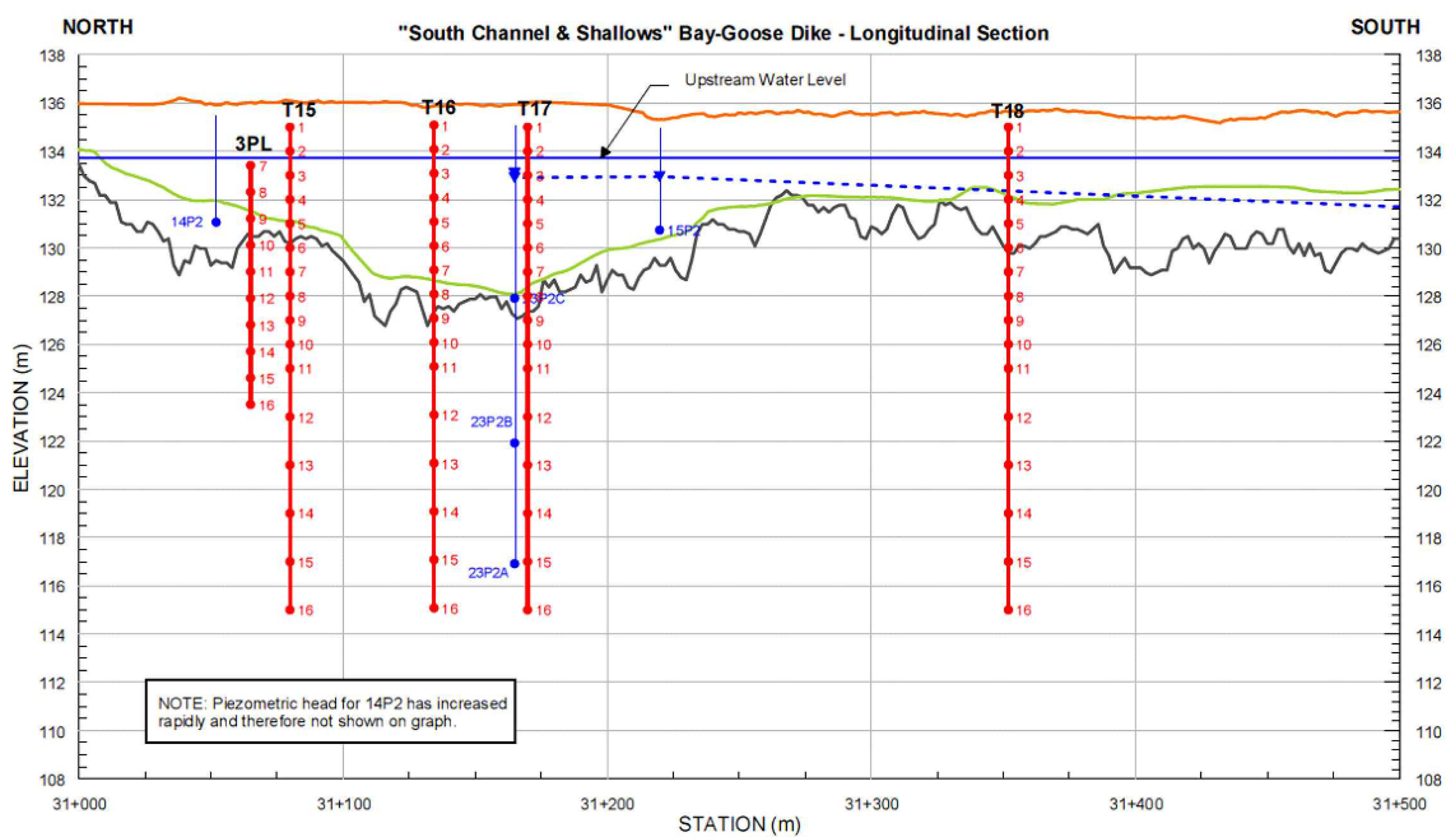
FIGURE C3-59

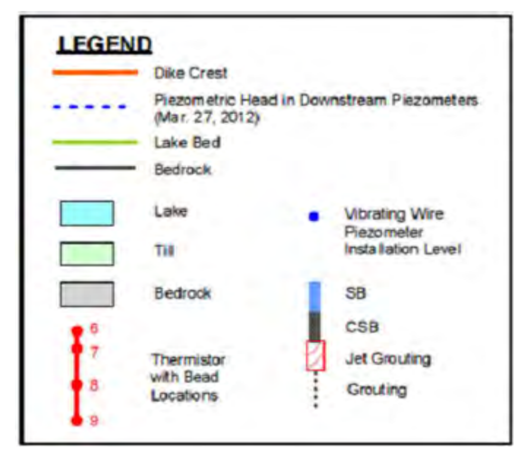
T18 - Sta.31+352 (Sep.11 - Mar.12)



T18 - Sta.31+352 (Mar.12 - Sep.12)







PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

BAY-GOOSE DIKE - T18 - 31+352
THERMISTOR DATA (SEP.2011 - SEP.2012)

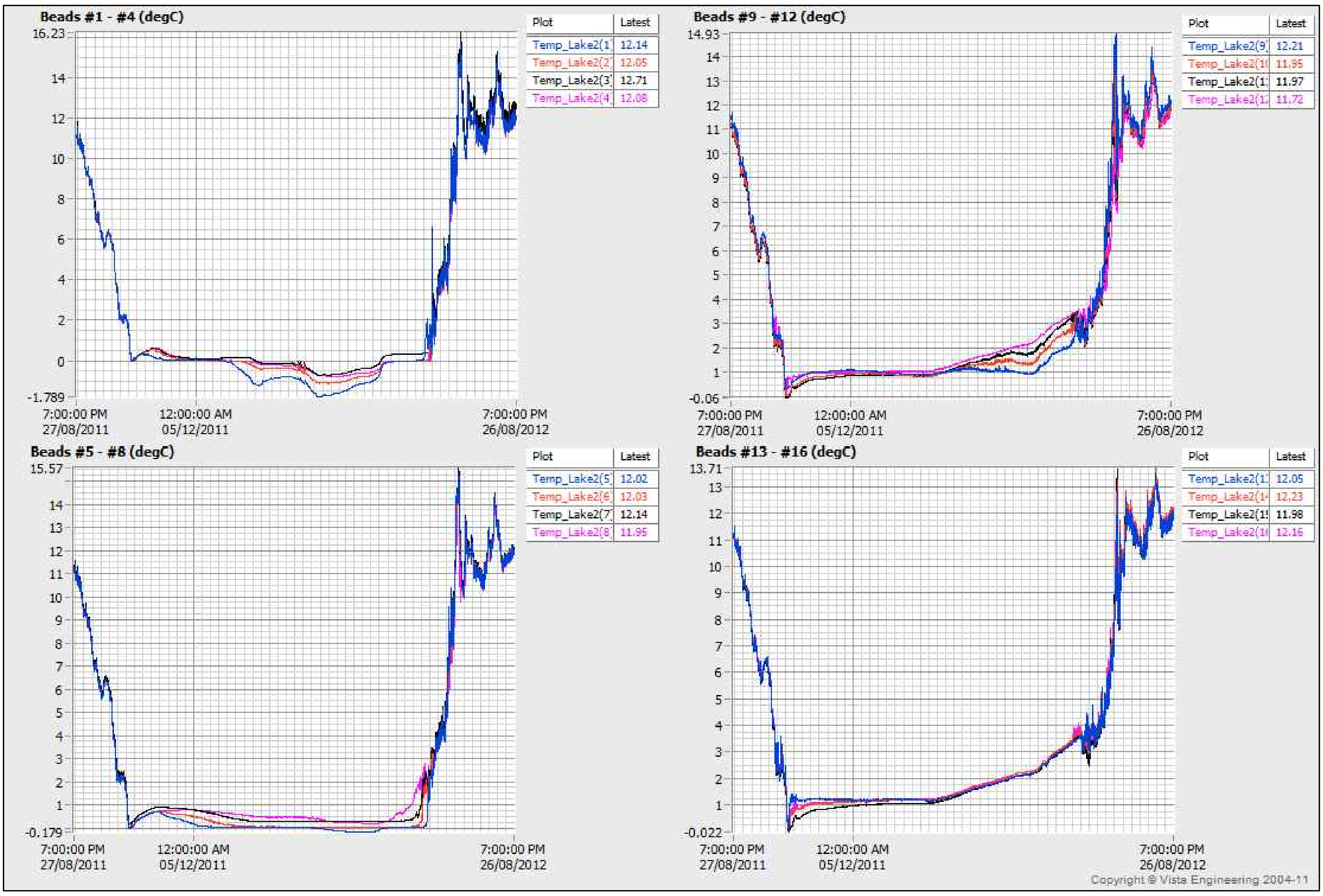
Golder Associates
Montréal, Québec

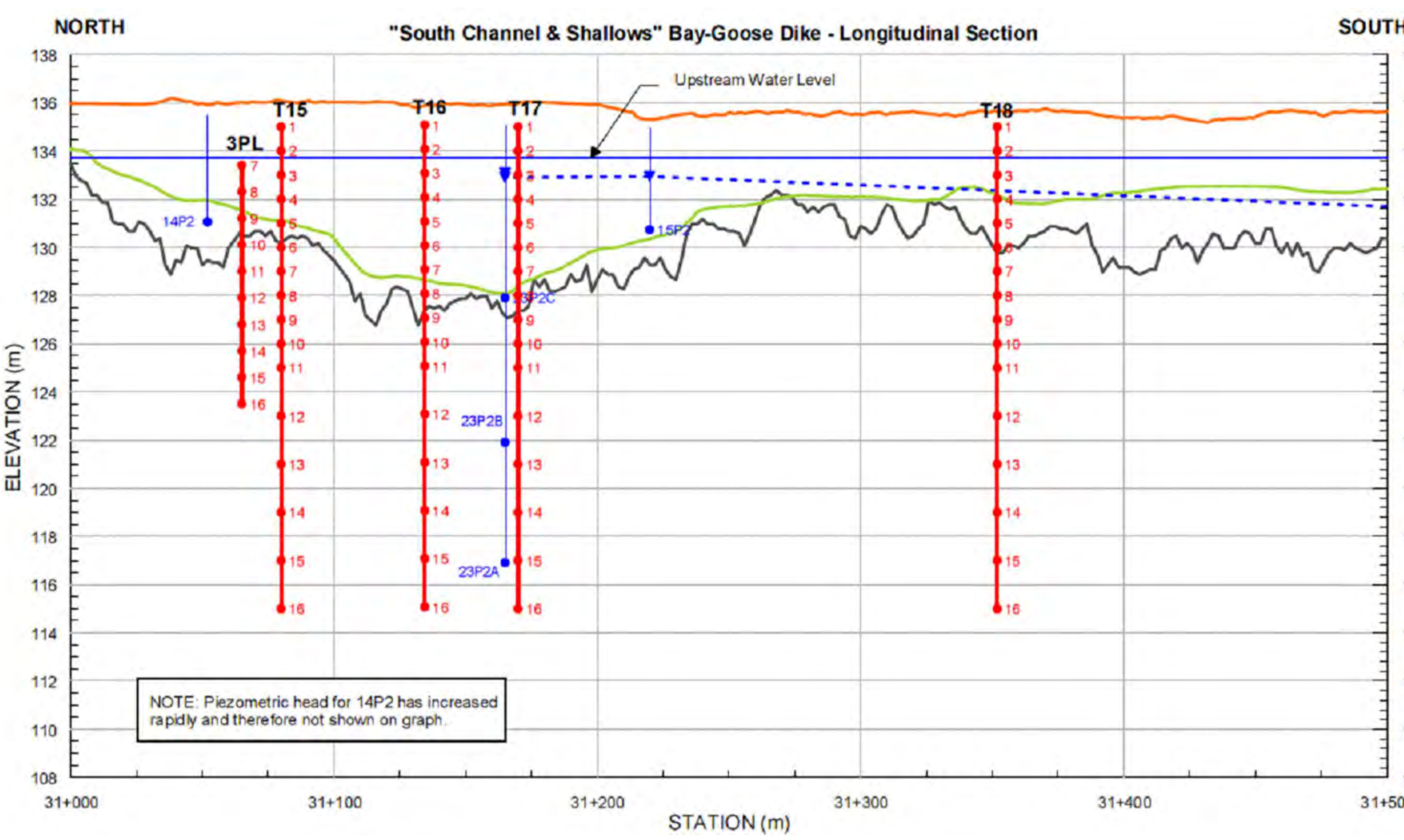
PROJECT No.		12-1221-0073
DESIGN	AEM	09/19/2012
CADD	FLB	10/19/2012
CHECK	YB	11/08/2012
REVIEW	FE	11/15/2012

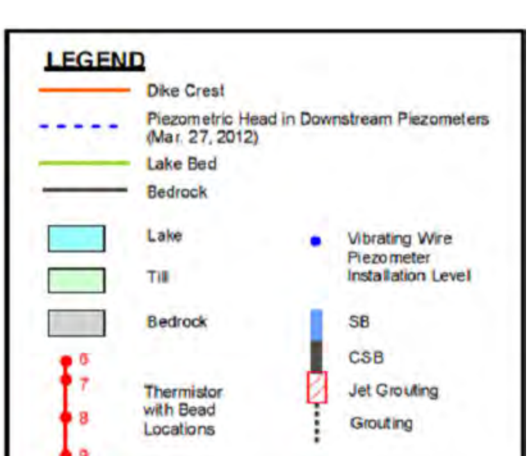
PHASE No. 3000
SCALE | REV. -

FIGURE
C3-60

Thermistor - 3PL Upstream Lake (Sep.11 - Sep.12)

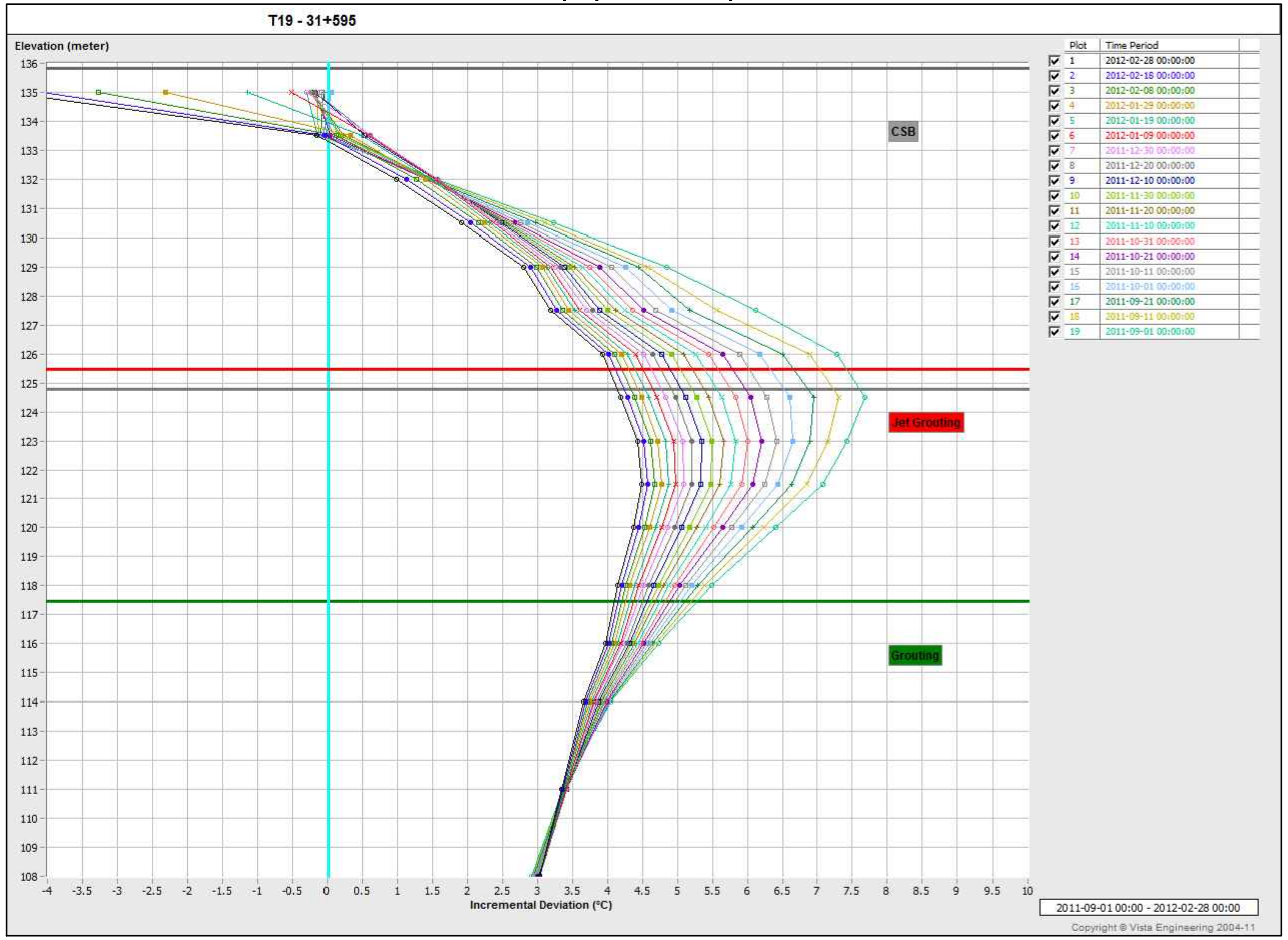




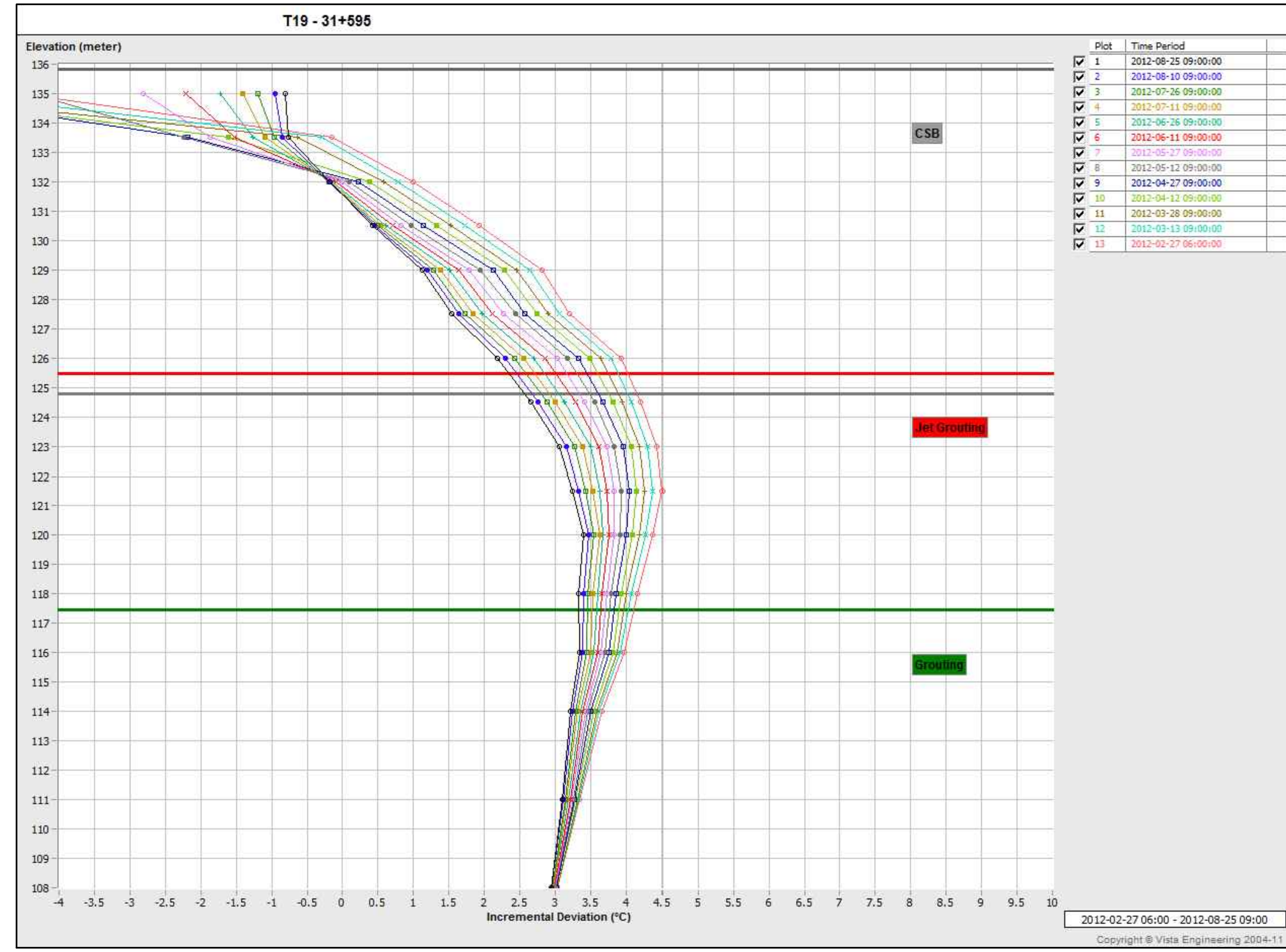


PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT			
TITLE	BAY-GOOSE DIKE - 3PL UPSTREAM LAKE 31+065 THERMISTOR DATA (SEP.2011 - MAR.2012)			
Golder Associates Montréal, Québec	PROJECT No.		12-1221-0073	PHASE No. 3000
	DESIGN	AEM	09/19/2012	SCALE - REV. -
	CADD	FLB	10/19/2012	FIGURE C3-61
	CHECK	YB	11/08/2012	
	REVIEW	FE	11/15/2012	

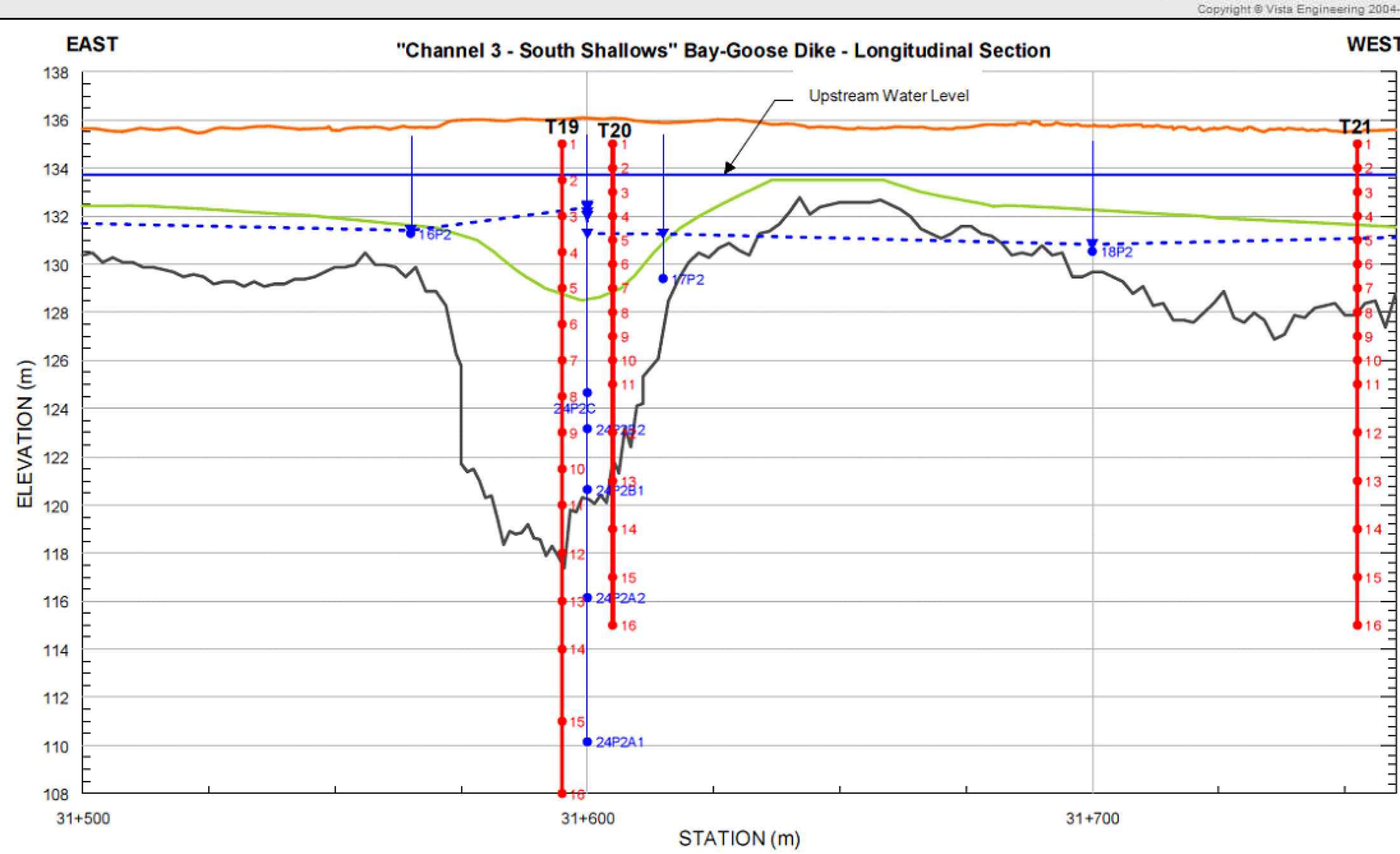
T19 - Sta.31+595 (Sep.11 - Mar.12)



T19 - Sta.31+595 (Mar.12 - Sep.12)



"Channel 3 - South Shallows" Bay-Goose Dike - Longitudinal Section



LEGEND

- Dike Crest
- Piezometric Head in Downstream Piezometers (Mar. 27, 2012)
- Lake Bed
- Bedrock
- Lake
- Till
- Bedrock
- Thermistor with Bead Locations
- Vibrating Wire Piezometer Installation Level
- SB
- CSB
- Jet Grouting
- Grouting

PROJECT
AEM
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE
BAY-GOOSE DIKE - T19 - 31+595
THERMISTOR DATA (SEP.2011 - SEP.2012)

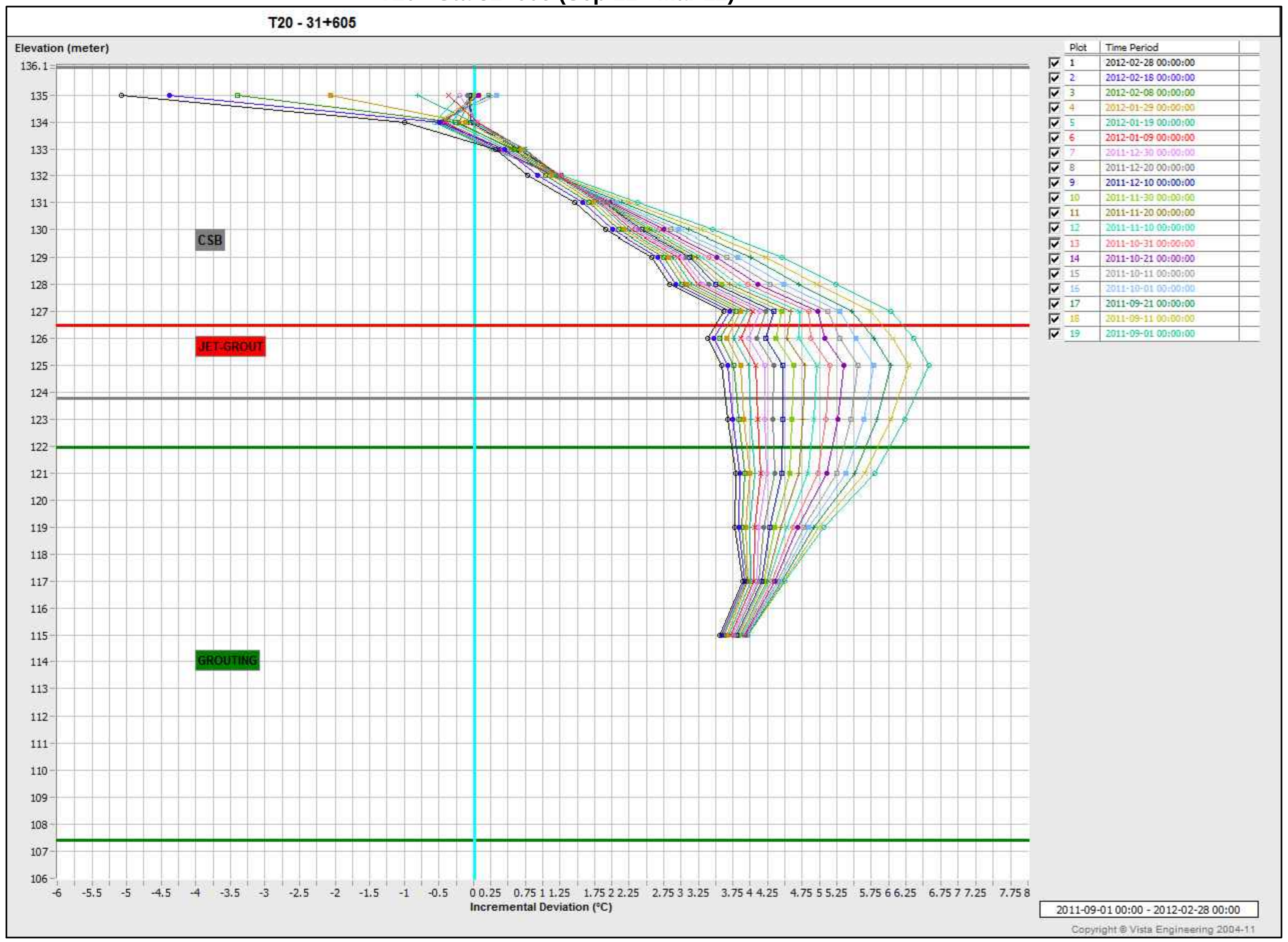
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073
DESIGN	AEM	09/19/2012
CADD	FLB	10/19/2012
CHECK	YB	11/08/2012
REVIEW	FE	11/15/2012

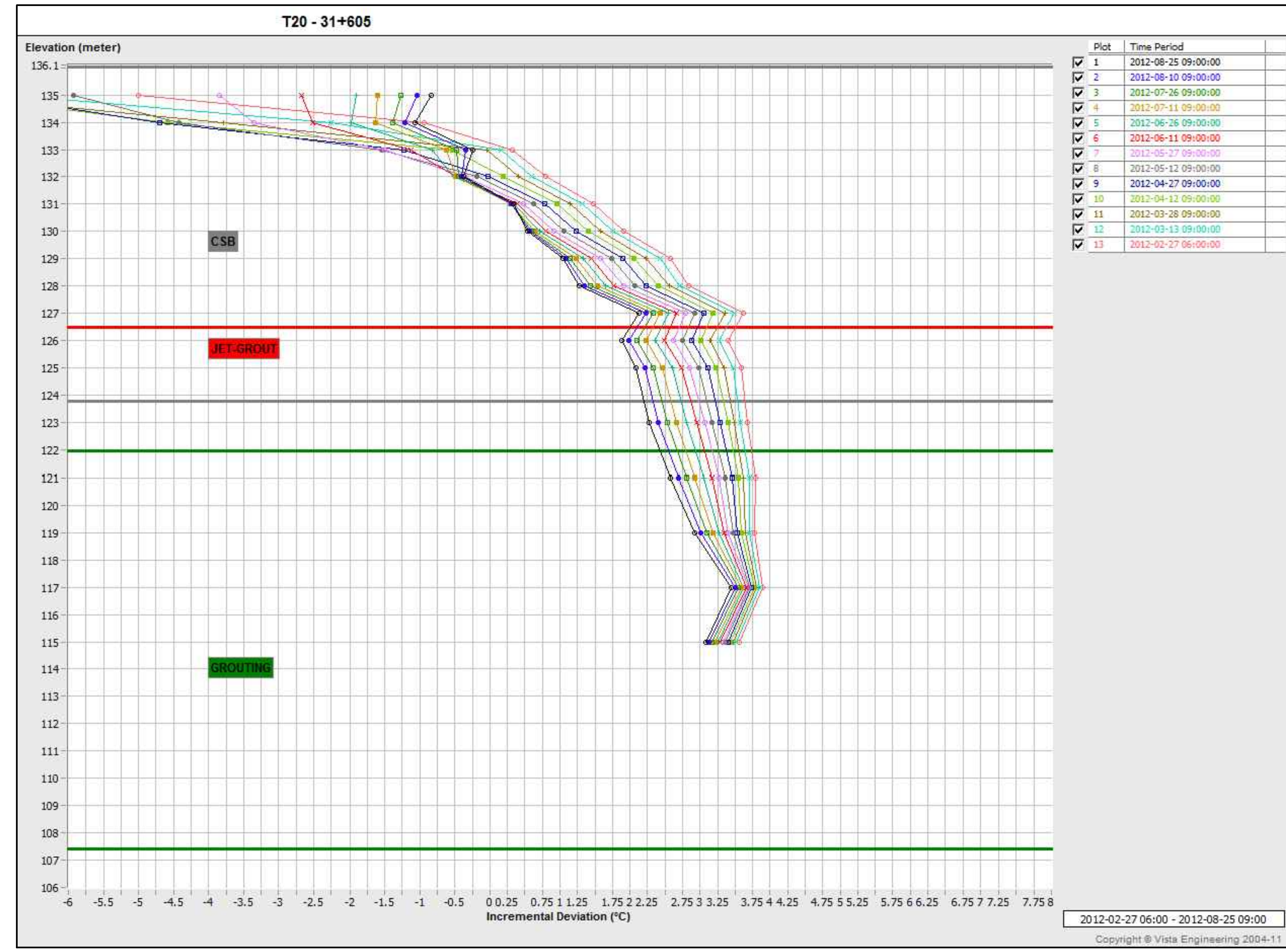
PHASE No. 3000
SCALE
REV. -

FIGURE C3-62

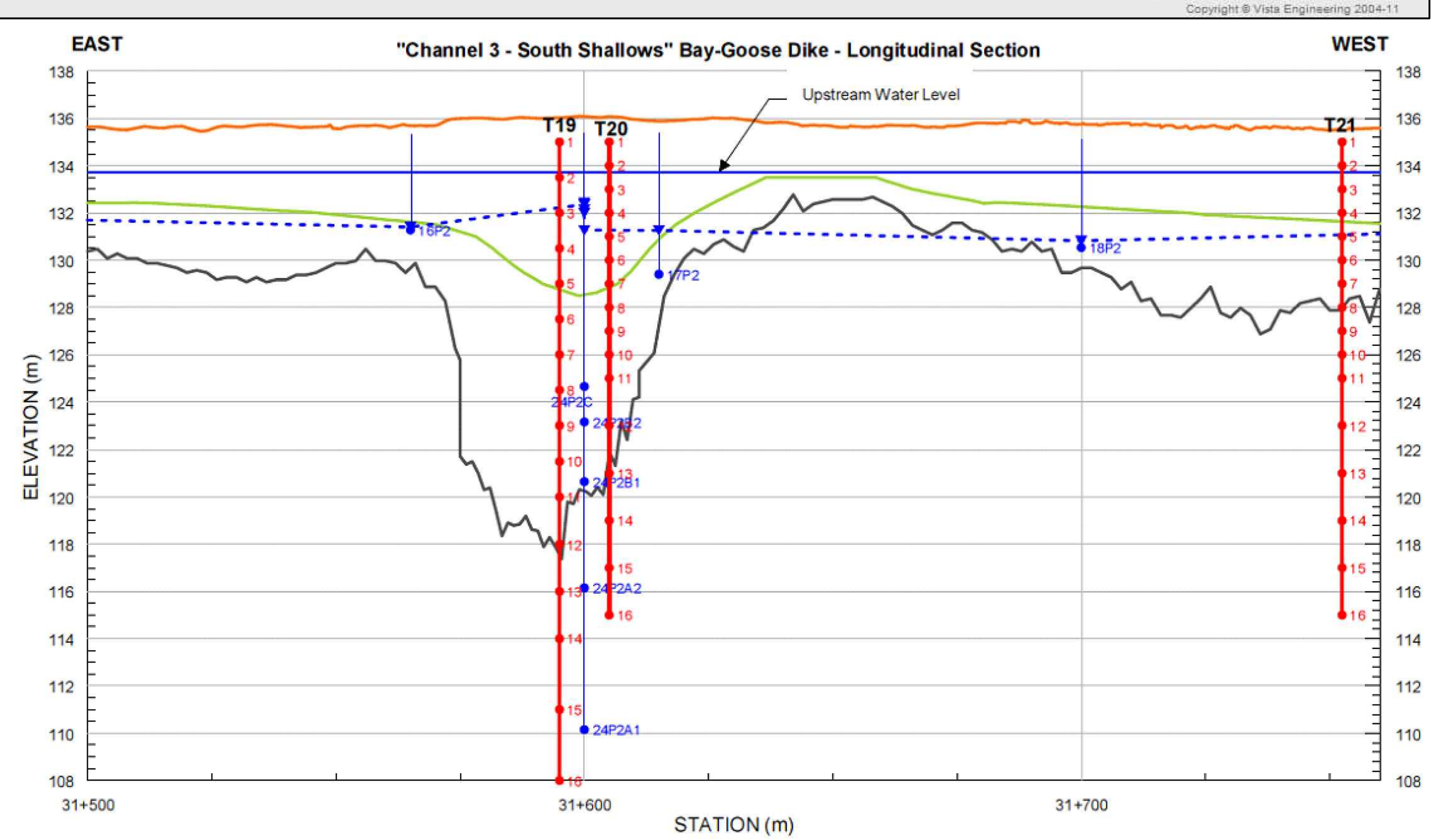
T20 - Sta.31+605 (Sep.11 - Mar.12)

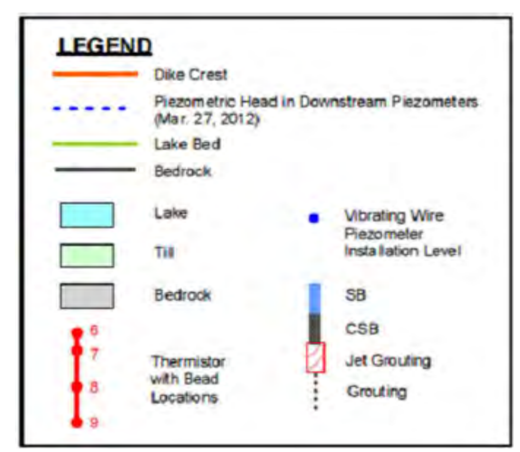


T20 - Sta.31+605 (Mar.12 - Sep.12)



"Channel 3 - South Shallows" Bay-Goose Dike - Longitudinal Section





PROJECT

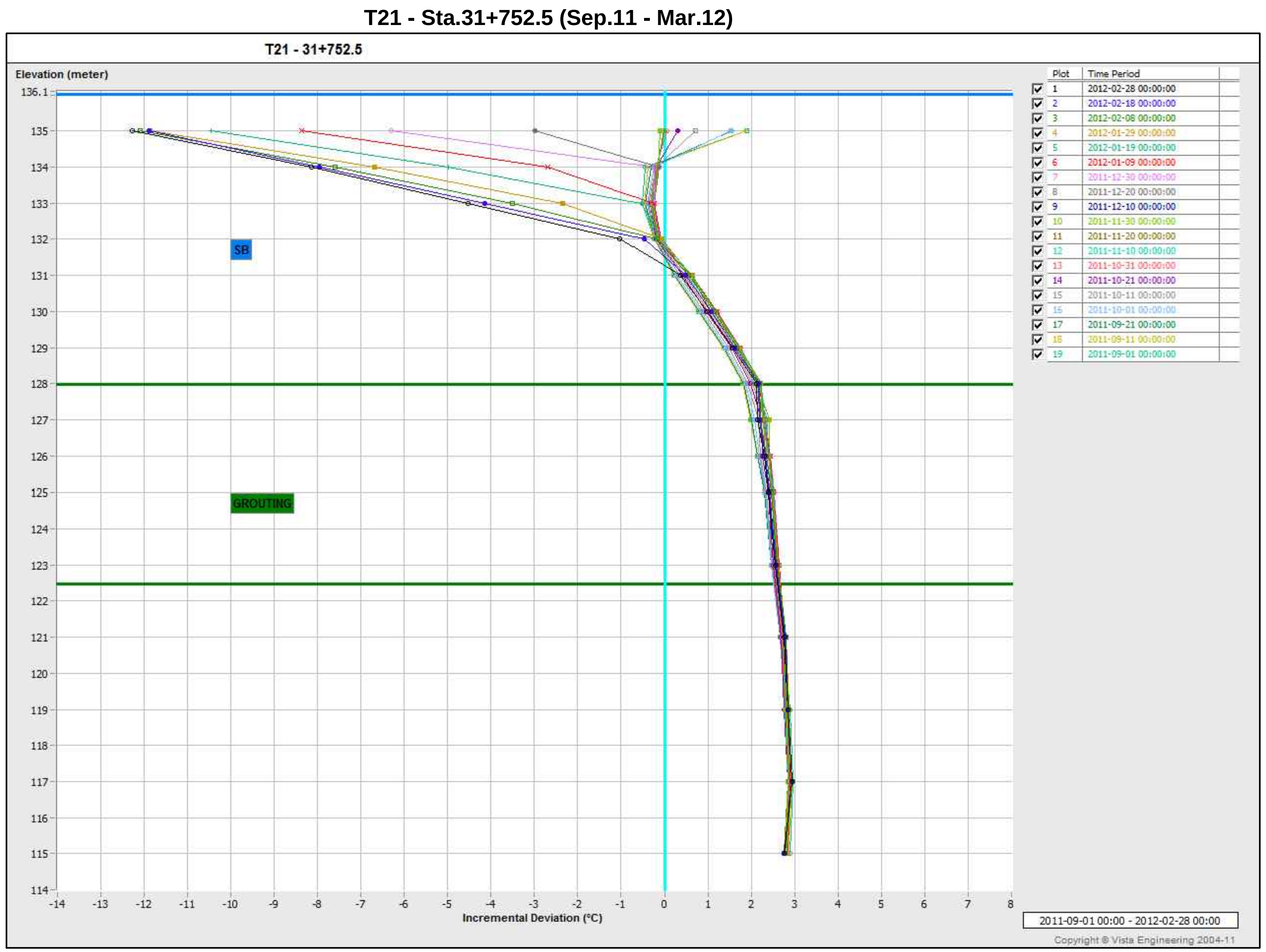
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

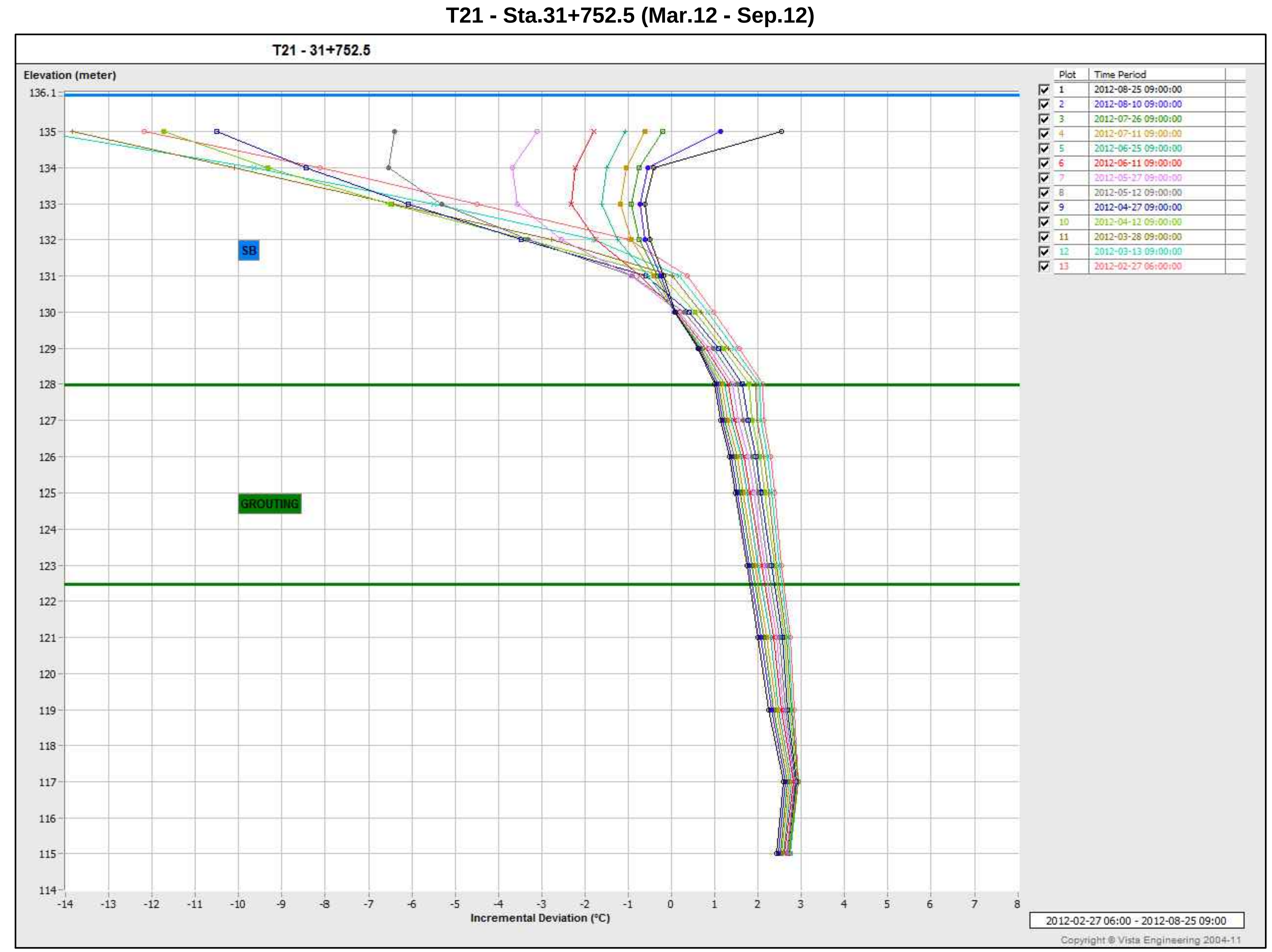
TITLE

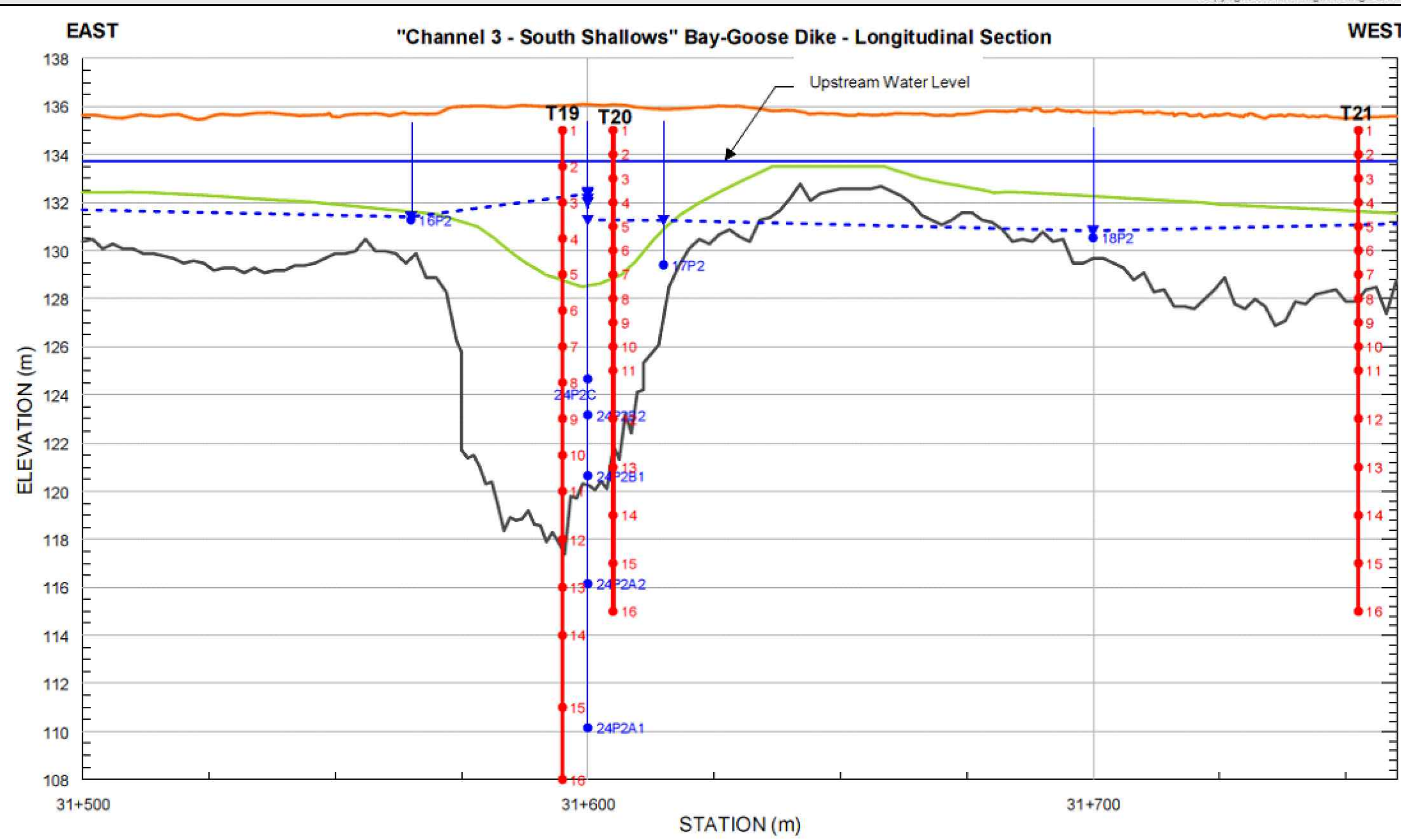
BAY-GOOSE DIKE - T20 - 31+605 THERMISTOR DATA (SEP.2011 - SEP.2012)

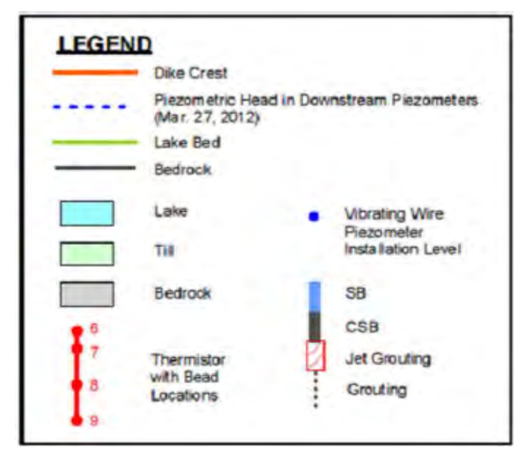
Golder Associates
Montréal, Québec

PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	FIGURE C3-63	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		









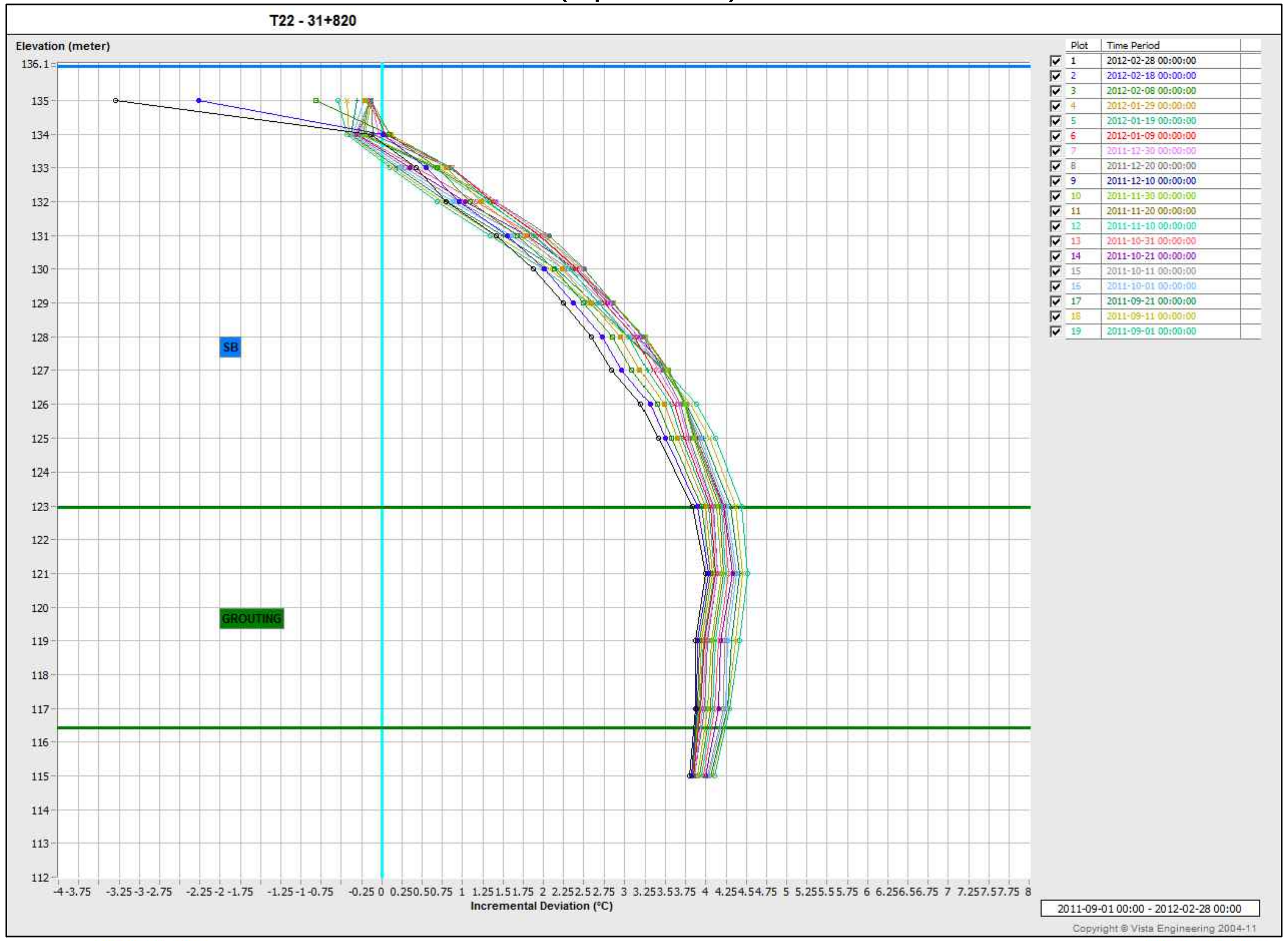
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	BAY-GOOSE DIKE - T21 - 31+752.5 THERMISTOR DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

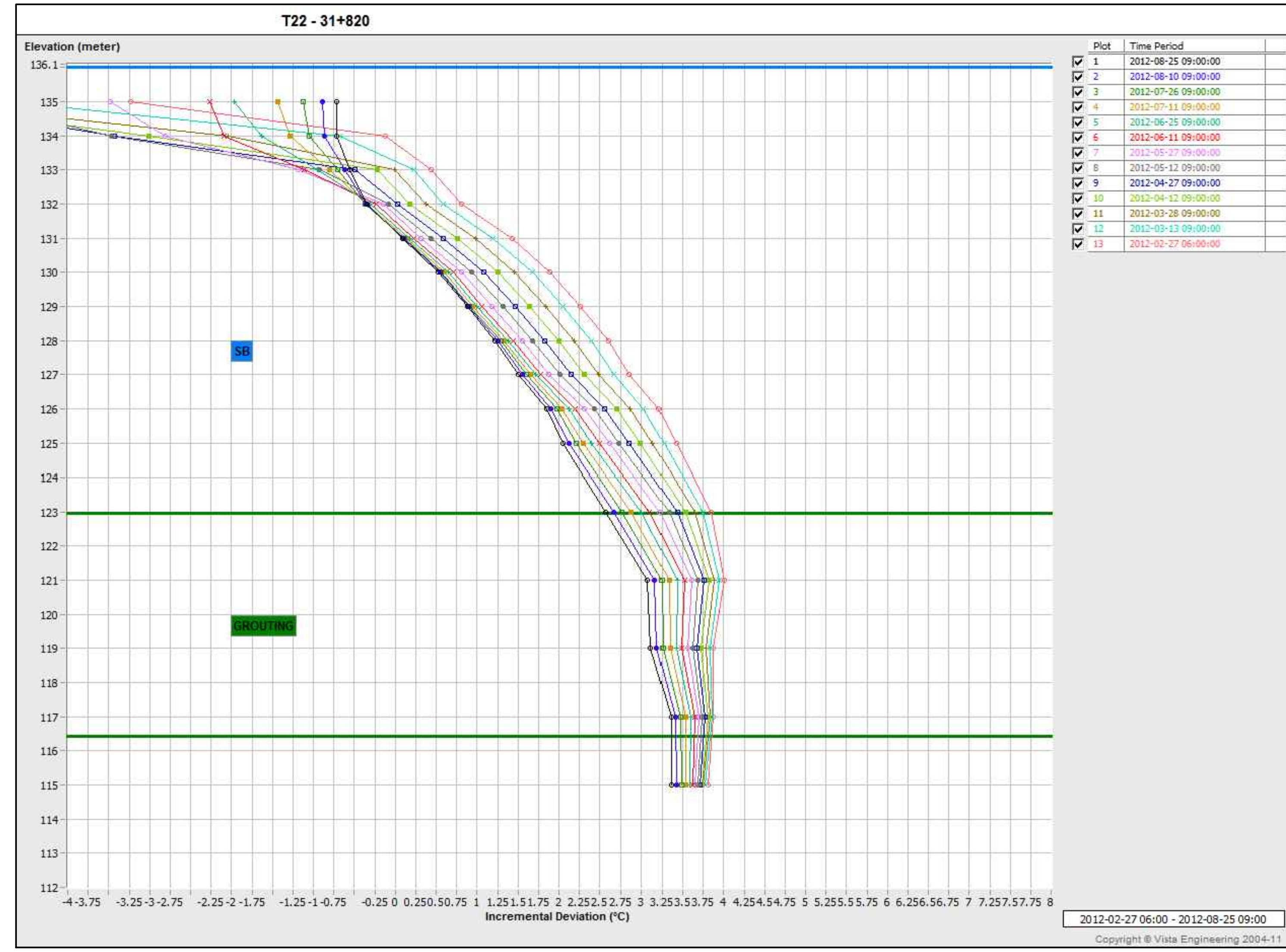
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

FIGURE C3-64

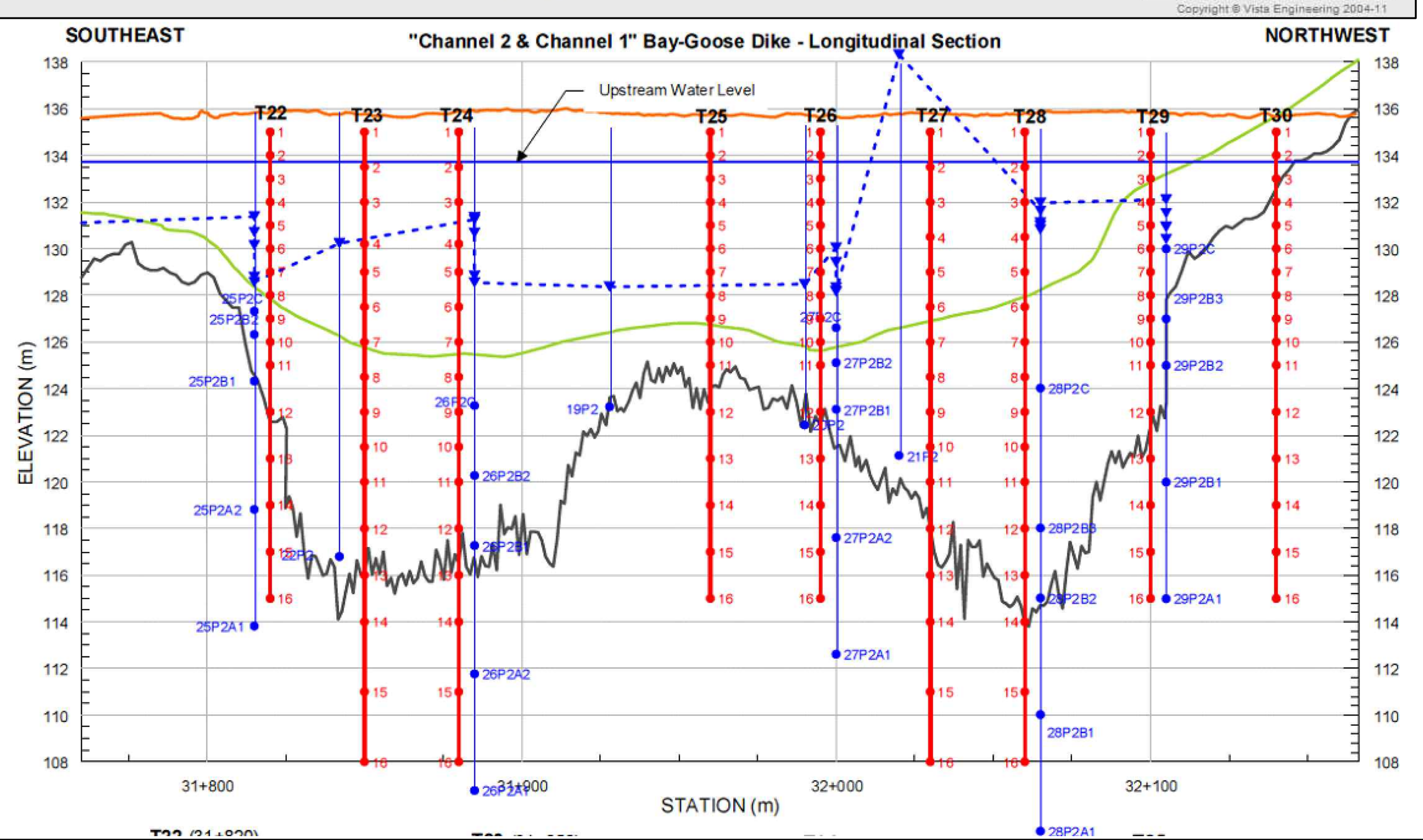
T22 - Sta.31+820 (Sep.11 - Mar.12)



T22 - Sta.31+820 (Mar.12 - Sep.12)



"Channel 2 & Channel 1" Bay-Goose Dike - Longitudinal Section



LEGEND

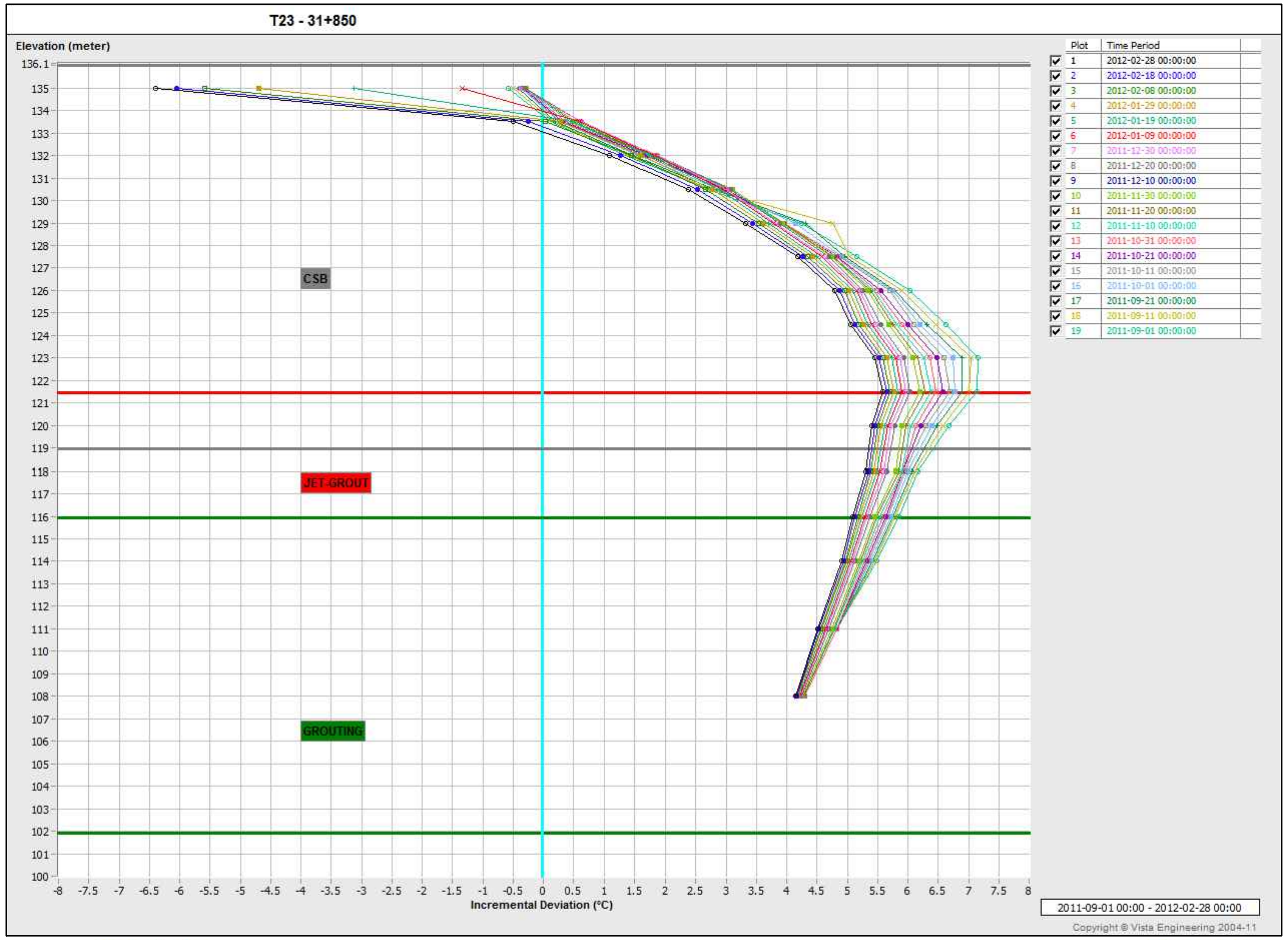
- Dike Crest
- Piezometric Head in Downstream Piezometers (Mar. 27, 2012)
- Lake Bed
- Bedrock
- Lake
- Till
- Bedrock
- Thermistor with Bead Locations
- Vibrating Wire Piezometer Installation Level
- SB
- CSB
- Jet Grouting
- Grouting

PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	BAY-GOOSE DIKE - T22 - 31+820 THERMISTOR DATA (SEP.2011 - SEP.2012)

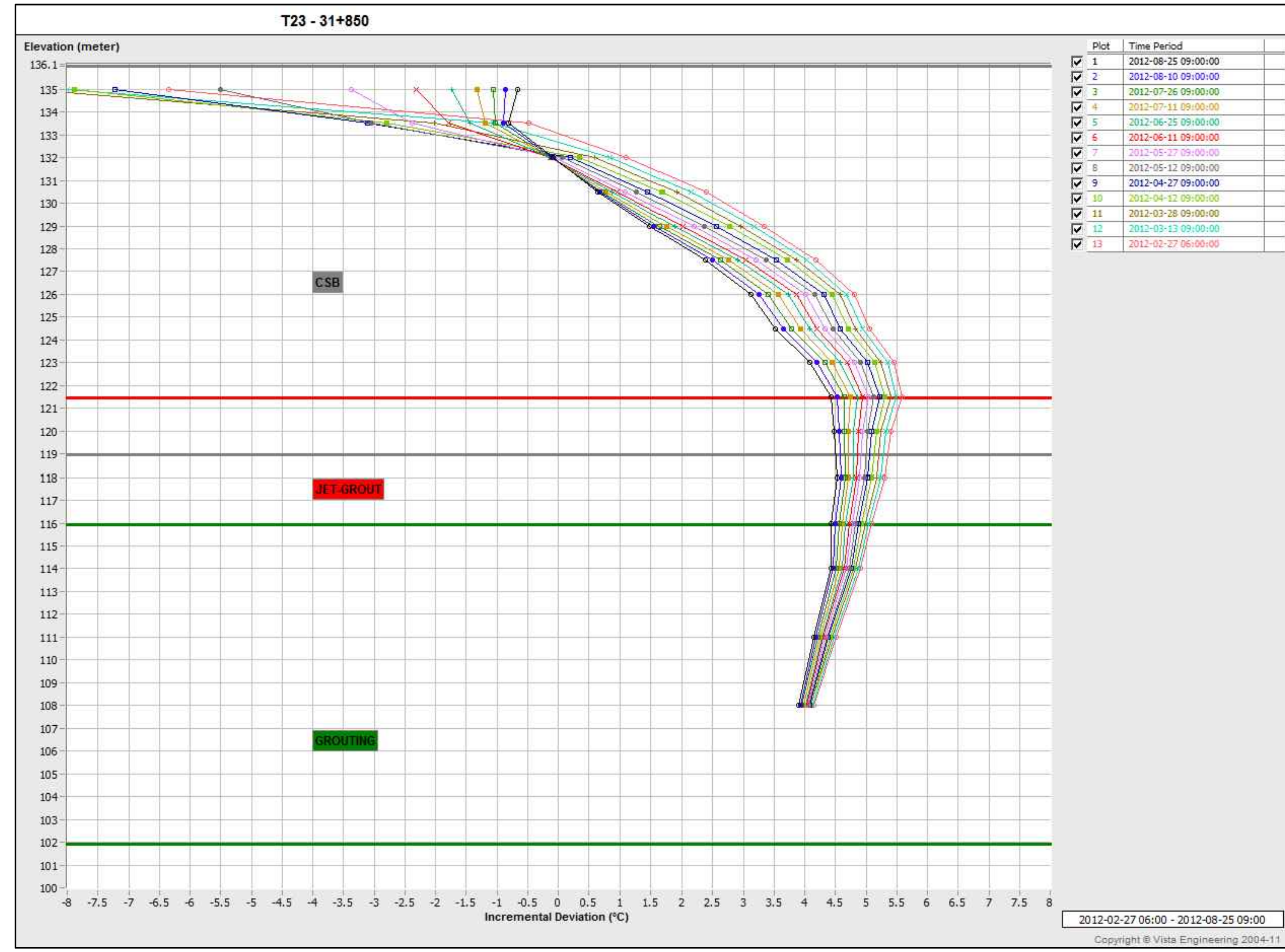
Golder Associates
Montréal, Québec

PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C3-65	
REVIEW	FE	11/15/2012		

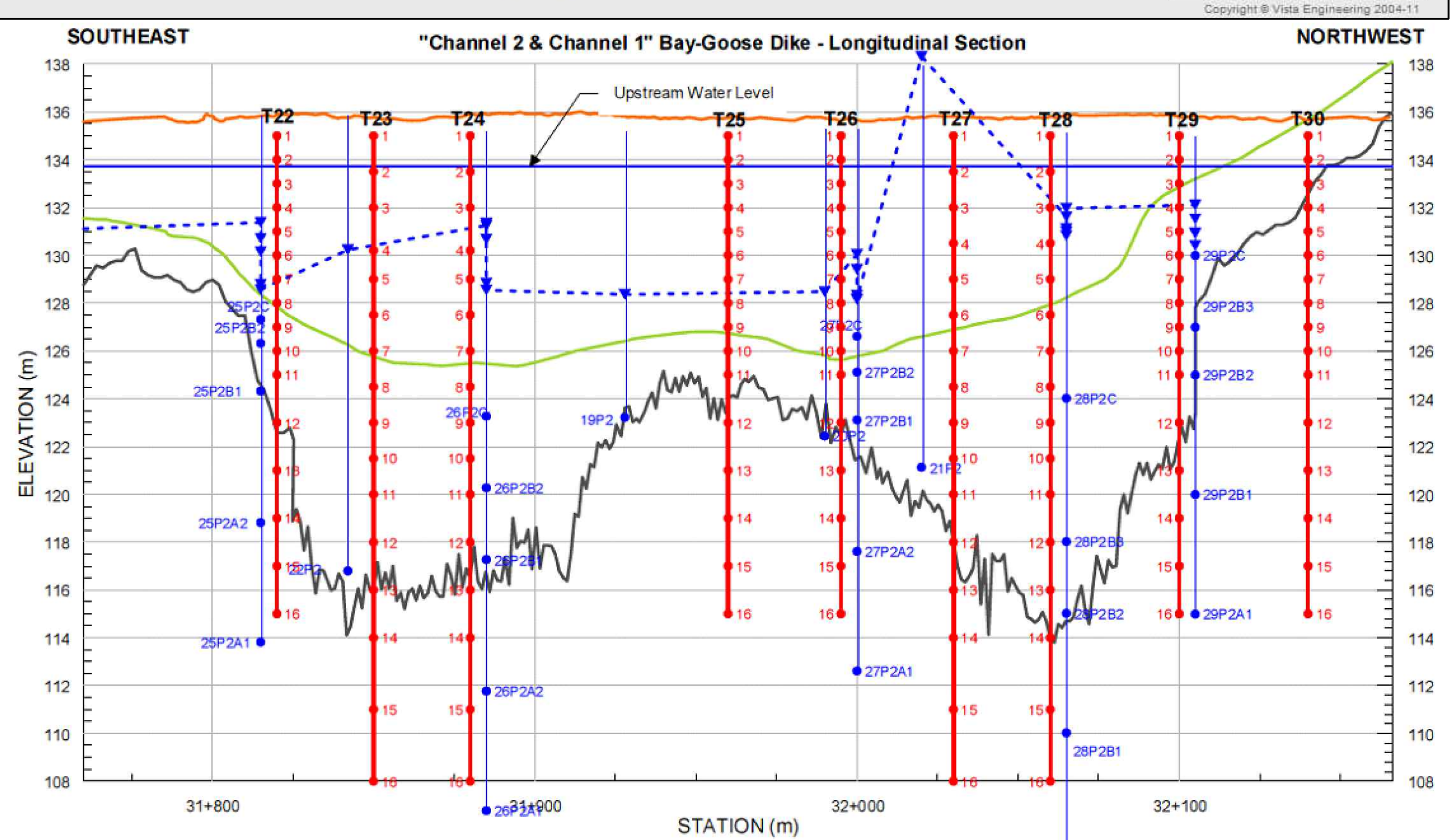
T23 - Sta.31+850 (Sep.11 - Mar.12)

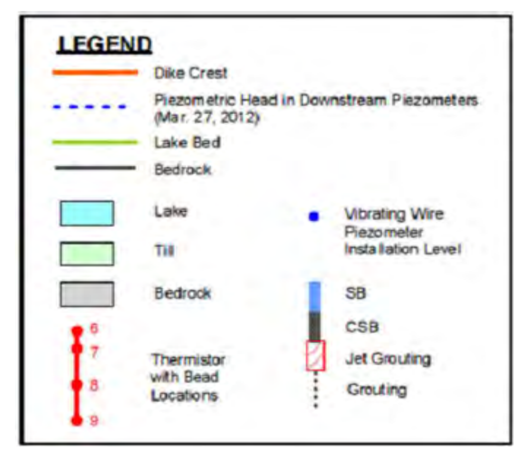


T23 - Sta.31+850 (Mar.12 - Sep.12)



"Channel 2 & Channel 1" Bay-Goose Dike - Longitudinal Section



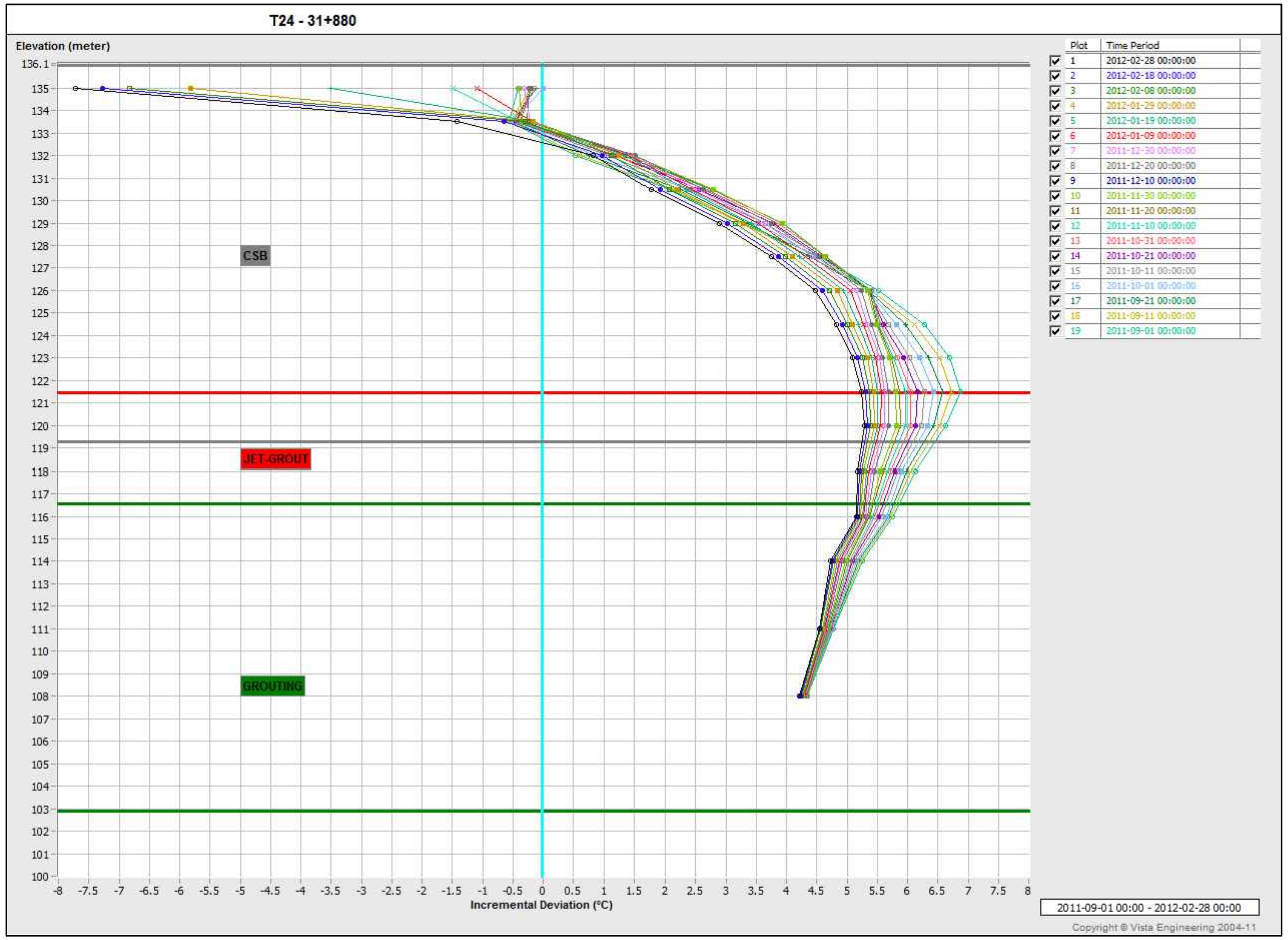


PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	BAY-GOOSE DIKE - T23 - 31+850 THERMISTOR DATA (SEP.2011 - SEP.2012)

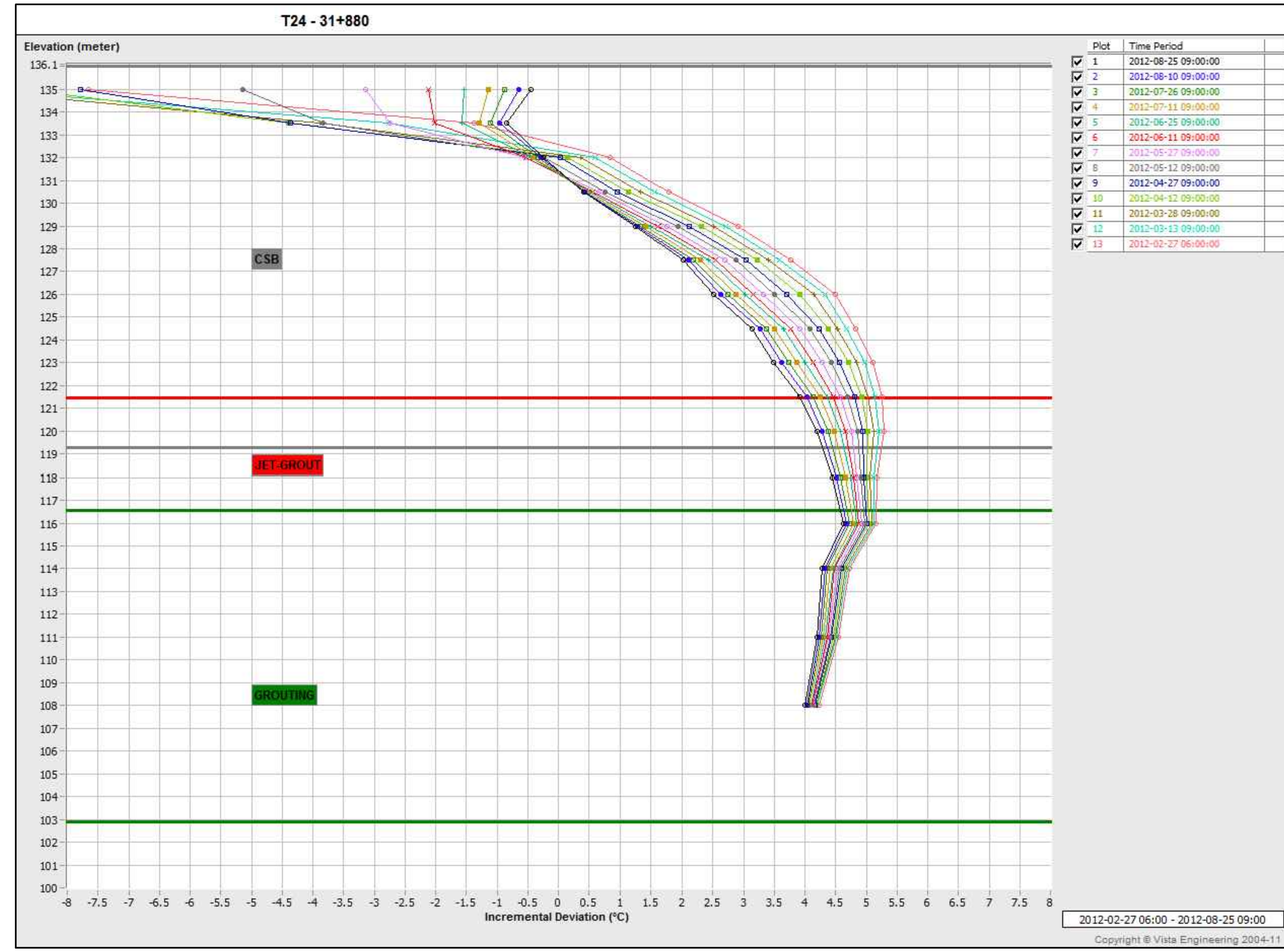
Golder Associates
Montréal, Québec

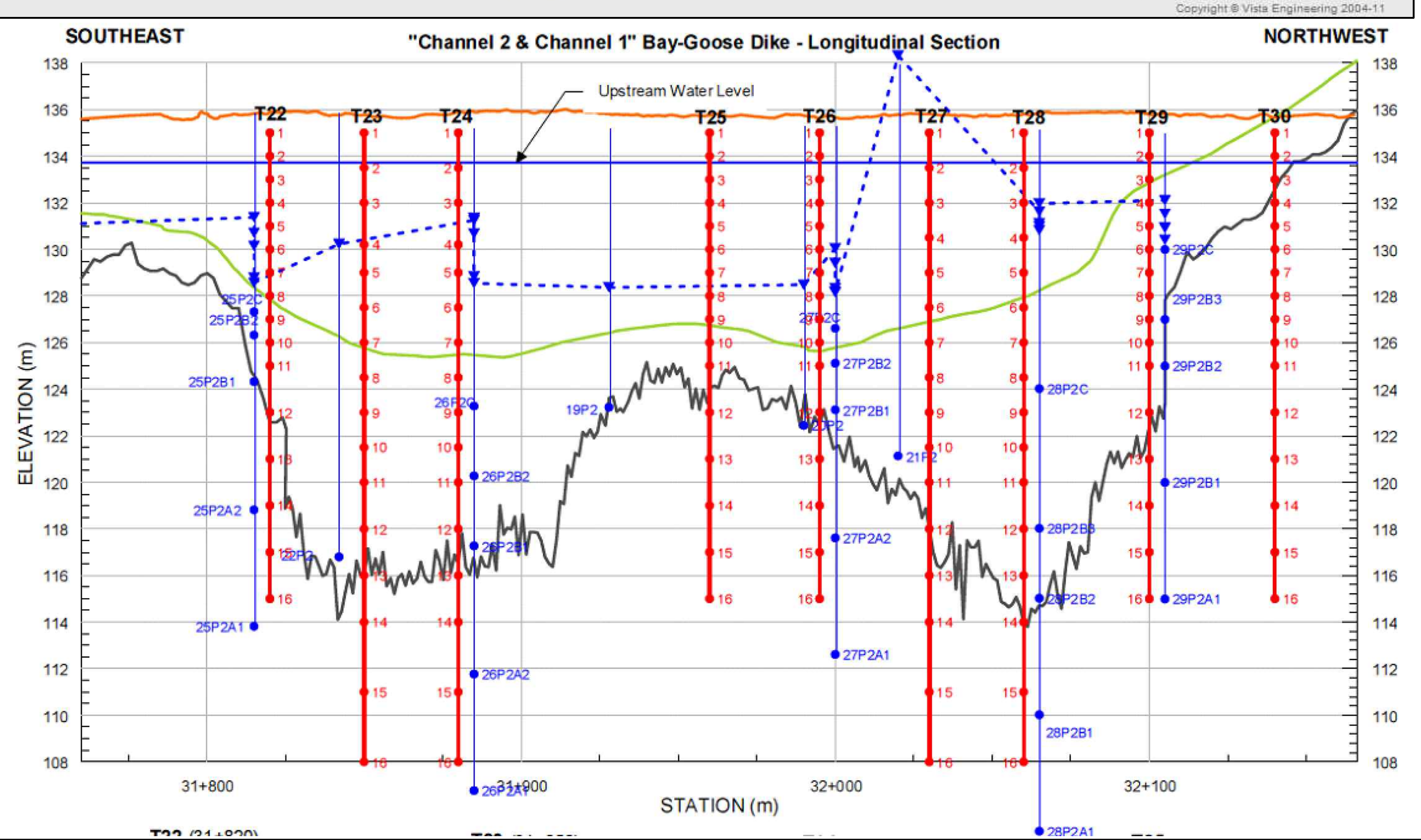
PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C3-66	
REVIEW	FE	11/15/2012		

T24 - Sta.31+880 (Sep.11 - Mar.12)



T24 - Sta.31+880 (Mar.12 - Sep.12)





LEGEND

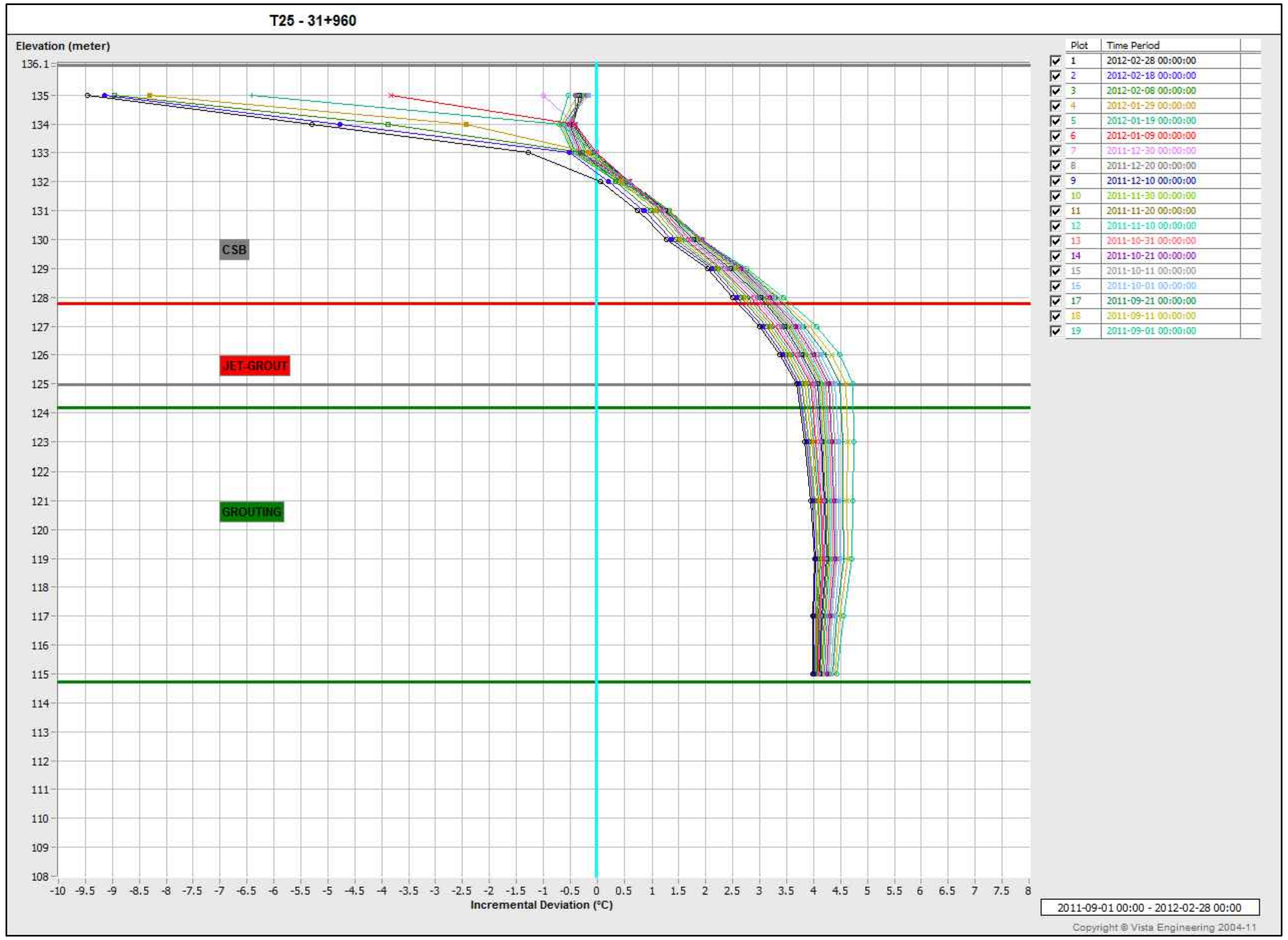
- Dike Crest
- Piezometric Head in Downstream Piezometers (Mar. 27, 2012)
- Lake Bed
- Bedrock
- Lake
- Till
- Bedrock
- Vibrating Wire Piezometer Installation Level
- SB
- CSB
- Jet Grouting
- Grouting
- Thermistor with Bead Locations

PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**BAY-GOOSE DIKE - T24 - 31+880 THERMISTOR DATA (SEP.2011 - SEP.2012)**

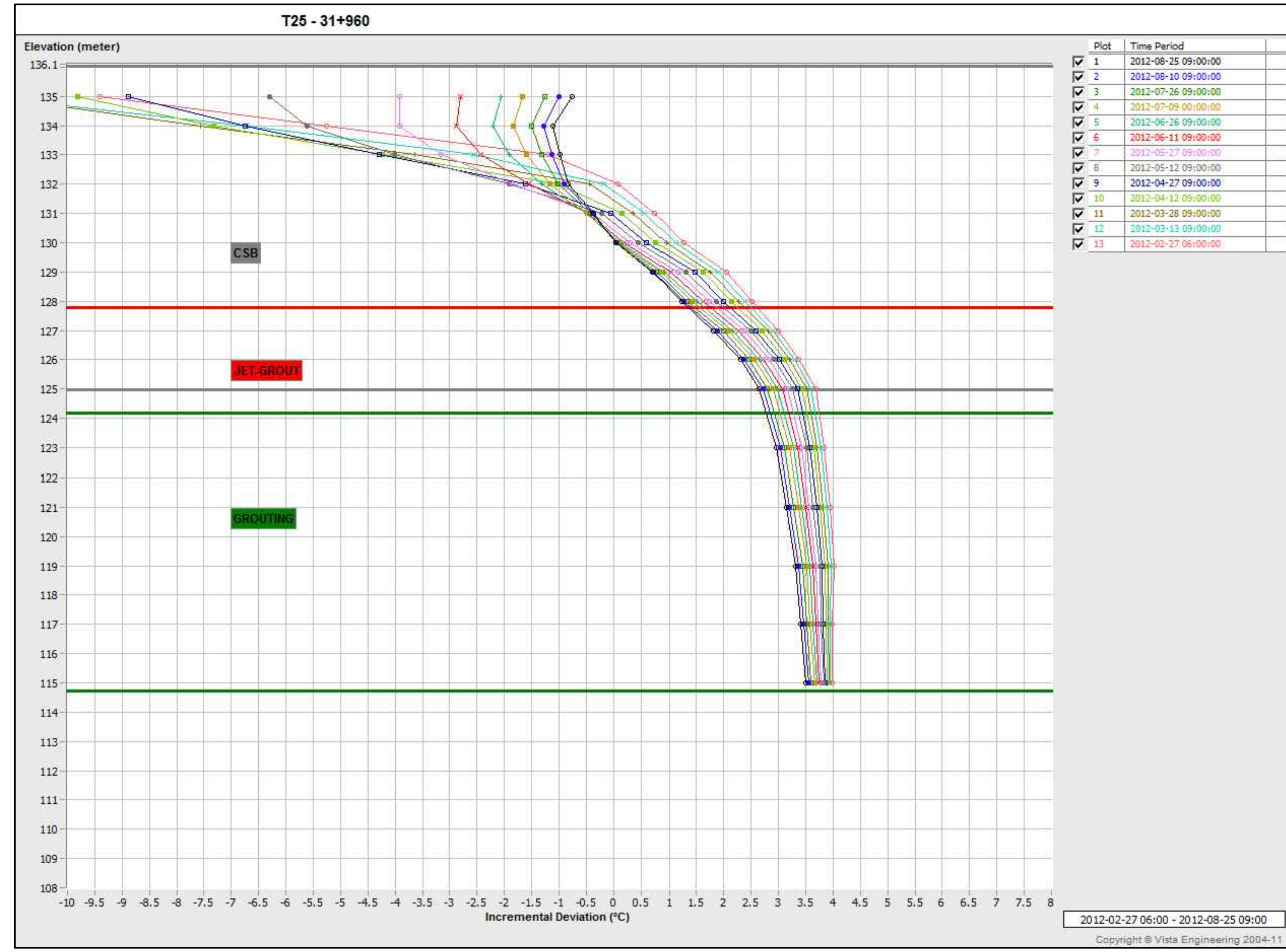
Golder Associates, Montréal, Québec

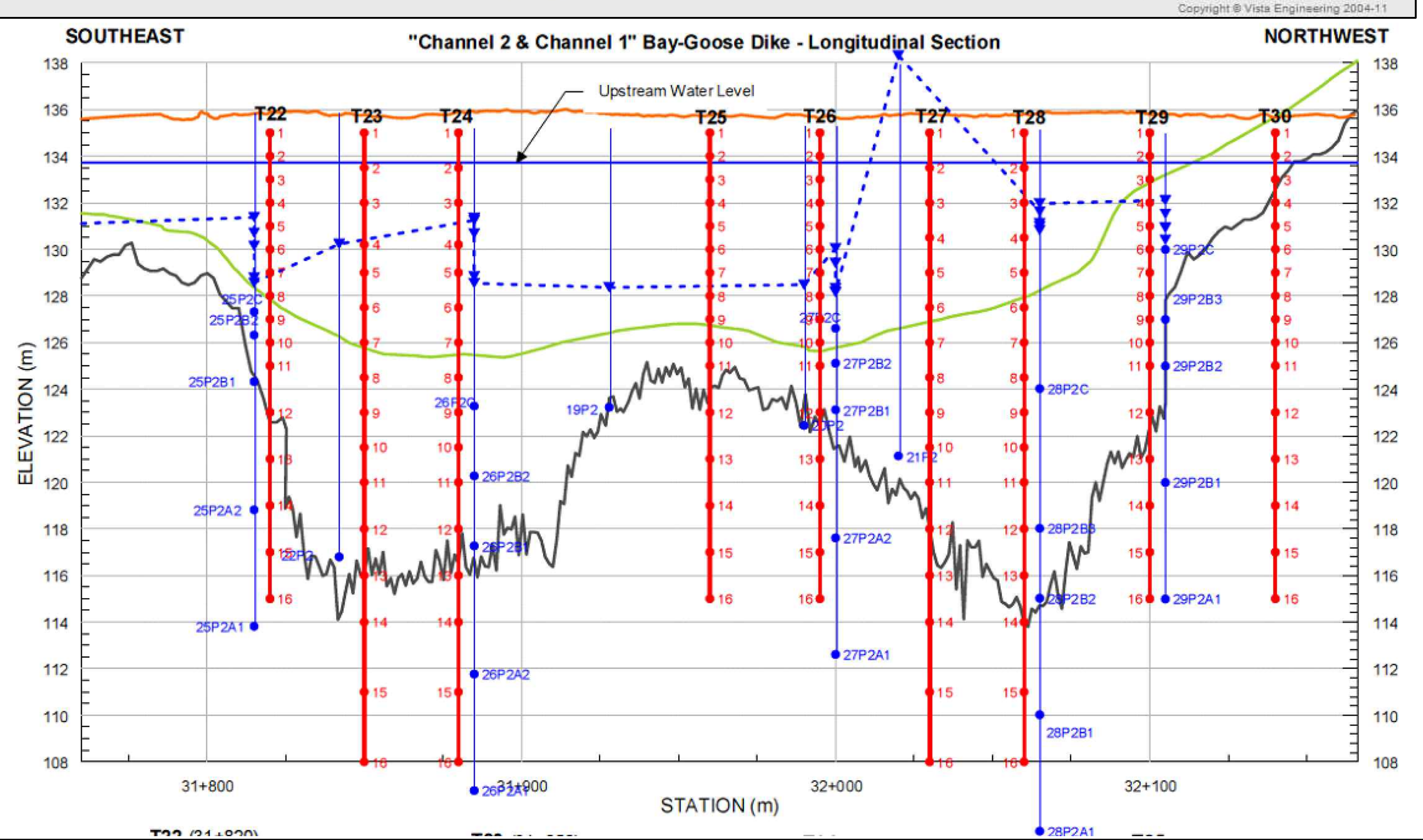
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C3-67	
REVIEW	FE	11/15/2012		

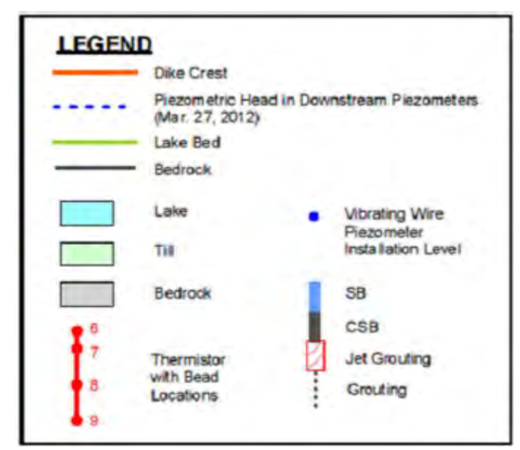
T25 - Sta.31+960 (Sep.11 - Mar.12)



T25 - Sta.31+960 (Mar.12 - Sep.12)





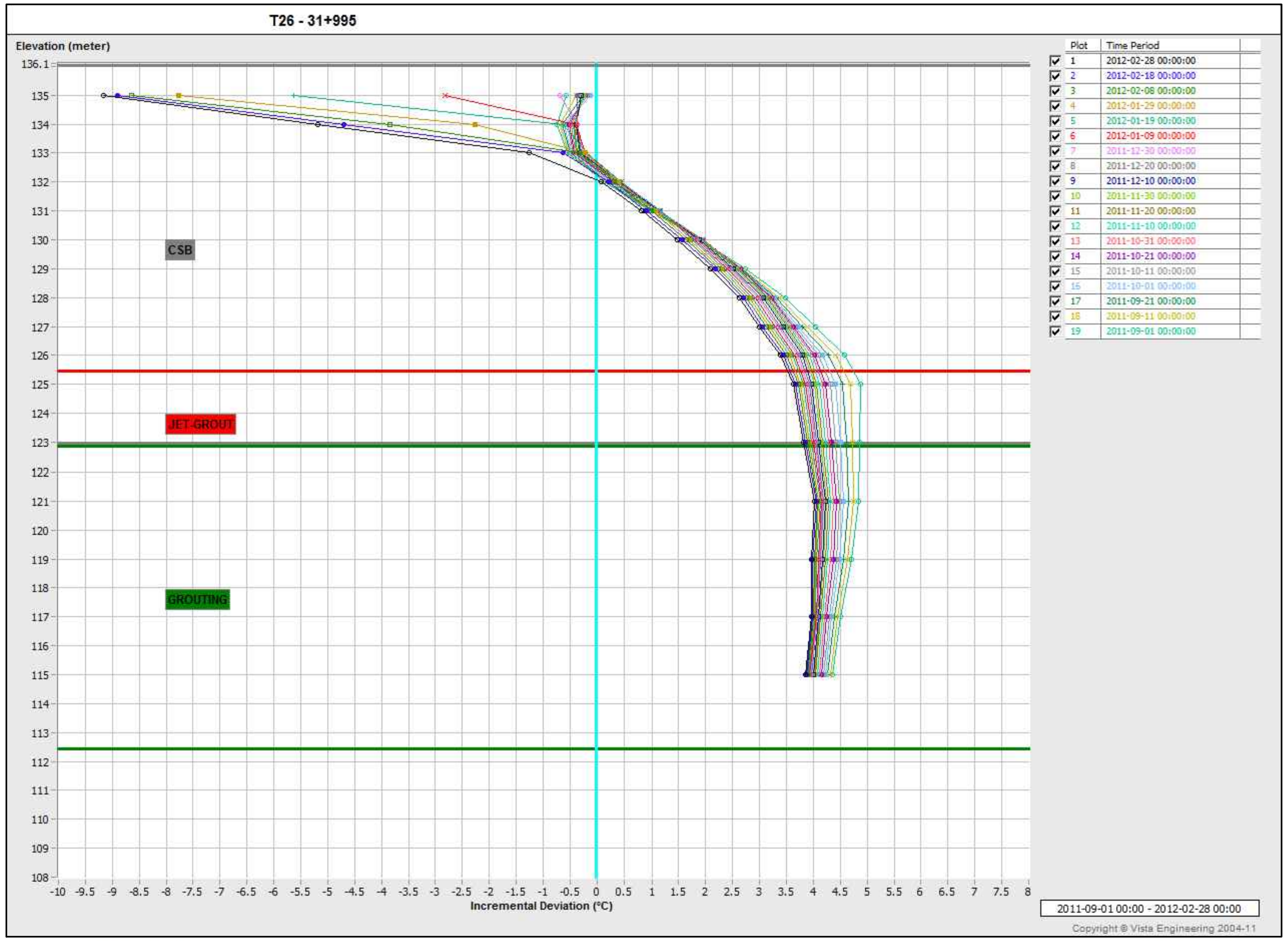


PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	BAY-GOOSE DIKE - T25 - 31+960 THERMISTOR DATA (SEP.2011 - SEP.2012)

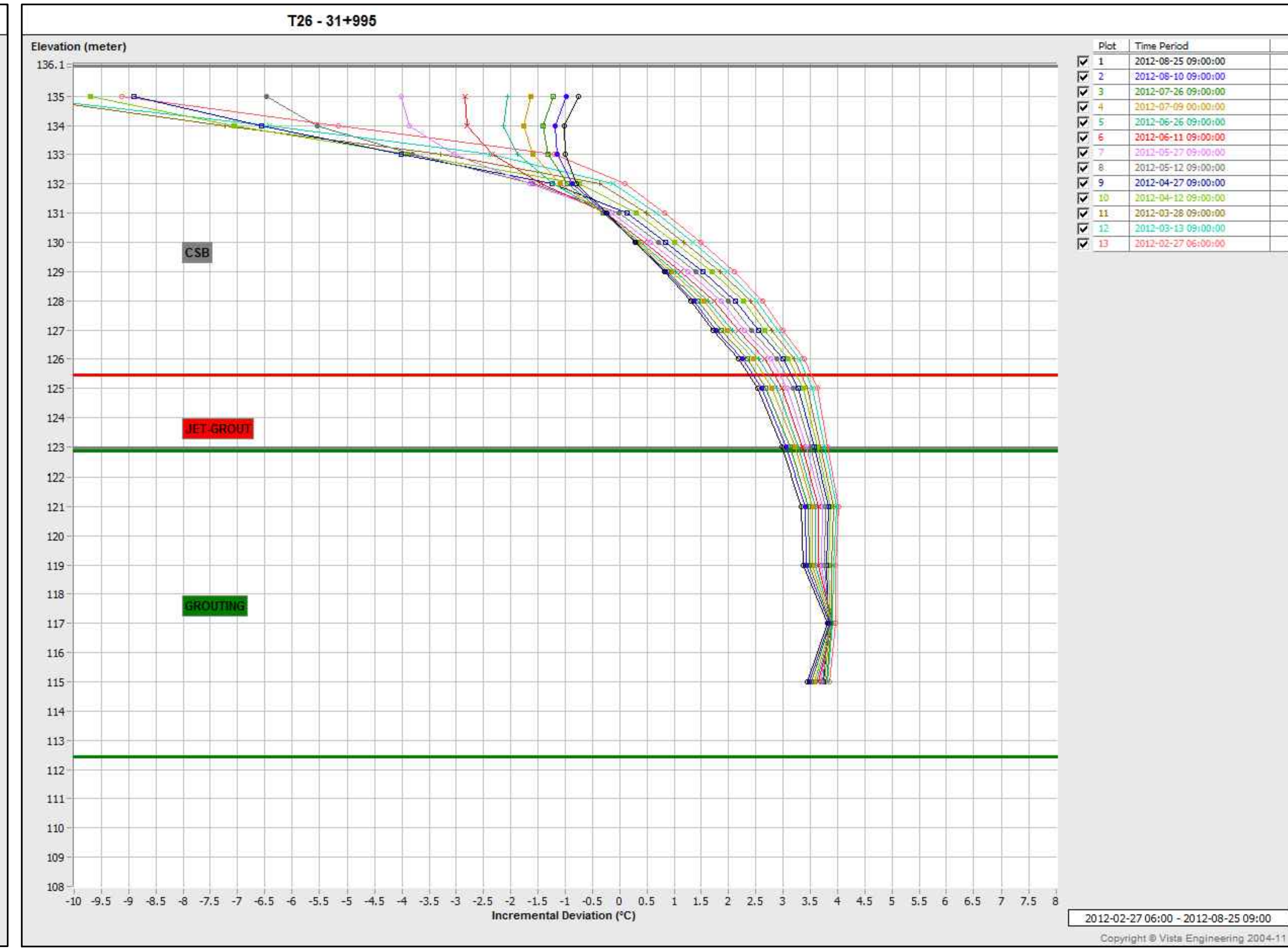
Golder Associates
Montréal, Québec

PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C3-68	
REVIEW	FE	11/15/2012		

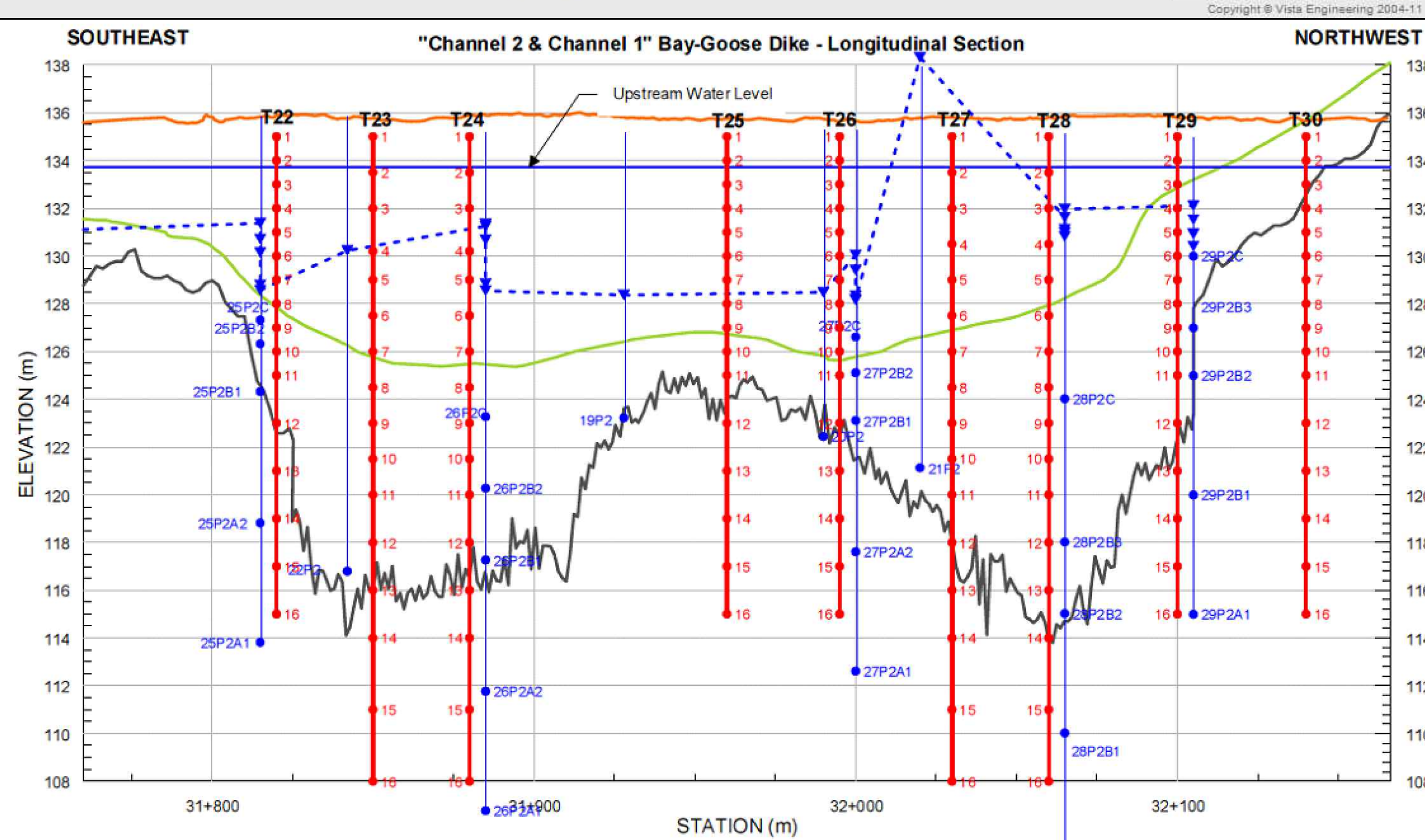
T26 - Sta.31+995 (Sep.11 - Mar.12)

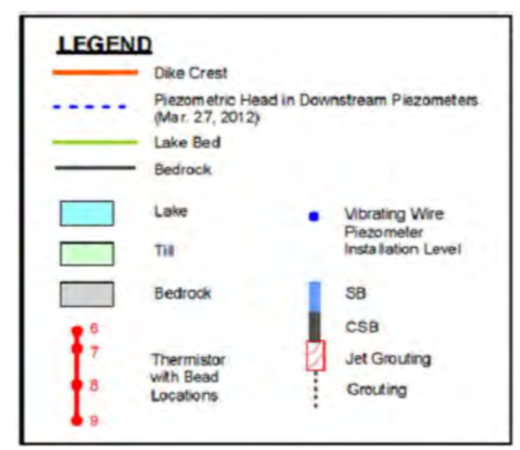


T26 - Sta.31+995 (Mar.12 - Sep.12)



"Channel 2 & Channel 1" Bay-Goose Dike - Longitudinal Section



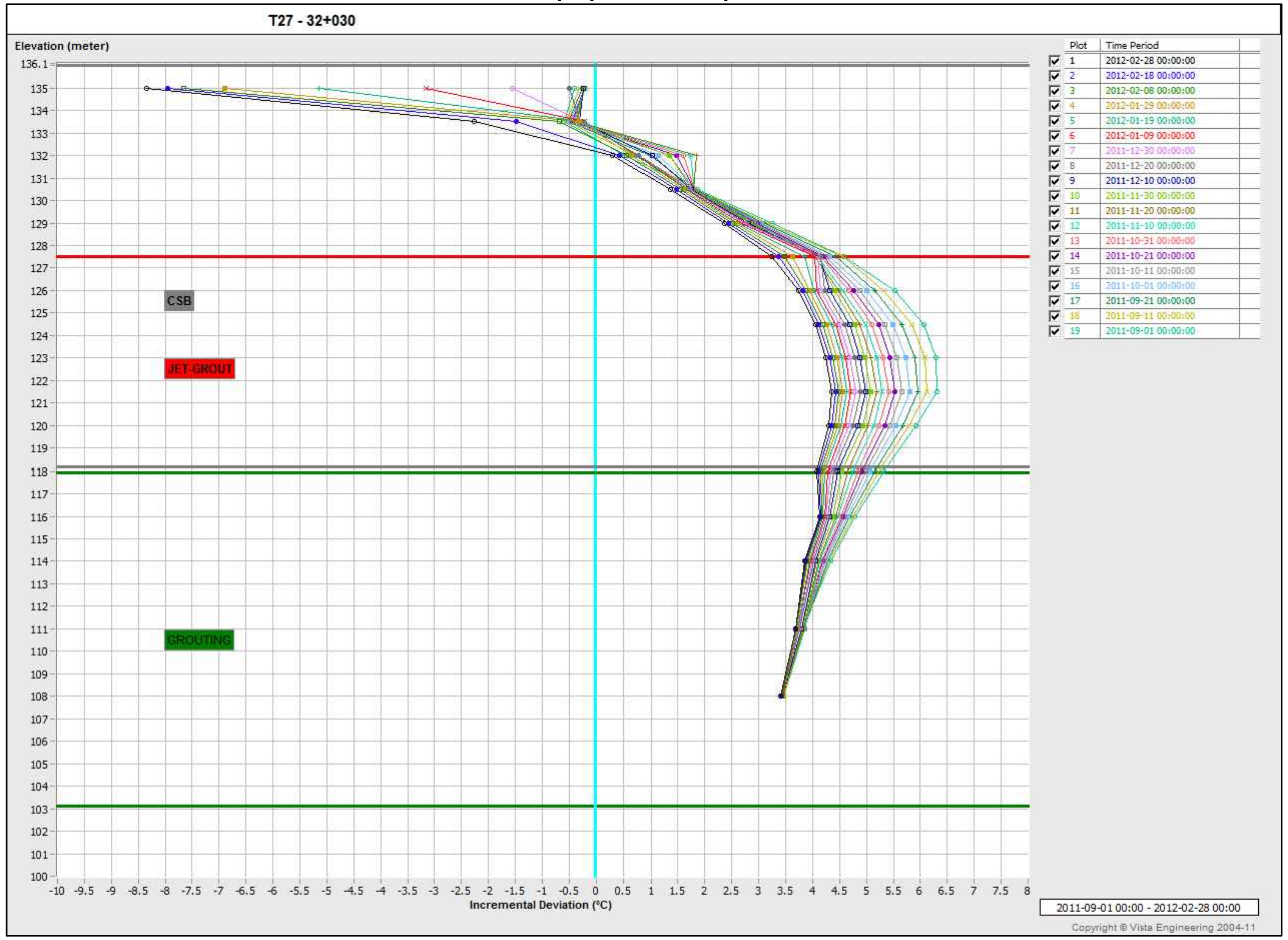


PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	BAY-GOOSE DIKE - T26 - 31+995 THERMISTOR DATA (SEP.2011 - SEP.2012)

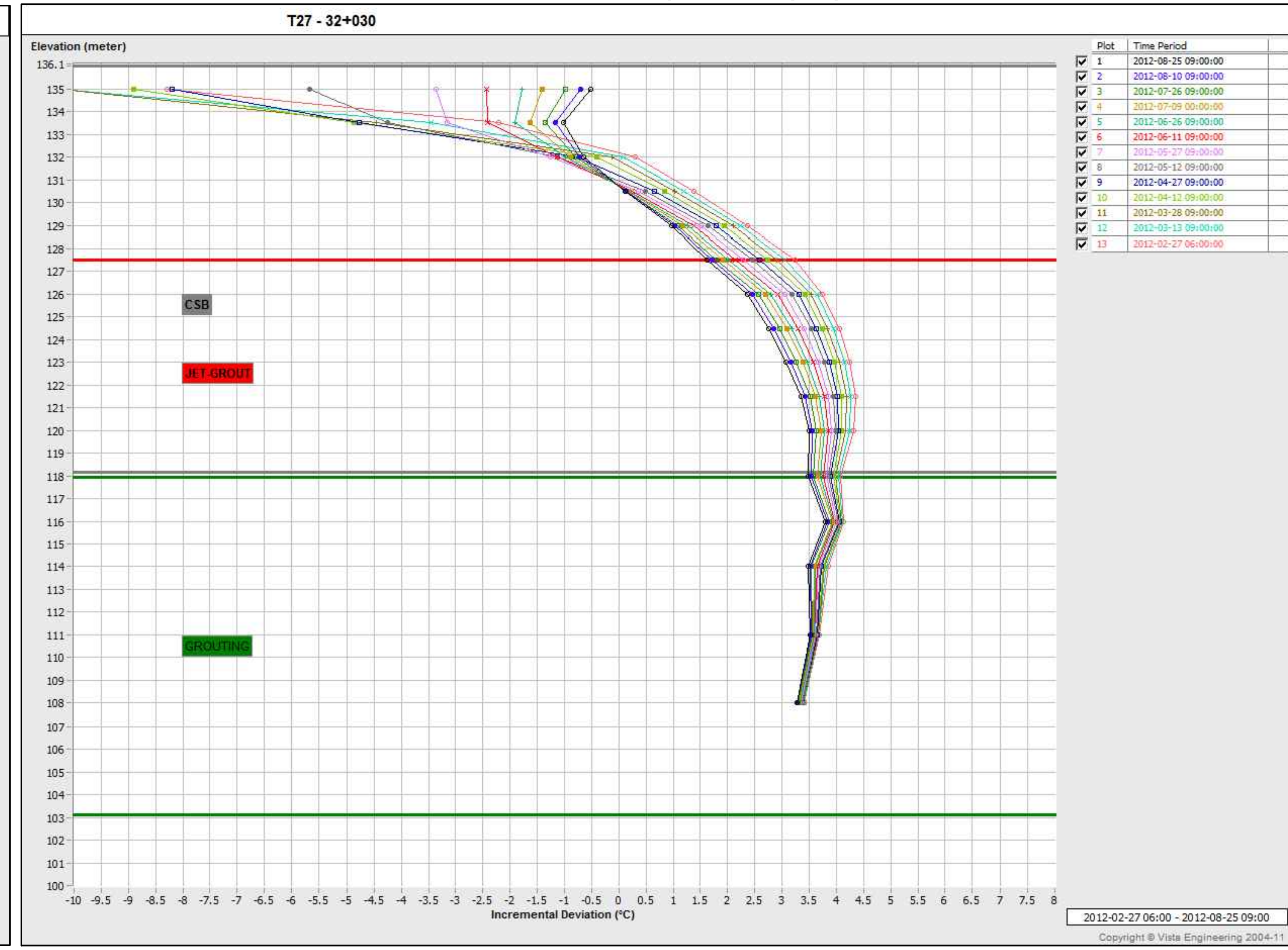
PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C3-69	
REVIEW	FE	11/15/2012		

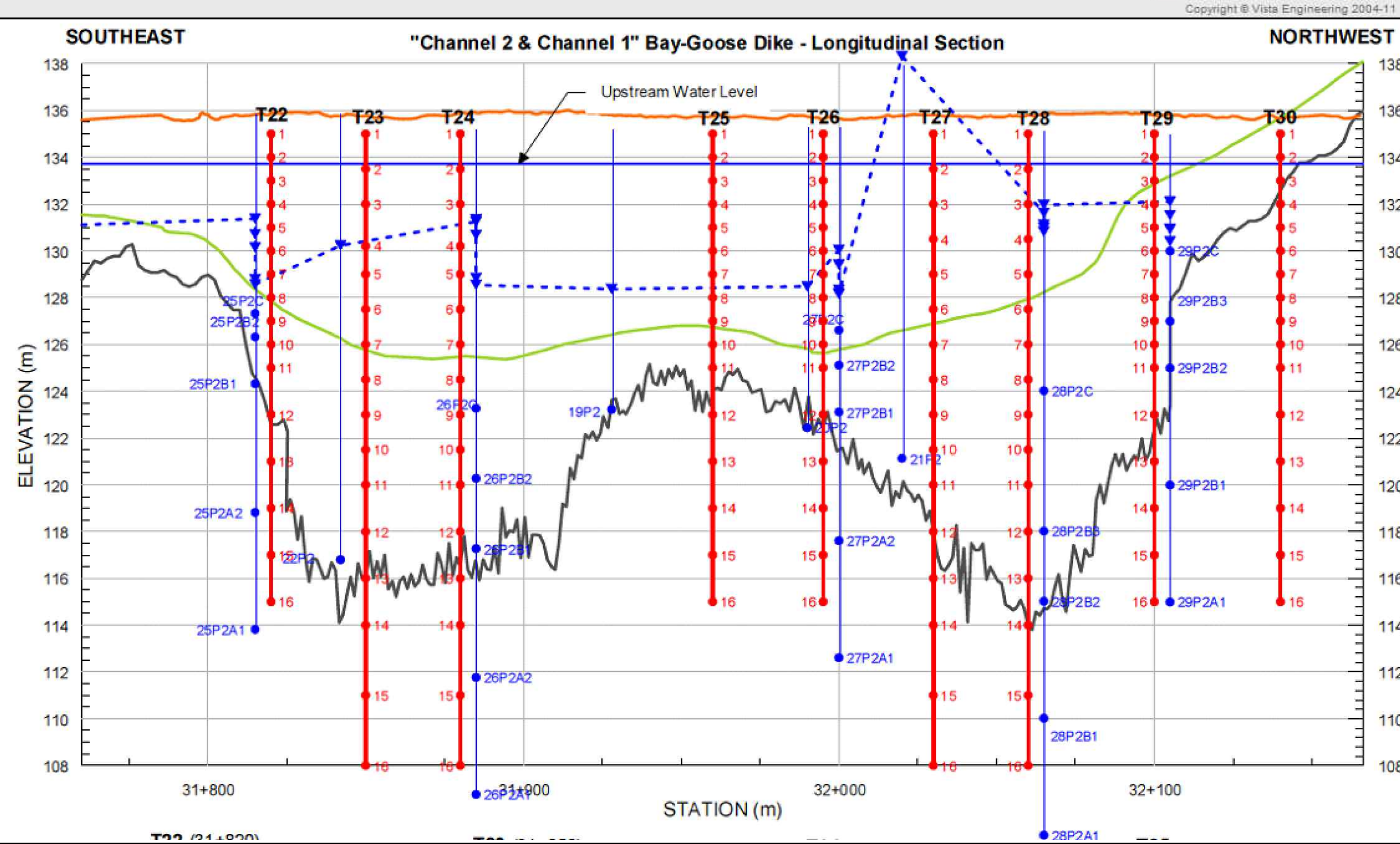
Golder Associates
Montréal, Québec

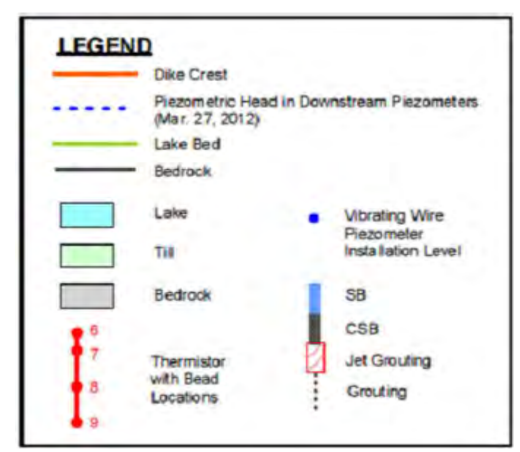
T27 - Sta.32+030 (Sep.11 - Mar.12)



T27 - Sta.32+030 (Mar.12 - Sep.12)





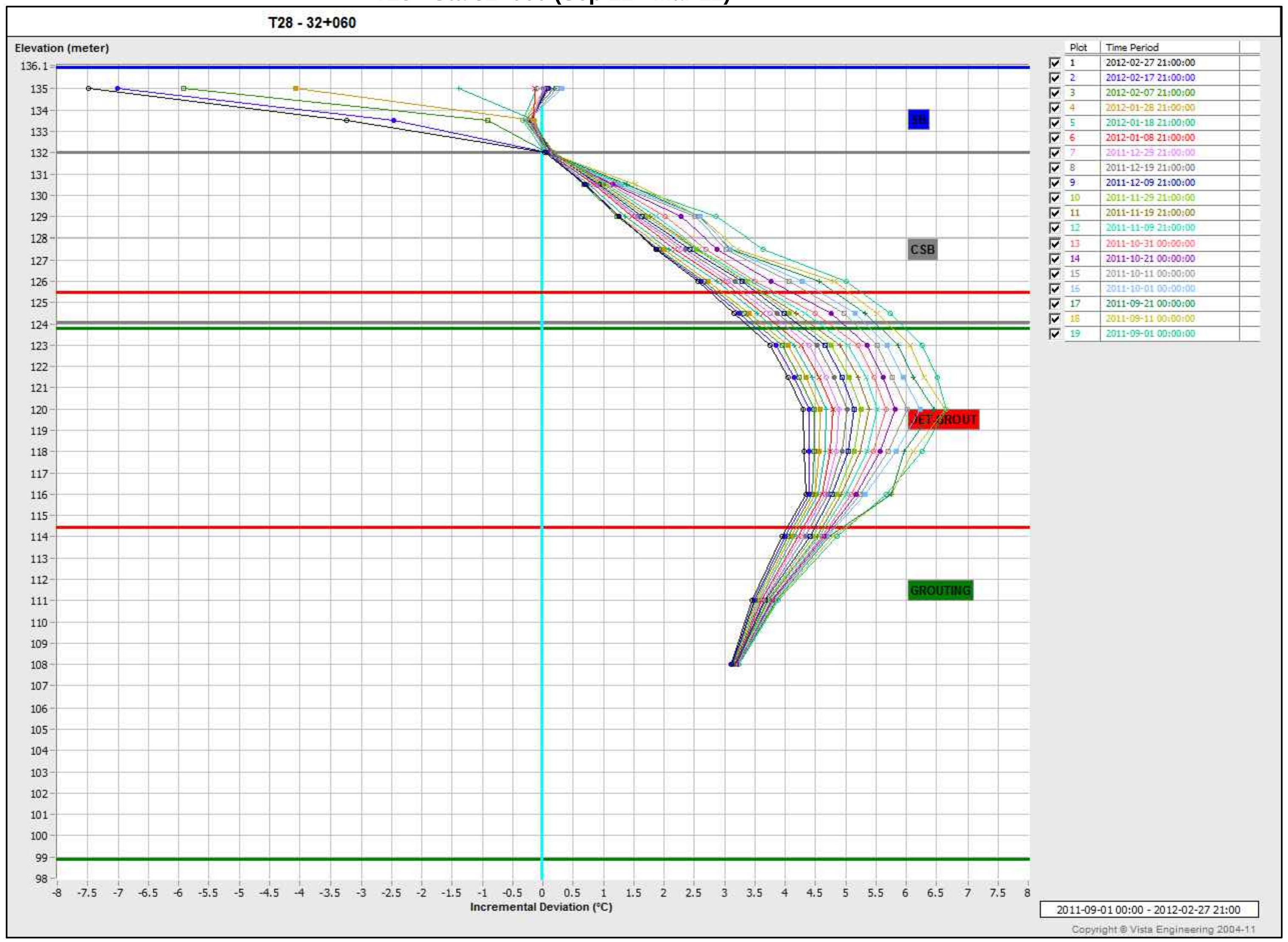


PROJECT	AEM — AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**BAY-GOOSE DIKE - T27 - 32+030** **THERMISTOR DATA (SEP.2011 - SEP.2012)**

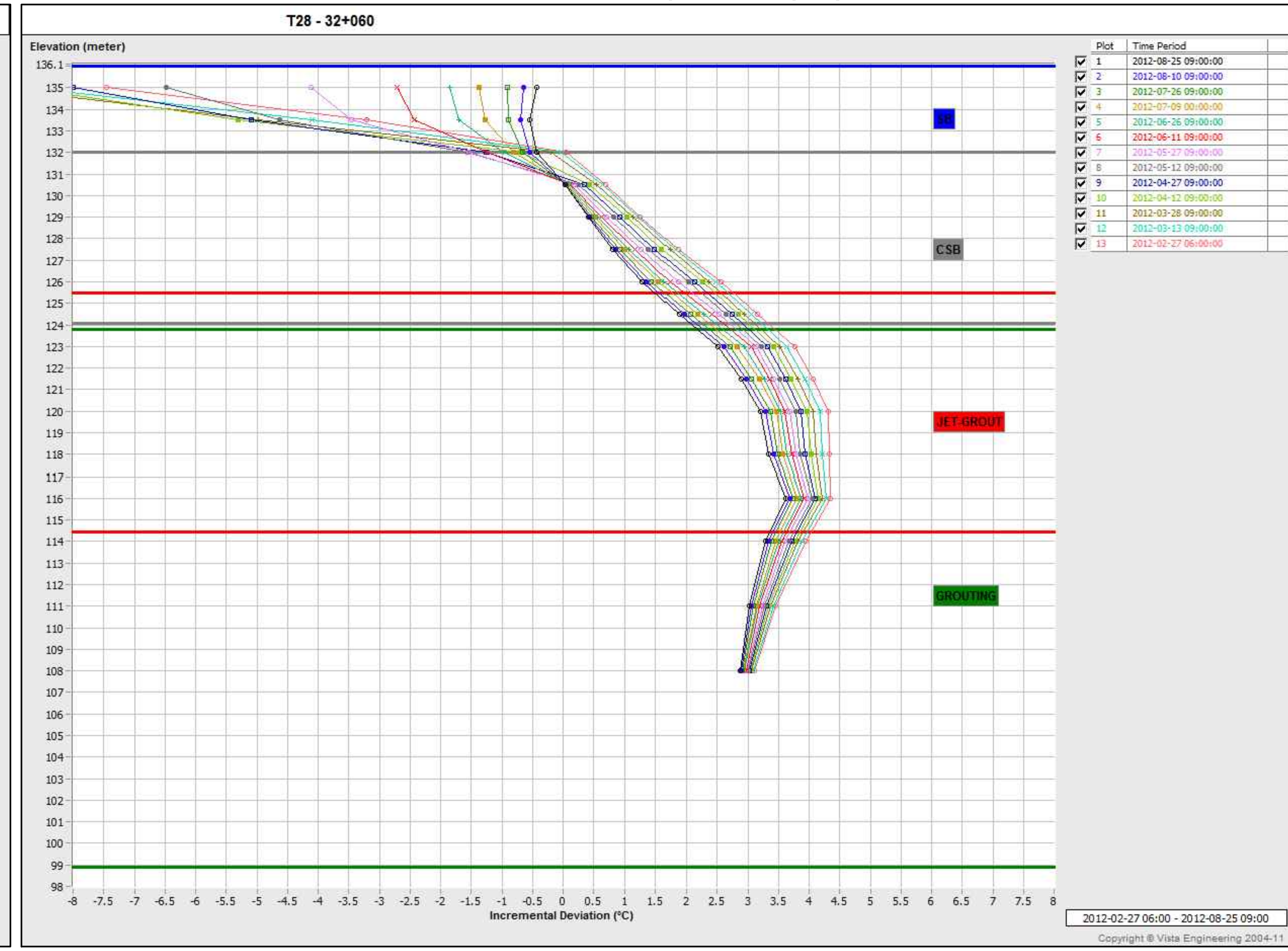
Golder Associates, Montréal, Québec

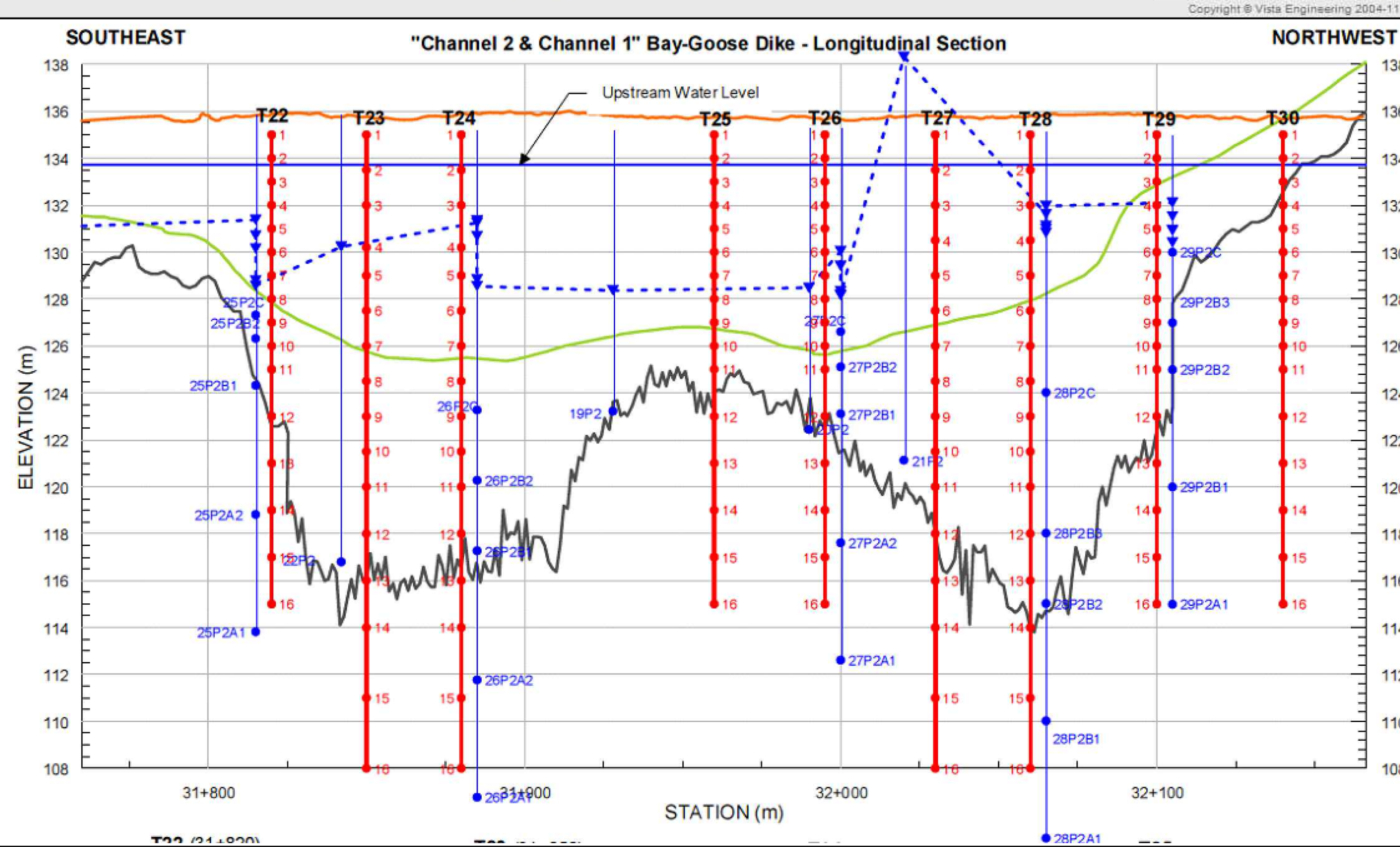
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE**	
CHECK	YB	11/08/2012	**C3-70**	
REVIEW	FE	11/15/2012		

T28 - Sta.32+060 (Sep.11 - Mar.12)



T28 - Sta.32+060 (Mar.12 - Sep.12)





LEGEND

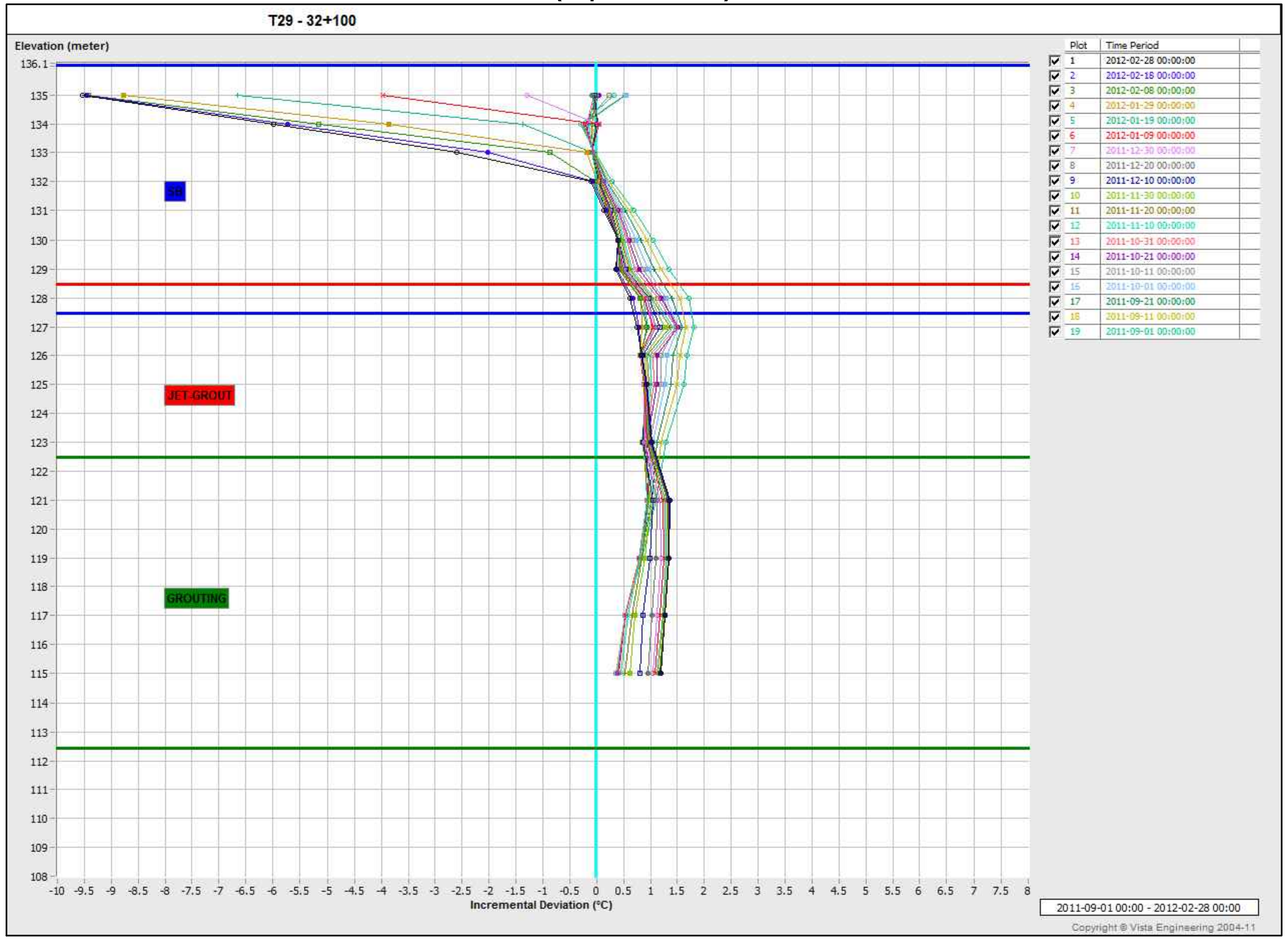
- Dike Crest
- Piezometric Head in Downstream Piezometers (Mar. 27, 2012)
- Lake Bed
- Bedrock
- Lake
- Till
- Bedrock
- Thermistor with Bead Locations
- Vibrating Wire Piezometer Installation Level
- SB
- CSB
- Jet Grouting
- Grouting

PROJECT	AEM	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT	
TITLE		**BAY-GOOSE DIKE - T28 - 32+060 THERMISTOR DATA (SEP.2011 - SEP.2012)**	

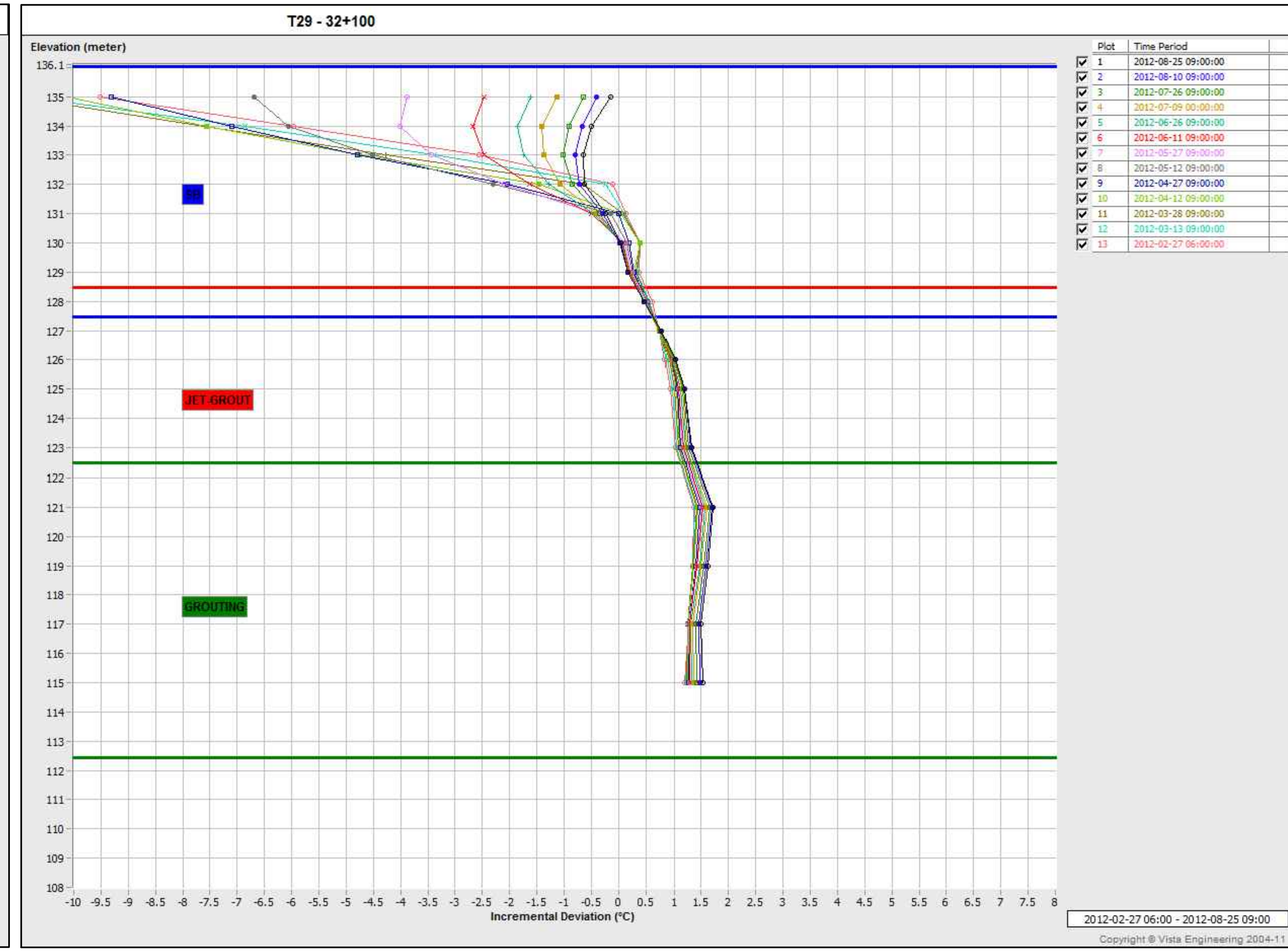
Golder Associates
Montréal, Québec

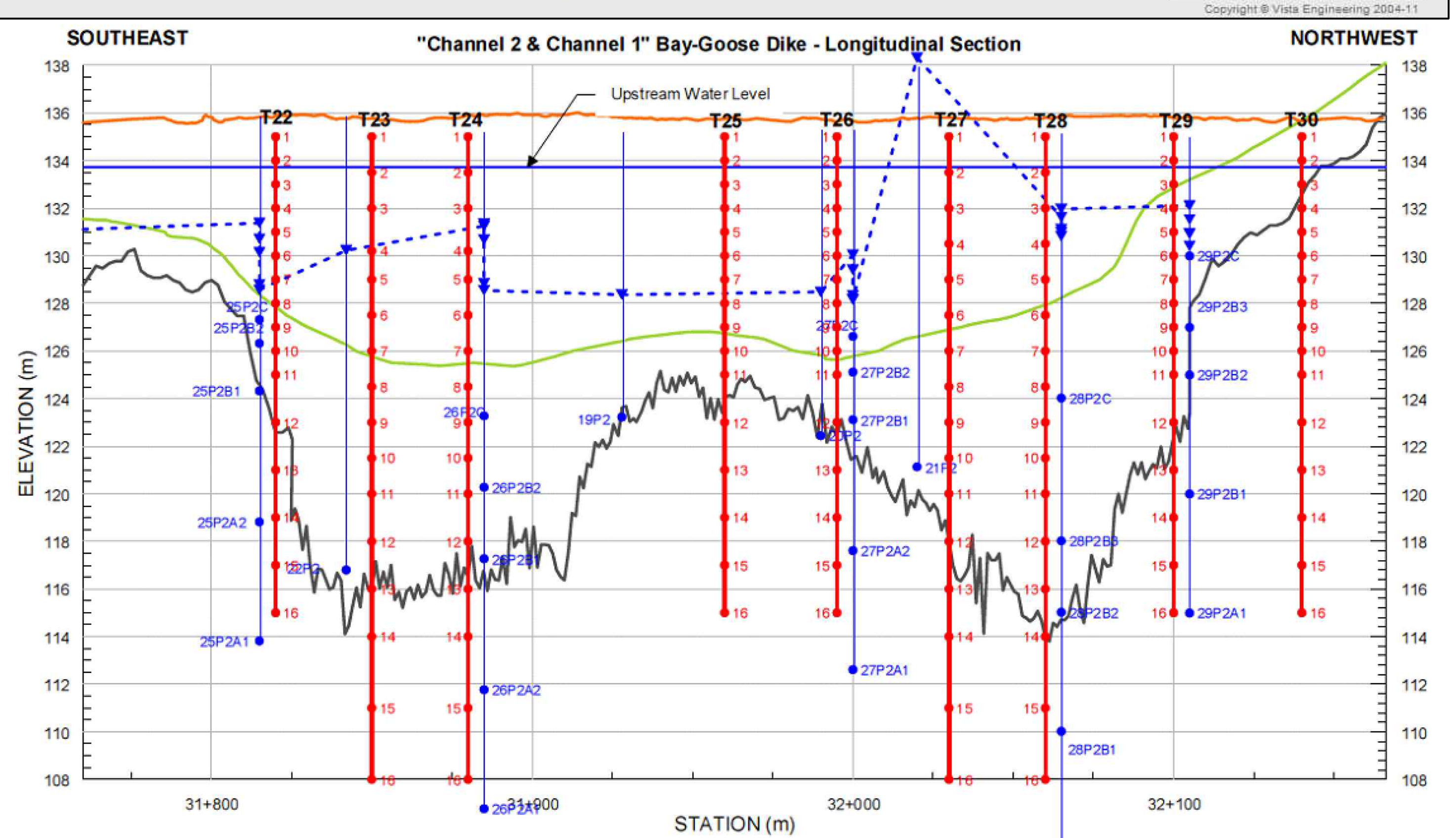
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE**	
CHECK	YB	11/08/2012	**C3-71**	
REVIEW	FE	11/15/2012		

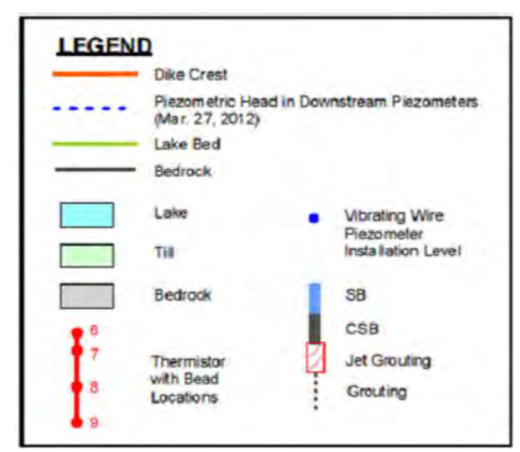
T29 - Sta.32+100 (Sep.11 - Mar.12)



T29 - Sta.32+100 (Mar.12 - Sep.12)







PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

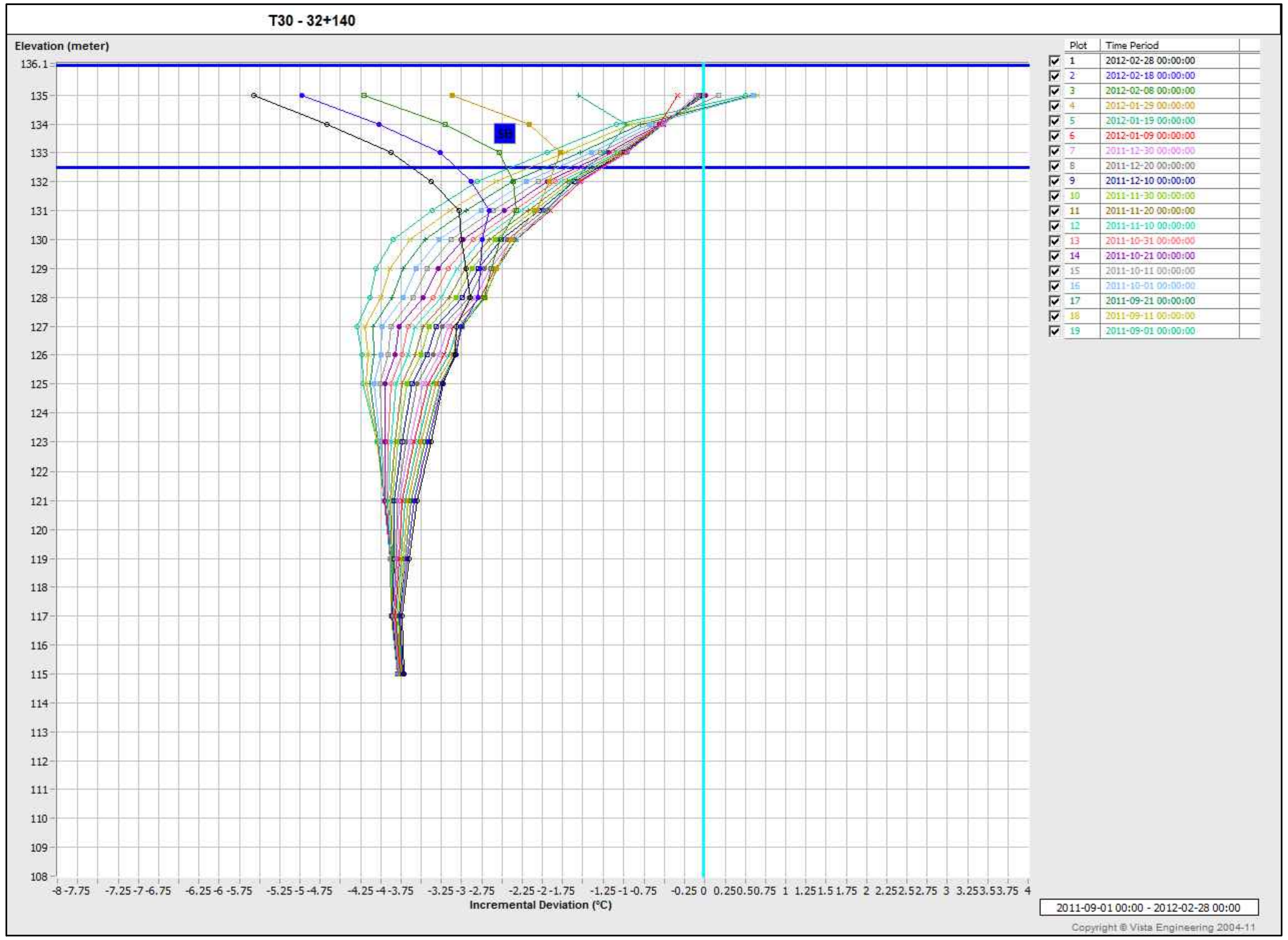
TITLE

BAY-GOOSE DIKE - T29 - 32+100
THERMISTOR DATA (SEP.2011 - SEP.2012)

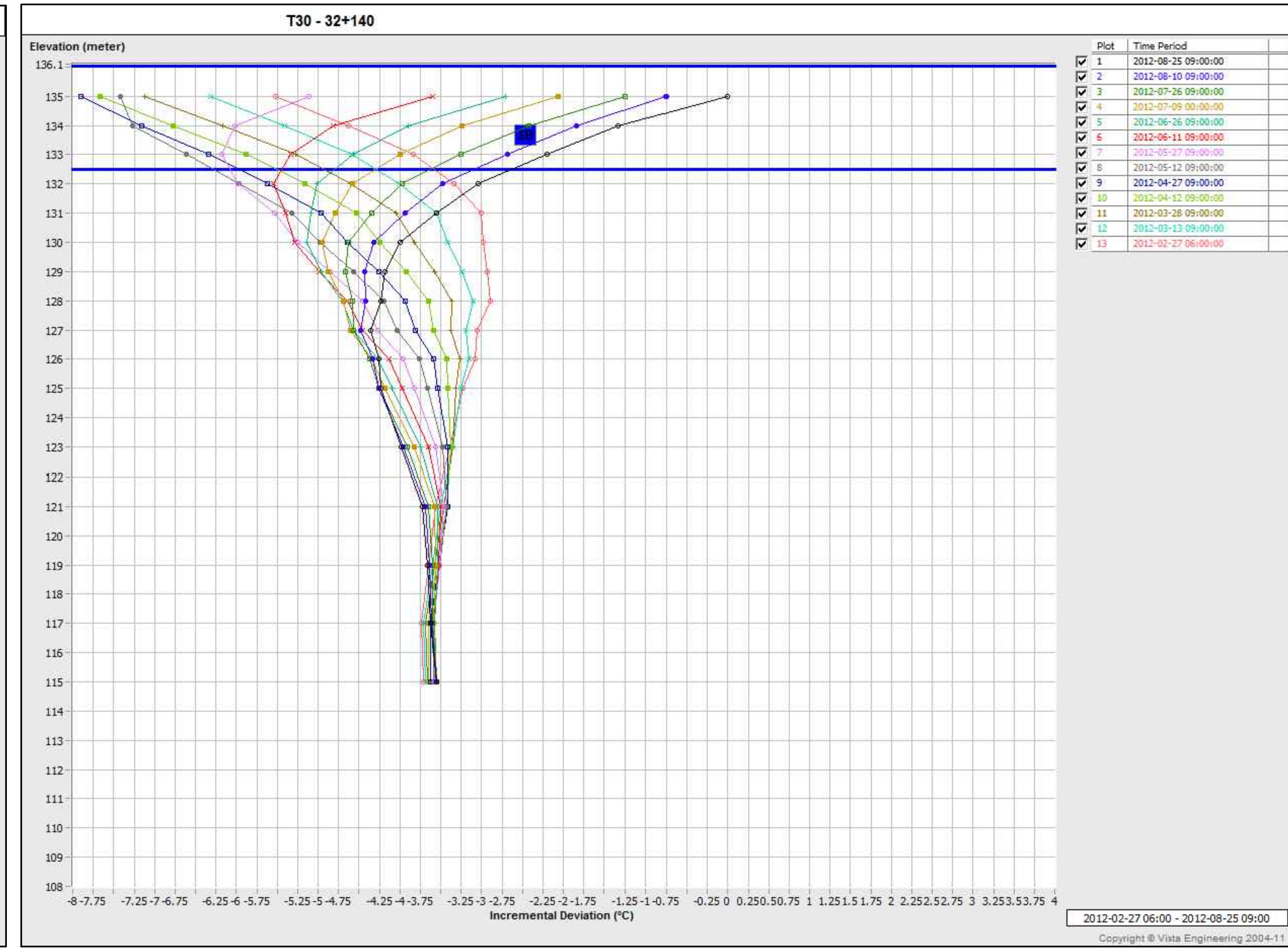
Golder Associates
Montréal, Québec

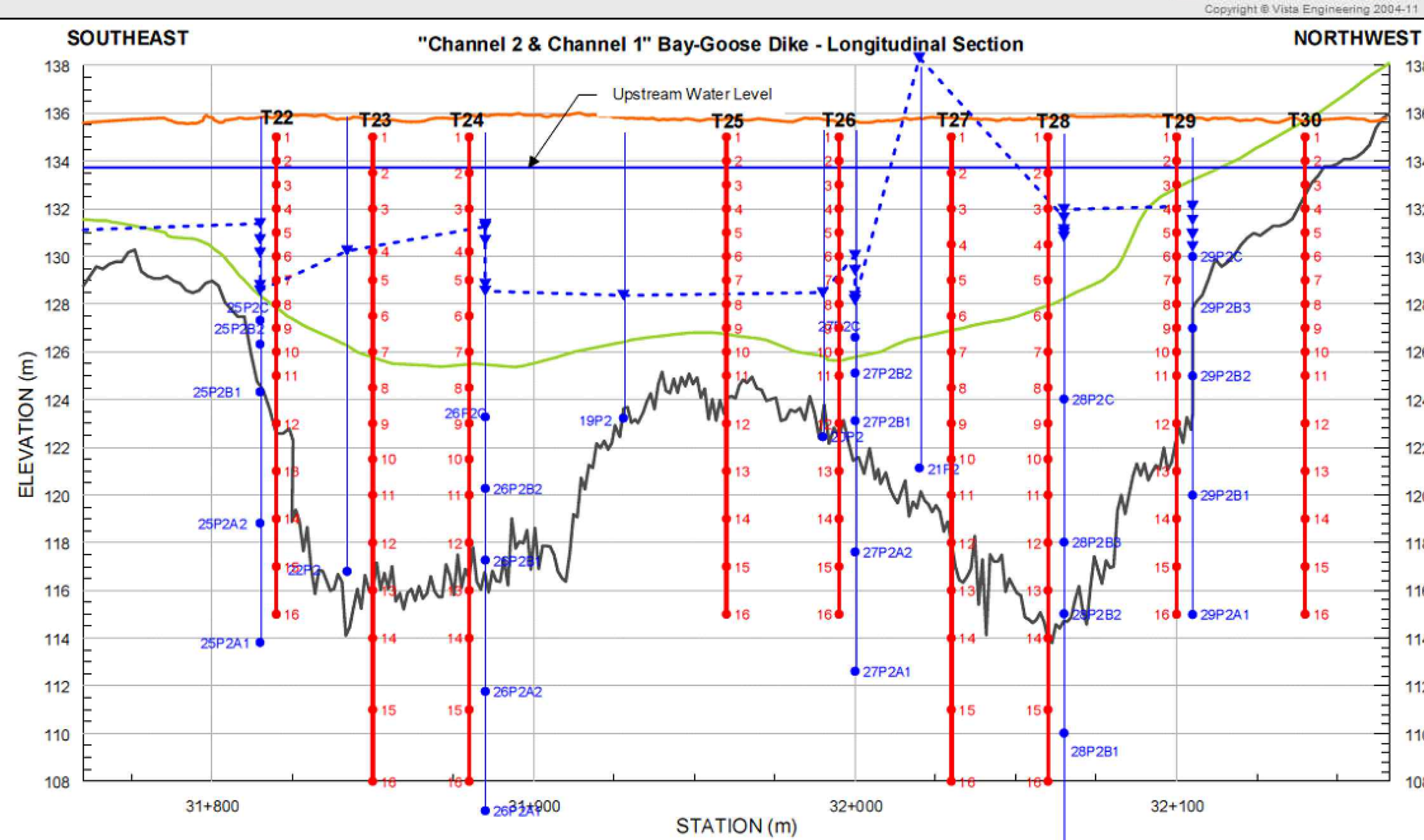
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C3-72**	
REVIEW	FE	11/15/2012		

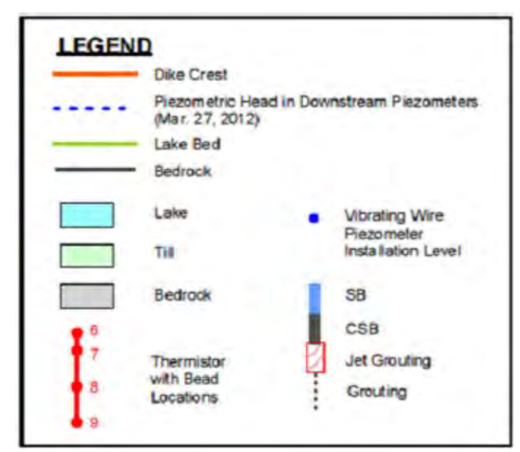
T30 - Sta.32+140 (Sep.11 - Mar.12)



T30 - Sta.32+140 (Mar.12 - Sep.12)







PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

BAY-GOOSE DIKE - T30 - 32+140
THERMISTOR DATA (SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No. 3000
DESIGN	AEM	09/19/2012	SCALE
CADD	FLB	10/19/2012	REV. -
CHECK	YB	11/08/2012	
REVIEW	FE	11/15/2012	

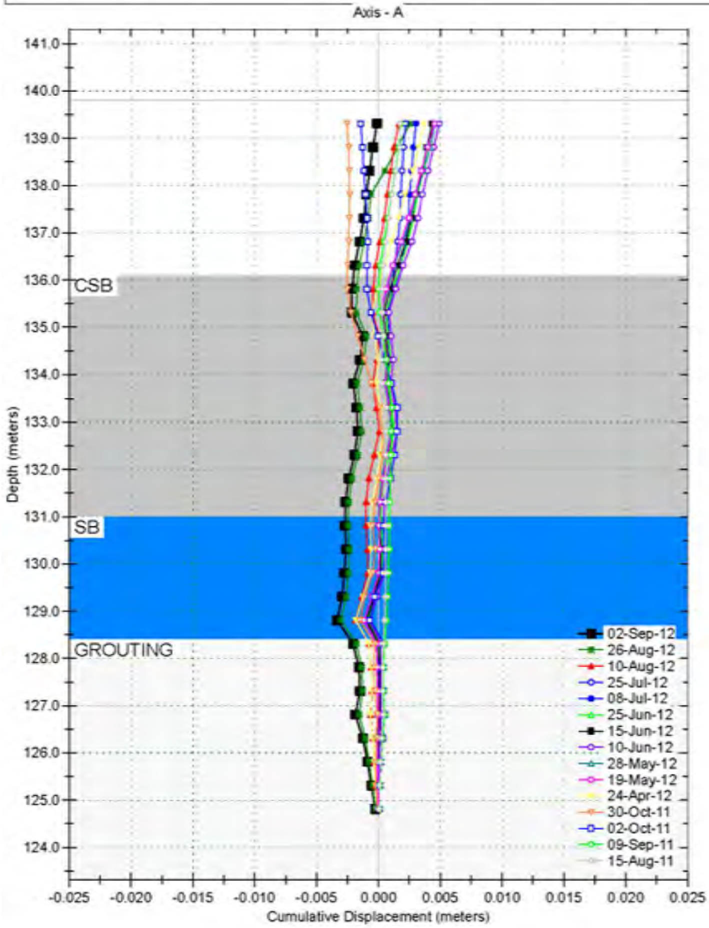
FIGURE C3-73

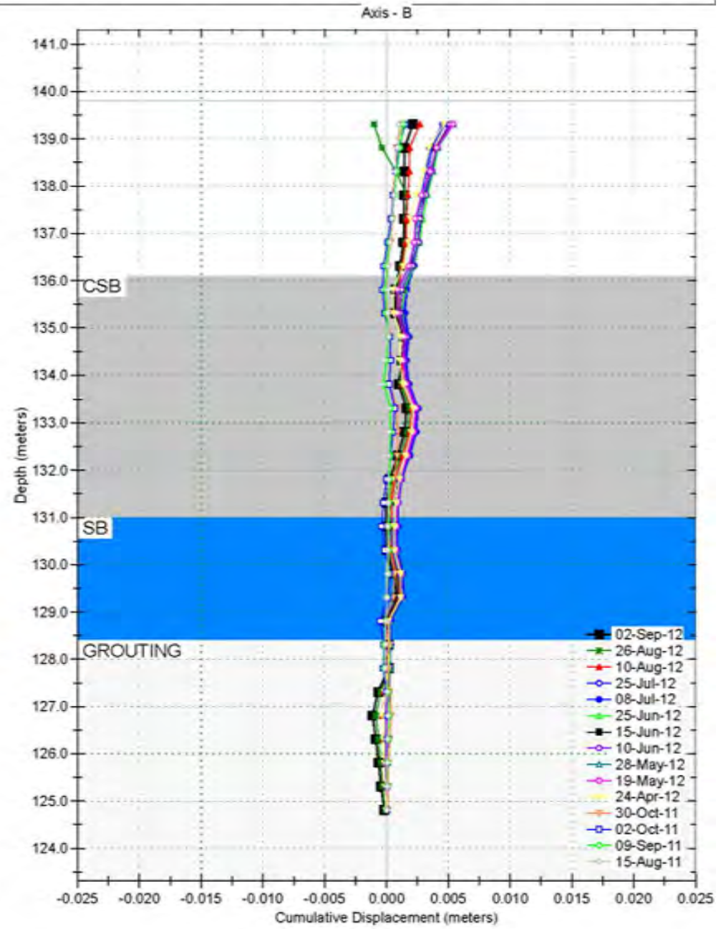
Inclinometer 1 - Sta.30+282 (Sep.11 - Sep.12)

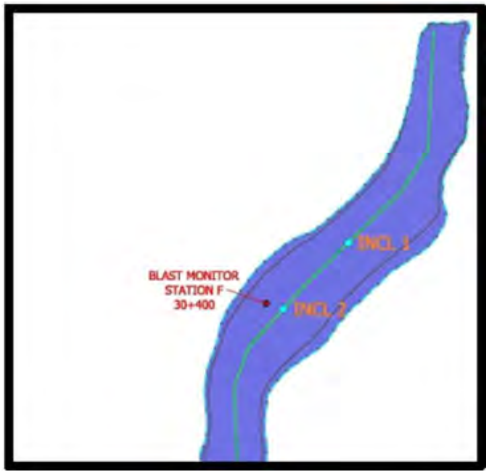
RST Instruments Ltd. — CUMULATIVE DISPLACEMENT — Inclinalysis v. 2.44.3

Borehole : BG-IN-30+282
Project : Baygoose dike
Location : 30+282
Northing : 7212943.162
Easting : 639077.778
Collar : 139.814

Spiral Correction : N/A
Collar Elevation : 139.8 meters
Borehole Total Depth : 15.0 meters
A+ Groove Azimuth :
Base Reading : 2011 Jul 24 07:18
Applied Azimuth : 0.0 degrees







PROJECT: AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE: **BAY-GOOSE DIKE - STA. 30+282**
INCLINOMETER 1 DATA
(SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

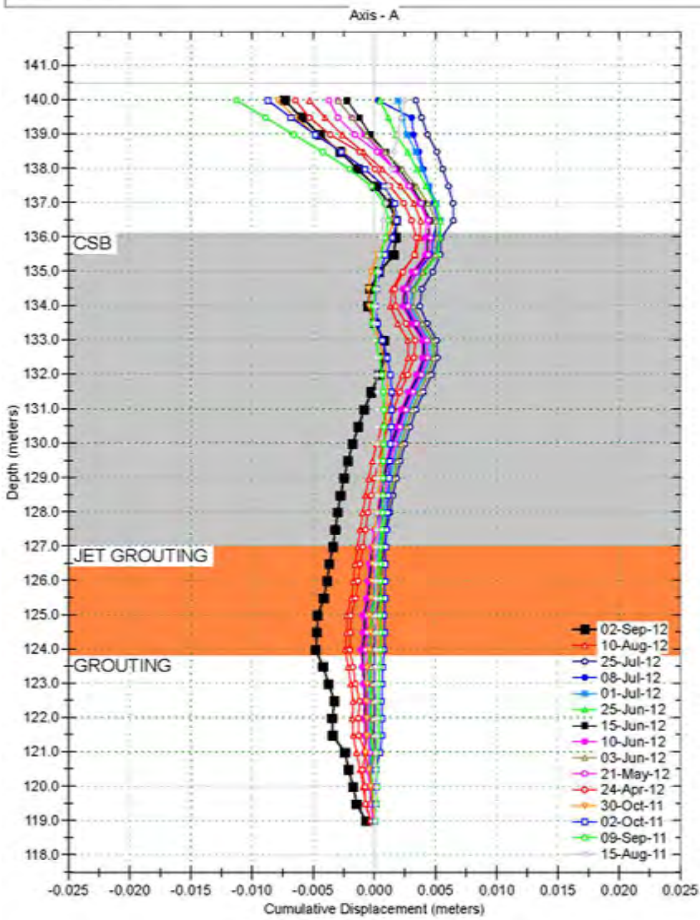
PROJECT No.	12-1221-0073		PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-74**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

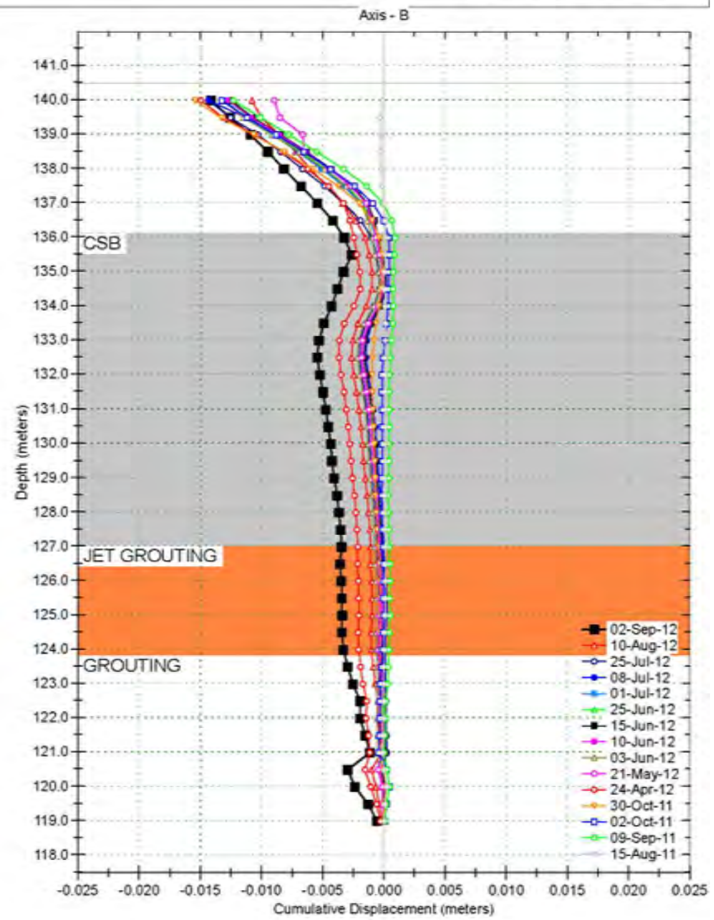
Inclinometer 2 - Sta.30+390 (Sep.11 - Sep.12)

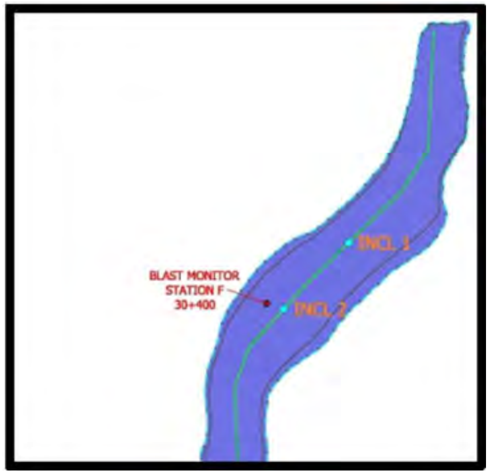
RST Instruments Ltd. | CUMULATIVE DISPLACEMENT | Inclinalysis v. 2.44.3

Borehole : BG-IN-30+390
Project : Baygoose dike
Location : 30+390
Northing : 7212865.990
Easting : 639002.468
Collar : 140.472

Spiral Correction : N/A
Collar Elevation : 140.5 meters
Borehole Total Depth : 21.5 meters
A+ Groove Azimuth :
Base Reading : 2011 Jul 24 06:54
Applied Azimuth : 0.0 degrees







PROJECT: AEM — AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE: **BAY-GOOSE DIKE - STA. 30+390**
INCLINOMETER 2 DATA
(SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

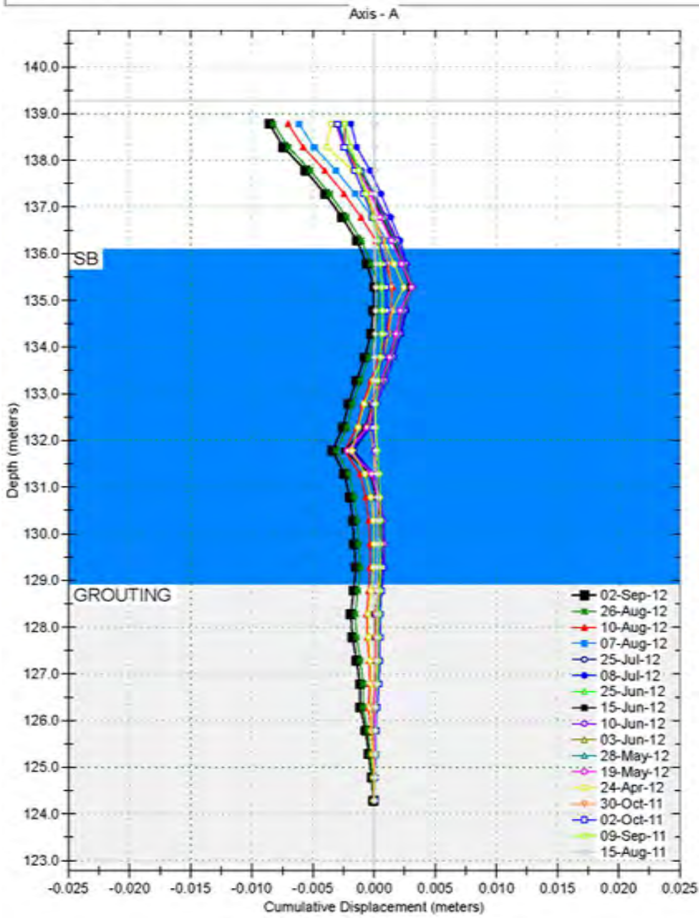
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	FIGURE C3-75	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

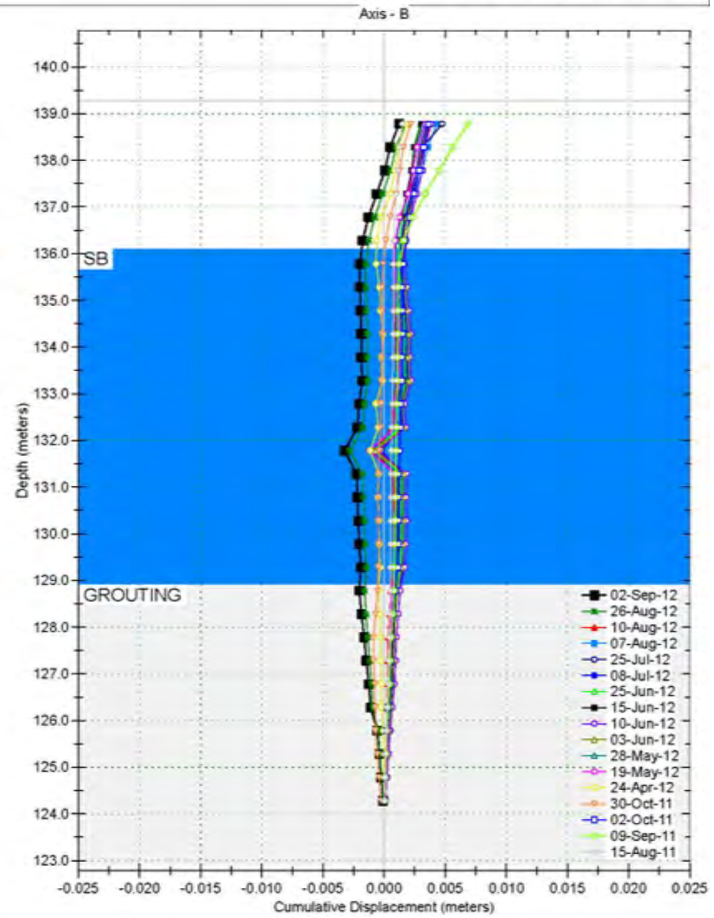
Inclinometer 3 - Sta.30+640 (Sep.11 - Sep.12)

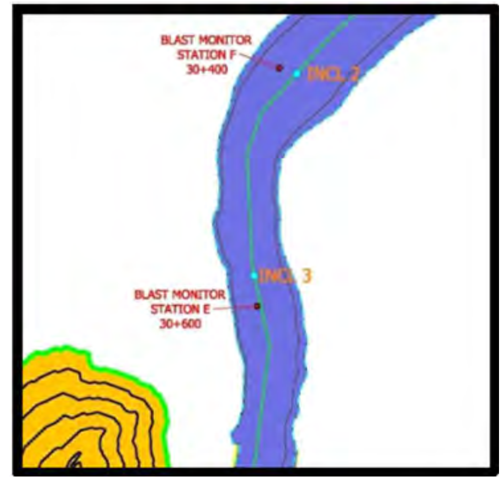
RST Instruments Ltd.	CUMULATIVE DISPLACEMENT	Inclinalysis v. 2.44.3

Borehole : BG-IN-30+640
Project : Baygoose dike
Location : 30+640
Northing : 7212634.144
Easting : 638953.388
Collar : 139.275

Spiral Correction : N/A
Collar Elevation : 139.3 meters
Borehole Total Depth : 15.0 meters
A+ Groove Azimuth :
Base Reading : 2011 Jul 23 16:17
Applied Azimuth : 0.0 degrees





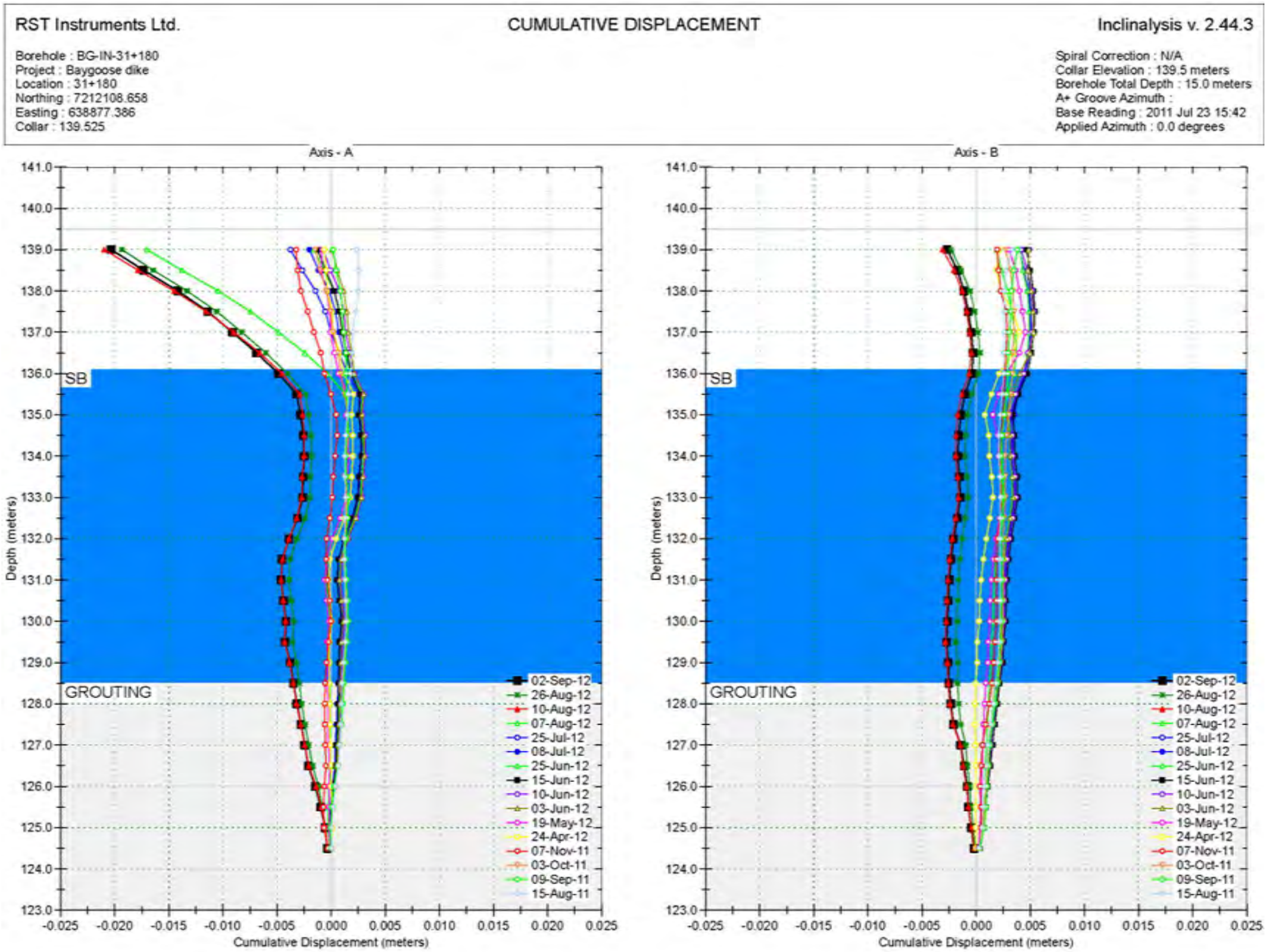


PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**BAY-GOOSE DIKE - STA. 30+640 INCLINOMETER 3 DATA (SEP.2011 - SEP.2012)**

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-76**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

Inclinometer 4 - Sta.31+180 (Sep.11 - Sep.12)



PROJECT

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

BAY-GOOSE DIKE - STA. 31+180
INCLINOMETER 4 DATA
(SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

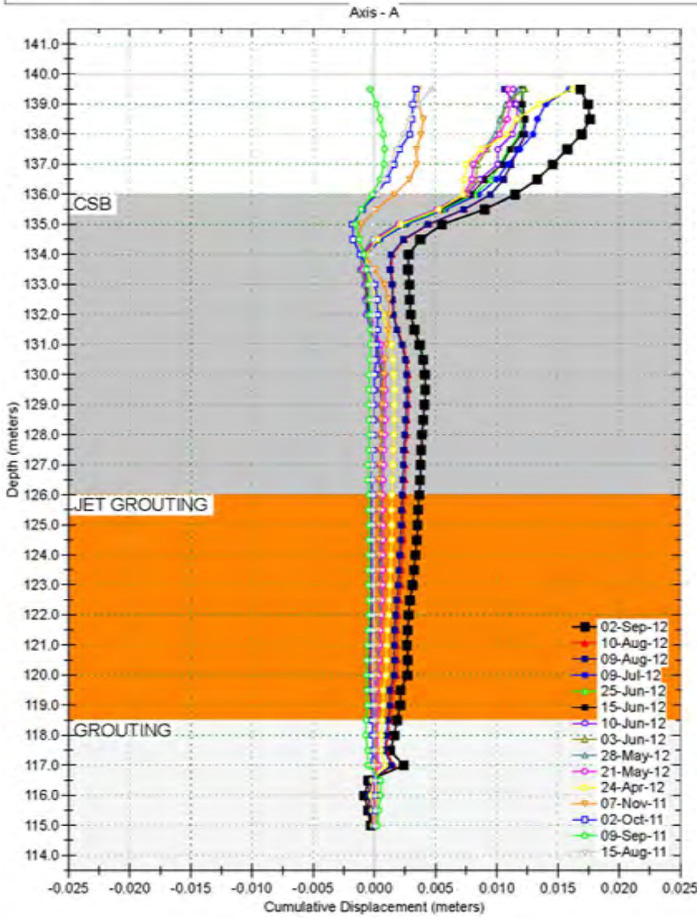
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-77**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

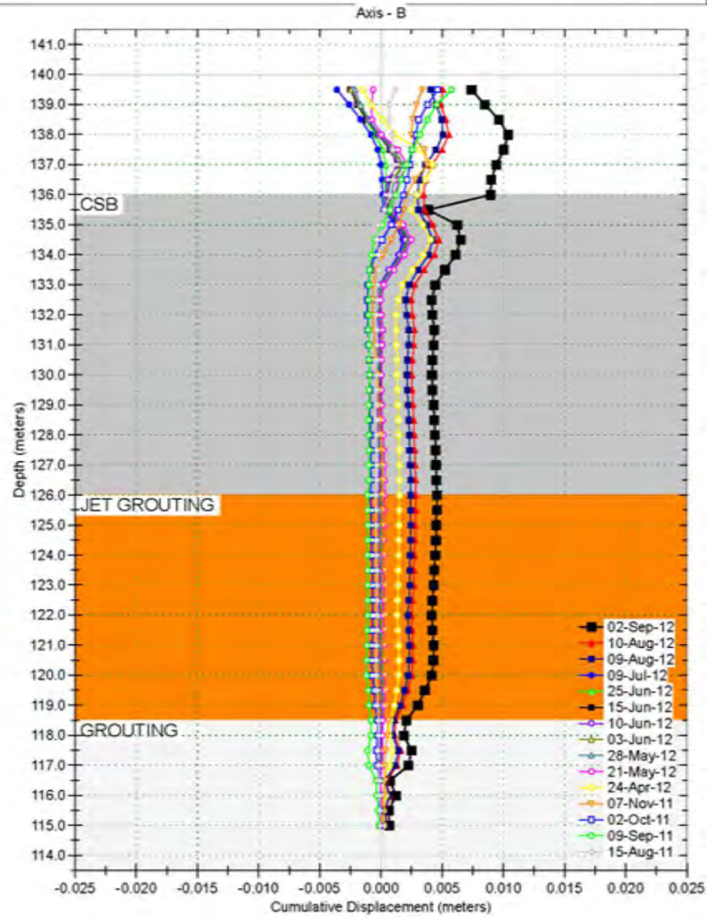
Inclinometer 5 - Sta.31+190 (Sep.11 - Sep.12)

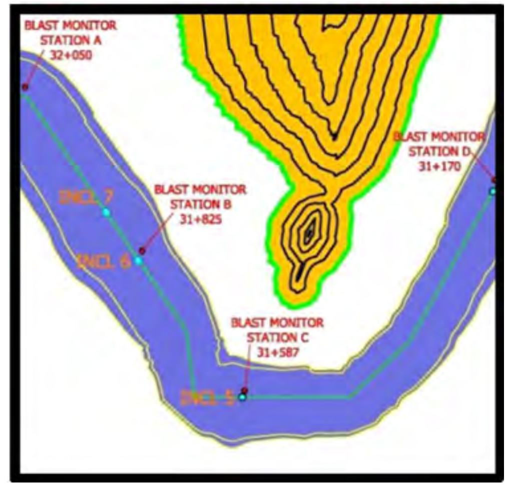
RST Instruments Ltd. | CUMULATIVE DISPLACEMENT | Inclinalysis v. 2.44.3

Borehole : BG-IN-31+590
Project : Baygoose dike
Location : 31+590
Northing : 7211875.070
Easting : 638593.965
Collar : 139.988

Spiral Correction : N/A
Collar Elevation : 140.0 meters
Borehole Total Depth : 25.0 meters
A+ Groove Azimuth :
Base Reading : 2011 Jul 23 10:17
Applied Azimuth : 0.0 degrees







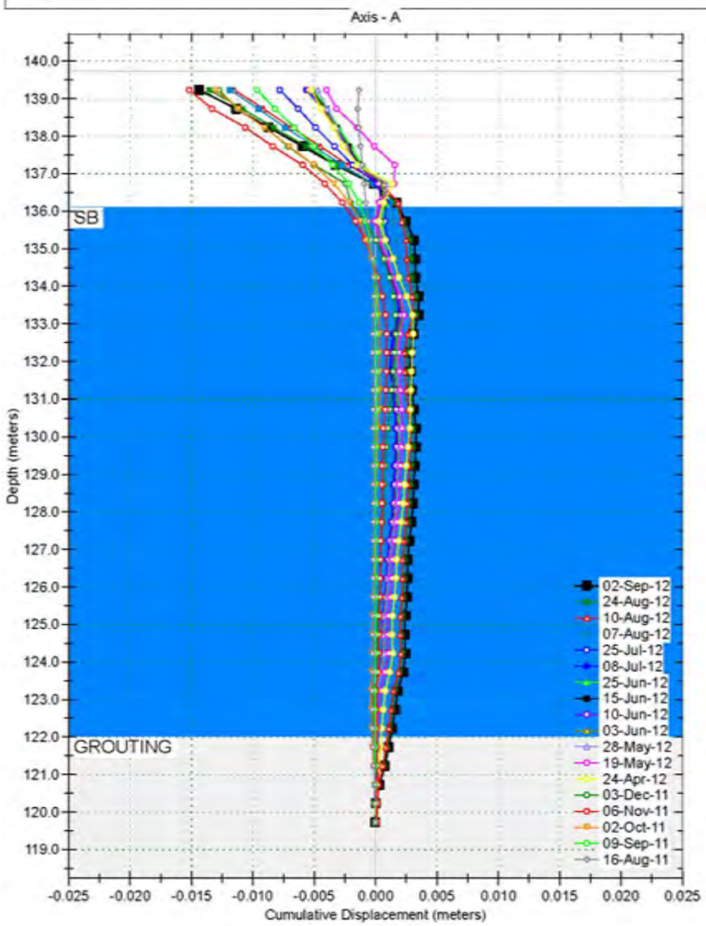
PROJECT	AEM	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT			
TITLE		**BAY-GOOSE DIKE - STA. 31+590 INCLINOMETER 5 DATA (SEP.2011 - SEP.2012)**			
Golder Associates Montréal, Québec	PROJECT No.		12-1221-0073	PHASE No.	3000
	DESIGN	AEM	09/19/2012	SCALE	REV. -
	CADD	FLB	10/19/2012	**FIGURE C3-78**	
	CHECK	YB	11/08/2012		
	REVIEW	FE	11/15/2012		

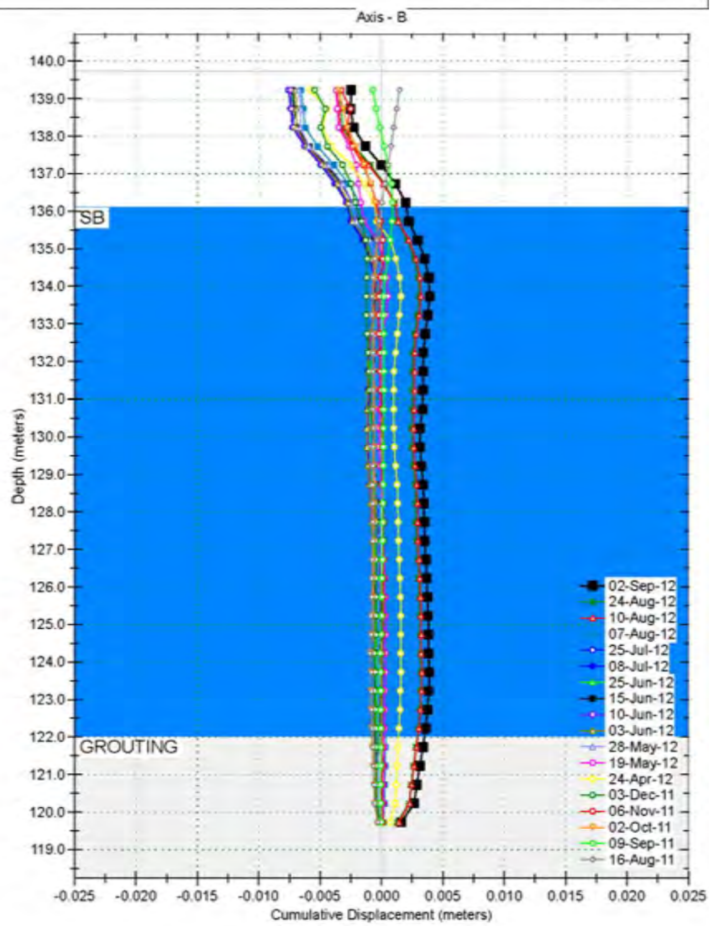
Inclinometer 6 - Sta.31+815 (Sep.11 - Sep.12)

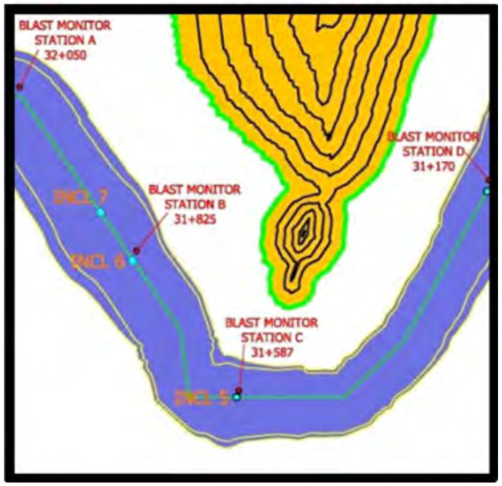
RST Instruments Ltd. CUMULATIVE DISPLACEMENT Inclinalysis v. 2.44.3

Borehole : BG-IN-31+815
Project : Baygoose dike
Location : 31+815
Northing : 7212031.135
Easting : 638475.717
Collar : 139.731

Spiral Correction : N/A
Collar Elevation : 139.7 meters
Borehole Total Depth : 20.0 meters
A+ Groove Azimuth :
Base Reading : 2011 Jul 23 09:40
Applied Azimuth : 0.0 degrees







PROJECT
AEM
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE
BAY-GOOSE DIKE - STA. 31+815
INCLINOMETER 6 DATA
(SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

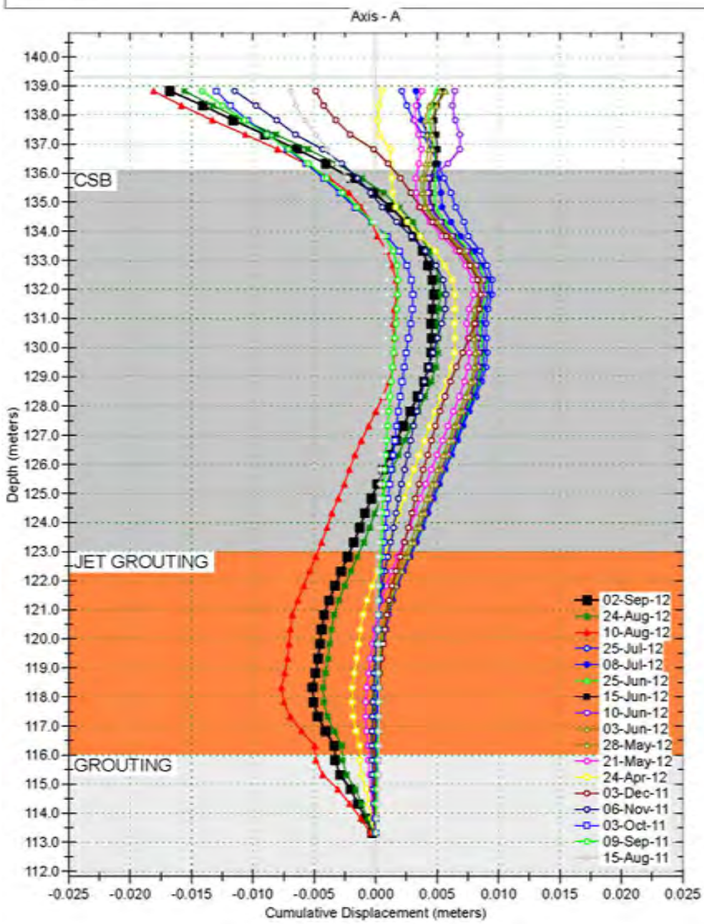
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-79**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

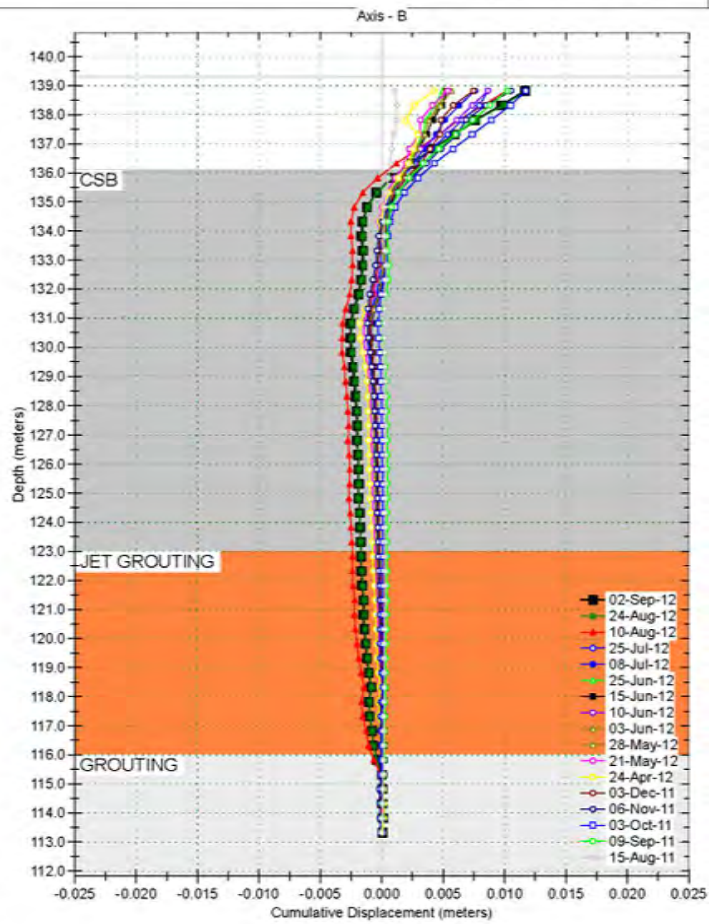
Inclinometer 7 - Sta.31+885 (Sep.11 - Sep.12)

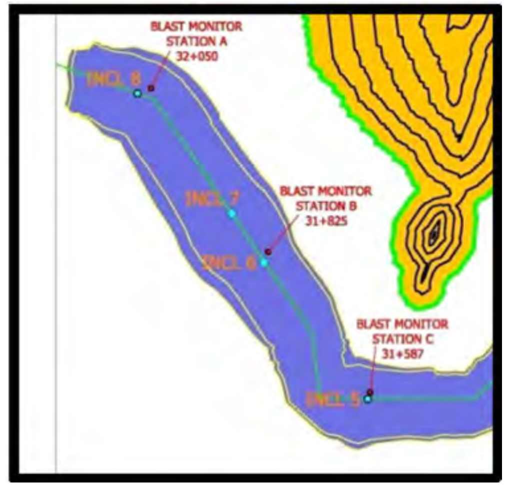
RST Instruments Ltd. | CUMULATIVE DISPLACEMENT | Inclinalysis v. 2.44.3

Borehole : BG-IN-31+885
Project : Baygoose dike
Location : 31+885
Northing : 7212085.062
Easting : 638439.68
Collar : 139.317

Spiral Correction : N/A
Collar Elevation : 139.3 meters
Borehole Total Depth : 26.0 meters
A+ Groove Azimuth :
Base Reading : 2011 Jul 23 09:00
Applied Azimuth : 0.0 degrees







PROJECT
AEM
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE
BAY-GOOSE DIKE - STA. 31+885
INCLINOMETER 7 DATA
(SEP.2011 - SEP.2012)

Golder Associates
Montréal, Québec

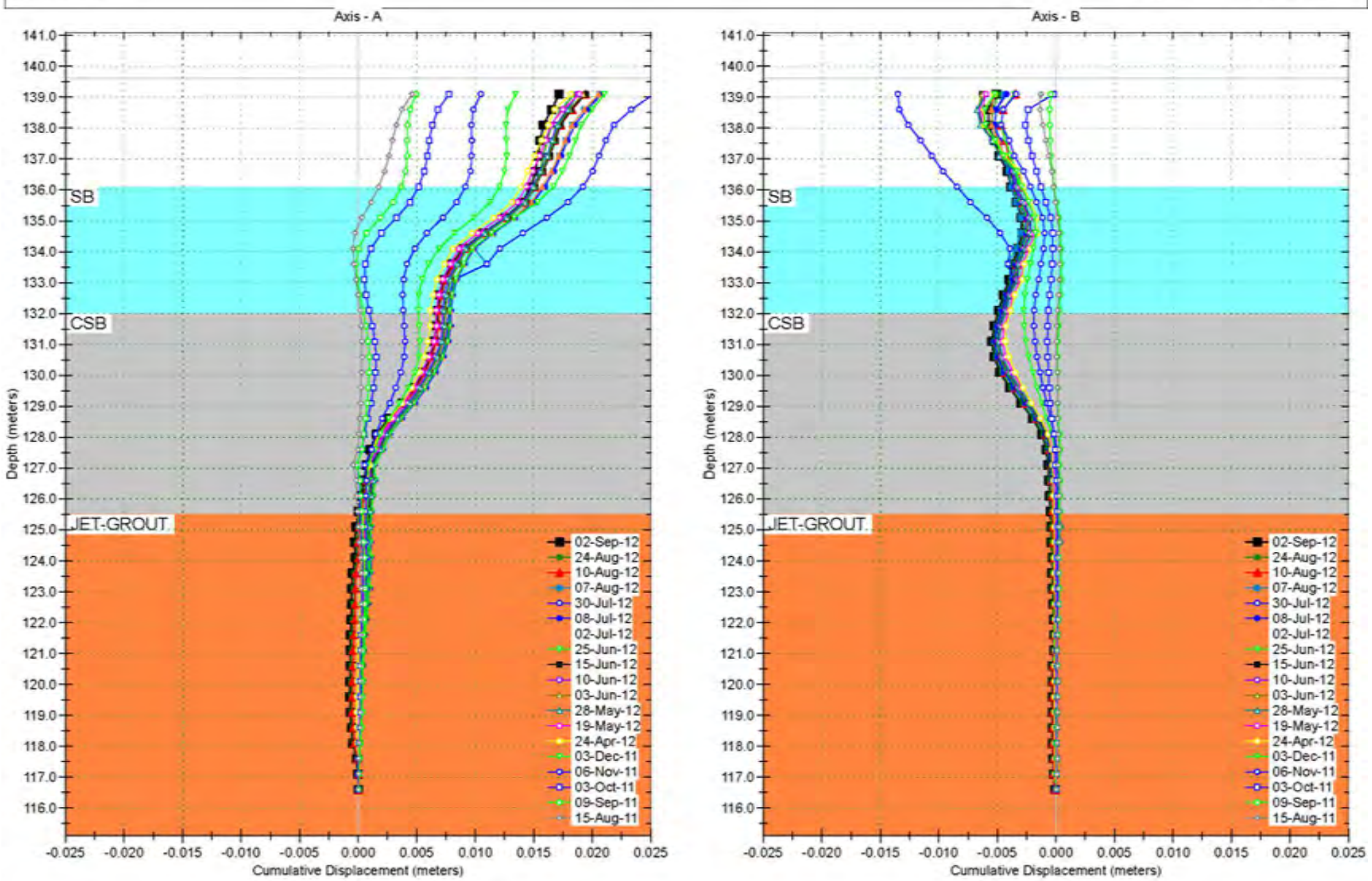
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-80**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

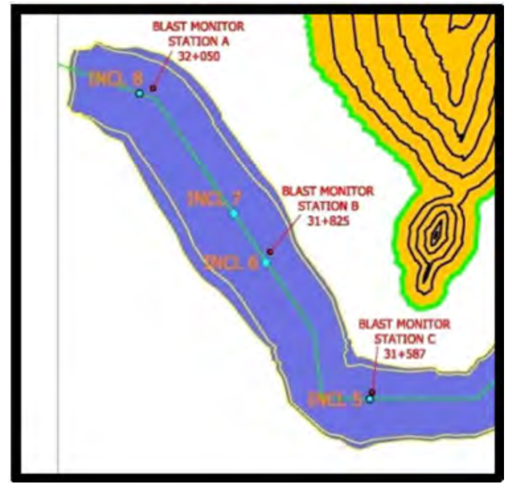
Inclinometer 8 - Sta.32+065 (Sep.11 - Sep.12)

RST Instruments Ltd. | CUMULATIVE DISPLACEMENT | Inclinalysis v. 2.44.3

Borehole : BG-IN-32+065
Project : Baygoose dike
Location : 32+065
Northing : 7212221.646
Easting : 638332.493
Collar : 139.598

Spiral Correction : N/A
Collar Elevation : 139.6 meters
Borehole Total Depth : 23.0 meters
A+ Groove Azimuth :
Base Reading : 2011 Jul 23 08:10
Applied Azimuth : 0.0 degrees





PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

BAY-GOOSE DIKE - STA. 32+065
INCLINOMETER 8 DATA
(SEP.2011 - SEP.2012)

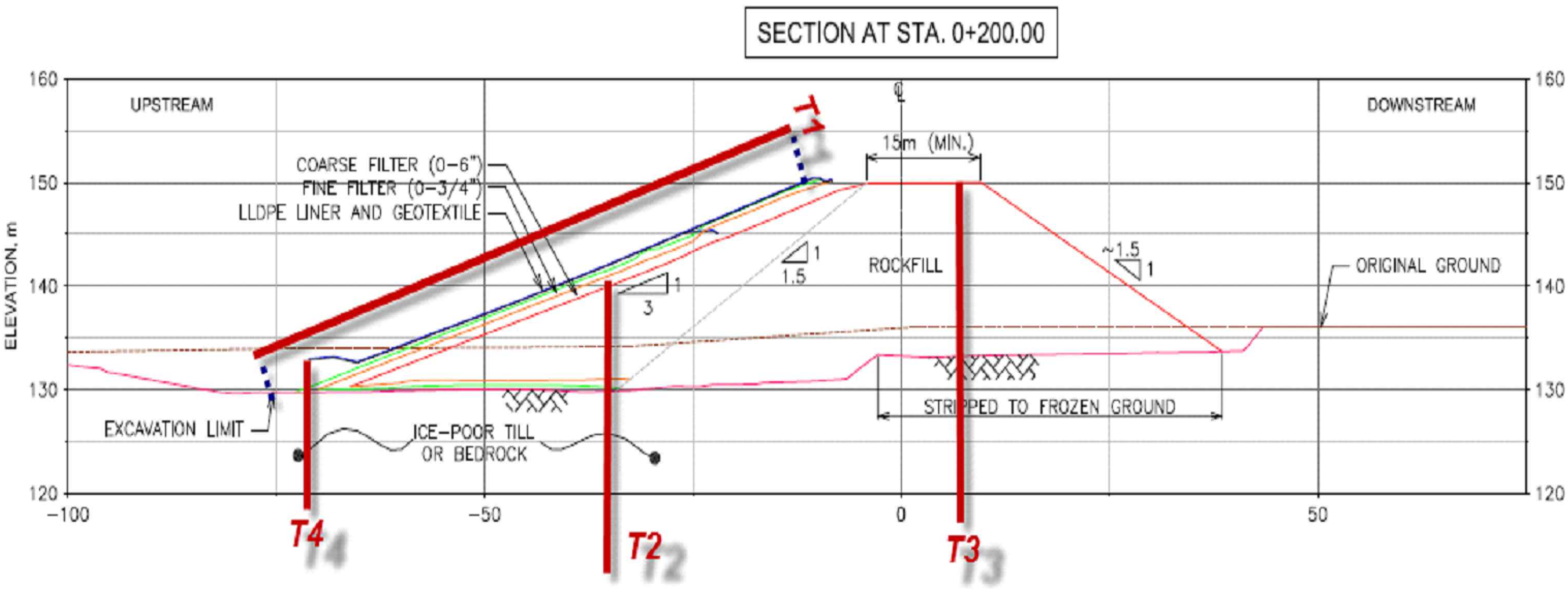
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C3-81**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

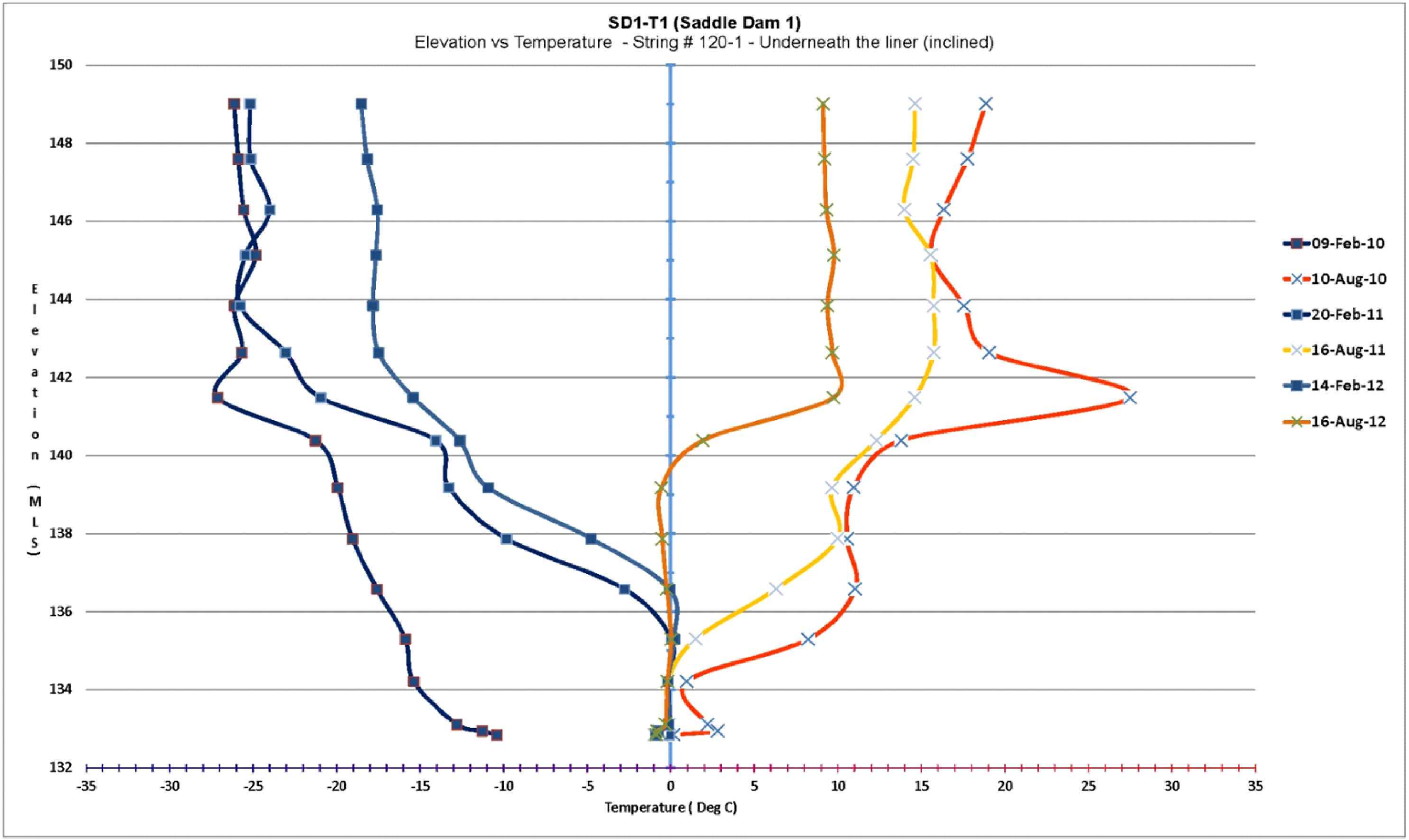
APPENDIX C4

Saddle Dam 1 Thermistor Data

Thermistor Emplacement - T1, T2, T3 and T4



PROJECT	AEM	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT			
TITLE	SADDLE DAM 1 THERMISTOR EMPLACEMENT				
Golder Associates Montréal, Québec	PROJECT No.		12-1221-0073	PHASE No.	3000
	DESIGN	AEM	09/19/2012	SCALE	REV. -
	CADD	FLB	10/19/2012	FIGURE C4-1	
	CHECK	YB	11/08/2012		
	REVIEW	FE	11/15/2012		



PROJECT

AEM

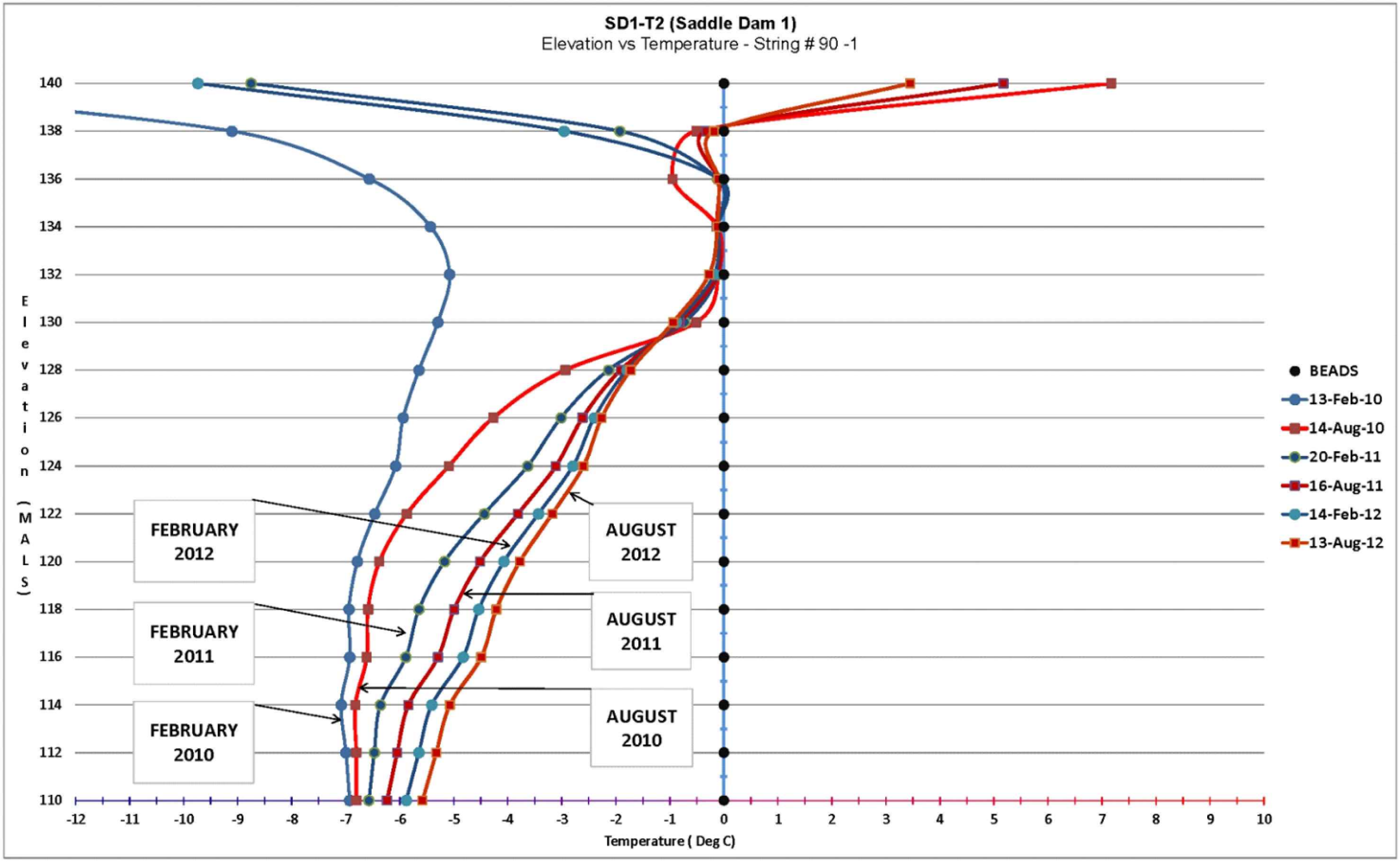
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

SADDLE DAM 1
THERMISTOR T1
FEB.2010 - AUG.2012

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C4-2**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



PROJECT

AEM

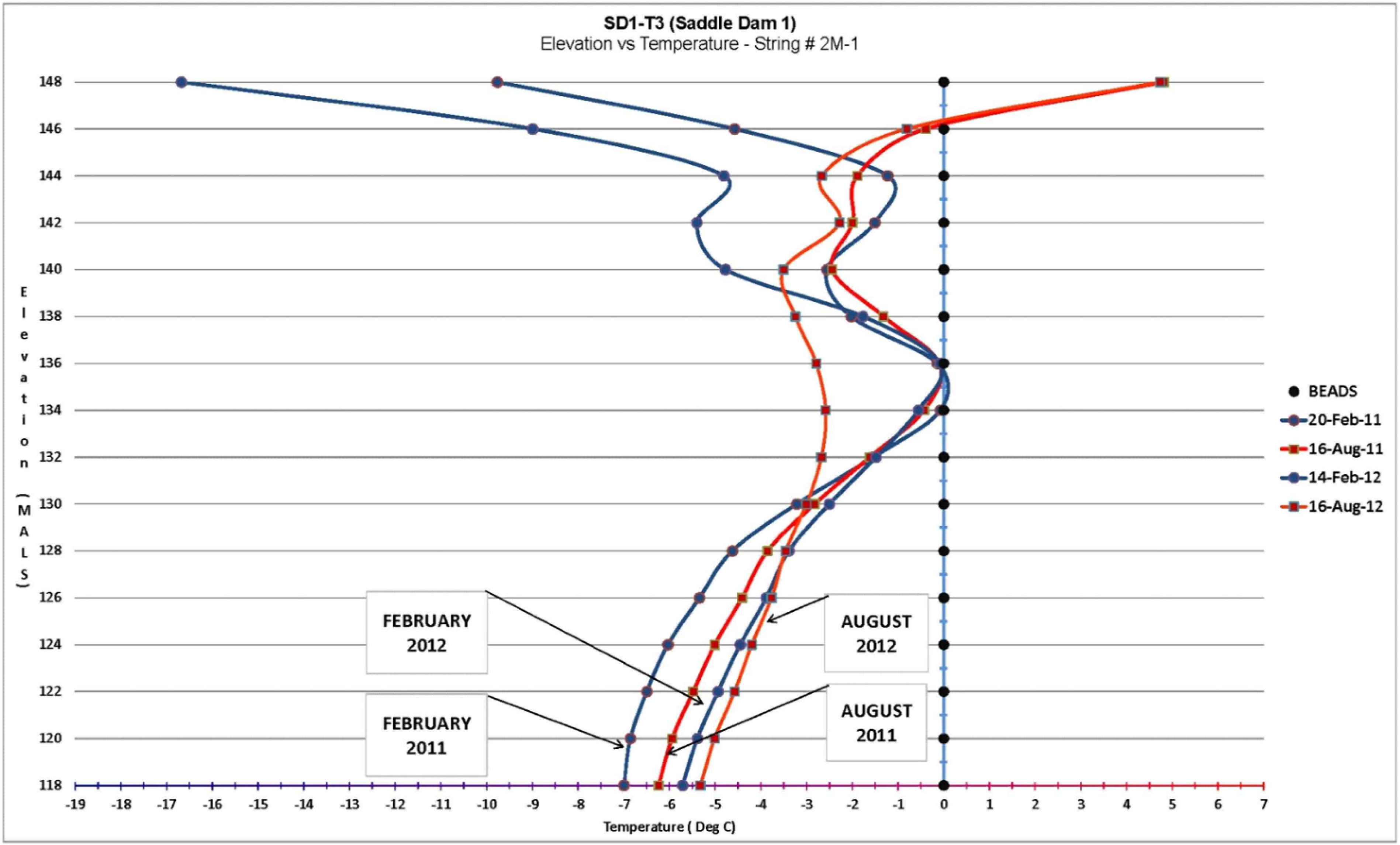
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

SADDLE DAM 1
THERMISTOR T2
FEB.2010 - AUG.2012

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C4-3**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



PROJECT

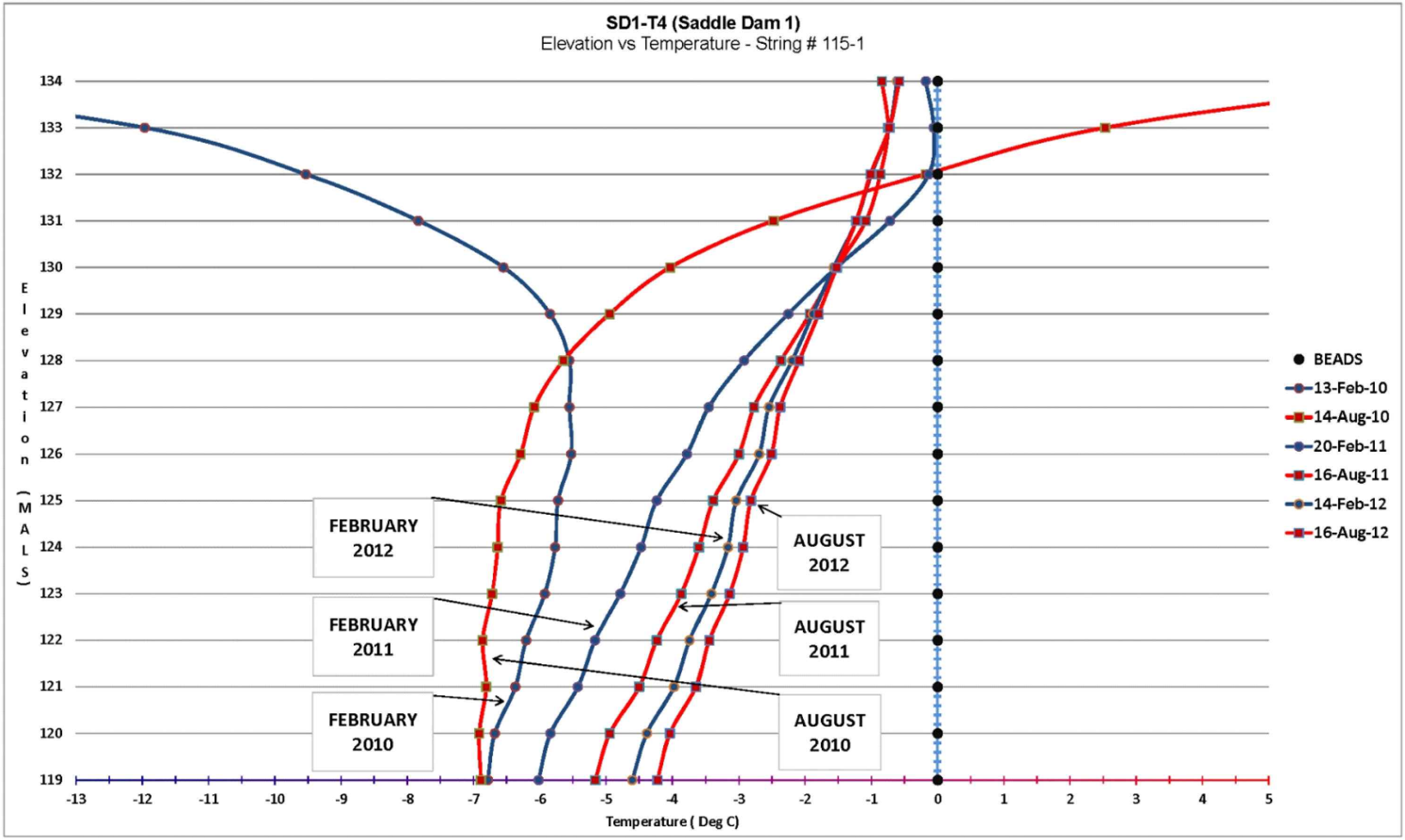
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

SADDLE DAM 1
THERMISTOR T3
FEB.2011 - AUG.2012

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C4-4**	
REVIEW	FE	11/15/2012		



PROJECT

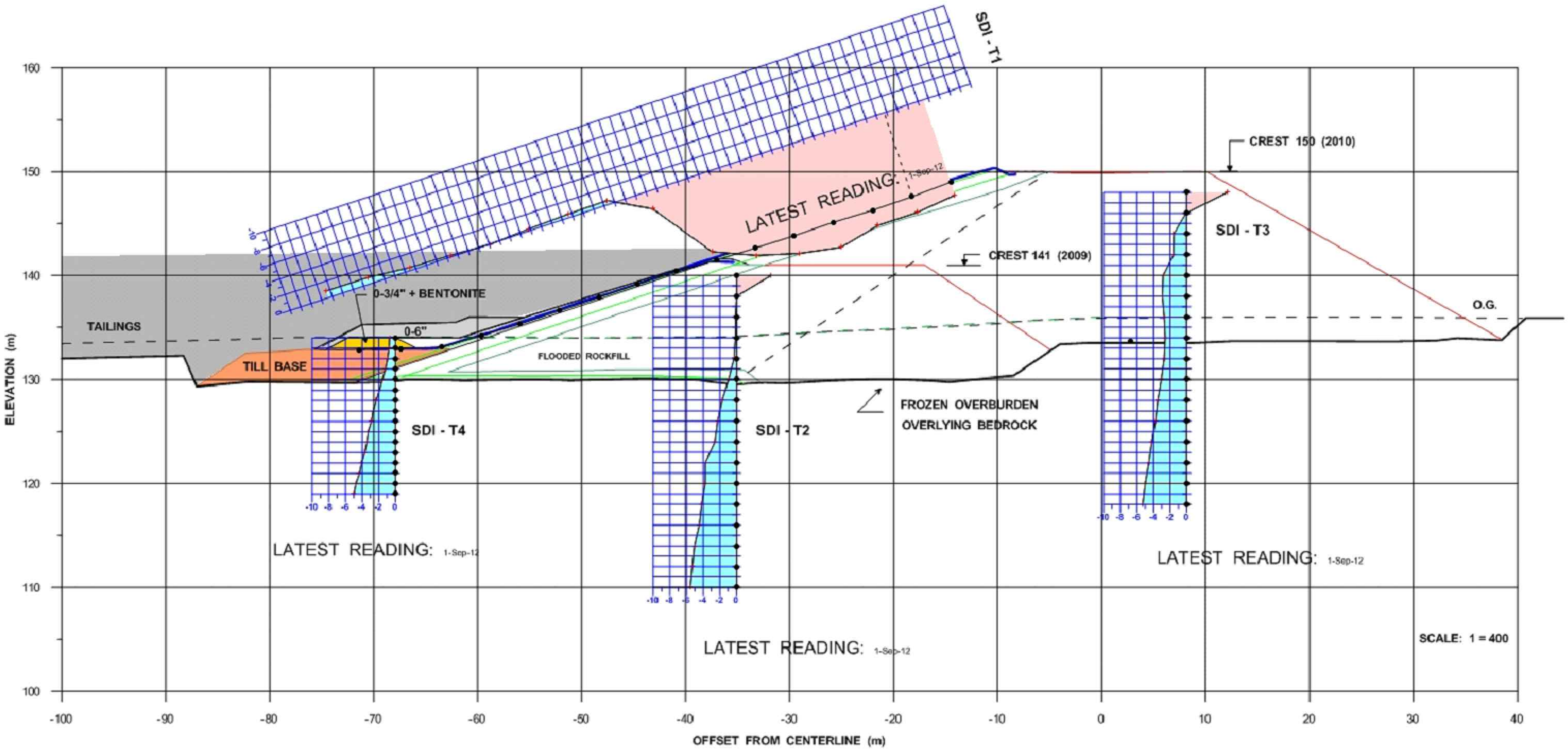
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

SADDLE DAM 1
THERMISTOR T4
FEB.2010 - AUG.2012

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	FIGURE C4-5	
REVIEW	FE	11/15/2012		



PROJECT

AEM

AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

SADDLE DAM 1
GRAPHER SUMMARY
SEPTEMBER 2012 PROFILE

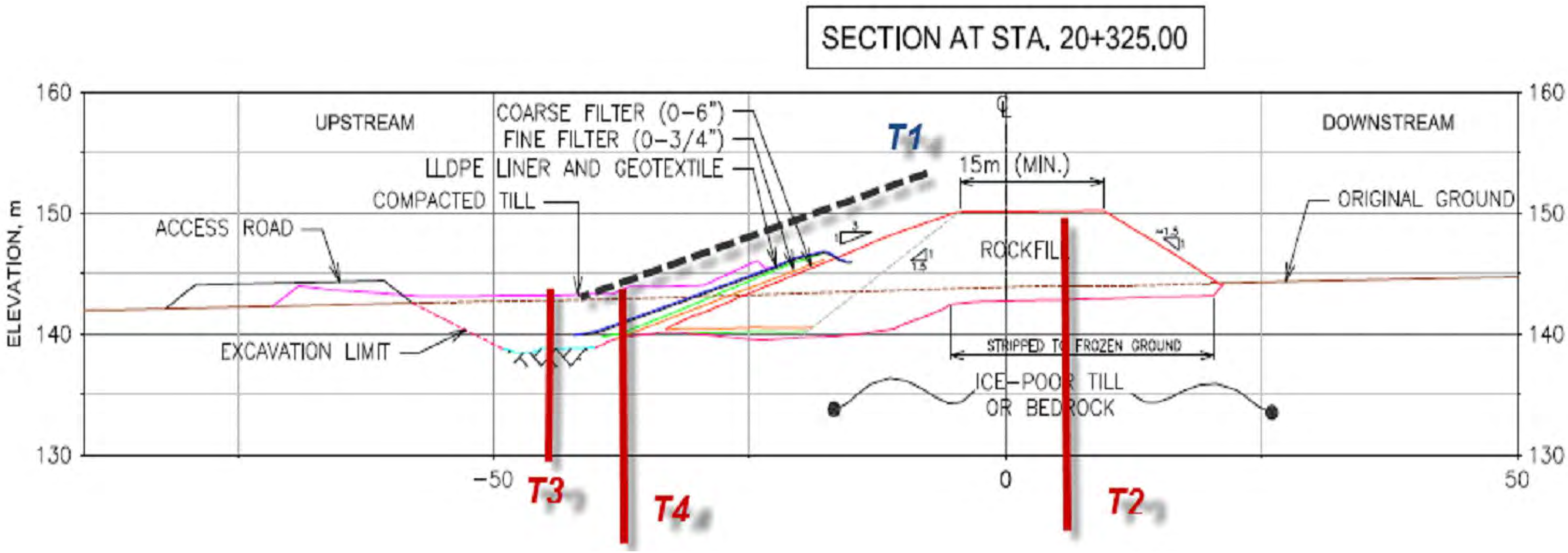
Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C4-6**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

APPENDIX C5

Saddle Dam 2 Thermistor Data

Thermistor Emplacement - T1, T2, T3 and T4



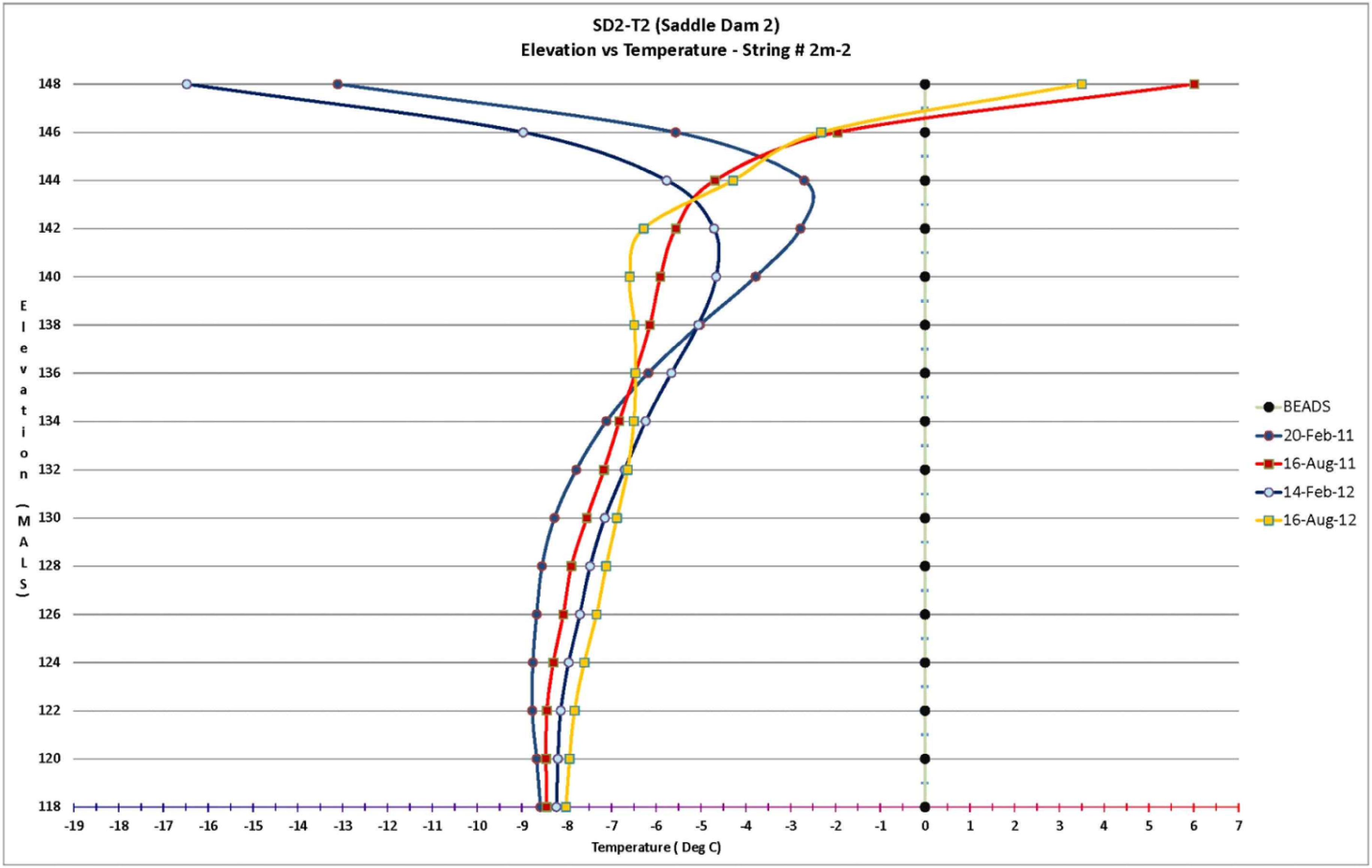
PROJECT	AEM	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT

TITLE

SADDLE DAM 2
THERMISTOR EMPLACEMENT

Golder Associates
Montréal, Québec

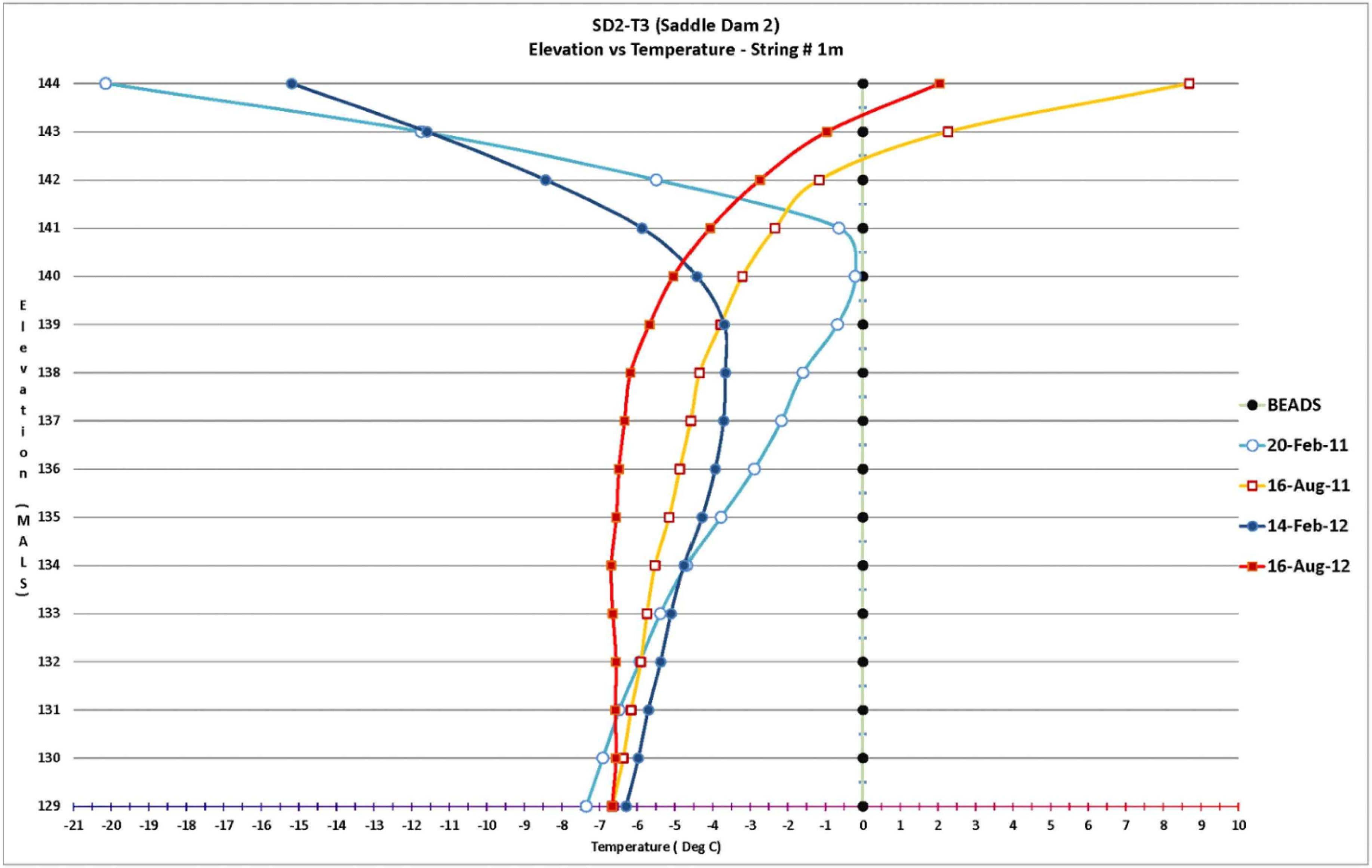
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C5-1**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**SADDLE DAM 2** **THERMISTOR T2** **FEB.2011 - AUG.2012**

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C5-2**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



PROJECT

AEM

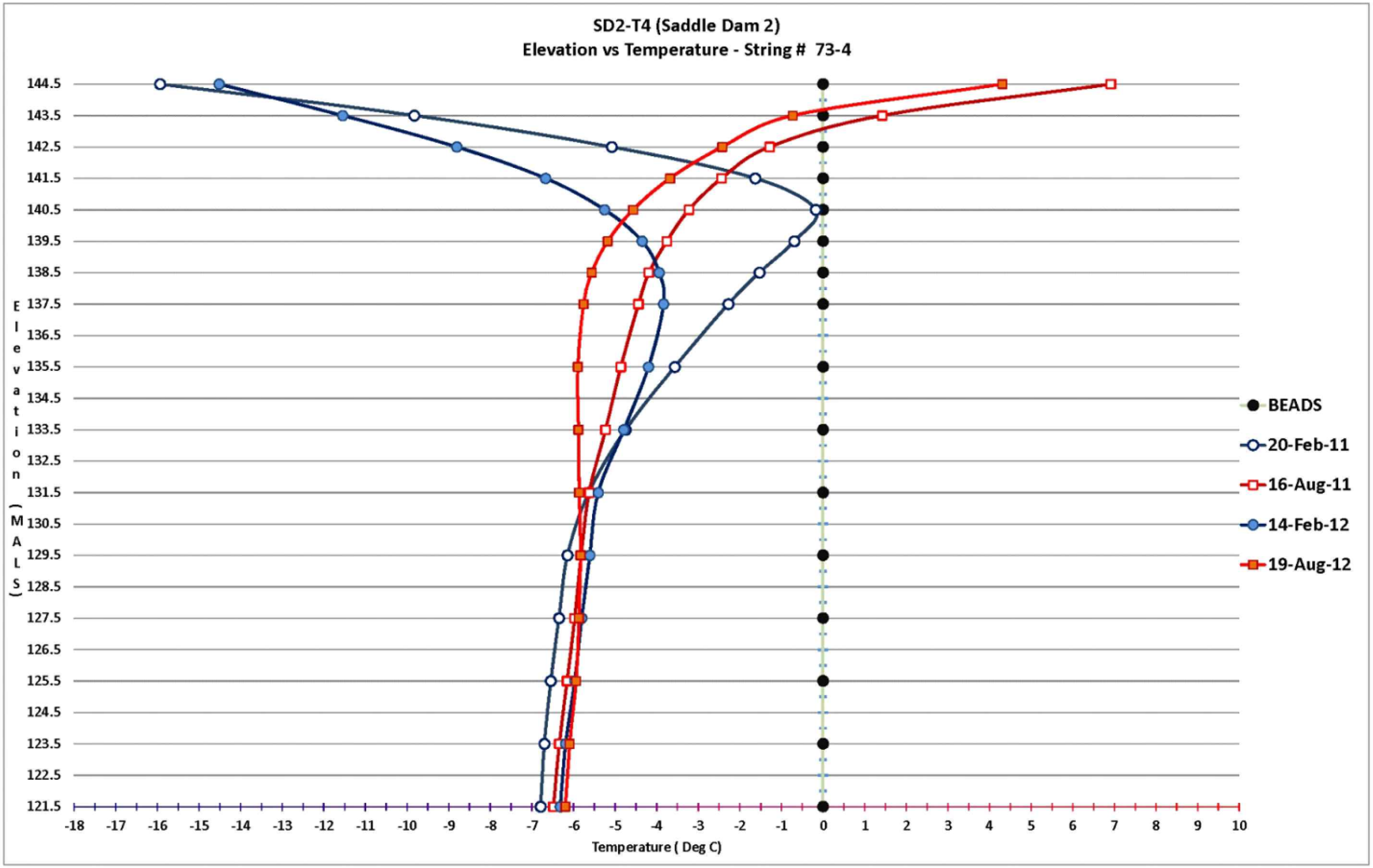
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

SADDLE DAM 2
THERMISTOR T3
FEB.2011 - AUG.2012

Golder Associates
Montréal, Québec

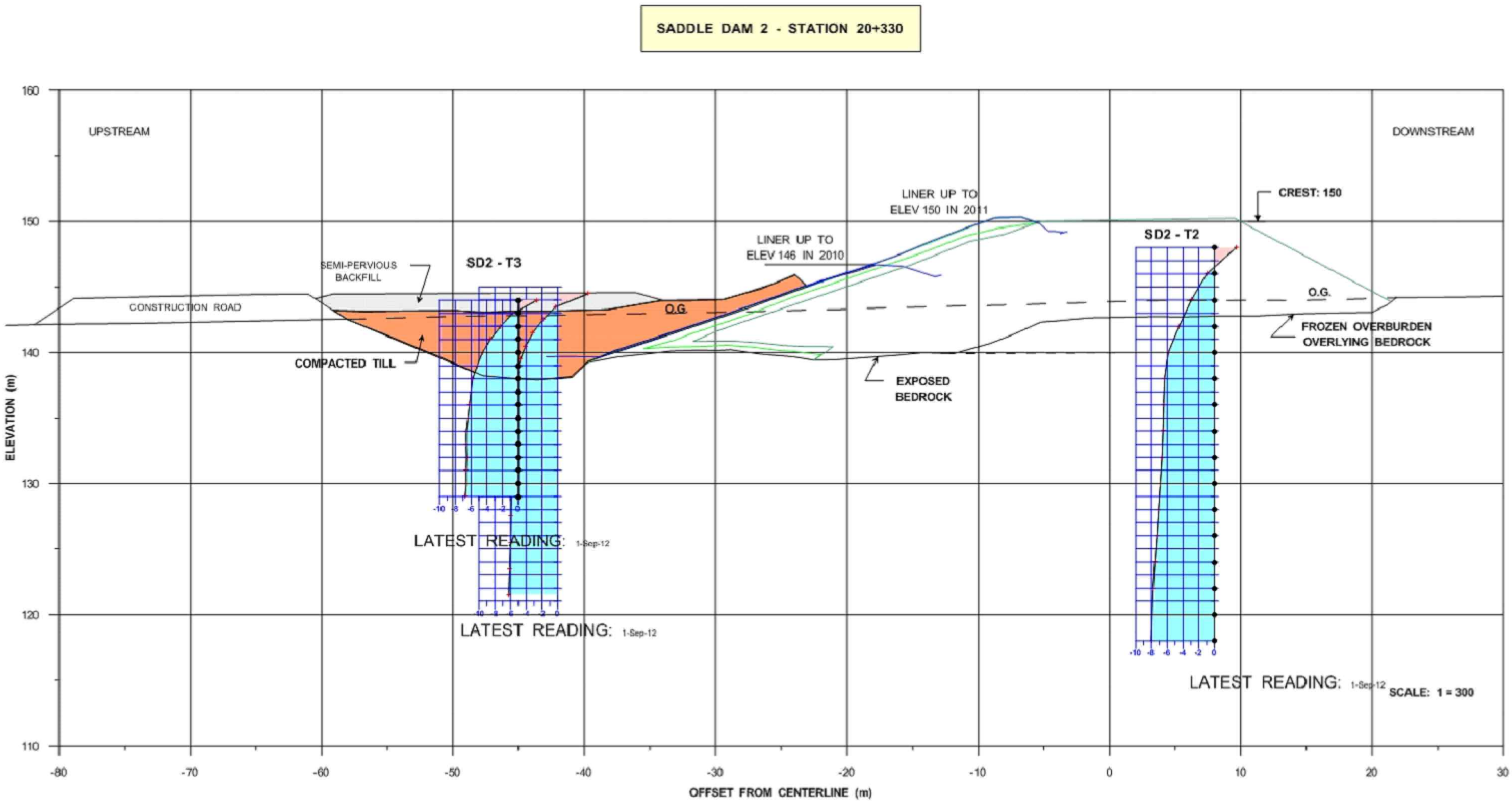
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C5-3**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**SADDLE DAM 2 THERMISTOR T4 FEB.2011 - AUG.2012**

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C5-4**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



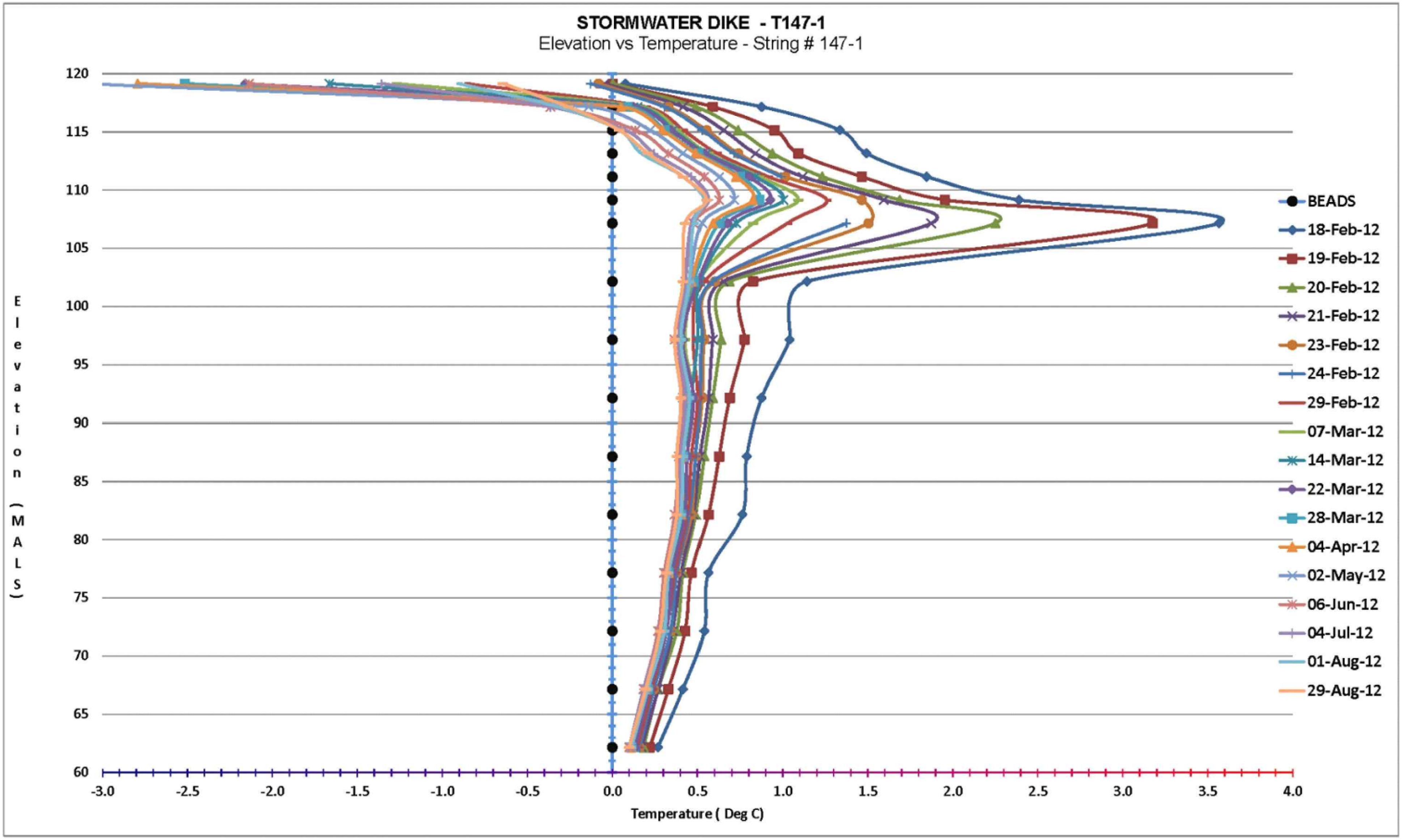
PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	SADDLE DAM 2 GRAPHER SUMMARY SEPTEMBER 2012 PROFILE

Golder Associates, Montréal, Québec

PROJECT No.	12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE / REV. -
CADD	FLB	10/19/2012	FIGURE C5-5
CHECK	YB	11/08/2012	
REVIEW	FE	11/15/2012	

APPENDIX C6

Stormwater Dike Piezometric and Thermistor Data



PROJECT

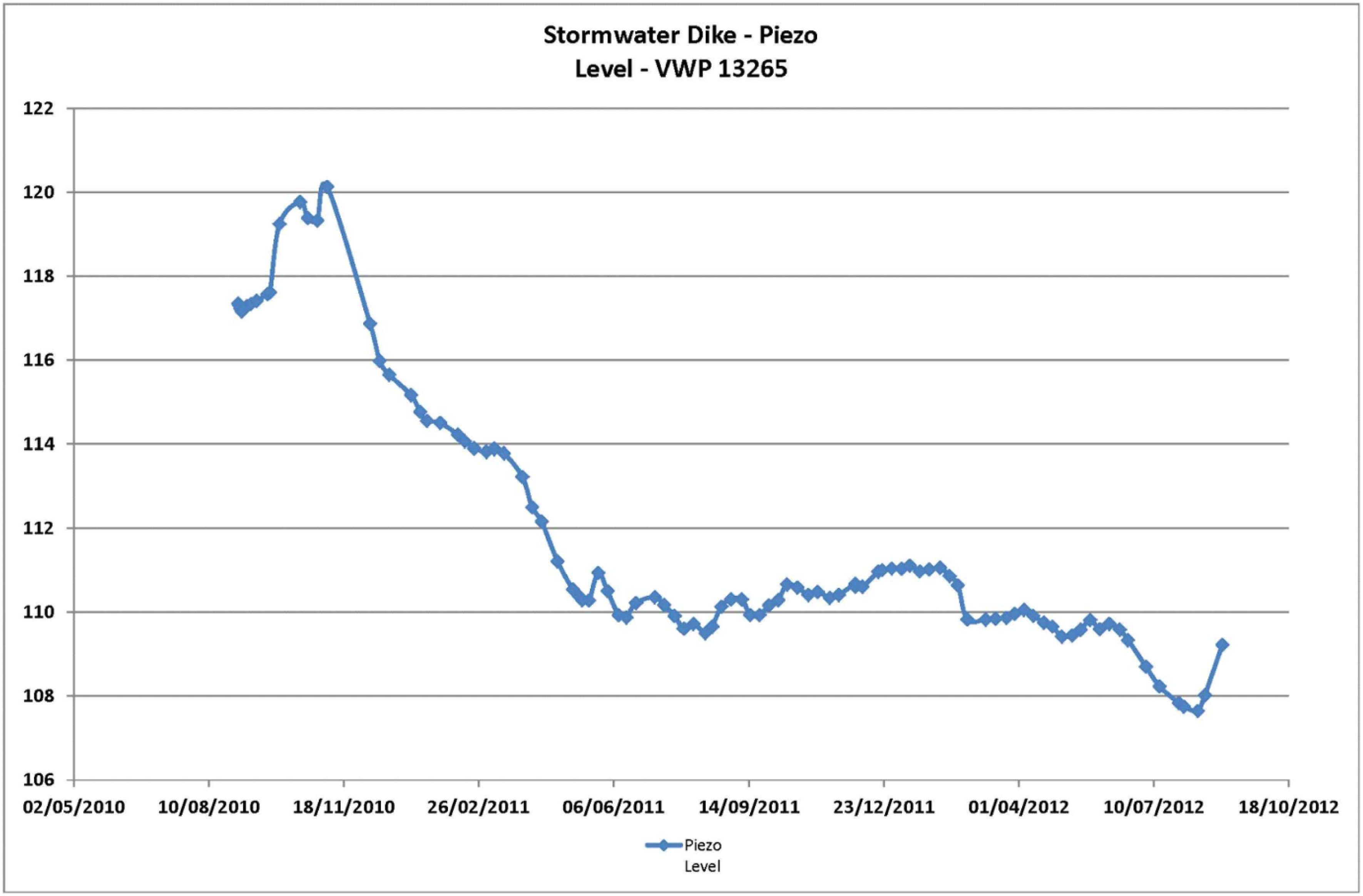
AGNICO - EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

STORMWATER DIKE
THERMISTOR T147-1
FEB.2012 - AUG.2012

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012		
CHECK	YB	11/08/2012	**FIGURE C6-1**	
REVIEW	FE	11/15/2012		



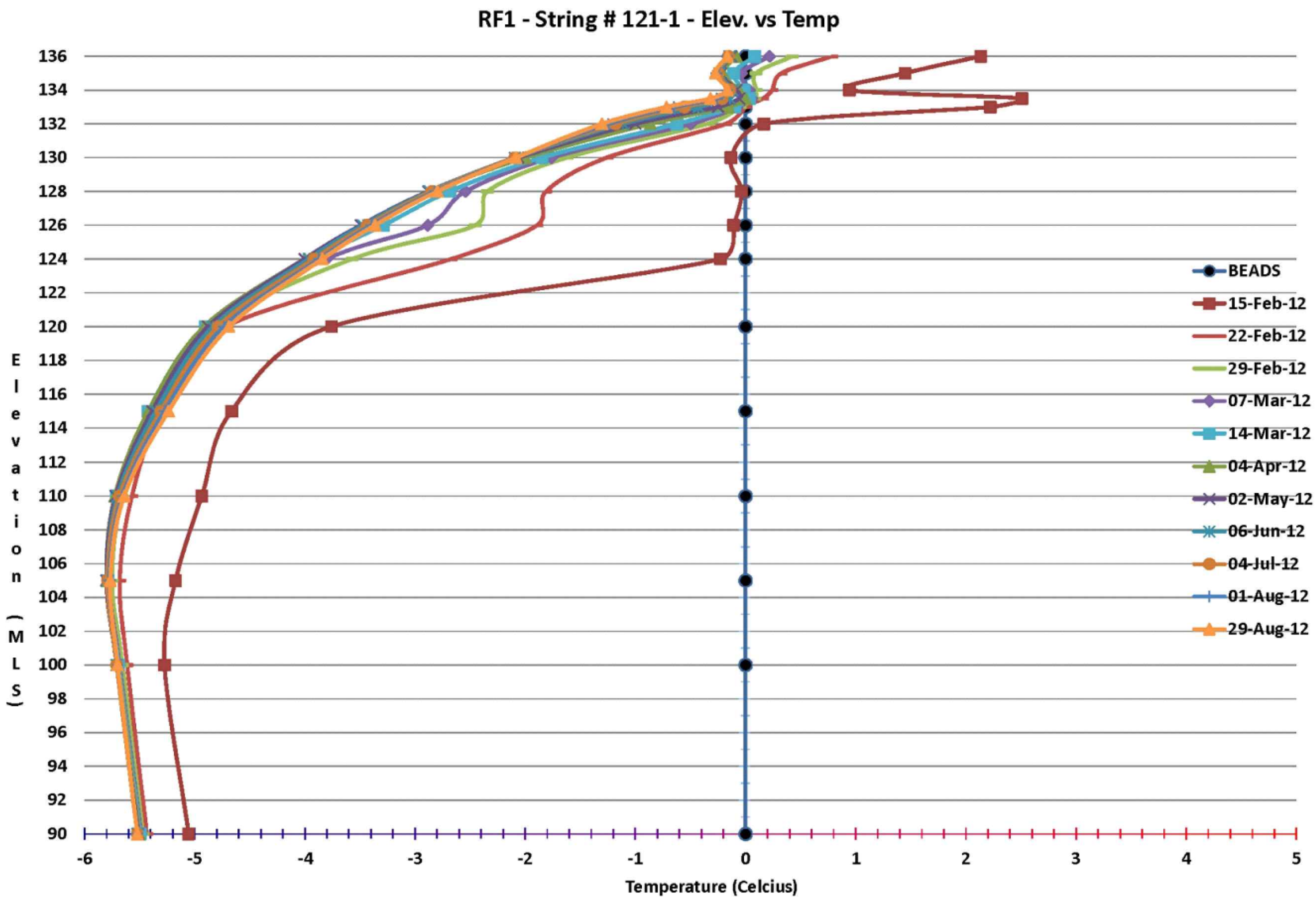
PROJECT	AEM — AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**STORMWATER DIKE PIEZOMETER P13265 AUG.2010 - AUG.2012**

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C6-2**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

APPENDIX C7

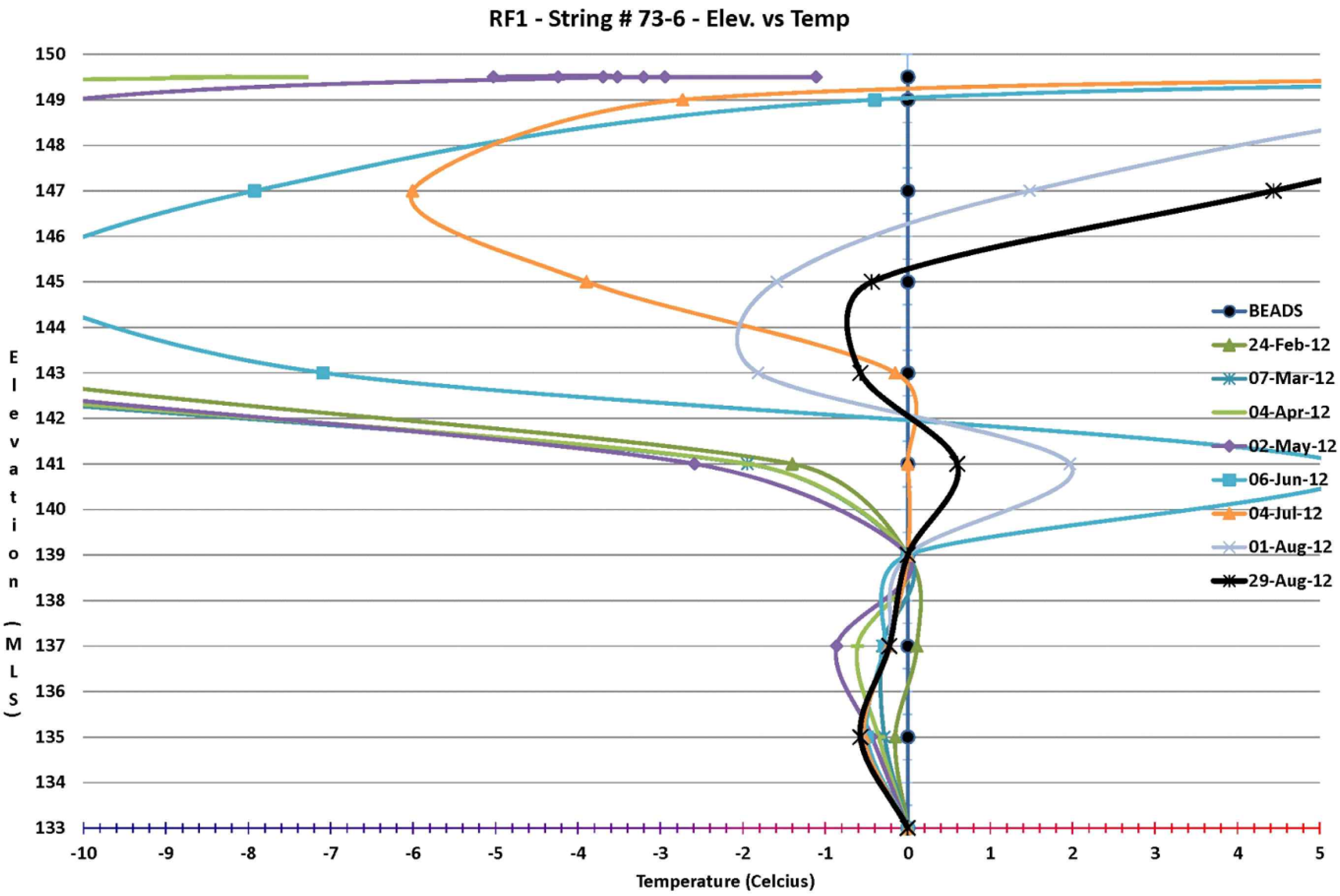
Tailings Facility Thermistor Data



PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	RF1 THERMISTOR T121-1 FEB.2012 - AUG.2012

Golder Associates
Montréal, Québec

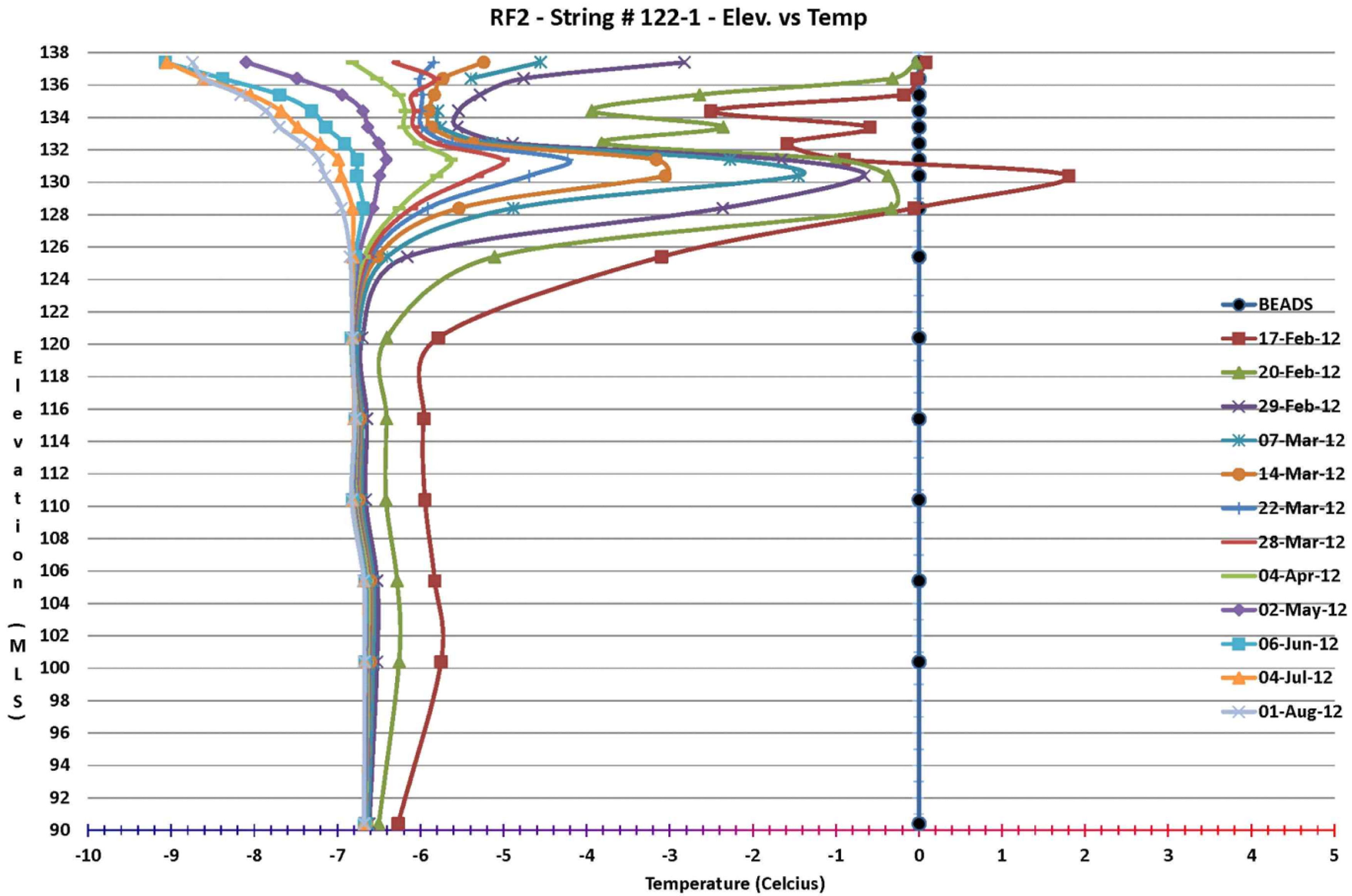
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	FIGURE C7-1	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



PROJECT	AEM — AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**RF1** **THERMISTOR T73-6** **FEB.2012 - AUG.2012**

Golder Associates
Montréal, Québec

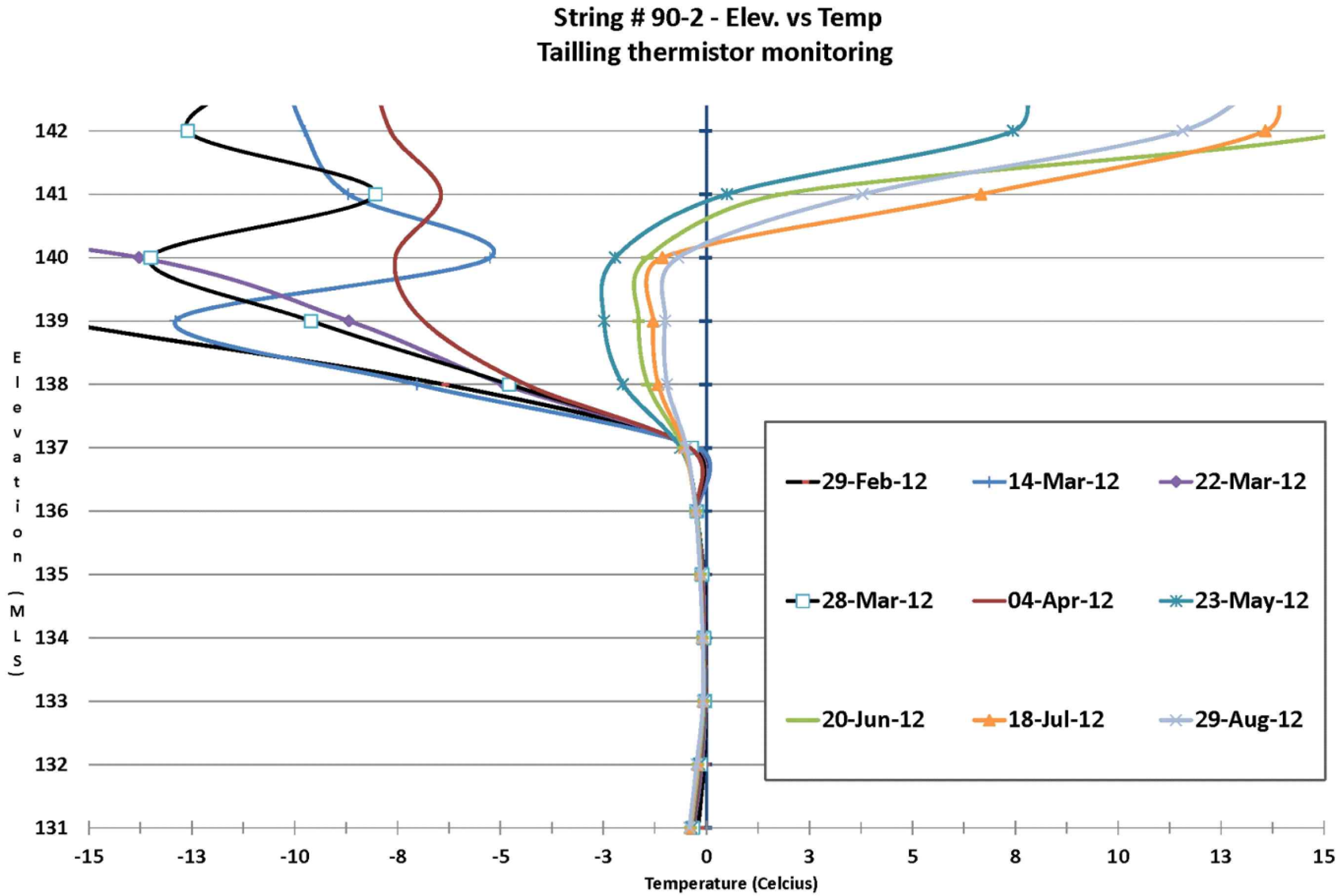
PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C7-2**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	RF2 THERMISTOR T122-1 FEB.2012 - AUG.2012

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	FIGURE C7-3	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		



PROJECT	AGNICO - EAGLE MINES LIMITED MEADOWBANK GOLD PROJECT NUNAVUT
TITLE	**TAILINGS THERMISTOR T90-2 FEB.2012 - AUG.2012**

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	AEM	09/19/2012	SCALE	REV. -
CADD	FLB	10/19/2012	**FIGURE C7-4**	
CHECK	YB	11/08/2012		
REVIEW	FE	11/15/2012		

APPENDIX D

All Weather Private Road

APPENDIX D1

Culverts Photographic Log

Photograph D1-1 : PRC1 km 0+430

Date: September 14, 2012 **Photo Number**: 296

Description: Upstream view of culvert, in good condition no sign of obstruction.

Photograph D1-2 : PRC1 km 0+430

Date: September 14, 2012 **Photo Number**: 295

Description: Downstream view of culvert. The outlet is slightly damaged and obstructed. The culvert is still functional and in overall good condition.

Photograph D1-3 : PRC2 km 0+470

Date: September 14, 2012 **Photo Number**: 293

Description: Upstream view of culverts. Good condition.

Photograph D1-4 : PRC2 km 0+470

Date: September 14, 2012 **Photo Number**: 294

Description: Downstream view of culverts. Good condition.

Photograph D1-5 : PRC3 km 1+380

Date: September 14, 2012 **Photo Number**: 291

Description: Upstream view of culvert. Good condition.

Photograph D1-6 : R-00A km 2+550

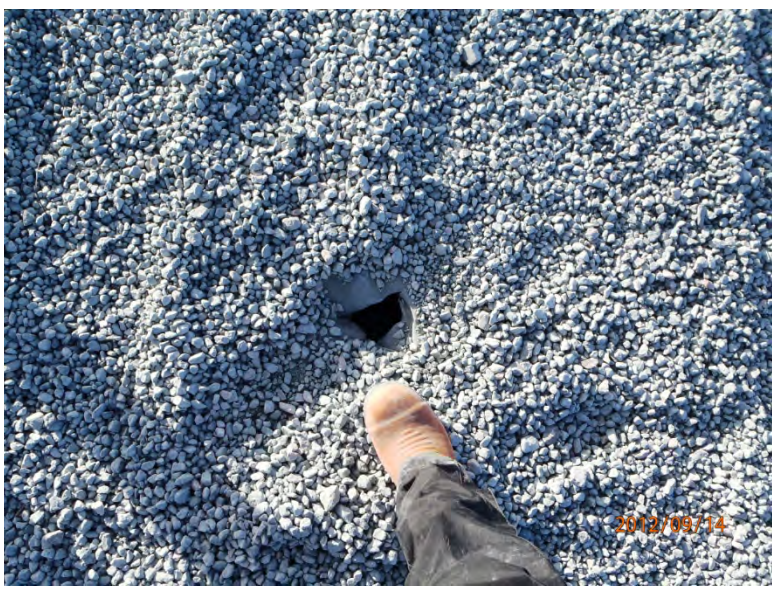
Date: September 14, 2012 **Photo Number**: 287

Description: Upstream view of culvert. The inlet is partially collapsed.

Photograph D1-7 : R-00A km 2+550

Date: September 14, 2012 **Photo Number**: 289

Description: Downstream view of culvert. The outlet is collapsed. Road bed cover is too thin to provide protection.



Photograph D1-8 : R-00A km 2+550

Date: September 14, 2012 **Photo Number**: 290

Description: A hole in the culvert in the middle of the road as can be seen from the road surface.

Photograph D1-9 : PC-14 km 4+260

Date: September 14, 2012 **Photo Number**: 284

Description: Upstream view of the culverts. Culvert on the right is filled with gravel, crushed and damaged. Culvert on the left is slightly damaged but still functioning. Notice the too thin road bed cover.

Photograph D1-10 : PC-14 km 4+260

Date: September 14, 2012 **Photo Number**: 286

Description: Downstream view of the culverts. Good condition.

Photograph D1-11 : unnamed km 5+700

Date: September 14, 2012 **Photo Number**: 277

Description: Upstream view of the culvert. Good condition, inlet slightly obstructed.

Photograph D1-12 : unnamed km 5+700

Date: September 14, 2012 **Photo Number**: 276

Description: Downstream view of the culvert. Good condition.

Photograph D1-13 : PC-17A km 8+830

Date: September 14, 2012 **Photo Number**: 268

Description: Upstream view of the culverts. Good condition.

Photograph D1-14 : PC-17A km 8+830

Date: September 14, 2012 **Photo Number**: 270

Description: Downstream view of the culverts. Good condition.

Photograph D1-15 : PC-17 km 8+850

Date: September 14, 2012 **Photo Number**: 267

Description: Upstream view of the culverts. Good condition other than slight damages observed at the inlet.

Photograph D1-16 : PC-17 km 8+850

Date: September 14, 2012 **Photo Number**: 271

Description: Downstream view of the culverts outlet. Good condition. Notice coarse material placed above gravel.

Photograph D1-17 : PC-1 km 9+952

Date: September 14, 2012 **Photo Number**: 265

Description: Upstream view of the culvert inlet. Good condition.

Photograph D1-18 : PC-1 km 9+952

Date: September 14, 2012 **Photo Number**: 266

Description: Downstream view of the culvert outlet. Good condition.

Photograph D1-19 : R-03 km 10+580

Date: September 14, 2012 **Photo Number**: 263

Description: Upstream view of the culvert inlet. Good condition.

Photograph D1-20 : R-03 km 10+580

Date: September 14, 2012 **Photo Number**: 264

Description: Downstream view of the culvert inlet. Good condition.

Photograph D1-21 : R-04 km 12+050

Date: September 14, 2012 **Photo Number**: 261

Description: Upstream view of the culvert inlet. Good condition.

Photograph D1-22 : R-04 km 12+050

Date: September 14, 2012 **Photo Number**: 262

Description: Downstream view of the culvert outlet. Good condition.

Photograph D1-23 : PC-13 km 12+745

Date: September 14, 2012 **Photo Number**: 258

Description: Upstream view of the culvert. The inlet is partially collapsed but still functional.

Photograph D1-24 : PC-13 km 12+745

Date: September 14, 2012 **Photo Number**: 260

Description: Downstream view of the culvert. Good condition.

Photograph D1-25 : PC-2 km 13+405

Date: September 14, 2012 **Photo Number**: 252

Description: Upstream view of the culvert. Minor obstruction of the inlet.

Photograph D1-26 : PC-2 km 13+405

Date: September 14, 2012 **Photo Number**: 253

Description: Downstream view of the culvert. Minor obstruction of the outlet.

Photograph D1-27 : PC-3 km 13+685

Date: September 14, 2012 **Photo Number**: 250

Description: Upstream view of the culvert. Good condition.

Photograph D1-28 : PC-3 km 13+685

Date: September 14, 2012 **Photo Number**: 251

Description: Downstream view of the culvert. Good condition.

Photograph D1-29 : unnamed km 13+950

Date: September 14, 2012 **Photo Number**: 248

Description: Upstream view of the culvert. Good condition.

Photograph D1-30 : unnamed km 13+950

Date: September 14, 2012 **Photo Number**: 249

Description: Downstream view of the culvert. Good condition.

Photograph D1-31 : PC-4 km 14+910

Date: September 14, 2012 **Photo Number**: 246

Description: Upstream view of the culvert. Good condition.

Photograph D1-32 : PC-4 km 14+910

Date: September 14, 2012 **Photo Number**: 247

Description: Downstream view of the culvert. Good condition. Large boulders piled around outlet.

Photograph D1-33 : R-05A km 15+745

Date: September 14, 2012 **Photo Number**: 244

Description: Upstream view of the culvert. Good condition.

Photograph D1-34 : R-05A km 15+745

Date: September 14, 2012 **Photo Number**: 245

Description: Downstream view of the culvert. Good condition.

Photograph D1-35 : PC-5 km 18+280

Date: September 14, 2012 **Photo Number**: 238

Description: Upstream view of the culvert. The inlet is a little bit damaged and shows small signs of erosion.

Photograph D1-36 : PC-5 km 18+280

Date: September 14, 2012 **Photo Number**: 239

Description: Downstream view of the culvert. Good condition.

Photograph D1-37 : PC-6 km 18+900

Date: September 14, 2012 **Photo Number**: 235

Description: Upstream view of culvert. Good condition.

Photograph D1-38 : PC-6 km 18+900

Date: September 14, 2012 **Photo Number**: 236

Description: Downstream view of culvert. Good condition.

Photograph D1-39 : PC-7A km 20+495

Date: September 14, 2012 **Photo Number**: 234

Description: Upstream view of culverts. Good condition.

Photograph D1-40 : PC-7A km 20+240

Date: September 14, 2012 **Photo Number**: 233

Description: Downstream view of culverts. Outlet of the north culvert (right) is slightly damaged. A little bit of erosion at the base of the outlet of the south culvert (left).

Photograph D1-41 : PC-7 km 20+250

Date: September 14, 2012 **Photo Number**: 231

Description: Upstream view of the culvert. Good condition.

Photograph D1-42 : PC-7 km 20+250

Date: September 14, 2012 **Photo Number**: 232

Description: Downstream view of the culvert. Good condition. Streambed covered by road material.

Photograph D1-43 : R-07 km 25+900

Date: September 14, 2012 **Photo Number**: 220

Description: Upstream view of the culvert. Good condition.

Photograph D1-44 : R-07 km 25+900

Date: September 14, 2012 **Photo Number**: 222

Description: Downstream view of the culvert. Good condition.

Photograph D1-45 : PC-8 km 29+420

Date: September 14, 2012 **Photo Number**: 216

Description: Upstream view of the culvert. Good condition.

Photograph D1-46 : PC-8 km 29+420

Date: September 14, 2012 **Photo Number**: 218

Description: Downstream view of the culvert. Good condition.

Photograph D1-47 : PC-9 km 35+690

Date: September 14, 2012 **Photo Number**: 207

Description: Upstream view of the culvert. Good condition.

Photograph D1-48 : PC-9 km 35+690

Date: September 14, 2012 **Photo Number**: 206

Description: Downstream view of the culvert. Good condition.

Photograph D1-49 : PC-10 km 36+865

Date: September 14, 2012 **Photo Number**: 201

Description: Upstream view of the culvert. Good condition.

Photograph D1-50 : PC-10 km 36+865

Date: September 14, 2012 **Photo Number**: 200

Description: Downstream view of the culvert. Good condition.

Photograph D1-51 : PC-11 km 39+552

Date: September 14, 2012 **Photo Number**: 198

Description: Upstream view of the culvert. Good condition.

Photograph D1-52 : PC-11 km 39+552

Date: September 14, 2012 **Photo Number**: 199

Description: Downstream view of the culvert. Minor obstruction of the outlet, but in good condition.

Photograph D1-53 : PC-12 km 41+300

Date: September 14, 2012 **Photo Number**: 191

Description: Upstream view of the culvert. Good condition. Culvert practically submerged.

Photograph D1-54 : PC-12 km 41+300

Date: September 14, 2012 **Photo Number**: 192

Description: Downstream view of the culvert. Good condition. Culvert practically submerged.

Photograph D1-55 : PC-16 km 54+950

Date: September 14, 2012 **Photo Number**: 168

Description: Upstream view of the culvert. Halfway buried by road material.

Photograph D1-56 : PC-16 km 54+950

Date: September 14, 2012 **Photo Number**: 169

Description: Downstream view of the culvert. Note that outlet is entirely buried.

Photograph D1-57 : R-14 km 67+840

Date: September 14, 2012 **Photo Number**: 143

Description: Upstream view of the northern culvert (out of three). Small signs of erosion, collapsed inside (hole in the middle). Expected to continue performing well.

Photograph D1-58 : R-14 km 67+840

Date: September 14, 2012 **Photo Number**: 144

Description: Downstream view of the northern culvert (out of three). Small signs of erosion, collapsed inside (hole in the middle). Expected to continue performing well.

Photograph D1-59 : R-14 km 67+840

Date: September 14, 2012 **Photo Number**: 142

Description: Upstream view of the middle culvert (out of three). Small signs of erosion, collapsed inside (hole in the middle) but still in good condition.

Photograph D1-60 : R-14 km 67+840

Date: September 14, 2012 **Photo Number**: 145

Description: Downstream view of the middle culvert (out of three). Small signs of erosion, collapsed inside (hole in the middle) but still in good conditions.

Photograph D1-61 : R-14 km 67+840

Date: September 14, 2012 **Photo Number**: 141

Description: Upstream view of the southern culvert (out of three). Good condition. Minor damage to the inlet.

Photograph D1-62 : R-14 km 67+840

Date: September 14, 2012 **Photo Number**: 146

Description: Downstream view of the southern culvert (out of three). Good condition.

Photograph D1-63 : R-17 km 77+440

Date: September 14, 2012 **Photo Number**: 123

Description: Upstream view of the culvert. Good condition.

Photograph D1-64 : R-17 km 77+440

Date: September 14, 2012 **Photo Number**: 122

Description: Downstream view of the culvert. Good condition.

Photograph D1-65 : R-18A km 80+950

Date: September 14, 2012 **Photo Number**: 112

Description: Upstream view of the culverts. Good condition.

Photograph D1-66 : R-18A km 80+950

Date: September 14, 2012 **Photo Number**: 114

Description: Downstream view of the culverts. Good condition. Minor obstruction of the southern culvert outlet (right) caused by accumulation of road material.

Photograph D1-67 : R-20 km 85+490

Date: September 14, 2012 **Photo Number**: 96

Description: Upstream view of the culvert. Good condition.

Photograph D1-68 : R-20 km 85+490

Date: September 14, 2012 **Photo Number**: 95

Description: Downstream view of the culvert. Outlet is damaged but in good condition overall.

Photograph D1-69 : R-21 km 87+300

Date: September 14, 2012 **Photo Number**: 90

Description: Upstream view of the culverts. Good condition.

Photograph D1-70 : R-21 km 87+300

Date: September 14, 2012 **Photo Number**: 90

Description: Downstream view of the culverts. Good condition.

Photograph D1-71 : R-23 km 93+600

Date: September 14, 2012 **Photo Number**: 80

Description: Upstream view of the culvert. Inlet has minor damage near the top, but is in good condition.

Photograph D1-72 : R-23 km 93+600

Date: September 14, 2012 **Photo Number**: 78

Description: Downstream view of the culvert. Good condition.

Photograph D1-73 : R-24 km 98+100

Date: September 14, 2012 **Photo Number**: 74

Description: Upstream view of the culverts. Good condition.

Photograph D1-74 : R-24 km 98+100

Date: September 14, 2012 **Photo Number**: 76

Description: Downstream view of the culverts. Good condition. The outlet of the southern culvert (left) shows signs of underneath erosion.

Photograph D1-75 : R-25 km 101+950

Date: September 14, 2012 **Photo Number**: 61

Description: Upstream view of the culverts. Good condition.

Photograph D1-76 : R-25 km 101+950

Date: September 14, 2012 **Photo Number**: 63

Description: Downstream view of the culverts. Good condition.

Photograph D1-77 : R-26 km 104+400

Date: September 14, 2012 **Photo Number**: 56

Description: Upstream view of the culverts. Good condition.

Photograph D1-78 : R-26 km 104+400

Date: September 14, 2012 **Photo Number**: 58

Description: Downstream view of the culverts. Good condition.

APPENDIX D2

Bridges Photographic Log

Photograph D2-1 Bridges 1 – R02 km 8+750

Date: September 14, 2012 **Photo Number**: 272

Description: Looking at the north abutment from downstream.

Photograph D2-2 Bridges 1 – R02 km 8+750

Date: September 14, 2012 **Photo Number**: 273

Description: Looking at the south abutment from downstream.

Photograph D2-3 Bridges 1 – R02 km 8+750

Date: September 14, 2012 **Photo Number**: 274

Description: Looking beneath the bridge at the north abutment.

Photograph D2-4 Bridges 1 – R02 km 8+750

Date: September 14, 2012 **Photo Number**: 275

Description: Looking beneath the bridge at the south abutment.

Photograph D2-5 Bridges 2 – R05 km 17+600

Date: September 14, 2012 **Photo Number**: 240

Description: Looking at the north abutment from upstream. Damage of the bin wall likely caused during snow removal activities.

Photograph D2-6 Bridges 2 – R05 km 17+600

Date: September 14, 2012 **Photo Number**: 241

Description: Looking at the south abutment from upstream.

Photograph D2-7 Bridges 2 – R05 km 17+600

Date: September 14, 2012 **Photo Number**: 242

Description: Looking beneath the bridge at the north abutment.

Photograph D2-8 Bridges 2 – R05 km 17+600

Date: September 14, 2012 **Photo Number**: 243

Description: Looking beneath the bridge at the south abutment.

Photograph D2-9 Bridges 3 – R06 km 23+100

Date: September 14, 2012 **Photo Number**: 227

Description: Looking at the east abutment from upstream.

Photograph D2-10 Bridges 3 – R06 km 23+100

Date: September 14, 2012 **Photo Number**: 228

Description: Looking at the west abutment from upstream.

Photograph D2-11 Bridges 3 – R06 km 23+100

Date: September 14, 2012 **Photo Number**: 229

Description: Looking beneath the bridge at the east abutment.

Photograph D2-12 Bridges 3 – R06 km 23+100

Date: September 14, 2012 **Photo Number**: 230

Description: Looking beneath the bridge at the west abutment.

Photograph D2-13 Bridges 4 – R09 km 48+500

Date: September 14, 2012 **Photo Number**: 179

Description: Looking at the bridge from upstream.

Photograph D2-14 Bridges 4 – R09 km 48+500

Date: September 14, 2012 **Photo Number**: 180

Description: Looking at the north abutment from upstream.

Photograph D2-15 Bridges 4 – R09 km 48+500

Date: September 14, 2012 **Photo Number**: 181

Description: Looking at the south abutment from upstream.

Photograph D2-16 Bridges 4 – R09 km 48+500

Date: September 14, 2012 **Photo Number**: 182

Description: Looking at the bridge from downstream.

Photograph D2-17 Bridges 5 – R13 km 62+060

Date: September 14, 2012 **Photo Number**: 158

Description: Looking at the bridge from downstream.

Photograph D2-18 Bridges 5 – R13 km 62+060

Date: September 14, 2012 **Photo Number**: 159

Description: Looking at the north abutment from downstream.

Photograph D2-19 Bridges 5 – R13 km 62+060

Date: September 14, 2012 **Photo Number**: 160

Description: Looking at the south abutment from downstream.

Photograph D2-20 Bridges 5 – R13 km 62+060

Date: September 14, 2012 **Photo Number**: 161

Description: Looking at the bridge from upstream.

Photograph D2-21 Bridges 6 – R15 km 69+200

Date: September 14, 2012 **Photo Number**: 135

Description: Looking at the south abutment from downstream. Damage of the bin wall likely caused during snow removal activities.

Photograph D2-22 Bridges 6 – R15 km 69+200

Date: September 14, 2012 **Photo Number**: 136

Description: Looking at the north abutment from downstream.

Photograph D2-23 Bridges 6 – R15 km 69+200

Date: September 14, 2012 **Photo Number**: 137

Description: Looking at the north abutment from downstream. Damage of the bin wall likely caused during snow removal activities.

Photograph D2-24 Bridges 6 – R15 km 69+200

Date: September 14, 2012 **Photo Number**: 138

Description: Looking at the south abutment from downstream. Damage of the bin wall likely caused during snow removal activities.

Photograph D2-25 Bridges 6 – R15 km 69+200

Date: September 14, 2012 **Photo Number**: 139

Description: Looking at the north abutment from upstream. Damage of the bin wall likely caused during snow removal activities.

Photograph D2-26 Bridges 6 – R15 km 69+200

Date: September 14, 2012 **Photo Number**: 140

Description: Looking at the south abutment from upstream. Damage of the bin wall likely caused during snow removal activities.

Photograph D2-27 Bridges 7 – R16 km 73+800

Date: September 14, 2012 **Photo Number**: 124

Description: Looking at the bridge from downstream.

Photograph D2-28 Bridges 7 – R16 km 73+800

Date: September 14, 2012 **Photo Number**: 125

Description: Looking at the bridge from upstream.

Photograph D2-29 Bridges 8 – R18 km 79+500

Date: September 14, 2012 **Photo Number**: 118

Description: Looking at the north abutment from downstream.

Photograph D2-30 Bridges 8 – R18 km 79+500

Date: September 14, 2012 **Photo Number**: 120

Description: Looking at the south abutment from downstream.

Photograph D2-31 Bridges 9 – R19 km 83+150

Date: September 14, 2012 **Photo Number**: 104

Description: Looking at the northwest abutment from upstream.

Photograph D2-32 Bridges 9 – R19 km 83+150

Date: September 14, 2012 **Photo Number**: 105

Description: Looking at the southeast abutment from upstream.

Photograph D2-33 Bridges 9 – R19 km 83+150

Date: September 14, 2012 **Photo Number**: 106

Description: Looking at the southeast abutment from downstream.

Photograph D2-34 Bridges 9 – R19 km 83+150

Date: September 14, 2012 **Photo Number**: 107

Description: Looking at the northwest abutment from downstream.

APPENDIX E

Quarries Photographic Log

Photograph E1-1: Quarry 1 – km 5+200

Date: September 14, 2012 **Photo Number**: 278

Description: View of east wall.

Photograph E1-2: Quarry 1 – km 5+200

Date: September 14, 2012 **Photo Number**: 280

Description: View of south and west wall.

Photograph E1-3: Quarry 1 – km 5+200

Date: September 14, 2012 **Photo Number**: 282

Description: View of west wall.

Photograph E1-4 : Quarry 1 – km 5+200

Date: September 14, 2012 **Photo Number**: 283

Description: View of north wall.

Photograph E1-5 : Quarry 2 – km 13+250

Date: September 14, 2012 **Photo Number**: 254

Description: View of south wall.

Photograph E1-6 : Quarry 2 – km 13+250

Date: September 14, 2012 **Photo Number**: 256

Description: View of north and west wall.

Photograph E1-7 : Quarry 3 – km 23+700

Date: September 14, 2012 **Photo Number**: 223

Description: View of east wall.

Photograph E1-8 : Quarry 3 – km 23+700

Date: September 14, 2012 **Photo Number**: 225

Description: View of west wall.

Photograph E1-9 : Quarry 4 – km 31+300

Date: September 14, 2012 **Photo Number**: 213

Description: View of Quarry 4, quarry is flooded, south and east wall not exposed.

Photograph E1-10 : Quarry 5 – km 34+650

Date: September 14, 2012 **Photo Number**: 208

Description: View of southwest wall. Note contaminate soils temporary stored in this quarry.

Photograph E1-11 : Quarry 5 – km 34+650

Date: September 14, 2012 **Photo Number**: 209

Description: View of northwest wall. Note contaminate soils temporary stored in this quarry.

Photograph E1-12 : Quarry 5 – km 34+650

Date: September 14, 2012 **Photo Number**: 211

Description: View of northeast wall.

Photograph E1-13 : Quarry 6 – km 36+470

Date: September 14, 2012 **Photo Number**: 202

Description: View of east wall.

Photograph E1-14 : Quarry 6 – km 36+470

Date: September 14, 2012 **Photo Number**: 203

Description: View of east, south and west wall.

Photograph E1-15 : Quarry 6 – km 36+470

Date: September 14, 2012 **Photo Number**: 204

Description: View of west wall.

Photograph E1-16 : Quarry 7 – km 39+800

Date: September 14, 2012 **Photo Number**: 194

Description: View of southwest wall. Notice the unstable blocks and high abrupt walls.

Photograph E1-17 : Quarry 7 – km 39+800

Date: September 14, 2012 **Photo Number**: 196

Description: View of north wall.

Photograph E1-18 : Quarry 7 – km 39+800

Date: September 14, 2012 **Photo Number**: 197

Description: View of west wall. Notice the high abrupt walls.

Photograph E1-19 : Quarry 8 – km 42+950

Date: September 14, 2012 **Photo Number**: 188

Description: View of southwest wall.

Photograph E1-20 : Quarry 8 – km 42+950

Date: September 14, 2012 **Photo Number**: 189

Description: View of northwest wall.

Photograph E1-21 : Quarry 9 – km 44+600

Date: September 14, 2012 **Photo Number**: 183

Description: View of southwest and west wall.

Photograph E1-22 : Quarry 9 – km 44+600

Date: September 14, 2012 **Photo Number**: 186

Description: View of northeast wall and north end of the west wall.

Photograph E1-23 : Quarry 10 – km 48+900

Date: September 14, 2012 **Photo Number**: 174

Description: Overview of the quarry looking north at the west and north wall.

Photograph E1-24 : Quarry 10 – km 48+900

Date: September 14, 2012 **Photo Number**: 175

Description: Overview of the quarry looking north at the east and north wall.

Photograph E1-25 : Quarry 10 – km 48+900

Date: September 14, 2012 **Photo Number**: 176

Description: View of the west wall.

Photograph E1-26 : Quarry 11 – km 53+500

Date: September 14, 2012 **Photo Number**: 172

Description: Overview of quarry 11 looking north.

Photograph E1-27 : Quarry 12 – km 58+300

Date: September 14, 2012 **Photo Number**: 163

Description: Overview of quarry 12 looking southeast.

Photograph E1-28 : Quarry 12 – km 58+300

Date: September 14, 2012 **Photo Number**: 164

Description: View of the southwest wall.

Photograph E1-29 : Quarry 12 – km 58+300

Date: September 14, 2012 **Photo Number**: 166

Description: View of the west and southwest wall.

Photograph E1-30 : Quarry 12 – km 58+300

Date: September 14, 2012 **Photo Number**: 167

Description: View of the southeast wall.

Photograph E1-31 : Quarry 13 – km 62+350

Date: September 14, 2012 **Photo Number**: 154

Description: View of the northwest and northeast wall.

Photograph E1-32 : Quarry 13 – km 62+350

Date: September 14, 2012 **Photo Number**: 156

Description: Looking southeast at the southeast wall.

Photograph E1-33 : Quarry 14 – km 65+700

Date: September 14, 2012 **Photo Number**: 151

Description: View of west and south wall.

Photograph E1-34 : Quarry 14 – km 65+700

Date: September 14, 2012 **Photo Number**: 153

Description: View of north and west wall.

Photograph E1-35 : Quarry 15 – km 67+600

Date: September 14, 2012 **Photo Number**: 148

Description: Overview of Quarry 15 looking at the southwest wall.

Photograph E1-36 : Quarry 15 – km 67+600

Date: September 14, 2012 **Photo Number**: 149

Description: View of the northwest wall.

Photograph E1-37 : Quarry 16 – km 70+400

Date: September 14, 2012 **Photo Number**: 131

Description: View of the south and southwest wall.

Photograph E1-38 : Quarry 16 – km 70+400

Date: September 14, 2012 **Photo Number**: 133

Description: View of the west wall.

Photograph E1-39 : Quarry 16 – km 70+400

Date: September 14, 2012 **Photo Number**: 134

Description: View of the south, southwest and northwest wall.

Photograph E1-40 : Quarry 17 – km 72+800

Date: September 14, 2012 **Photo Number**: 127

Description: Looking at the northeast wall.

Photograph E1-41 : Quarry 17 – km 72+800

Date: September 14, 2012 **Photo Number**: 130

Description: Looking at the northwest wall.

Photograph E1-42 : Quarry 18 – km 80+200

Date: September 14, 2012 **Photo Number**: 115

Description: Looking northwest at the west and the north wall.

Photograph E1-43 : Quarry 19 – km 84+300

Date: September 14, 2012 **Photo Number**: 100

Description: Looking east at the north and east wall.

Photograph E1-44 : Quarry 19 – km 84+300

Date: September 14, 2012 **Photo Number**: 97

Description: Looking west at the north and west wall.

Photograph E1-45 : Quarry 20 – km 89+550

Date: September 14, 2012 **Photo Number**: 85

Description: Looking at the northwest wall.

Photograph E1-46 : Quarry 20 – km 89+550

Date: September 14, 2012 **Photo Number**: 87

Description: Looking at the northeast wall.

Photograph E1-47 : Quarry 20 – km 89+550

Date: September 14, 2012 **Photo Number**: 88

Description: Looking at the southeast wall.

Photograph E1-48 : Quarry 21 – km 93+400

Date: September 14, 2012 **Photo Number**: 81

Description: Looking at the south wall.

Photograph E1-49 : Quarry 21 – km 93+400

Date: September 14, 2012 **Photo Number**: 82

Description: Looking at the west wall.

Photograph E1-50 : Quarry 21 – km 93+400

Date: September 14, 2012 **Photo Number**: 83

Description: Looking at the north wall.

Photograph E1-51 : Quarry 22 – km 99+200

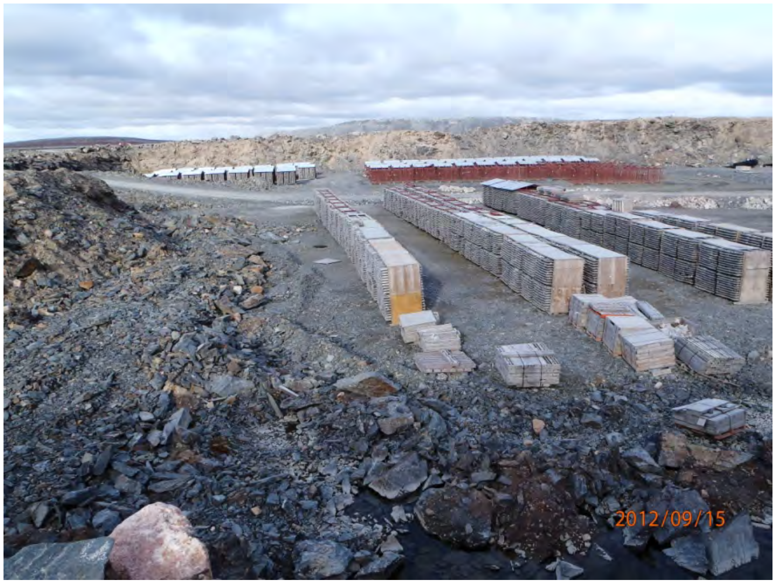
Date: September 14, 2012 **Photo Number**: 65

Description: Overview of the quarry, looking northwest. Note the presence of contaminated soil temporary stored inside the quarry.

Photograph E1-52 : Quarry 22 – km 99+200

Date: September 14, 2012 **Photo Number**: 68

Description: Looking at the northeast wall. Note the presence of contaminated soil temporary stored inside the quarry.



Photograph E1-53 : Quarry 23 (Airstrip Quarry)

Date: September 14, 2012 **Photo Number**: 360

Description: Looking northeast at northeast wall.

Photograph E1-54 : Quarry 23 (Airstrip Quarry)

Date: September 14, 2012 **Photo Number**: 361

Description: Looking east at northeast wall.

Photograph E1-55 : Quarry 23 (Airstrip Quarry)

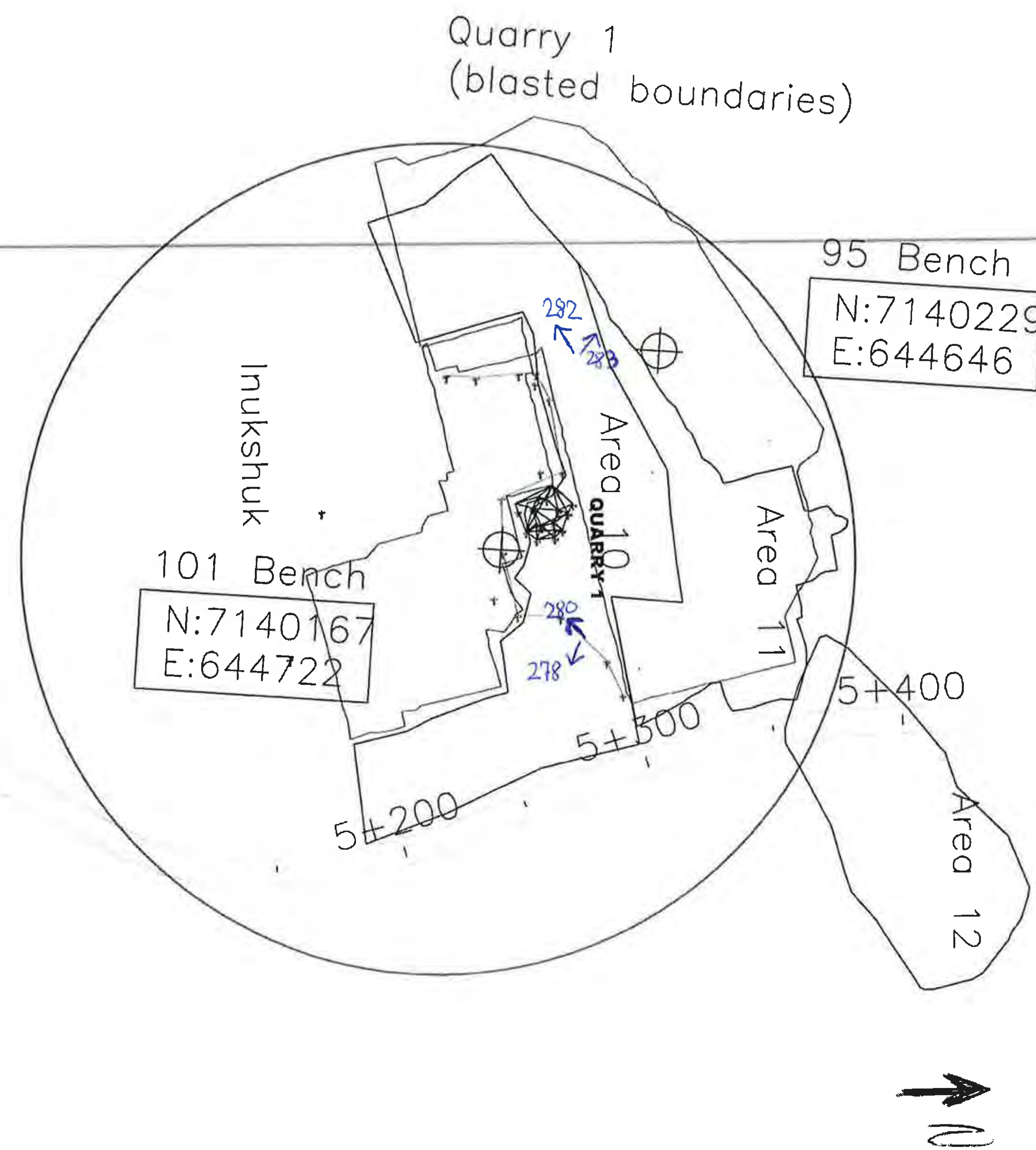
Date: September 14, 2012 **Photo Number**: 364

Description: Looking west at southwest wall.

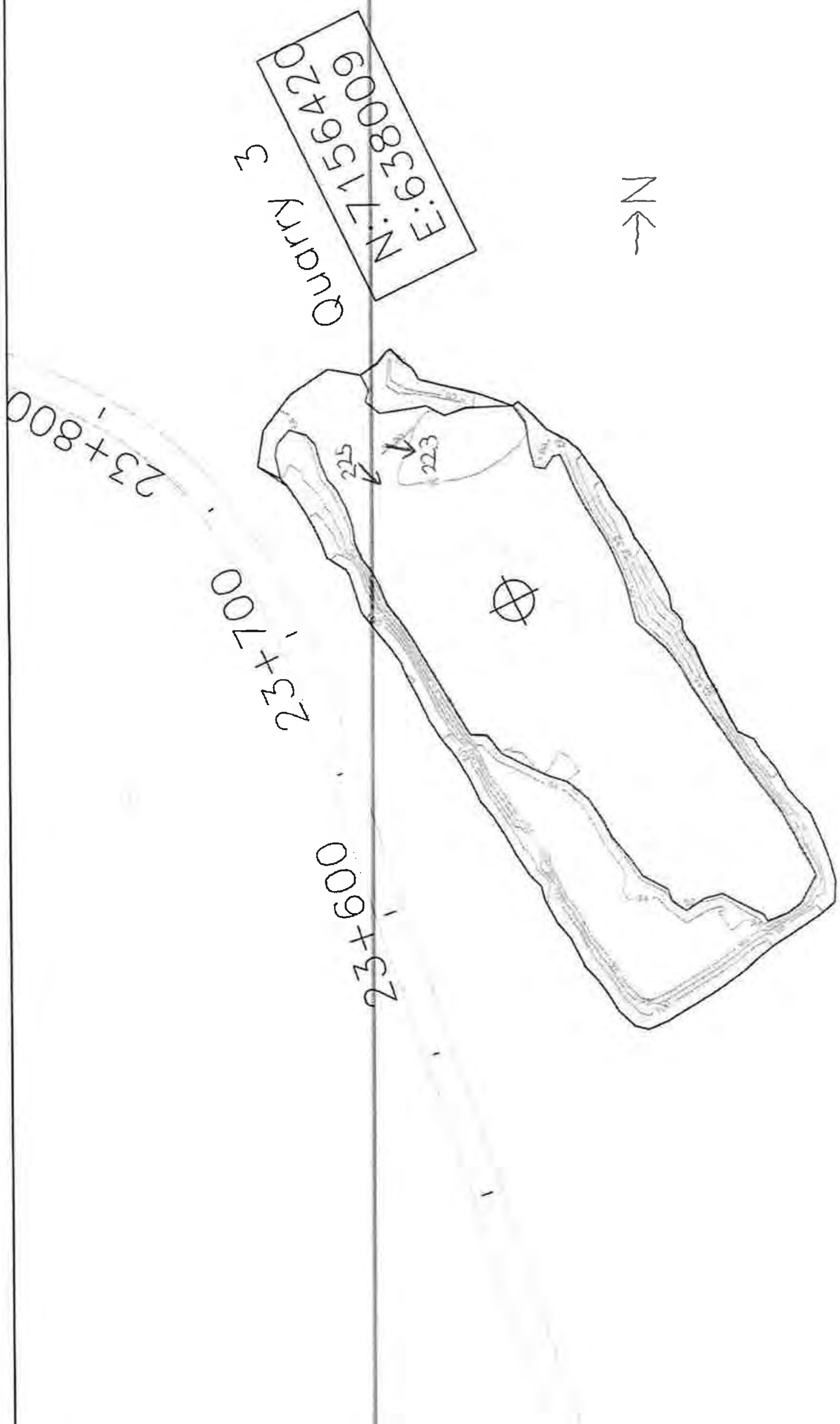
Photograph E1-56 : Quarry 23 (Airstrip Quarry)

Date: September 14, 2012 **Photo Number**: 365

Description: Looking at southeast wall.


Quarry 1
(blasted boundaries)
95 Bench
N:7140229
E:644646
Inukshuk
Area 10
QUARRY 1
Area 11
101 Bench
N:7140167
E:644722
282
283
280
278
5+400
5+300
5+200
Area 12
N

QUARRY 3



BLIND HILL

GENERAL NOTES

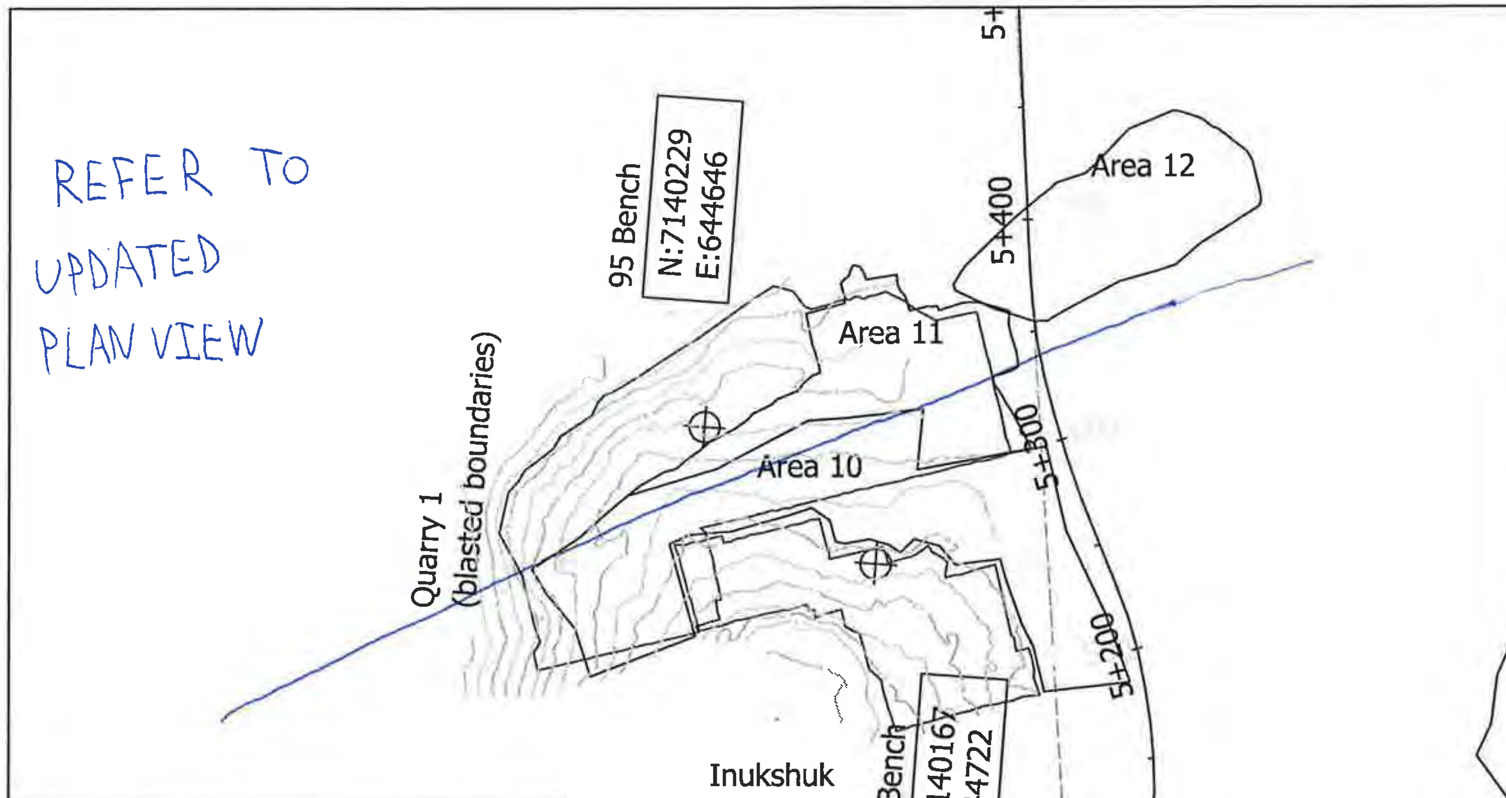
REFERENCE DRAWINGS

REVISIONS

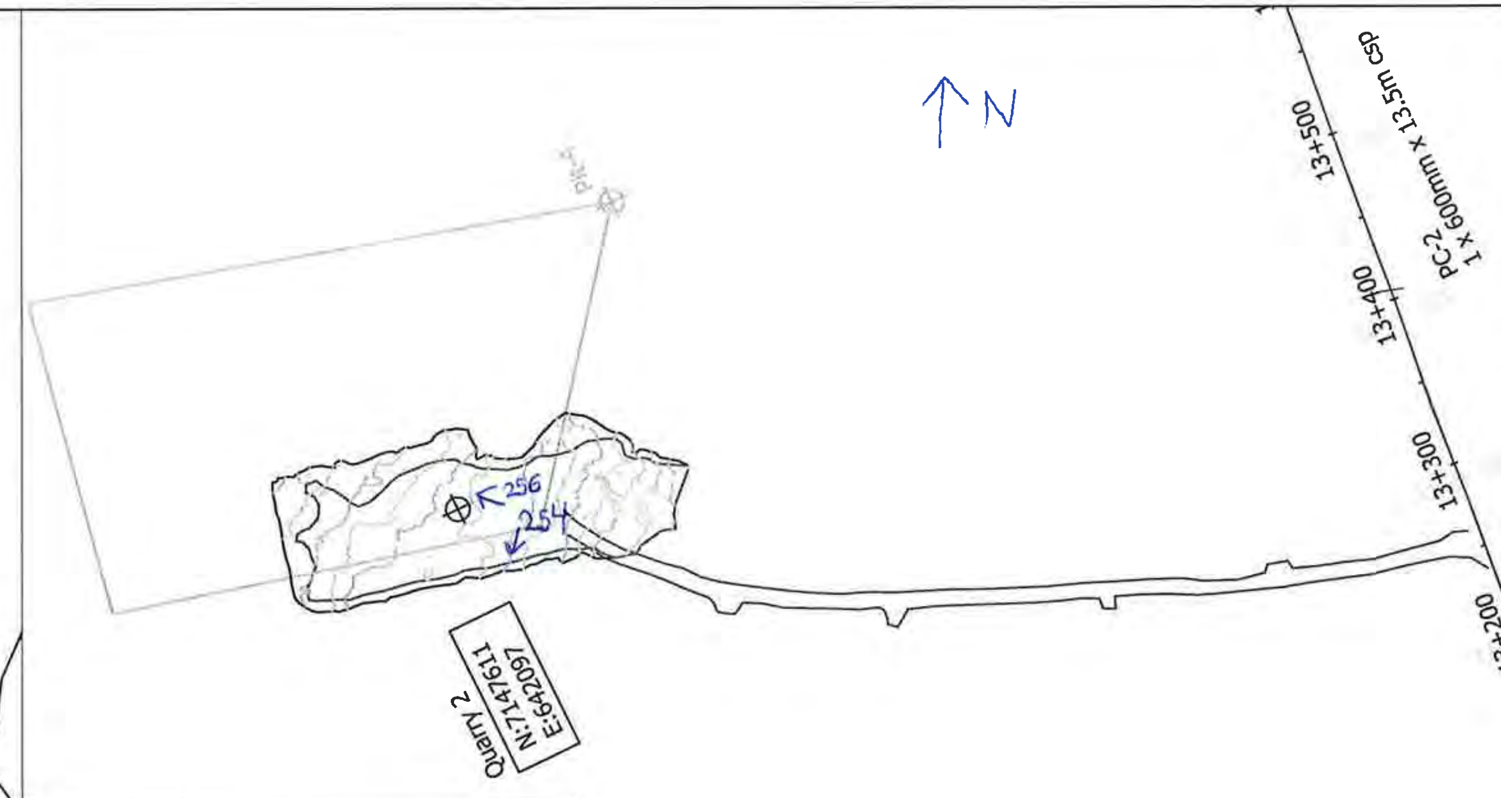
AGNICO-EAGLE – MEADOWBANK DIVISION
SURFACE
PLANNING
MEADOWBANK SURFACE PLAN
1:5000
.DWG
MEADOWBANK_PLANNING

FORMAT ANSI E-PORTRAIT

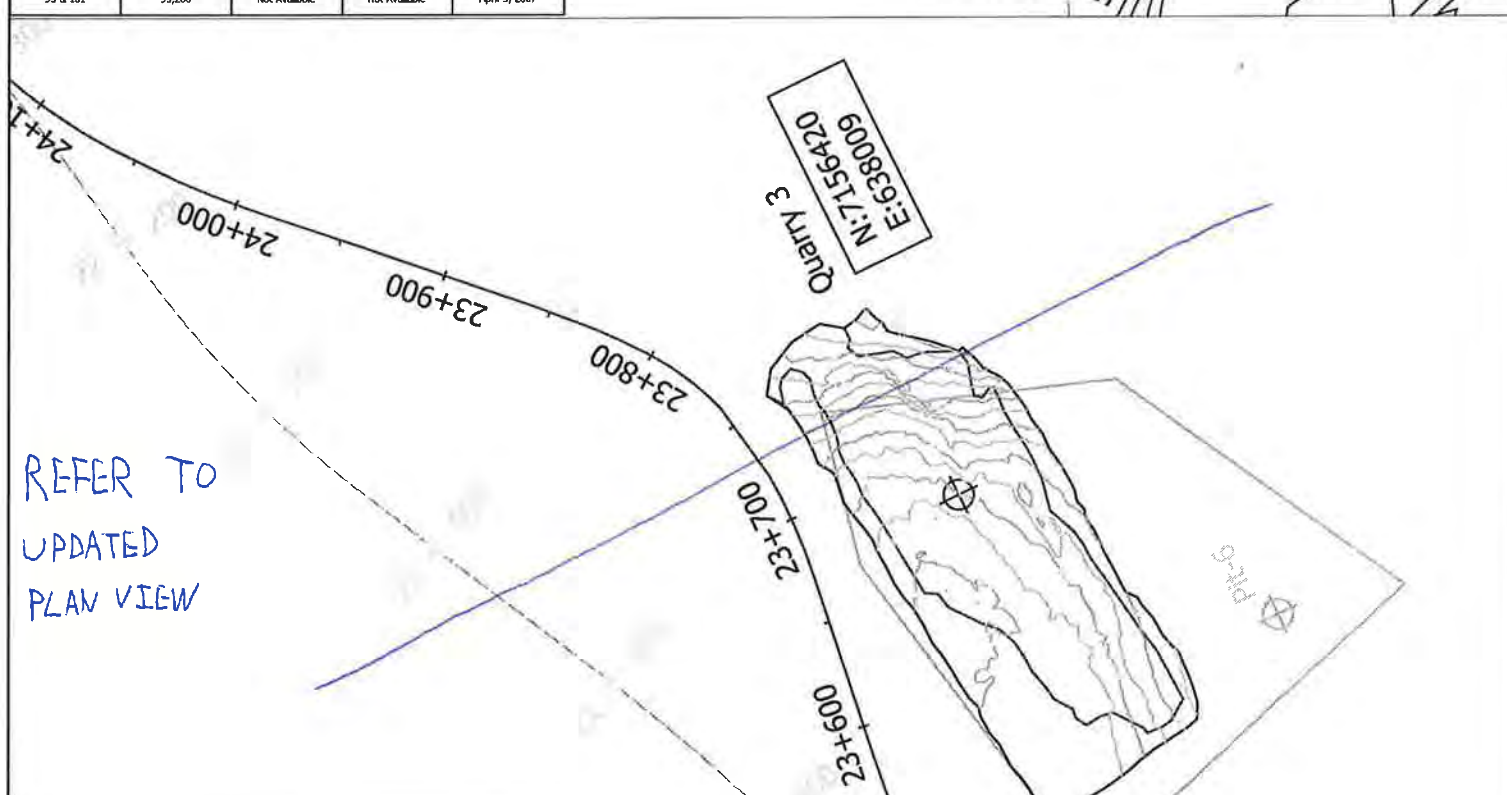
FILE NO. .DWG



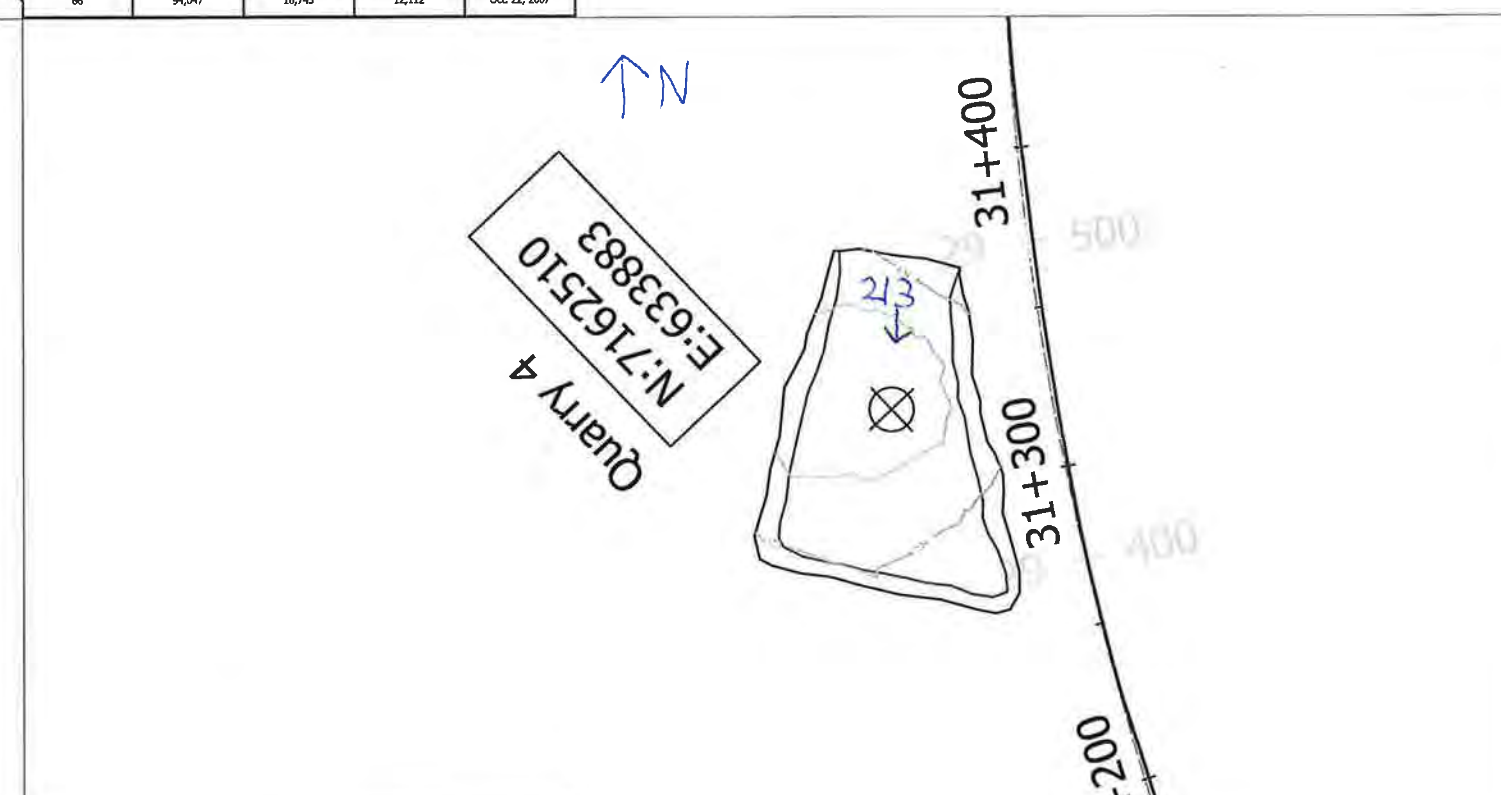
Quarry 1 - 1m contour intervals				
Bench Elevation	Design Volume Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
95 & 101	93,260	Not Available	Not Available	April 3, 2007



Quarry 2 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
86	94,047	16,743	12,112	Oct. 22, 2007



Quarry 3 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
90	126,791	20,507	13,127	Oct. 21, 2007



Quarry 4 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
119	25,315	6,437	4,935	Jun. 3, 2007

GOLDER DATA

- LfLa-3 — Existing Archeological site
- Pit-13 — Proposed Quarry Site
- Existing Lake/Stream
- R02 — River crossing (crossing structure and dimension)
- 120 — Existing major contour (10m Topo)
- Existing minor contour (interpreted)
- 1+000 — Proposed centerline of road

AS CONSTRUCTED DATA

- 172 — Quarry original ground 2m major contour
- Quarry original ground 1m minor contour
- Crest boundary of quarry limit at original ground
- Toe boundary of quarry excavation at bench grade
- 1+200 — Centerline of road with 100m stations
- R20 PC-1 — River crossing-culvert 600mm/1200mm dia
- R02 — River Crossing-12m30m bridges

NOTES:

Quarry Data Summarized in Table 1

100m stations are referenced to 0+000 N 7135821.224 E 646026.187

Agnico-Eagle Mines Ltd

NUNAVUT

Meadowbank Gold Project

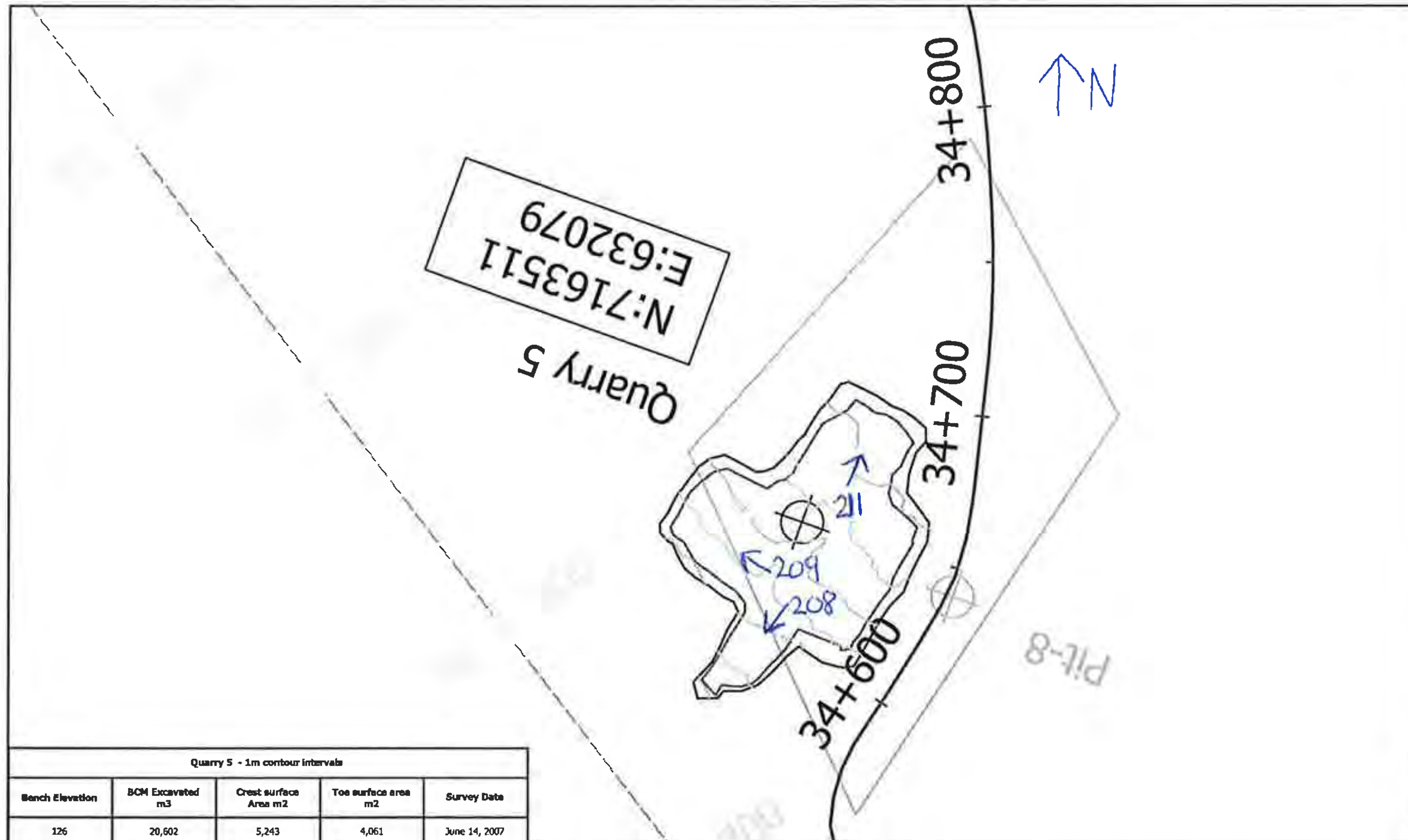
Tehek Access Road Construction

As constructed Quarry Drawing Figure 1

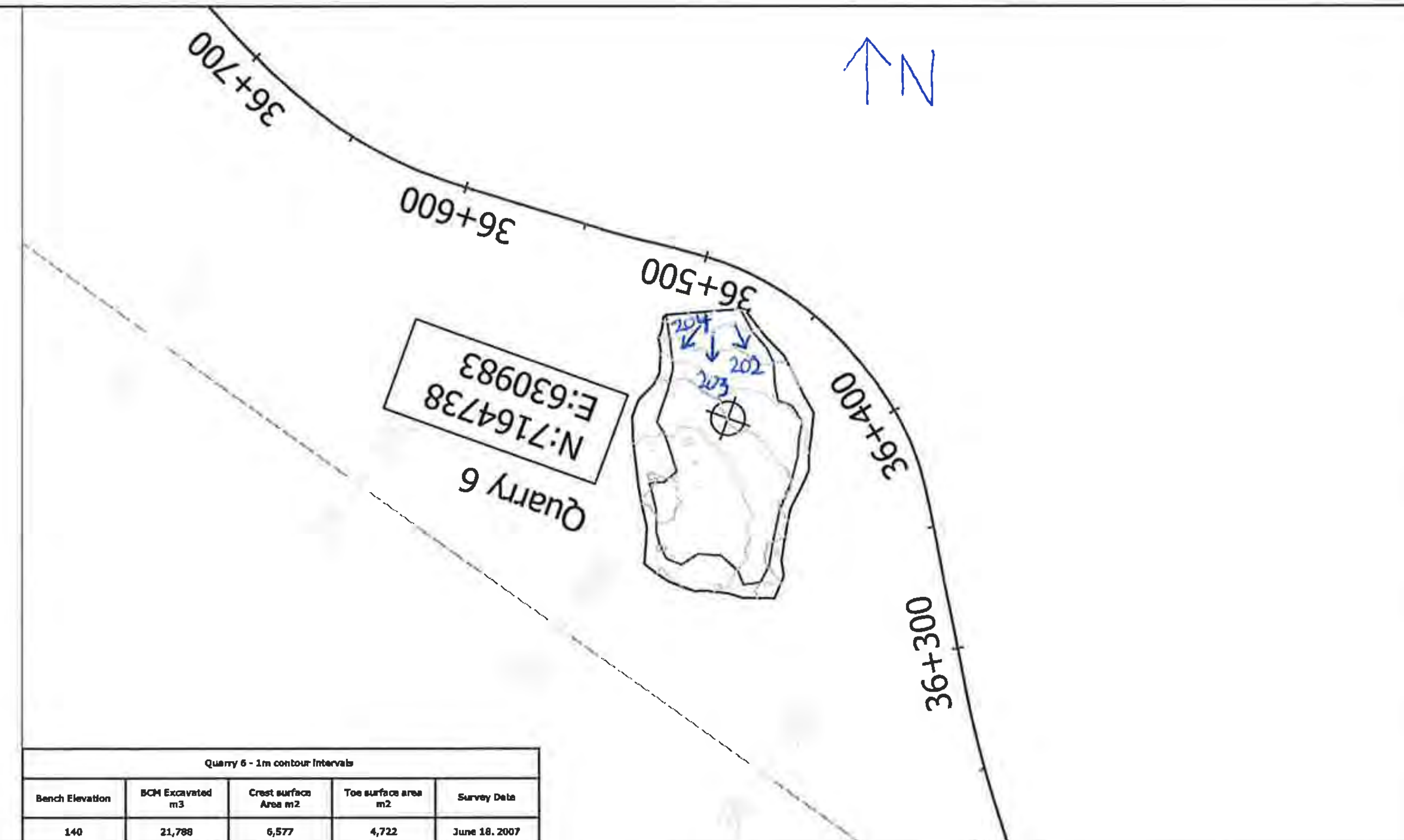
Quarry 1 to Quarry 4

NUNA M & T SERVICES LTD

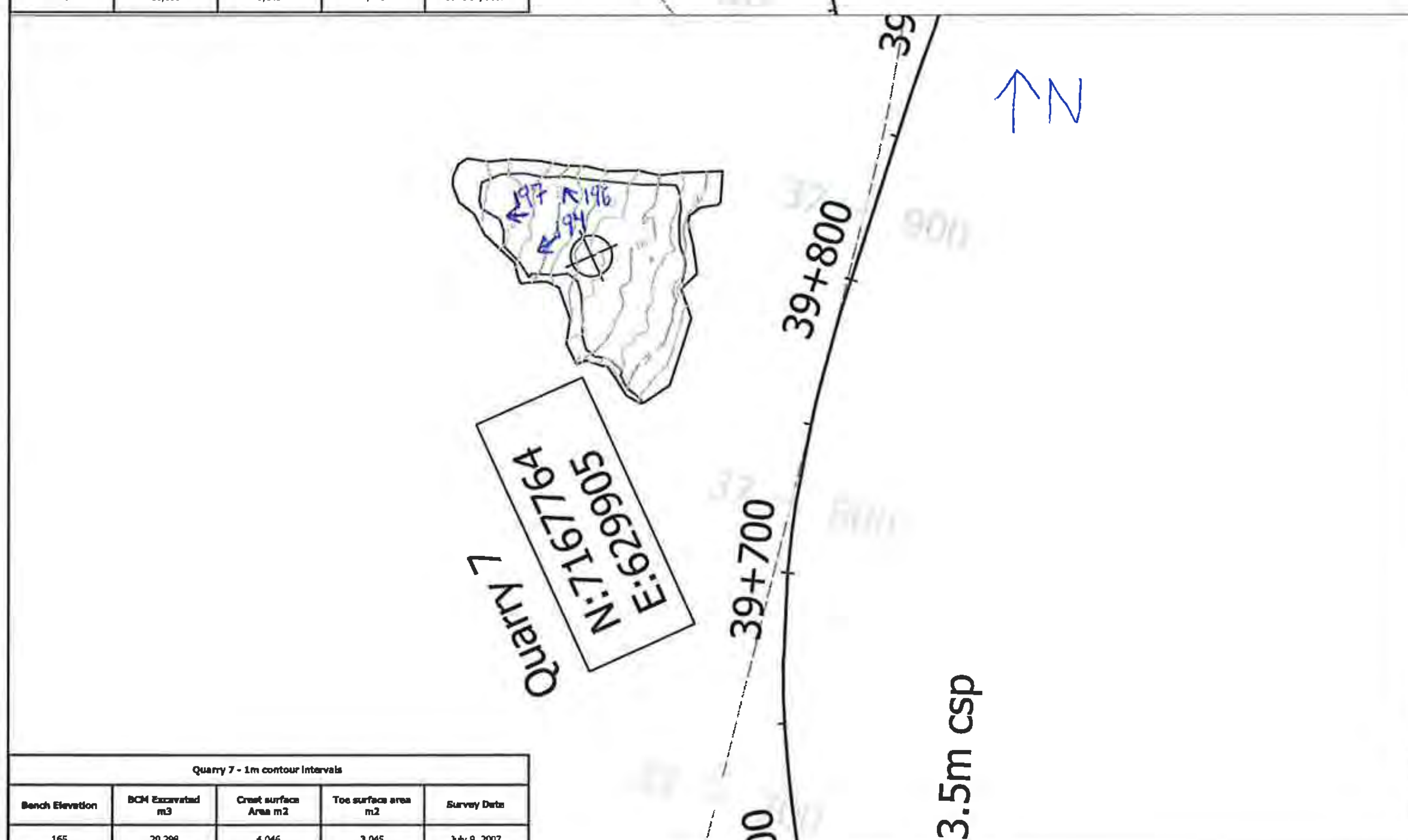
NTS	MC	CG/HB	March 31, 2008



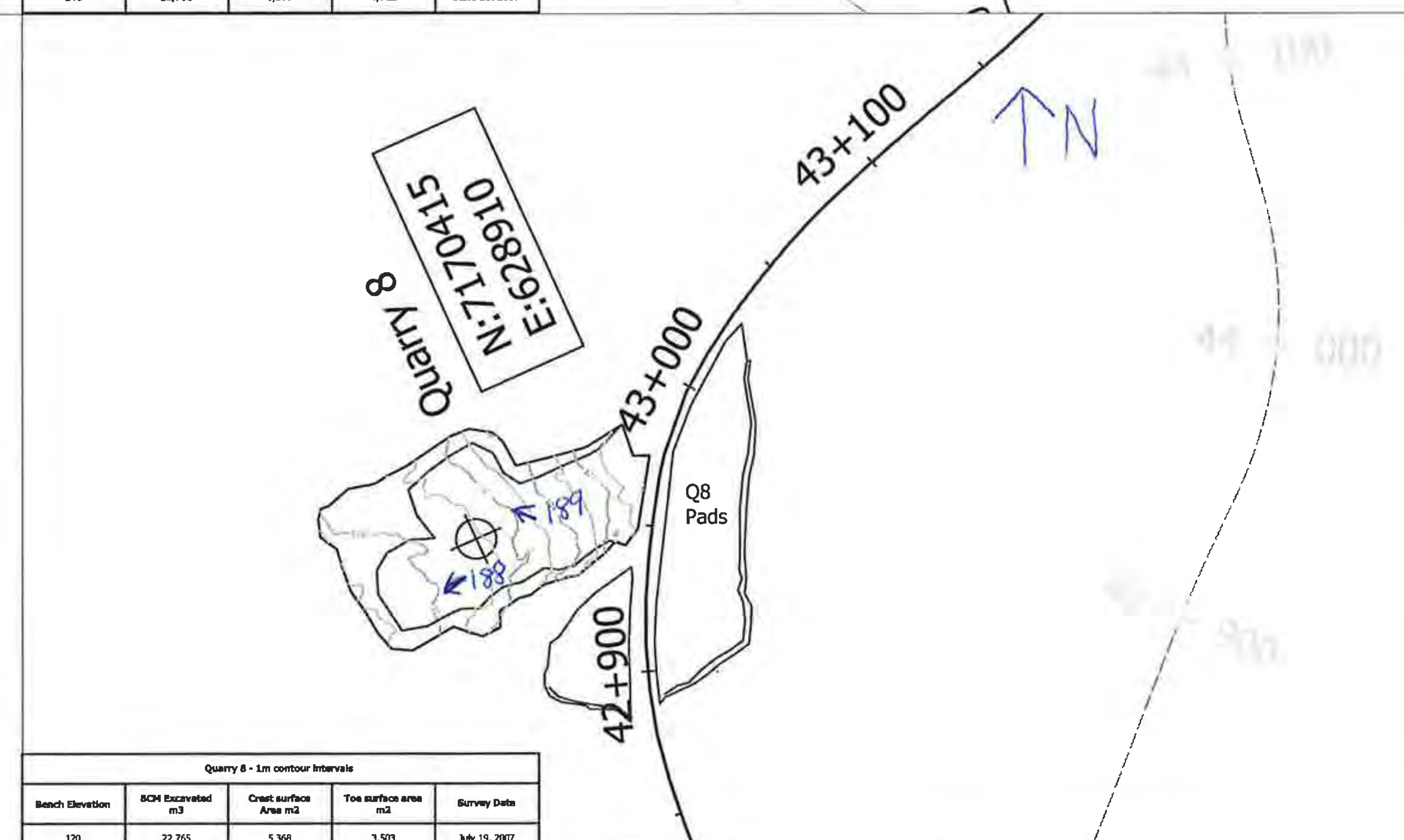
Quarry 5 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
126	20,602	5,243	4,061	June 14, 2007



Quarry 6 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
140	21,788	6,577	4,722	June 18. 2007



Quarry 7 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
165	20,298	4,046	3,045	July 9, 2007



Quarry 8 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
120	22,765	5,368	3,503	July 19, 2007

GOLDER DATA

LfLa-3 — Existing Archeological site
Pit-13 — Proposed Quarry Site
Existing Lake/Stream
R02 — River crossing (crossing structure and dimension)
120 — Existing major contour (10m Topo)
Existing minor contour (interpreted)
1+000 — Proposed centerline of road

AS CONSTRUCTED DATA

172 — Quarry original ground 2m major contour
Quarry original ground 1m minor contour
Crest boundary of quarry limit at original ground
Toe boundary of quarry excavation at bench grade
1+200 — Centerline of road with 100m stations
R20 PC-1 — River crossing-culvert 600mm/1200mm dia
R02 — River Crossing-12m30m bridges

NOTES:

Quarry Data Summarized in Table 1
100m stations are referenced to 0+000 N 7135821.224 E 646026.187

Agnico-Eagle Mines Ltd

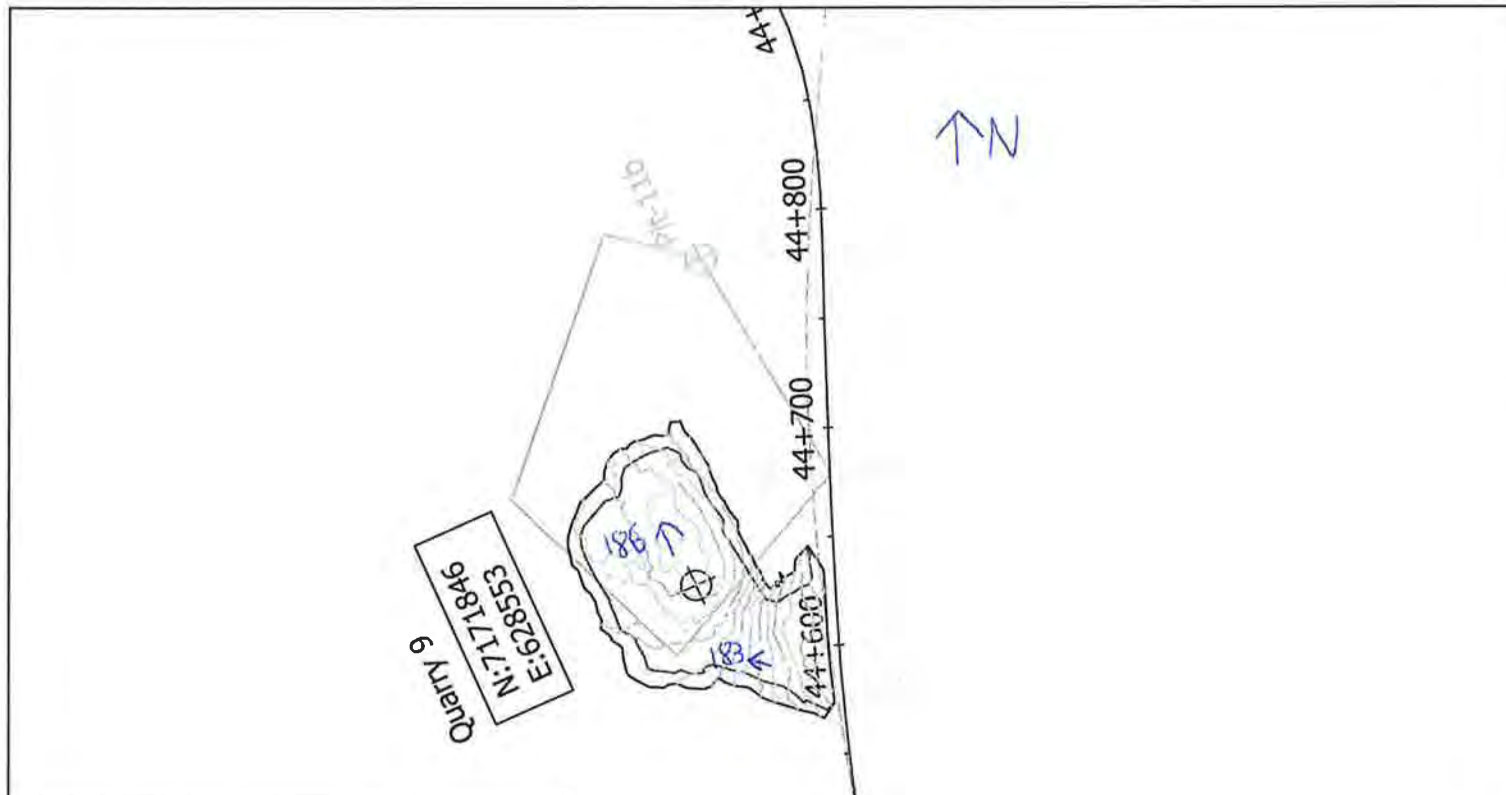
Meadowbank Gold Project
Tehek Access Road Construction

As constructed Quarry Drawing Figure 2

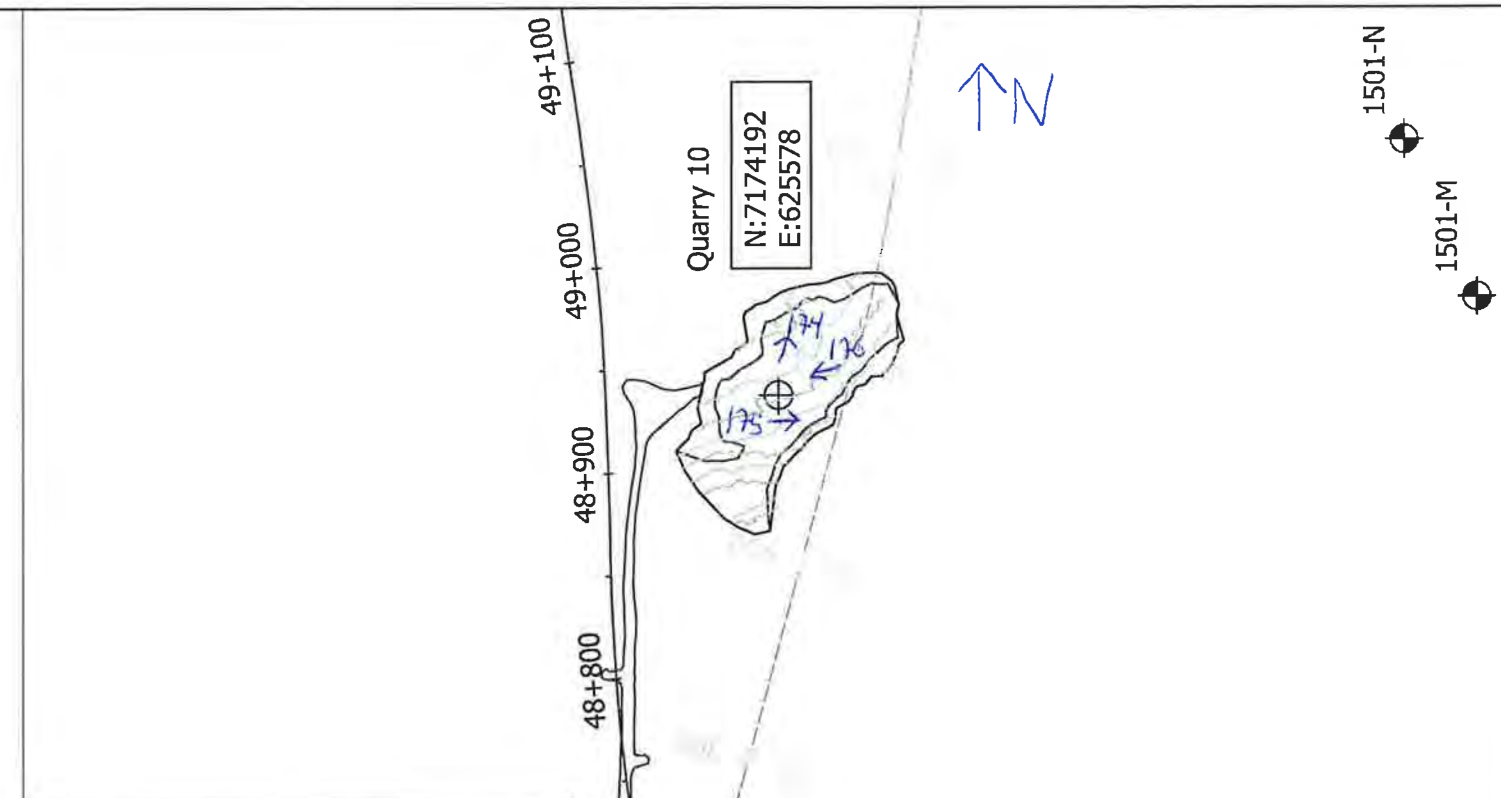
Quarry 5 to Quarry 8

NUNA H & T SERVICES LTD

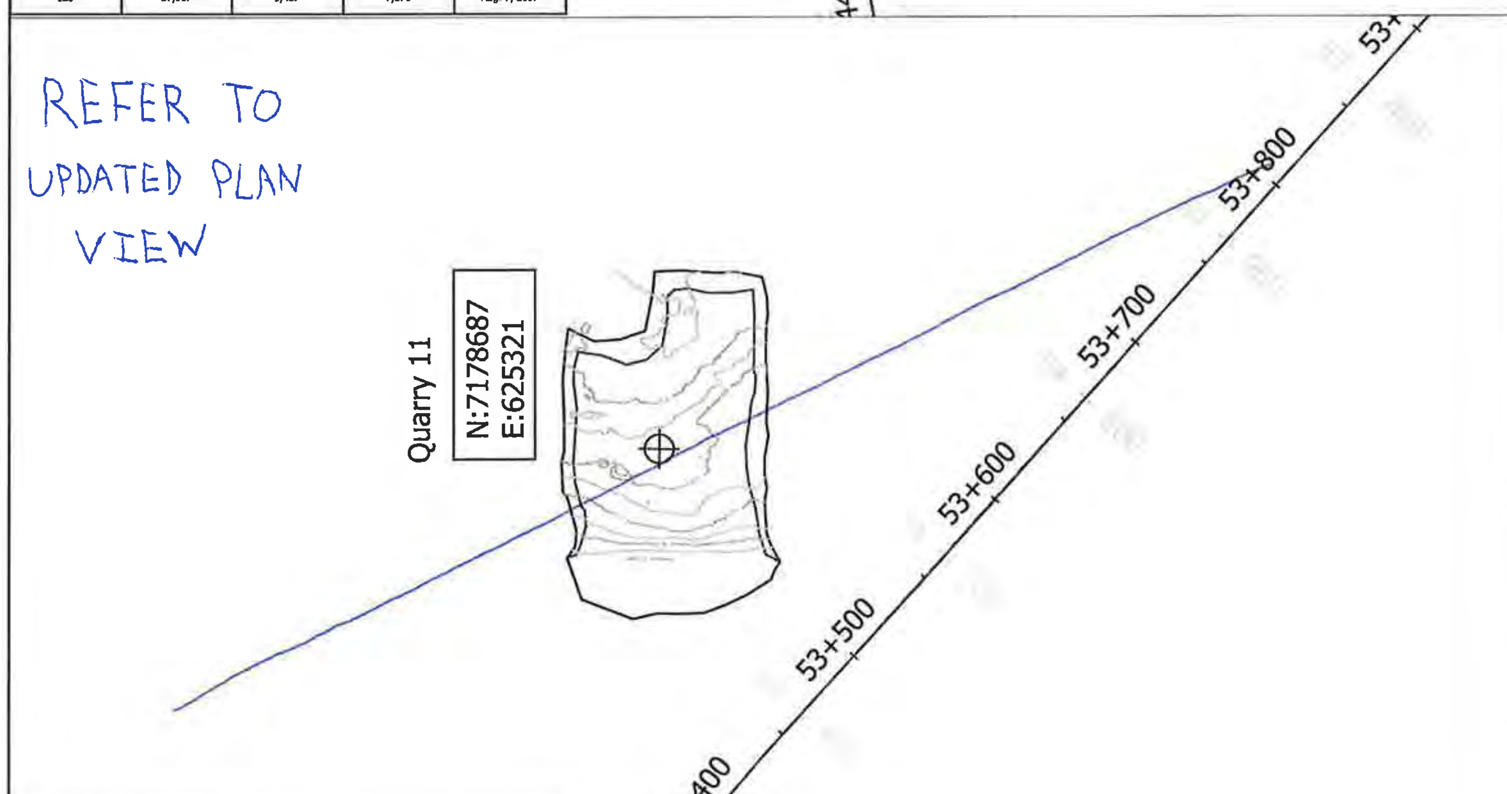
NTS	MC	CG/HB	March 31, 2008



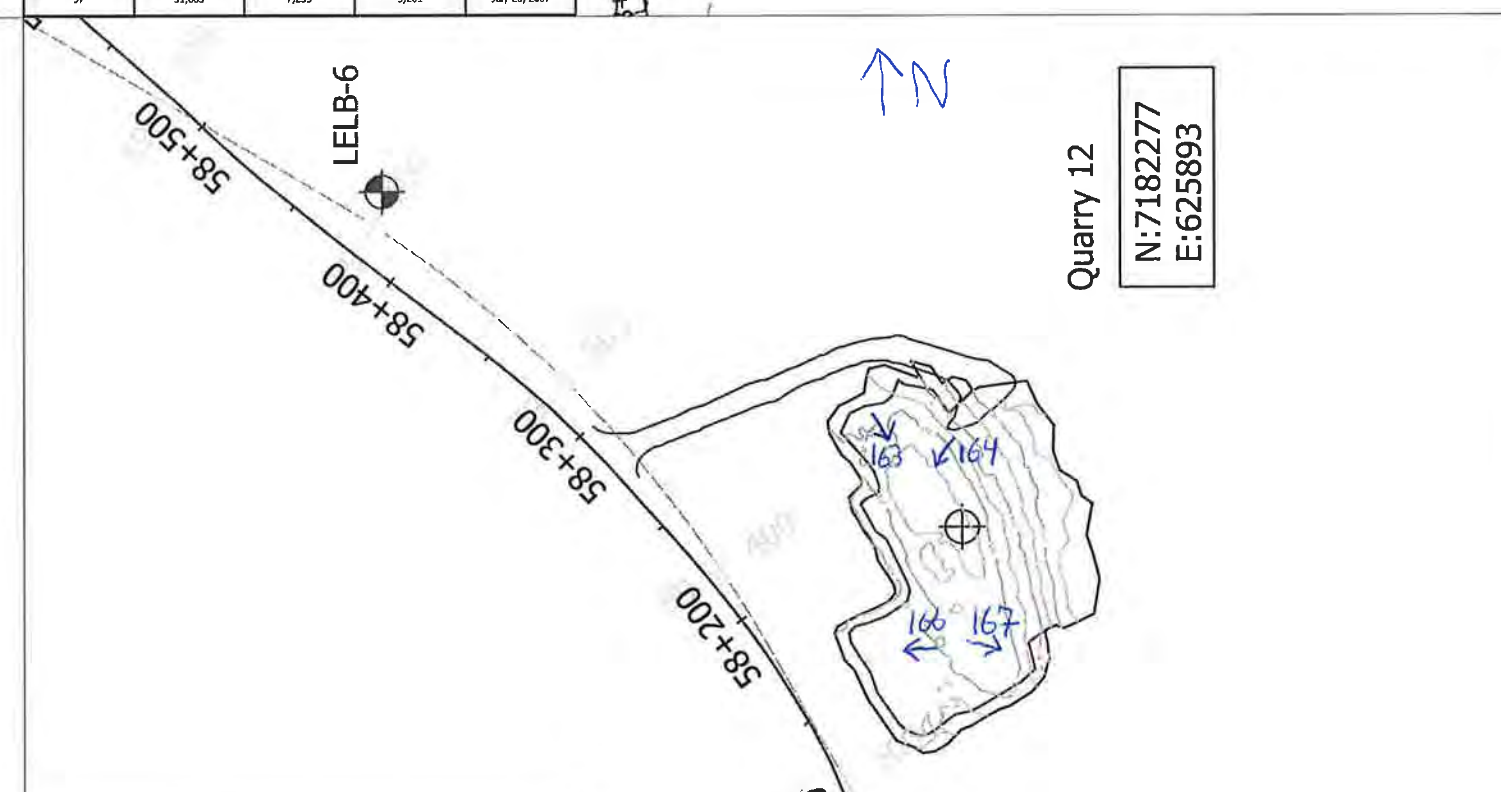
Quarry 9 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
120	57,917	9,487	7,176	Aug. 7, 2007



Quarry 10 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
97	31,663	7,235	5,201	July 26, 2007



Quarry 11 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
114	63,671	13,744	11,341	Oct. 6 ,2007



Quarry 12 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
127	48,347	11,987	10,158	Aug 25, 2007

GOLDER DATA

- LfLa-3 — Existing Archeological site
- Pit-13 — Proposed Quarry Site
- Existing Lake/Stream
- R02 — River crossing (crossing structure and dimension)
- 120 — Existing major contour (10m Topo)
- Existing minor contour (interpreted)
- 1+000 — Proposed centerline of road

AS CONSTRUCTED DATA

- 172 — Quarry original ground 2m major contour
- Quarry original ground 1m minor contour
- Crest boundary of quarry limit at original ground
- Toe boundary of quarry excavation at bench grade
- 1+200 — Centerline of road with 100m stations
- R20 PC-1 — River crossing-culvert 600mm/1200mm dia
- R02 — River Crossing-12m30m bridges

NOTES:

Quarry Data Summarized in Table 1

100m stations are referenced to 0+000 N 7135821.224 E 646026.187

Agnico-Eagle Mines Ltd

NUNAVUT

Meadowbank Gold Project

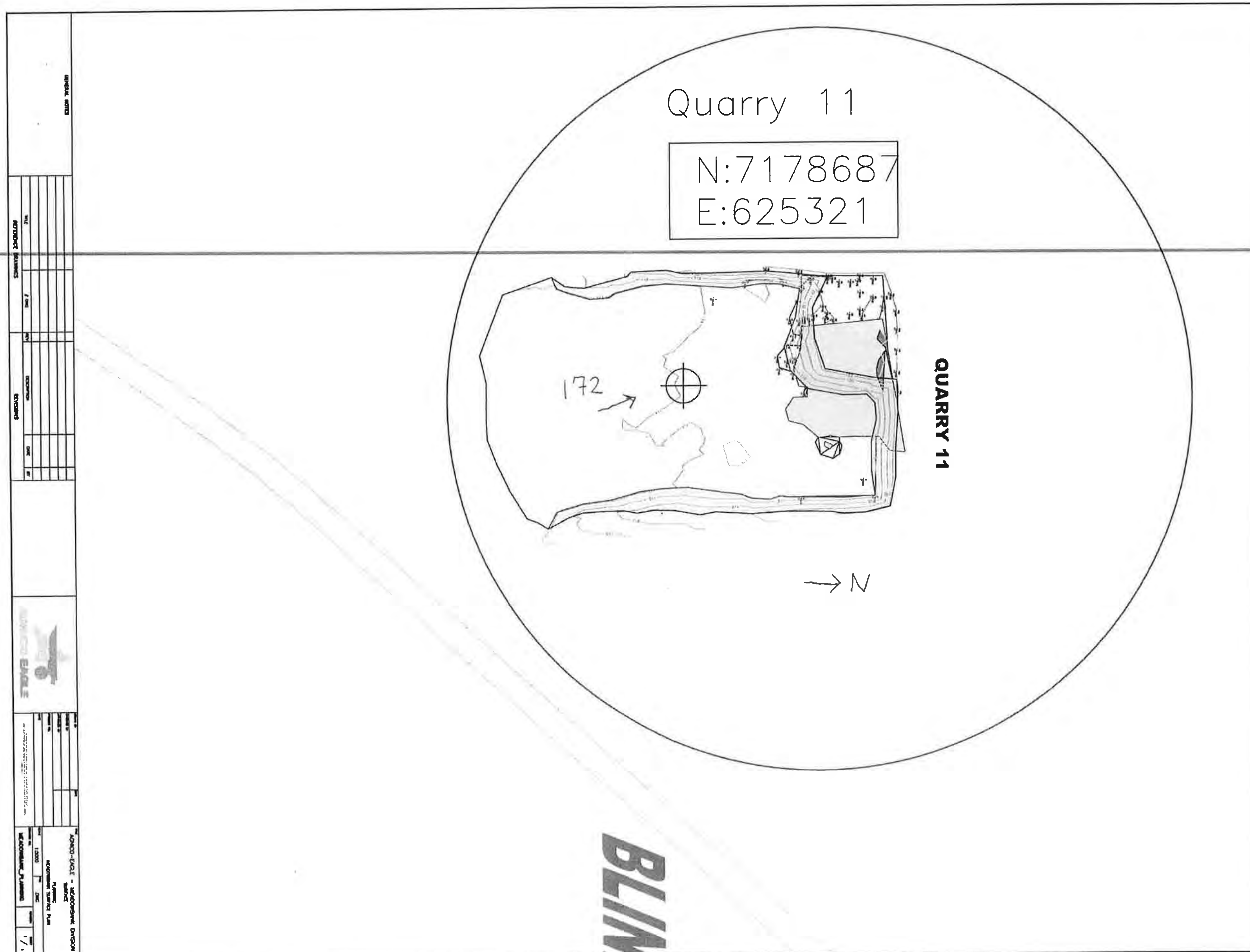
Tehek Access Road Construction

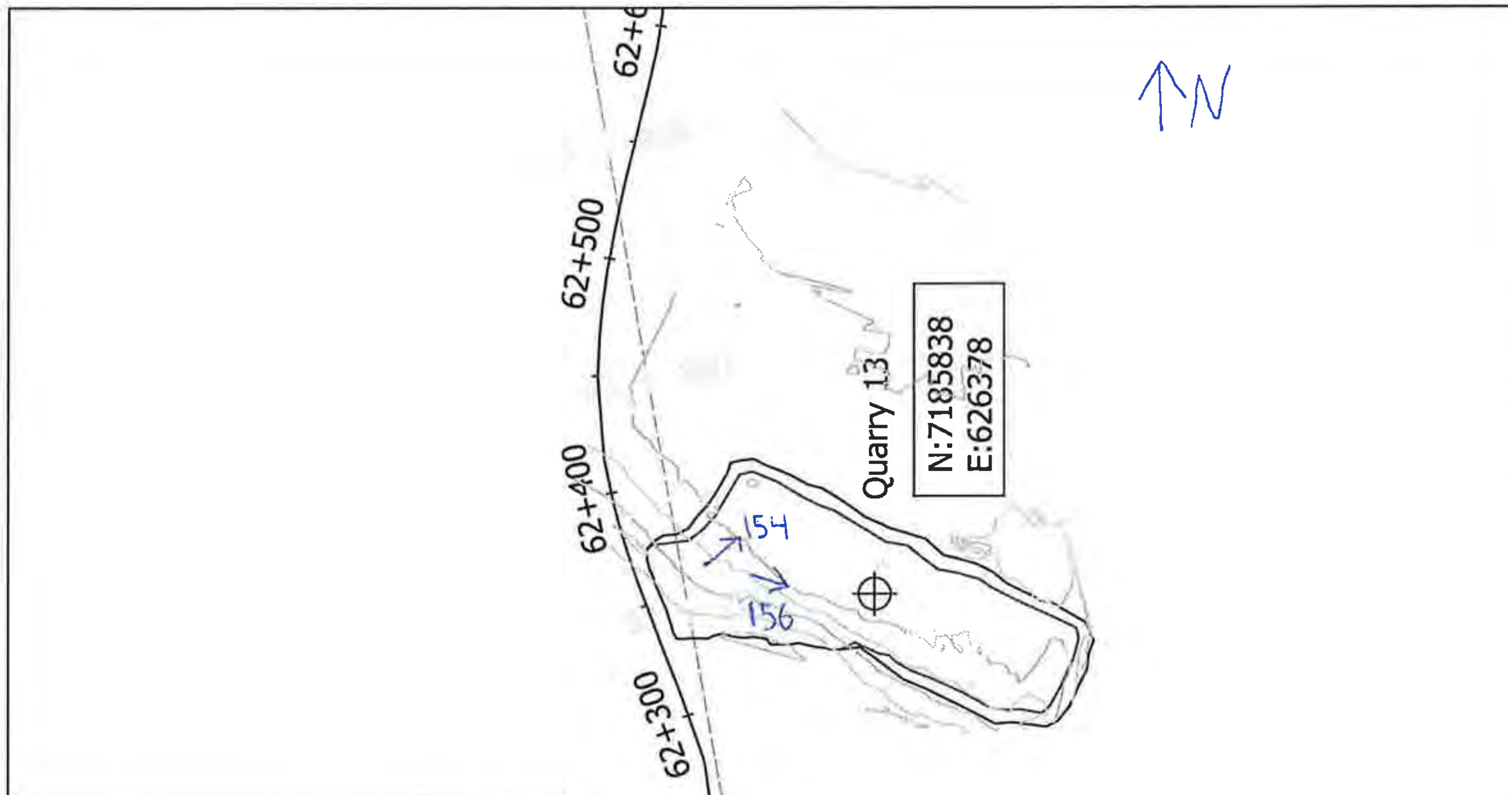
As constructed Quarry Drawing Figure 3

Quarry 9 to Quarry 12

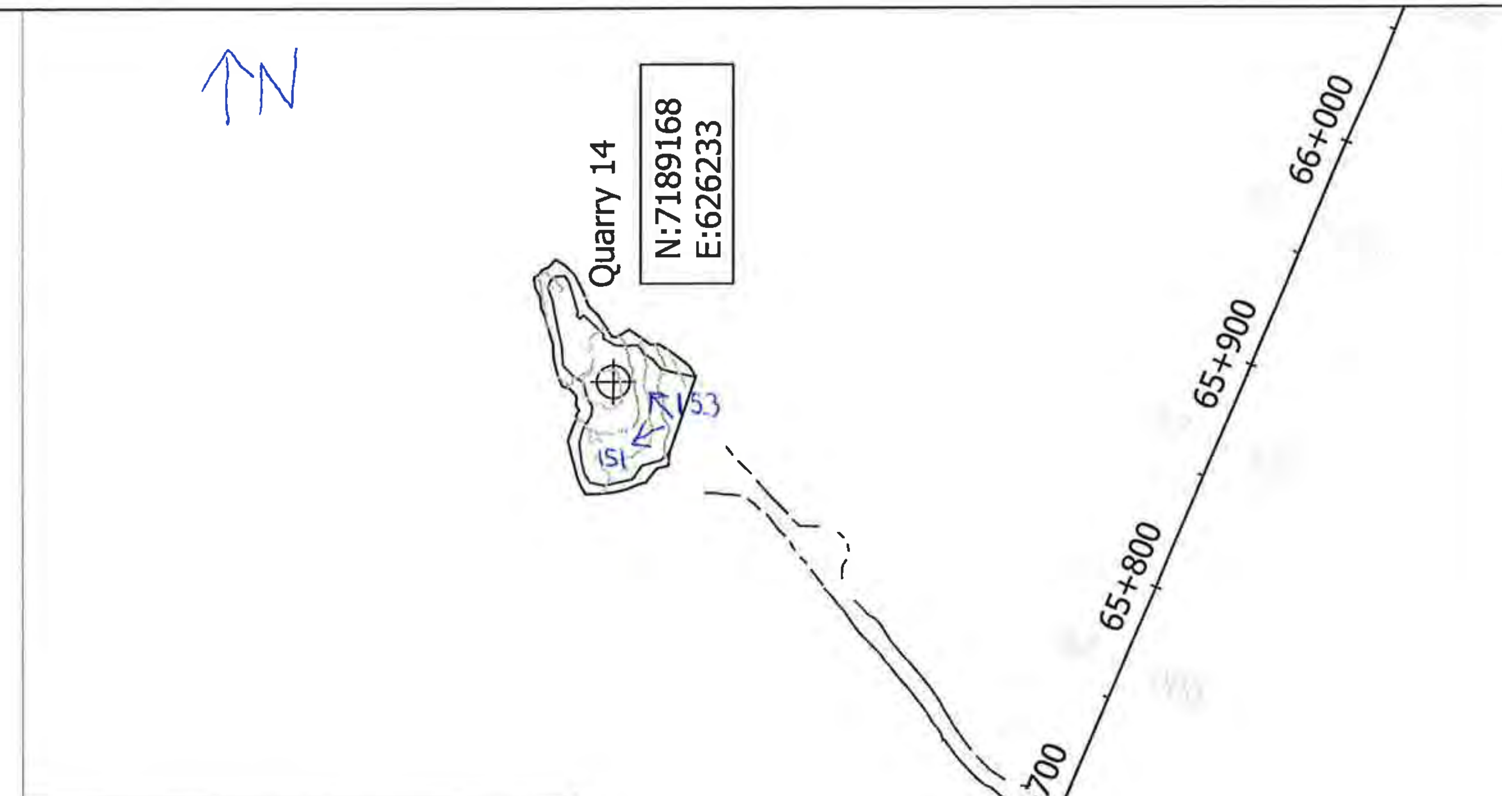
NUNA M & T SERVICES LTD.

NTS	MC	CG/HB	March 31, 2008

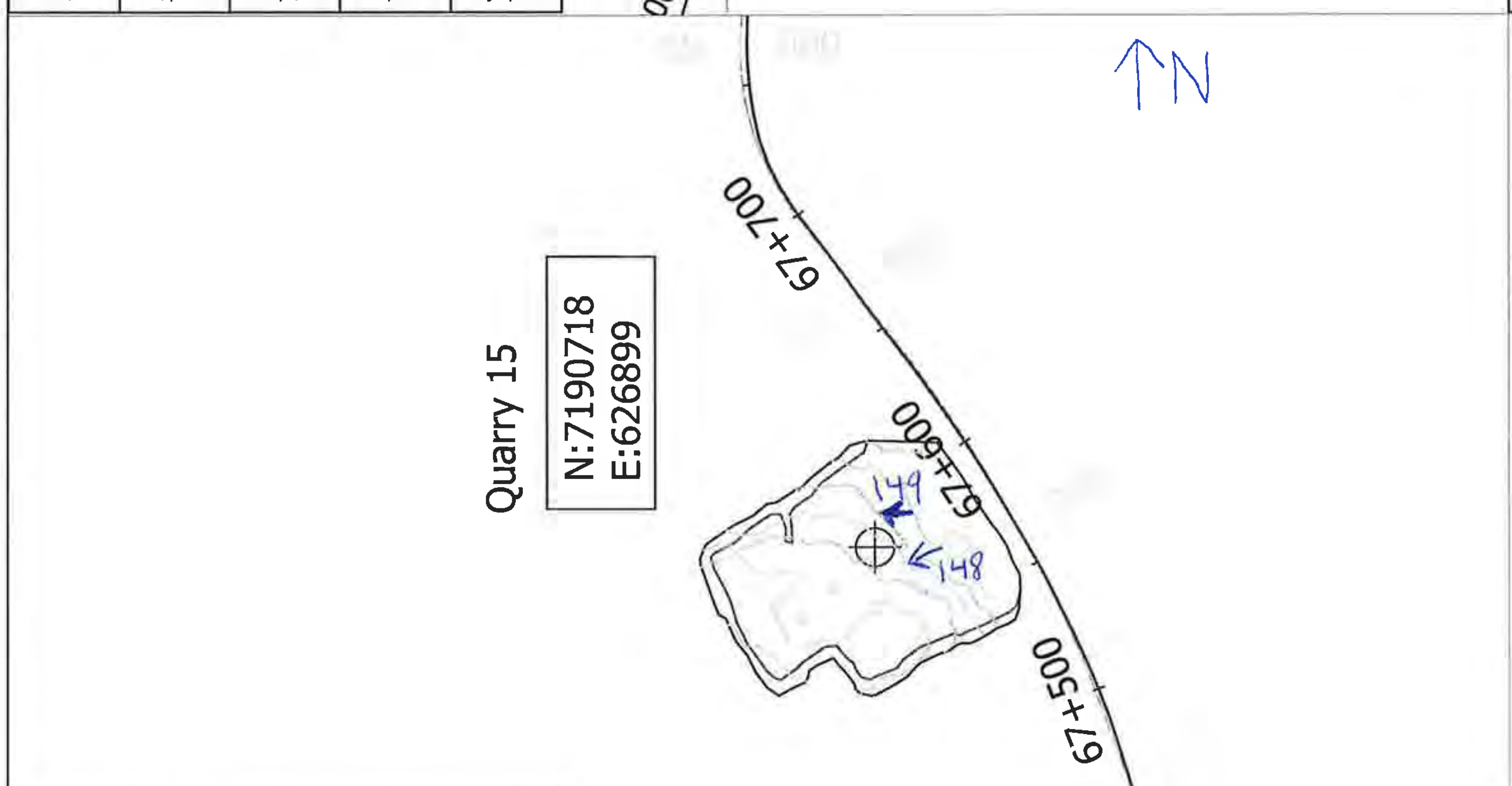

Quarry 11
N:7178687
E:625321
172
QUARRY 11
N
BLIN



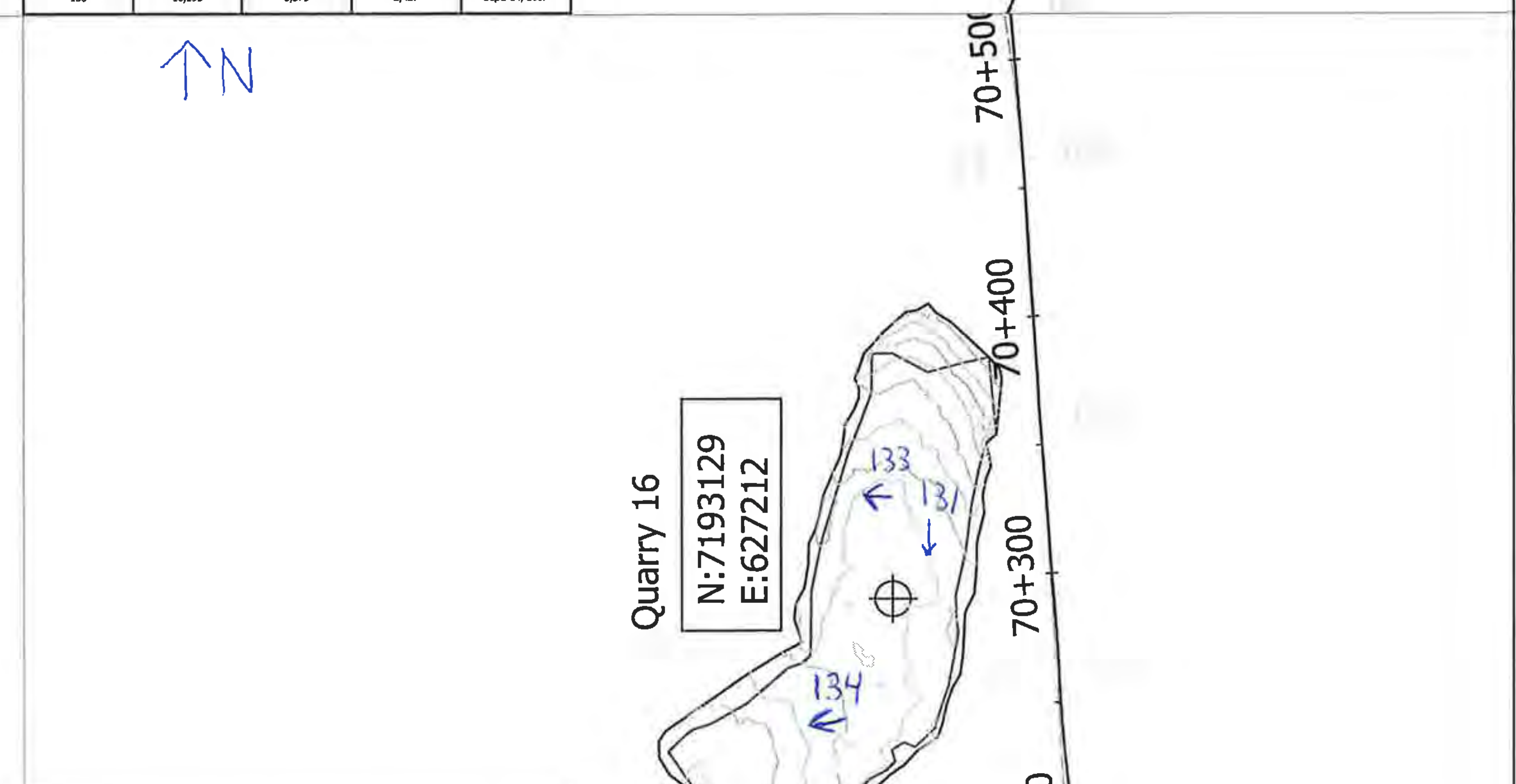
Quarry 13 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
132	36,106	10,778	8,979	Aug. 26, 2007



Quarry 14 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
136	16,295	3,375	2,427	Sept. 14, 2007



Quarry 15 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
125	30,201	6,940	5,958	Sept. 13, 2007



Quarry 16 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
121	88,714	13,634	10,958	May 3, 2008

GOLDER DATA

LfLa-3 Existing Archeological site
Pit 13 Proposed Quarry Site
Existing Lake/Stream
R02 River crossing (crossing structure and dimension)
120 Existing major contour (10m Topo)
Existing minor contour (interpreted)
1+000 Proposed centerline of road

AS CONSTRUCTED DATA

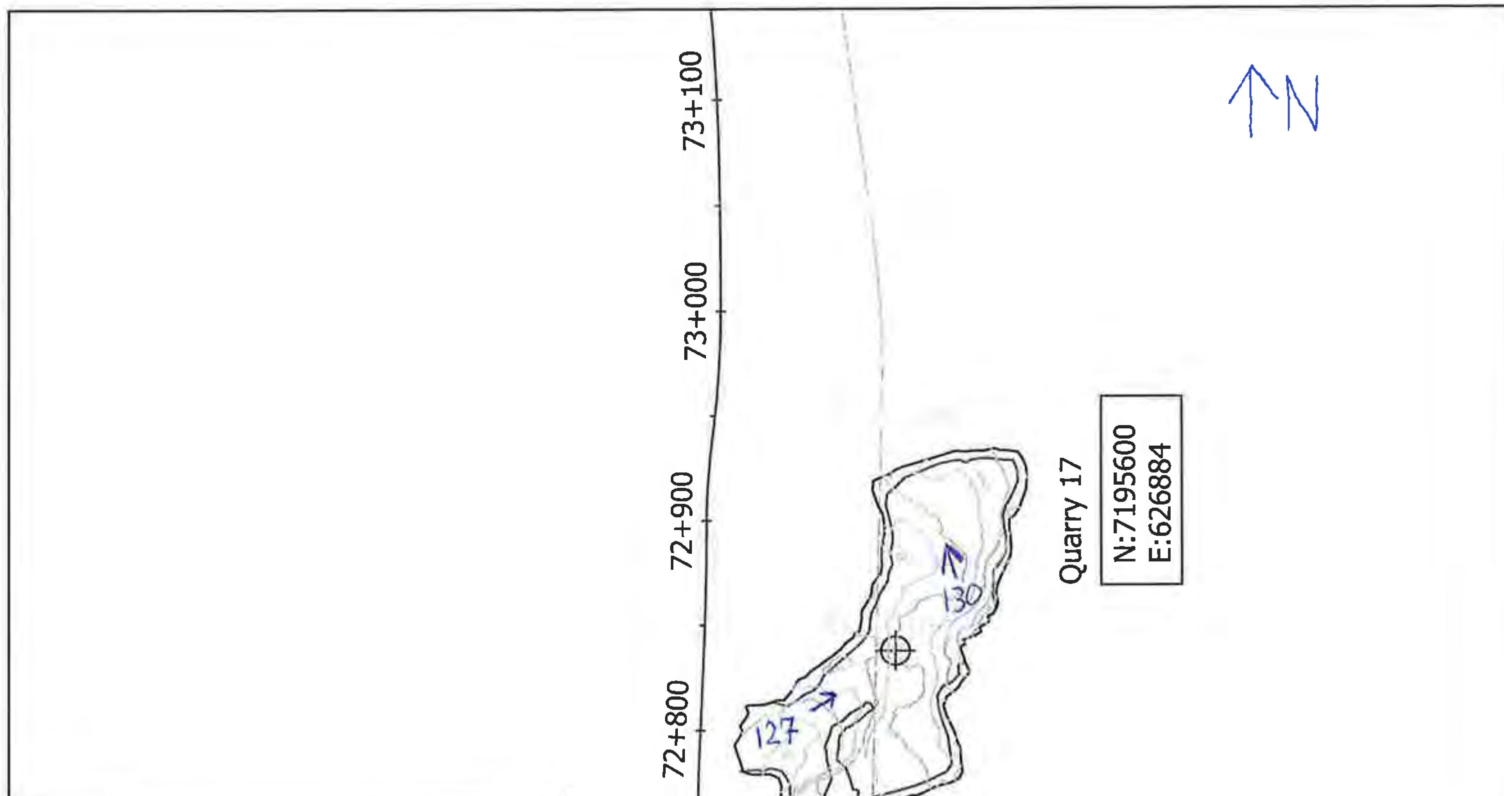
Quarry original ground 2m major contour
Quarry original ground 1m minor contour
Crest boundary of quarry limit at original ground
Toe boundary of quarry excavation at bench grade
1+200 Centerline of road with 100m stations
R20 PC-1 River crossing-culvert 600mm/1200mm dia
R02 River Crossing-12m30m bridges

NOTES:

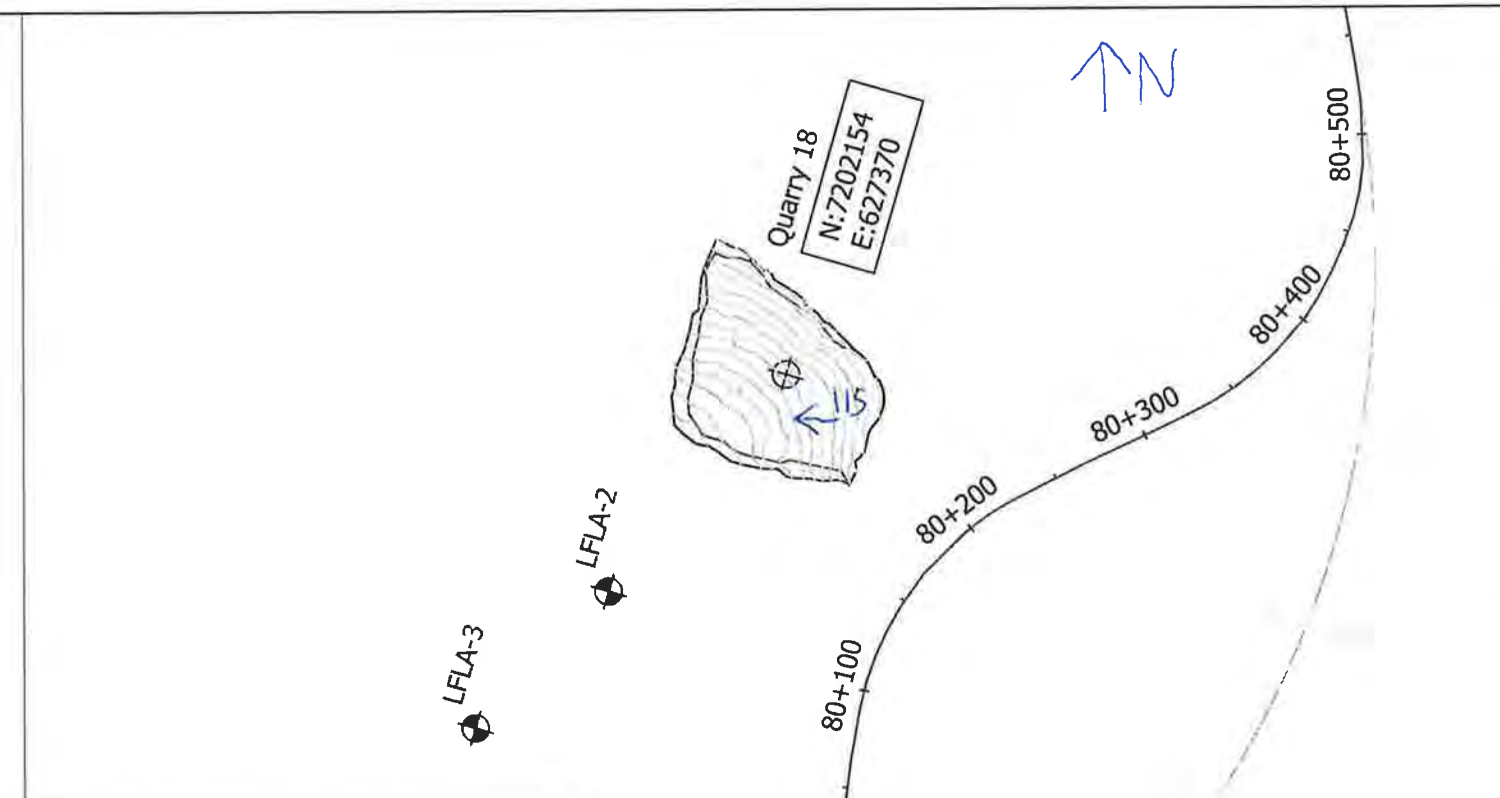
Quarry Data Summarized In Table 1
100m stations are referenced to 0+000 N 7135821.224 E 646026.187

Agnico-Eagle Mines Ltd
NUNAVUT
Meadowbank Gold Project
Tehek Access Road Construction
As constructed Quarry Drawing Figure 4
Quarry 13 to Quarry 16
NUNA M & T SERVICES LTD.

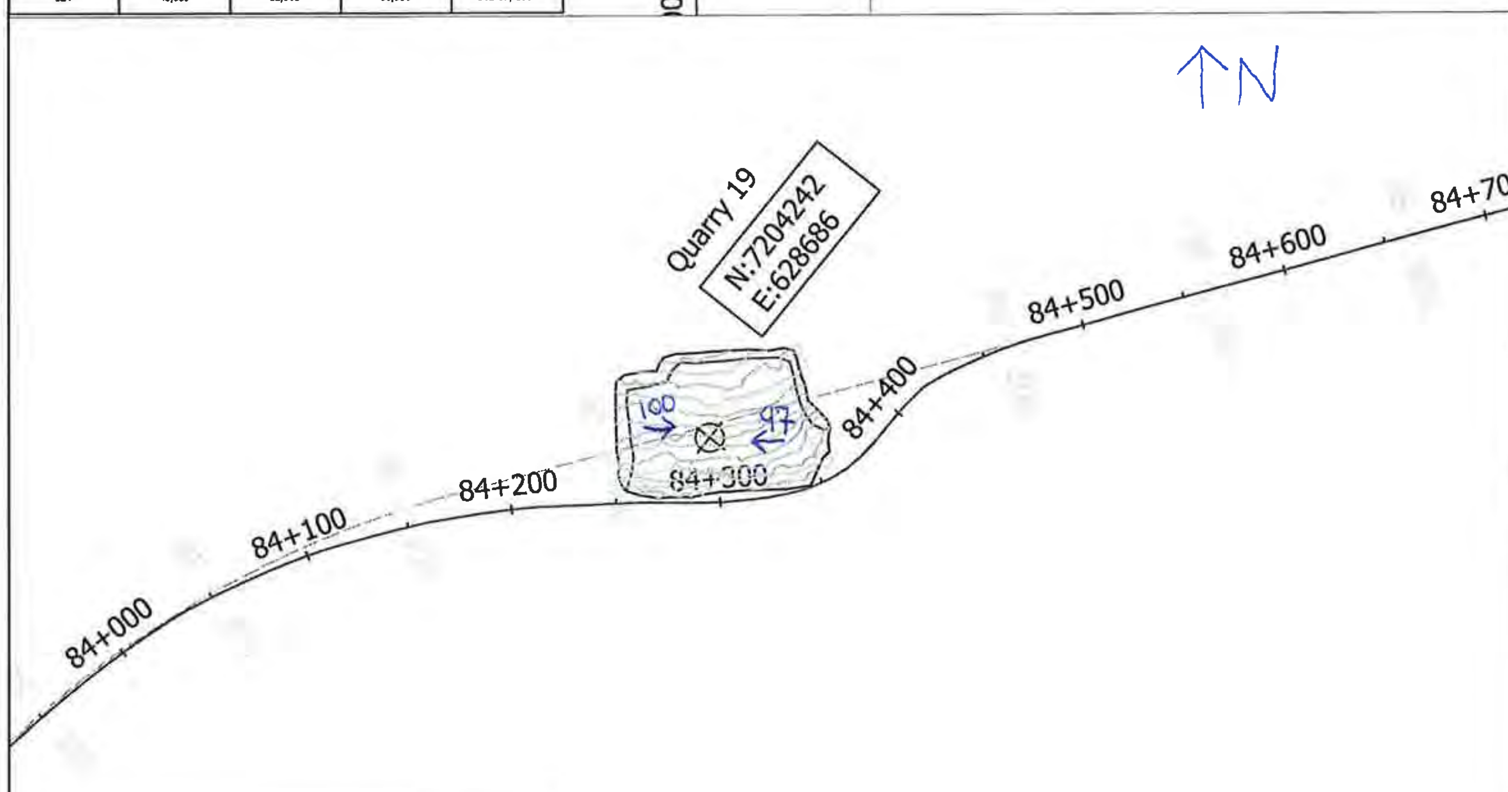
Scale	Drawn by	Checked by	Date
NTS	MC	CG/HB	May 3, 2008



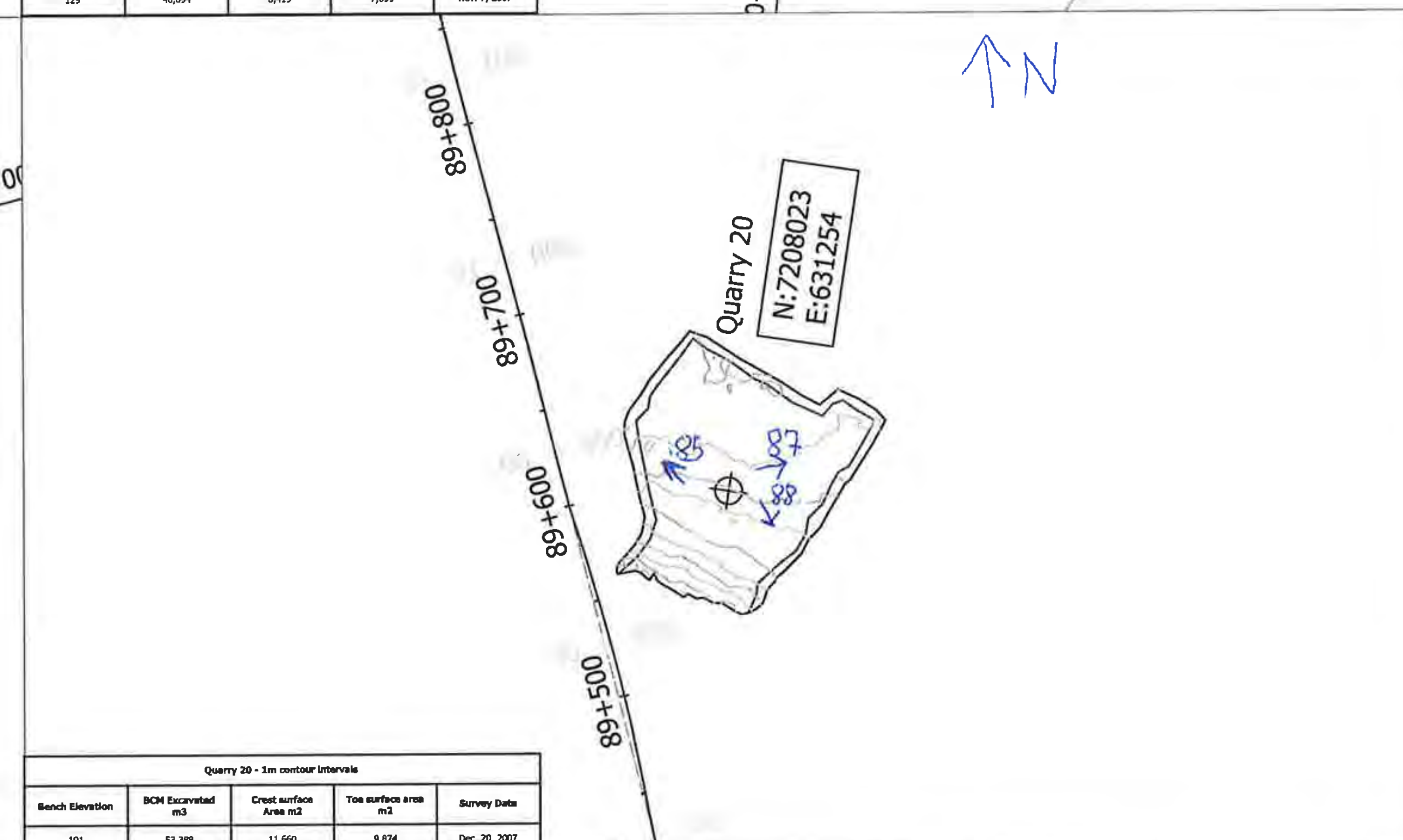
Quarry 17 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
124	48,539	12,363	10,958	Oct. 17, 2007



Quarry 18 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
129	46,094	8,419	7,099	Nov. 7, 2007



Quarry 19 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
133	34,480	6,230	5,286	Dec. 1, 2007



Quarry 20 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
191	53,388	11,660	9,874	Dec 20, 2007

GOLDER DATA

- LfLa-3 — Existing Archeological site
- Pit-13 — Proposed Quarry Site
- Existing Lake/Stream
- R02 — River crossing (crossing structure and dimension)
- 120 — Existing major contour (10m Topo)
- Existing minor contour (Interpreted)
- 1+000 — Proposed centerline of road

AS CONSTRUCTED DATA

- 172 — Quarry original ground 2m major contour
- Quarry original ground 1m minor contour
- Crest boundary of quarry limit at original ground
- Toe boundary of quarry excavation at bench grade
- 1+200 — Centerline of road with 100m stations
- R20 PC-1 — River crossing-culvert 600mm/1200mm dia
- R02 — River Crossing-12m30m bridges

NOTES:

Quarry Data Summarized in Table 1

100m stations are referenced to 0+000 N 7135821.224 E 646026.187

Agnico-Eagle Mines Ltd

NUNAVUT

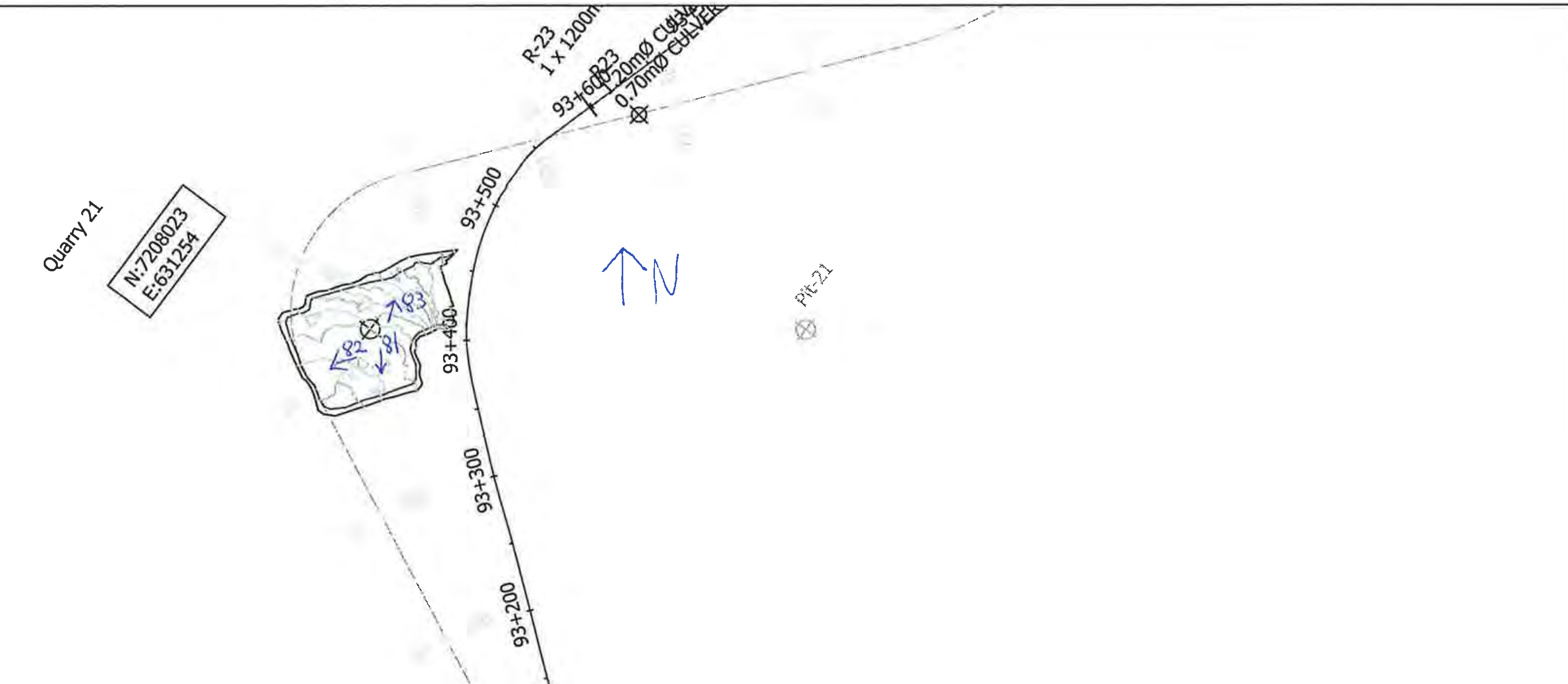
Meadowbank Gold Project
Tehek Access Road Construction

As constructed Quarry Drawing Figure 5

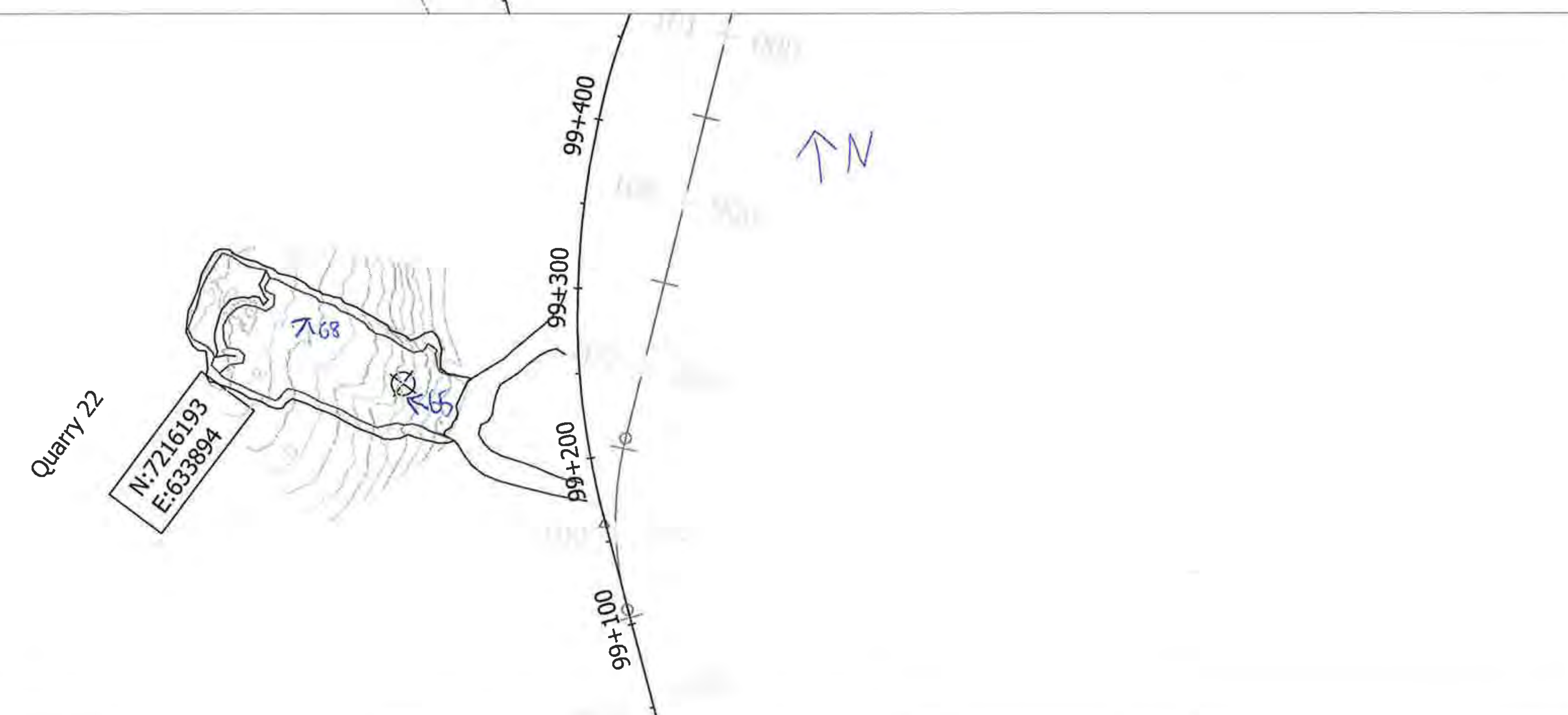
Quarry 17 to Quarry 20

NUNA M & T SERVICES LTD

NTS	MC	CG/HB	March 31, 2008



Quarry 20 - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
167	55,360	9,096	7,732	Feb. 5, 2008



Quarry 22 Active Pit - 1m contour intervals				
Bench Elevation	BCM Excavated m3	Crest surface Area m2	Toe surface area m2	Survey Date
147	65,049	10,440	8,634	May 4, 2008

GOLDER DATA

LfLa-3 Existing Archeological site

Proposed Quarry Site

Existing Lake/Stream

R02 River crossing (crossing structure and dimension)

120 Existing major contour (10m Topo)

Existing minor contour (interpreted)

1+000 Proposed centerline of road

AS CONSTRUCTED DATA

172 Quarry original ground 2m major contour

Quarry original ground 1m minor contour

Crest boundary of quarry limit at original ground

Toe boundary of quarry excavation at bench grade

1+200 Centerline of road with 100m stations

R20 PC-1 River crossing-culvert 600mm/1200mm dia

R02 River Crossing-12m30m bridges

NOTES:

Quarry Data Summarized in Table 1

100m stations are referenced to 0+000 N 7135821 224 E 646026 187

Agnico-Eagle Mines Ltd

NUNAVUT

Meadowbank Gold Project
Tehek Access Road Construction

As constructed Quarry Drawing Figure 6

Quarry 21 to Quarry 22

NUNA M & T SERVICES LTD.

Scale	Drawn by	Checked by	Date
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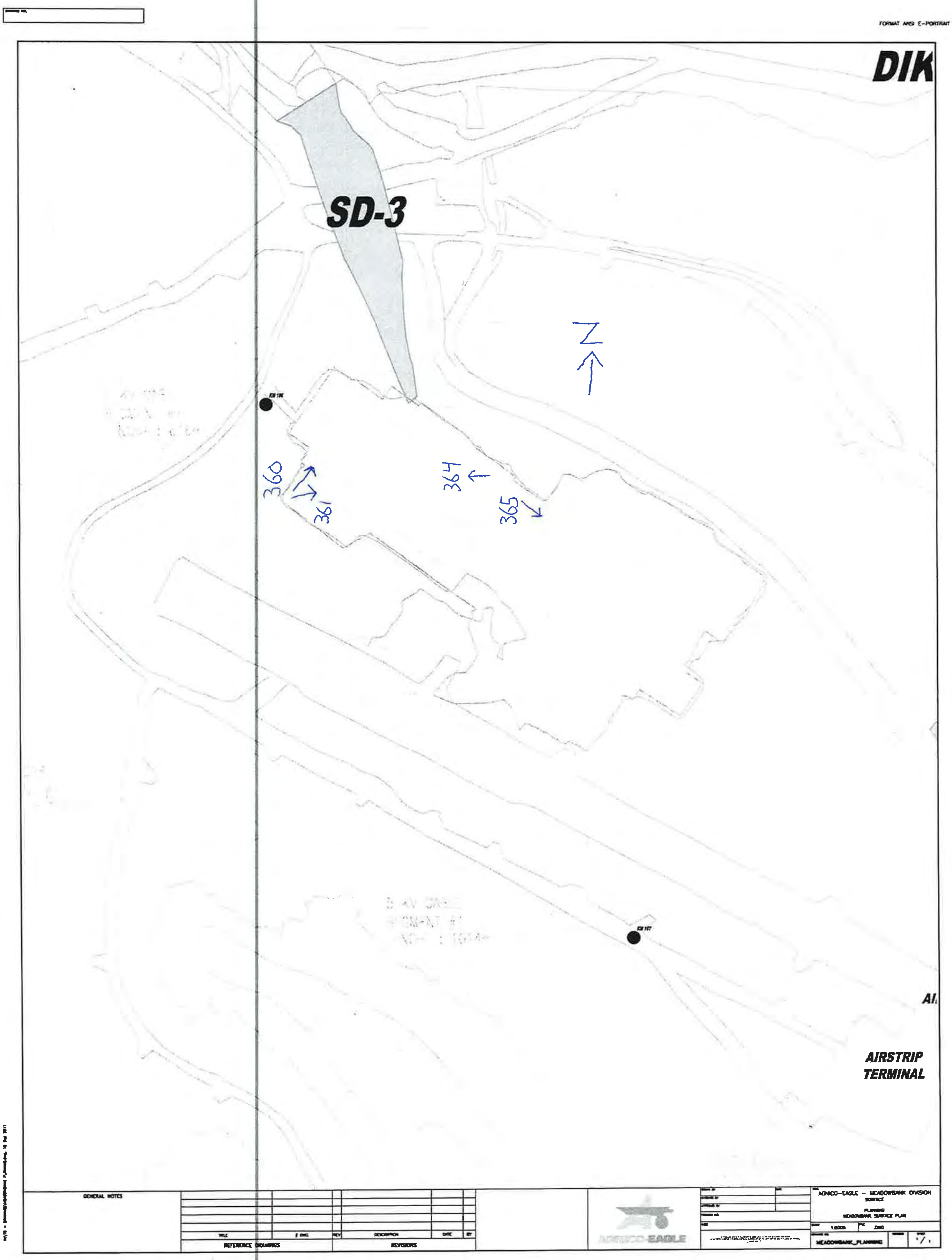

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AGNICO-EAGLE – MEADOWBANK DIVISION
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APPENDIX F

Bulk Fuel Storage Facilities

APPENDIX F1

Baker Lake Tank Farm Photographic Log

Photograph F1-1 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 298

Description: From southwest corner of southern tanks, looking northeast at tanks 1 and 2.

Photograph F1-2 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 299

Description: From southwest corner of southern tanks, looking southwest at tanks 1 to 4.

Photograph F1-3 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 301

Description: Looking at the northeast corner of tank 1.

Photograph F1-4 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 306

Description: Looking at the northwest corner of tank 1.

Photograph F1-5 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 302

Description: Looking northeast between tanks 1 and 2.

Photograph F1-6 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 303

Description: Looking at the northwest corner of tank 2.

Photograph F1-7 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 304

Description: Looking at the southwest corner of tank 2.

Photograph F1-8 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 309

Description: From north side of tank 2 looking southeast at tanks 2, 3 and 4.

Photograph F1-9 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 311

Description: Looking southwest at the northeast corner of tank 2.

Photograph F1-10 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 314

Description: Looking northwest at the southeast corner of tank 2. Notice the small accumulation of water.

Photograph F1-11 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 305

Description: Unprotected exposed geomembrane over 5 m at the base of the slope separating the lower and upper tank. The exposed area is located at the base of the slope between tanks 1 and 2.

Photograph F1-12 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 310

Description: Unprotected exposed geomembrane over 5 m at the base of the slope separating the lower and upper tank. The exposed area is located at the base of the slope in front of tank 2.

Photograph F1-13 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 312

Description: Looking southwest at the northwest corner of tanks 3 and 4.

Photograph F1-14 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 315

Description: Looking northeast at the southwest corner of tank 3.

Photograph F1-15 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 316

Description: Looking northwest at tanks 3 and 4. Notice the accumulation of water in the corner and the sign of high elevation of water that probably submerged the tank foundation fill at freshet.

Photograph F1-16 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 318

Description: Looking northeast at the southern side of tank 4.

Photograph F1-17 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 320

Description: Looking south at the northeast corner of tank 4.

Photograph F1-18 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 321

Description: Looking northwest at the north side of tanks 4, 3, 2 and 1.

Photograph F1-19 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 322

Description: Presence of longitudinal tension crack (10 mm open) on the upper bench north of tanks 3 and 4.

Photograph F1-20 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 325

Description: Looking northeast between tanks 5 and 6.

Photograph F1-21 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 326

Description: Looking northeast at southwest corner of tank 6.

Photograph F1-22 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 327

Description: Looking northwest at southern side of tanks 5 and 6.

Photograph F1-23 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 328

Description: Looking northwest at south east corner of tank 6. Notice the accumulation of water.

Photograph F1-24 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 330

Description: Looking southeast at northwest corner of tank 6.

Photograph F1-25 Baker Lake Tank Farm

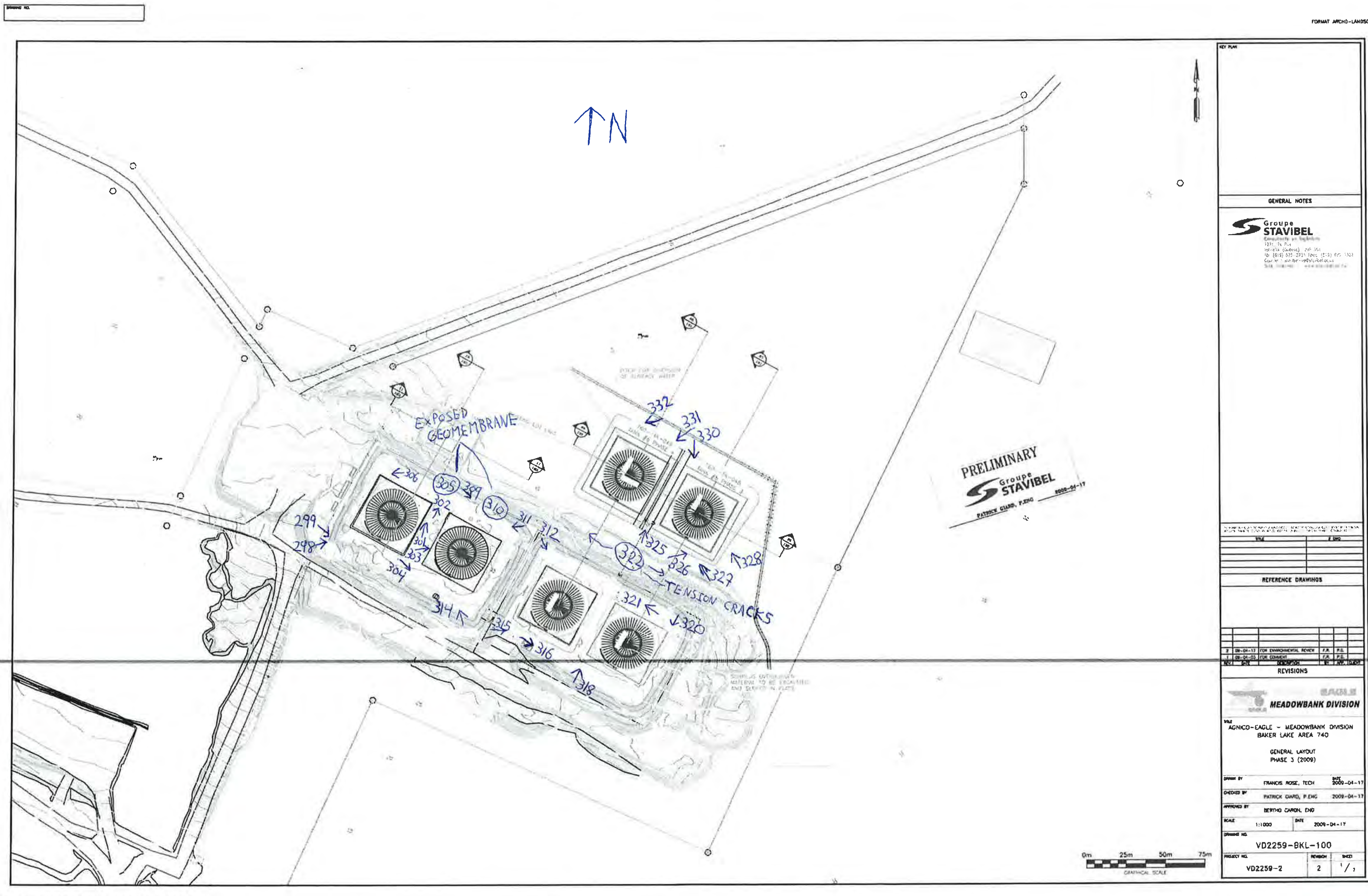
Date: September 15, 2012 **Photo Number**: 331

Description: Looking southwest at northeast corner of tank 5.

Photograph F1-26 Baker Lake Tank Farm

Date: September 15, 2012 **Photo Number**: 332

Description: Looking southwest at northwest corner of tank 5.



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GENERAL NOTES
Groupe STAVIBEL
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1 09-04-03 FOR COMMENT F.R. P.G.
REV. DATE DESCRIPTION BY APP. CLIENT
REVISIONS
MEADOWBANK DIVISION
TITLE
AGNICO-EAGLE - MEADOWBANK DIVISION
BAKER LAKE AREA 740
GENERAL LAYOUT
PHASE 3 (2009)
DRAWN BY FRANCIS ROSE, TECH DATE 2009-04-17
CHECKED BY PATRICK GIARD, P.ENG 2009-04-17
APPROVED BY BERTHO CARON, ENG
SCALE 1:1000 DATE 2009-04-17
DRAWING NO.
VD2259-BKL-100
PROJECT NO. VD2259-2 REVISION 2 SHEET 1/1
0m 25m 50m 75m
GRAPHICAL SCALE
FILE NO. .DWG

APPENDIX F2

Meadowbank Tank Farm Photographic Log

Photograph F2-1 Meadowbank Tank Farm

Date: September 13, 2012 **Photo Number**: 20

Description: Looking northeast at the tank southwest side.

Photograph F2-2 Meadowbank Tank Farm

Date: September 13, 2012 **Photo Number**: 21

Description: Exposed geotextile in the southwest corner.

Photograph F2-3 Meadowbank Tank Farm

Date: September 13, 2012 **Photo Number**: 22

Description: From the southwest corner, looking north at the tank southeast side.

Photograph F2-4 Meadowbank Tank Farm

Date: September 13, 2012 **Photo Number**: 23

Description: From the southeast corner, looking northwest at the tank southeast side. Note the accumulation of water.

Photograph F2-5 Meadowbank Tank Farm

Date: September 13, 2012 **Photo Number**: 25

Description: Accumulation of water in the northeast corner. Note the sign of higher water level in the past.

Photograph F2-6 Meadowbank Tank Farm

Date: September 13, 2012 **Photo Number**: 26

Description: Looking south from the northeast corner. Note the accumulation of water in the northeast corner.

Photograph F2-7 Meadowbank Tank Farm

Date: September 13, 2012 **Photo Number**: 27

Description: Small erosion at the base of the north side of the tank.

Photograph F2-8 Meadowbank Tank Farm

Date: September 13, 2012 **Photo Number**: 28

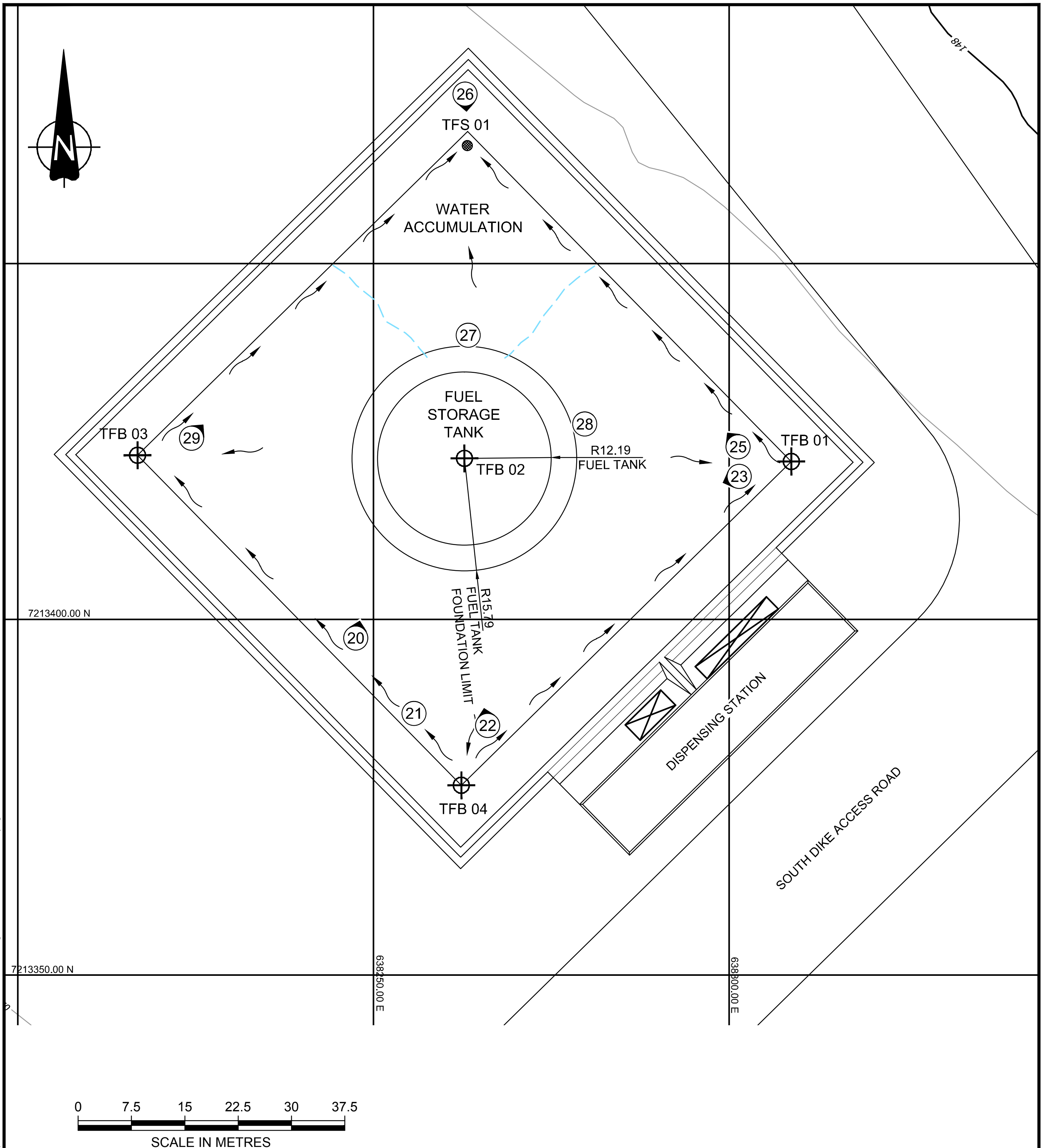
Description: Small erosion on southeast of the tank foundation fill side.

Photograph F2-9 Meadowbank Tank Farm

Date: September 13, 2012 **Photo Number**: 29

Description: From the northeast corner looking northwest.

\\golder.gds\gal\montreal\actif\2012\1221\upis000~\5prepa~1\doc139~1\h9hi000~\f2mead~1\appendix f2 - meadowbank photographic log.docx



LEGEND

(1) IDENTIFICATION AND DIRECTION OF PHOTOGRAPHY

REFERENCES

1) BASE PLAN INFORMATION IS PROVIDED BY CUMBERLAND DATED FEBRUARY 03, 2008.

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK GOLD PROJECT
NUNAVUT

TITLE

TANK FARM
2012 ANNUAL GEOTECHNICAL INSPECTION

Golder Associates
Montréal, Québec

PROJECT No.		12-1221-0073	PHASE No.	3000
DESIGN	FB	19OCT12	SCALE 1 : 750	REV. -
CADD	SB	19OCT12		
CHECK	YB	07NOV12	**FIGURE F2**	
REVIEW	FE	07NOV12		

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APPENDIX G

Other Site Facilities

APPENDIX G1

Site Roads Photographic Log

Photograph G1-1 Mine Site Road - RF1

Date: September 15, 2012 **Photo Number**: 371

Description: Looking west at road RF1.

Photograph G1-2 Mine Site Road - RF1

Date: September 15, 2012 **Photo Number**: 367

Description: Looking at road RF1 from Stormwater Dike.

Photograph G1-3 Mine Site Road - RF1

Date: September 15, 2012 **Photo Number**: 372

Description: Looking at a longitudinal tension cracks (50 mm open), 5 m length on the crest of the berm (near rusted container) at coordinate 638132E/7215710N on RF1.

Photograph G1-4 Mine Site Road - RF1

Date: September 15, 2012 **Photo Number**: 373

Description: Looking at a longitudinal tension cracks (50 mm open), 5 m length at the base of the safety berm (near rusted container) at coordinate 638132E/7215710N on RF1.

Photograph G1-5 Mine Site Road – West Road

Date: September 15, 2012 **Photo Number**: 375

Description: Looking at West road from Central Dike.

Photograph G1-6 Mine Site Road – West Road

Date: September 15, 2012 **Photo Number**: 382

Description: Looking at West road. Portage Pit is located on the right of this photo.

Photograph G1-7 Mine Site Road – East Road

Date: September 15, 2012 **Photo Number**: 384

Description: Looking south at East Road. Portage Pit is located on the right side of the photo.

Photograph G1-8 Mine Site Road – East Road

Date: September 15, 2012 **Photo Number**: 386

Description: Looking north at East Road. Portage Pit is located on the left side of the photo.

Photograph G1-9 Mine Site Road – Vault Road

Date: September 16, 2012 **Photo Number**: 393

Description: Looking at the three downstream culverts located on vault road at 640964E/7217466N.

Photograph G1-10 Mine Site Road – Vault Road

Date: September 16, 2012 **Photo Number**: 399

Description: From the upstream face looking inside the eastern culvert located on vault road at 640964E/7217466N. Note that the culvert is partially collapsed inside and that there is a hole in the middle of the culvert.

Photograph G1-11 Mine Site Road – Vault Road

Date: September 16, 2012 **Photo Number**: 398

Description: Looking at the three culverts upstream located on vault road at 640964E/7217466N.

Photograph G1-12 Mine Site Road – Vault Road

Date: September 16, 2012 **Photo Number**: 402

Description: Looking at the upstream of the two derivation culverts on Vault Road near the waste rock pile at 639214E/7216189N.

Photograph G1-13 Mine Site Road – Vault Road

Date: September 16, 2012 **Photo Number**: 404

Description: Looking at the downstream of the two derivation culverts on Vault Road near the waste rock pile at 639214E/7216189N.

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APPENDIX G2

Landfill Photographic Log

Photograph G2-1 Landfill

Date: September 15, 2012 **Photo Number**: 388

Description: Looking east, toward the landfill located at 638569E/7215673N.

Photograph G2-2 Landfill

Date: September 15, 2012 **Photo Number**: 391

Description: Looking west, toward the landfill located at 638569E/7215673N.

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APPENDIX G3

Contaminated Soil Storage and Bioremedial Landfarm Facility Photographic Log

Photograph G3-1 Contaminated Soil Storage and Bioremedial Landfarm Facility

Date: September 15, 2012 **Photo Number**: 392

Description: Looking southeast at the temporary Contaminated Soil Storage and Bioremedial Landfarm Facility location within the TSF South Cell where contaminated soils will be stored in 2013.

APPENDIX G4

Stormwater Management Pond 1 Photographic Log

Photograph G4-1 Stormwater Pond

Date: September 15, 2012 **Photo Number**: 343

Description: Looking south at Stormwater Pond. Note crusher access ramp on the right.

Photograph G4-2 Stormwater Pond

Date: September 15, 2012 **Photo Number**: 347

Description: Looking southwest at Stormwater Pond. Note crusher access ramp in the back.

Photograph G4-3 Stormwater Pond

Date: September 15, 2012 **Photo Number**: 352

Description: From the base of the crusher access ramp, looking northwest at Stormwater Pond and the crusher access ramp.

Photograph G4-4 Stormwater Pond

Date: September 15, 2012 **Photo Number**: 346

Description: Looking northeast at Stormwater Pond.

APPENDIX G5

Airstrip Channels Photographic Log

Photograph G5-1 Airstrip

Date: September 15, 2012 **Photo Number**: 341

Description: Looking northwest at the airstrip southwest side.

Photograph G5-2 Airstrip

Date: September 15, 2012 **Photo Number**: 342

Description: Looking northeast at the airstrip southeast side.

Photograph G5-3 Airstrip

Date: September 15, 2012 **Photo Number**: 354

Description: Looking northwest at the airstrip northwest side.

Photograph G5-4 Airstrip

Date: September 15, 2012 **Photo Number**: 353

Description: Looking northeast at the airstrip northeast side.

At Golder Associates we strive to be the most respected global company providing consulting, design, and construction services in earth, environment, and related areas of energy. Employee owned since our formation in 1960, our focus, unique culture and operating environment offer opportunities and the freedom to excel, which attracts the leading specialists in our fields. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees who operate from offices located throughout Africa, Asia, Australasia, Europe, North America, and South America.

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Australasia	+ 61 3 8862 3500
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Golder Associés

AGNICO-EAGLE
MEADOWBANK DIVISION

January 21, 2013

Via Email and Xpresspost

Ms. Phyllis Beaulieu
Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Phone: (867) 360-6338
licensingadmin@nunavutwaterboard.org

Dear Ms. Beaulieu,

Re: Meadowbank Water License 2AM-MEA0815 Part I, Item 13 – 2012 Annual Geotechnical Inspection Report

As required by Water license 2AM-MEA0815, Part I, Item 13, please find enclosed a copy of the document: *Report on 2012 Annual Geotechnical Inspection, Meadowbank Gold Project, Nunavut.*

Implementation Plan

Please consider the following information as the implementation plan to address the recommendations in Section 9.0 of the report.

DEWATERING DIKES

Recommendation*: *It is understood that AEM is preparing a final version of an Operation, Maintenance and Surveillance (OMS) Manual and Emergency Preparedness Plan (EPP) to cover the dewatering dikes.

> Action: The OMS manual and the Emergency preparedness plan are both currently in revision. The OMS manual will be finalized for the beginning of the second quarter and the EPP will be finalized in the third quarter of 2013.

EAST DIKE

Recommendation*: *Settlement at the base of the road berm should be monitored due to its proximity with the 2009 sinkhole event but is not considered a concern.;

> Action: After further inspection, AEM and Golder realize that the small depression is not related with the East dike itself but with only some loose/muddy material that have been

push next to a berm. However, visual monitoring of the dike will continue on a regular basis.

***Recommendation**: It is recommended to measure the flow of water pumped by the two seepage collection sumps and to periodically visually assess the clarity of the water removed. It is understood that AEM plan to install flow meters and have recently started observing the clarity of the water. Monitoring of the third seepage channel should continue.*

Action: Clarity of the water is observed every day since April 2012. The 2 flowmeters will be installed in the first months of 2013.

***Recommendation**: Regular monitoring and assessment of the monitoring data: piezometric, thermal, inclinometer, and seismograph (associated with blasting) data should continue.*

Action: The monitoring of the instrumentation at East Dike is done on a regular basis and will continue.

SOUTH CAMP DIKE

***Recommendation**: Instrumentation monitoring at the South Camp dike should continue on a regular basis;*

Action: The monitoring of the instrumentation at South Camp dike is done on a regular basis.

***Recommendation:** The presence of water at the downstream toe needs to be monitored to see if this water is associated with runoff or seepage and to detect if any changes occurs.*

Action: Visual monitoring of the dike is conduct on a regular basis. The water at the downstream toe of the dike is associated with run off and not with seepage.

BAY-GOOSE DIKE

***Recommendation:** Currently the dike crest surface, near the cut-off wall centreline, is highly irregular which limits visual observation of potential deformations, settlement, and/or cracking. To assist in the quality of the regular visual inspections, it is recommended to smooth the existing surface 3 m (one dozer blade width) on either side of the dike centreline, once the thermal cap is in place.*

Action: The thermal capping will be done in 2013.

<u>Recommendation:</u> Rebars installed to monitor tension cracks on the centreline at some locations should continue to be monitored.

<u>Action</u>: The tension cracks were a superficial reaction of the surface of the dike related to the thaw season. No more cracks are visible anymore.

<u>Recommendation:</u> Regular monitoring and assessment of the monitoring data (piezometric, thermal, inclinometer, seismograph associated with blasting and seepage) occurs and should continue. Displacement monitoring of the dike crest should be conducted.

<u>Action</u>: The monitoring of the instrumentation at BayGoose Dike is done on a regular basis and will continue.

<u>Recommendation:</u> It is understood that the final version of the as-built report for the Bay-Goose Dike is in preparation.

<u>Action</u>: The as-built report will be finalized in the first quarter of 2013 and will be send to the NWB.

<u>TAILING STORAGE FACILITY</u>

<u>Recommendation:</u> AEM is preparing the final version of an Operations, Maintenance and Surveillance (OMS) Manual and Emergency Response Plan (EPP) for the TSF.

<u>Action</u>: The OMS manual and the Emergency preparedness plan are both currently in revision. The OMS manual will be finalized for the beginning of the second quarter and the EPP will be finalized in the third quarter of 2013.

<u>Recommendation:</u> It is understood that AEM will construct a permanent seepage collection and pump back system on the downstream side of all permanent dikes and dams around the TSF following completion of construction activities at each facility. Saddle Dam 1 is currently storing tailings and supernatant water and a pump back system. Such a system should be installed at Saddle Dam 2.

<u>Action</u>: For Saddle Dam 1, the permanent seepage collection system was put in place in the fall 2012. For Saddle Dam 2, no water or tailing will be in contact with the dam before 2013. The permanent seepage collection will be installed in 2013.

<u>Recommendation:</u> It is recommended to restrict vehicle access on the pad of uncompacted material near the north abutment of Saddle Dam 1 at around 30 m from the crest as signs of past failure and presence of continuous tension cracks suggest that more failures will occur.

<u>Action</u>: The access will be close.

<u>SADDLE DAM 1</u>

<u>Recommendation:</u> Significant wrinkles were observed in the liner. Wrinkle conditions need to be monitored to ensure no geomembrane pinching will occur.

<u>Action</u>: Regular visual inspection of the liner is done and will continue. No wrinkles have been observed during winter time.

<u>Recommendation:</u> It is recommended that a formal ballast design be completed in function of existing wind speed and direction conditions to avoid such adverse condition repeated again.

<u>Action</u>: A ballast design has been determine and will be implemented during summer 2013.

<u>Recommendation:</u> Displacement monitoring locations should be established and regularly monitored.

<u>Action</u>: AEM is currently evaluating the necessity of those displacements monitoring station. The Meadowbank Dike Review Board did not mention the necessity of these one.

<u>SADDLE DAM 2</u>

<u>Recommendation:</u> Displacement monitoring locations should be established and regularly monitored.

<u>Action</u>: AEM is currently evaluating the necessity of those displacements monitoring station. The Meadowbank Dike Review Board did not mention the necessity of these one.

<u>STORMWATER DIKE</u>

Recommendation: ***Differential settlement was observed between Sta. 10+700 and Sta. 11+000 on upstream edge and slope. AEM should monitor the differential settlement.***

Action: The depressions are visually monitored in the regular dike inspection.

Recommendation: ***The three holes identified in the liner about 1 m below the crest should be repaired before the tailings reach this elevation.***

Action: The three holes will be repaired before the tailings reach this elevation.

AWPR

Recommendation: ***AEM has been conducting regular and event-based inspections of the fish-bearing water crossing locations along the road and these should continue in order to confirm the hydraulic function of the crossings, adequacy of crossing locations with respect to the watercourses, and minimal impact to fish habitat. Consideration should be given to expanding the AEM inspections to include cursory monitoring of flow and high water marks at all crossings during freshet and peak flow events.***

Action: AEM will expand the monitoring as recommended and increase inspections to 1x/week during the peak flow freshet period (mid June – mid July). We will monitor for any sediment release and mark the high water level.

Recommendation: ***For some culvert locations, it is recommended that AEM monitor to see if flow is actually occurring, i.e., during the freshet. If insufficient capacity to handle the flows is observed, then it is recommended to clear the obstructions or repair the culverts; particular attention should be paid to R-00A (km 2+550), PC-14 (km 4+260), PC-16 (km 54+950), R-14 (km 67+840) and R-05A (15+745).***

Action: The condition of the obstructions at the culverts will be monitored and we will evaluate if their replacement is needed.

Recommendation: Some water was observed seeping under the northwest abutment of Bridge 9, R19 at about km 83+150. The water quality of this seepage should be monitored for signs of turbidity.

Action: The water quality of the seepage will be monitored for signs of turbidity.

QUARRY

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J0Y 1C0
Tel: 819-759-3700 Fax: 819-759-3663

Baker Lake Office:
P.O. Box 540
Baker Lake, Nunavut
X0C 0A0
Tel: 867-793-4610 Fax: 867-793-4611

Recommendation: ***It is understood that AEM is developing a plan for progressively closing some of the quarries along the AWPR while maintaining others for storage of materials and to provide a supply of materials for ongoing road maintenance;***

Action: For the ongoing road maintenance some quarries will stay open for the duration of the mine life. A plan will be developed in the next two years for progressive closure.

Recommendation: ***Quarry 4 and Quarry 14 are flooded and it is understood that AEM is evaluating how best to eliminate the ponding of water within these quarries, if possible***

Action: The actions necessary to deal with the water and close these quarries will be included in the plan described in the point above.

BULK FUEL STORAGE FACILITIES

Recommendation: ***Ongoing removal of fluids that accumulate within the secondary containment facilities should be managed appropriately. At the Baker Lake fuel tank farm, there were signs that water had accumulated to a very high level in the past, submerging the tank foundation fill.;***

Action: AEM environment staff will ensure that accumulated water is pumped out in a timely manner (in accordance with Water license requirements) to prevent any submerging of tank foundation fill.

Recommendation: ***At the Baker Lake fuel tank farm, the geomembrane was folded and exposed in two areas over a 5 m length on the internal slope, north of Tanks 1 and 2. To minimize potential damage to the liner, it is recommended to cut and repair the fold and to re-cover the area with fill material.***

Action: The fold will be repaired and the area will be cover with fill material during the summer 2013.

Recommendation: ***At the Baker Lake fuel tank farm, tension cracks were observed on the upper bench, north of Tanks 3 and 4 and south of the Tanks 5 and 6. These may be a result of the steep side slopes. No mitigation work is required, but regular inspection should be performed to monitor the cracks. Any changes to the cracks (e.g., lengthening, deepening, widening) should be noted and provided to the design engineer. At the time of the inspection, the slope instability observed appeared superficial due to the presence of shallow bedrock and was not considered a threat to the lower tanks.***

Action: Regular inspections will be performed to monitor the cracks.

Recommendation: ***At the Meadowbank fuel tank farm small signs of erosion were noted on the tank foundation. This is considered not to be significant at this stage but it should be monitored to avoid unstable tank foundation conditions.***

Action: Regular inspections will be performed to monitor the erosion.

Meadowbank Site Roads

Recommendation: ***Three culverts were installed on Vault Road. These three culverts were partially collapsed in the middle and showed signs of erosion at the inlet. This is presently not a significant issue but it is recommended to monitor these culverts during the next freshet to ensure that they provide sufficient capacity and that erosion is not occurring.***

Action: Regular inspection will be performed to ensure sufficient capacity and that erosion is not occuring.

Recommendation: ***Tension cracks were observed on the crest of the berm and on the road near the berm at one location on RF1. It is recommended to restrict vehicle access in the area of these cracks and monitor their evolution. Light vehicles can continue using this road.***

Action: Access will be restricted in the area of these cracks and their evolution will be monitor.

Should you have any questions or require more information, please contact me directly at stephane.robert@agnico-eagle.com or by telephone at 819-763-0229.

Regards,
Agnico-Eagle Mines Limited – Meadowbank Division

Stéphane Robert

AGNICO-EAGLE
MEADOWBANK DIVISION

Environment Superintendent

cc: *David Abernethy, INAC*
Luis Manzo, KIA

REPORT

January 14, 2013

MEADOWBANK MINE

Annual Review of Portage and Goose Pit Slope Performance (2012)

Submitted to:
Agnico Eagle Mines Limited
Meadowbank Division
PO Box 540
Baker Lake NU X0C 0A0
Canada

Attention: Julie Bélanger

Report Number: 1212210087-1397-R-Rev.0

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1 Electronic Copy: Golder Associates Ltd.

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Golder Associates

Executive Summary

An annual site visit to inspect the performance of the pit walls of the open pits at Agnico-Eagle Mines Ltd.'s (AEM) Meadowbank Mine was carried out by Golder Associates Ltd. (Golder) from September 10 to September 13, 2012. Currently, the performance of the walls observed at both the Portage Pit and Goose Pit is satisfactory. There are specific areas in the Portage Pit that require instrumentation and regular monitoring. . The only exposed bench in the Goose pit, along the east wall, was observed to be performing satisfactorily. Prisms have been installed on this bench and around the Goose Pit, as recommended.

PORTAGE PIT

Pit A

A rock fall was noted along the west wall of Pit A, near its northern end. A berm at the toe of the bench has been filled and over-topped. AEM has indicated the berm will be reconstructed to prevent traffic from travelling or stopping below this area. Although this area does not present a large-scale stability hazard to the pit wall, continued ravelling should be regularly monitored as it is conceivable that ravelling could extend back to the haul road area behind the west pit crest, and could potentially affect operations.

The north wall of Pit A is characterized by bench scale ravelling. The bench scale ravelling is effectively managed by a broad platform at the base of the wall. Mining is nearly complete in this area of the pit. There are no immediate concerns with this wall

In 2011 AEM observed tension cracks at the crest of the east wall ramp. The area was inspected as part of the 2011 pit slope performance review. The area was re-inspected during the 2012 site visit and no tension cracks were observed. This should continue to be monitored, but there are no immediate stability concerns.

Pit B

A fault in the west wall of Pit B should continue to be surveyed as it is exposed. The fault is approximately parallel to the west pit wall and dips steeply into the wall, and as a result is not expected to present a large-scale longer-term stability hazard in the absence of additional unfavourable structural features.

A portion of the west wall of Pit B was noted to have closely spaced north and south dipping joints, forming small wedges. While these do not currently present a stability concern these joints are oriented such that larger wedges could be formed as the pit is deepened. Prisms should be installed now in this area of the pit.

Pit C

A fault intersecting the east wall of Pit C was observed. The rock adjacent to the fault is strongly fractured. This fracturing is combined with out-dipping foliation at steep angles resulting in significant ravelling of material. This may be the Second Portage Fault, or fault splay. The fault can be followed along strike to intersect the west wall of the pit. AEM should survey the location and orientation of the fault to compare with the previously interpreted location of the Second Portage Fault. It has been recommended that the access road beneath this area of the wall be bermed off to prevent access. AEM have indicated the road is lightly used and that the road may be decommissioned or closed by the spring.

Pit D

The main ramp access to Pit D and Pit E of the Portage Pit is along the west wall of Pit D. The rock mass quality of the ultramafic rock exposed in the lower slopes and below the ramp degrades rapidly when exposed and rock falls have undermined the ramp area. AEM have effectively controlled this by building a buttress of rock fill material against the west wall of the pit, below the ramp.

A portion of the east wall of Pit D was observed during the 2011 site visit as having substantial catchment loss due to undercutting of steeply west dipping foliation. A wide platform with catch berm is now in place below this area of the east wall. Prisms should be installed along the crest of this area, and monitored regularly for slope movement. The most likely time for slope movement to occur will be during the spring thaw period.

Pit E

Currently, the east and south walls of Pit E are performing satisfactorily. The east wall is characterized by steeply dipping foliation, and pre-shear blasting methods have been effective in minimizing blast damage and reducing catchment loss due to over-break.

The lower portion of the west wall of Pit E is being excavated in ultramafic rock. The bench face angles are steeper than the design recommendations, and over-digging of the rock in some areas has resulted in overhangs. Some “scallop-type” structures (relatively shallow failures resulting from undulations in secondary foliation) have formed in the ultramafic rock, resulting in rock falls onto the ramp. AEM are managing these rock falls effectively by placing berms beneath them to prevent personnel or equipment from travelling or parking in these areas. Regular geotechnical inspections of this pit area should focus on identifying these hazards above the ramp so that additional berms may be constructed if necessary.

GOOSE PIT

There are no critical slope stability concerns for the Goose Pit at this time. Currently, the Goose Pit is at an early stage of development, and at the time of the site visit the floor of the pit was between 5,116 RL (Reduced Level) along the east side of the pit and 5,123 RL along the west side of the pit; the site visit focussed on the east wall.. Pre-shear blasting has been effective in breaking back to the foliation orientation, minimizing blast damage, and preserving bench crests.

The east wall is performing satisfactorily. Prisms have been installed on the east wall as recommended; at the time of the site visit monitoring of the prisms had not started. AEM have been requested to survey any seepage areas and structural features as they are encountered. A complete map of this information is important for mine planning and safety as the excavation of the pit continues.

A significant water inflow event occurred on September 10, 2012, at the south end of the Goose Pit. The water inflow subsided rapidly, suggesting this to be the result of release of water from a confined aquifer rather than flow along a potential structure hydraulically connected to the lake. The location of the inflows roughly coincides with the projected location of a north–south trending fault approximately through the centre of the Goose Deposit area.

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TABLES

FIGURES

PHOTOGRAPHS

1.0 INTRODUCTION

Golder Associates Ltd. (Golder) was retained by Agnico-Eagle Mines (AEM) to complete an annual inspection of the pit slope performance in order to satisfy the water licence requirements.

During the site visit from September 10 to September 13, 2012, two personnel from Golder reviewed the pit wall performance of Portage Pits A through E, and the Goose Pit. This report summarizes the inspection carried out for the pits and describes observations made during the site visit of the performance of the various pit slopes. Where possible, the observations are related to the engineering geological model for the project in order to test assumptions made during the development of the slope design criteria.

A summary of the key observations was presented to AEM personnel on site at the end of the site visit.

2.0 CURRENT MINE STATUS

2.1 Portage Pit

The Portage Pit consists of five subordinate pits, identified as Pits A through E, from north to south. This is shown in Figure 1. At the time of the Golder site visit, September 10 to September 13, 2012, the Portage Pit was being actively mined in all five mining areas. Work is set to begin shortly on a pushback of the west wall of Pit E of the Portage Pit.

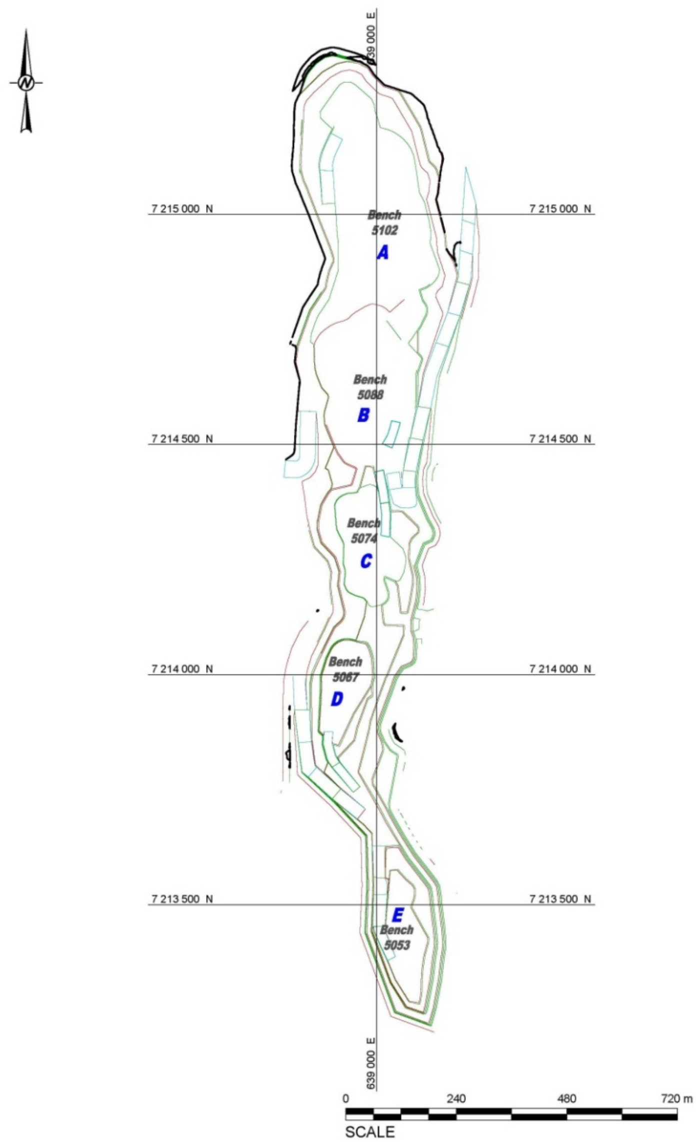


Figure 1: The Portage Pit at the time of the pit wall inspection site visit

2.2 Goose Pit

At the time of the Golder site visit, the Goose Pit was being actively mined. The status of the Goose Pit at the time of the site visit is shown in the following figure.

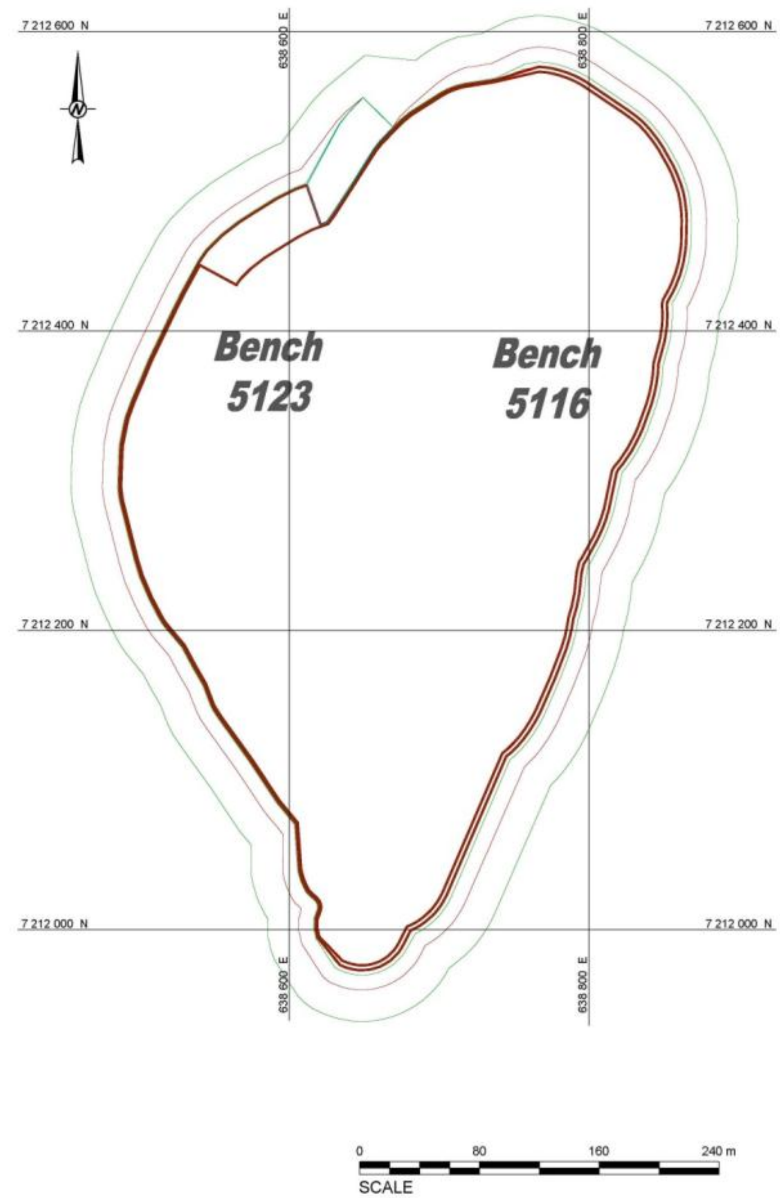


Figure 2: The Goose Pit at the time of the 2012 pit inspection site visit

2.3 Life of Mine Schedule

The current Life of Mine schedule for the various pits at the site was provided by AEM, and is summarized in the following table.

Table 2-1: Life of Mine Schedule for Meadowbank Project Open Pits (Ref. AEM, 29 October 2012)

PIT	Current Elevation (mRL)	Final Elevation (mRL)	Completion Date
A	5,109 to 5,102	5,004	DEC 2015
B	5,088 to 5,081	5,025	DEC 2015
C	5,067	5,046	APR 2013
D	5,060	5,046	MAR 2013
E	5,053	4,990	DEC 2016
GOOSE	5,116 to 5,109	4,990	JUN 2015

2.3.1 Mine Site Engineering Geology Model

The supracrustal stratigraphy of the Third Portage Lake area consists of ultramafic volcanic, felsic to intermediate volcaniclastics and/or greywacke, interbedded magnetite-chert iron formations and associated pelitic schists, and quartzite. The bulk of the gold mineralization in the deposit is contained within the iron formations. Intermediate volcaniclastic units are the most common and have been subject to weak to moderate sericite alteration and locally weak to moderate biotite alterations.

The Portage Deposit area has undergone a series of regional deformations events resulting in the typical “dome and basin” fold structures. The dominant structural feature of the Portage Deposit is a gently to steeply inclined, tightly folded north–south trending anticline, which has resulted in the iron formation, interbedded, volcaniclastic and metasedimentary rocks being folded around a core of ultramafic volcanic rock. Bedding-parallel foliation associated with the east–west deformational events is pervasive throughout the deposit area. Foliation surfaces tend to be slightly altered with occasional coatings and can be associated with slickensiding and shearing. In general, the foliation and stratigraphy dip to the west at variable inclinations from horizontal to sub-vertical. Locally the foliation orientations can vary considerable, particularly when adjacent to major fault zones.

The Goose Island Deposit is a steeply dipping, stratiform gold bearing iron formation that is part of a sequence of Archean ultramafic and mafic flow sequences, volcaniclastic sediments, felsic to intermediate flows and tuffs, and sediments. The ultramafic rocks are variably altered and contain serpentinite, chlorite, actinolite, and talc. The deposit trends northward and southward from Goose Island and dips at steep angles, generally greater than about 55 to 60 degrees to the west. Axial planar and bedding-parallel foliation, which is pervasive throughout the rock mass, occurs commonly as healed fractures rather than open fractures within the rock. Axial plane and bedding-parallel ductile shearing are common at both the Portage and Goose Deposits due to intense regional deformation events. This shearing is most commonly associated with weaker lithologic units such as the ultramafic volcanic rock.

Brittle deformation features such as fault gouge and strongly broken rock are reportedly rare in the immediate area of Third Portage and Goose Island.

2.4 Tectonic and Structural Features

The main tectonic features within the Third Portage Lake area are Second Portage Lake Fault zone and the Bay Fault zone. These faults were intersected during the geotechnical drilling investigations for feasibility design.

The Second Portage Fault zone is interpreted to trend northwest–southeast, parallel to the axis of Second Portage Lake, dipping at approximately 70 degrees to the southwest. A fault zone identified during the 2012 inspection on the east and west walls of the Portage Pit may be the Second Portage Fault or a sub-parallel splay. This is discussed in greater detail below. Based on the drilling investigations, the Second Portage Fault is characterized by variable thickness and rock mass quality.

The Bay Fault zone has not yet been exposed in the west wall of the Portage pit, and so final confirmation of its interpreted extent, orientation, and thickness is not yet possible. The Bay Fault may extend south to intersect the Goose Pit. A fault zone identified initially during the 2011 in the west wall of the Portage Pit, and exposed further in 2012, may be the northern extension of the Bay Fault. This is discussed in greater detail below.

The foliation and sheared stratigraphic contacts are continuous features, while other joint sets are generally semi-continuous or discontinuous.

2.5 Structural Domains

For the purpose of the previous pit slope design studies, the Portage and Goose Deposits were subdivided into structural domains based on the orientation of the main structural features within each domain.

The Portage Deposit structural domains used for pit slope design are shown in Figure 3. As mining has progressed, the previously defined structural domains have been compared to observations made of the main structural features exposed in the pit walls. Field observations have confirmed that the structure and stratigraphic orientations exposed in the current pits is consistent with the engineering geology model used to develop pit slope design criteria.

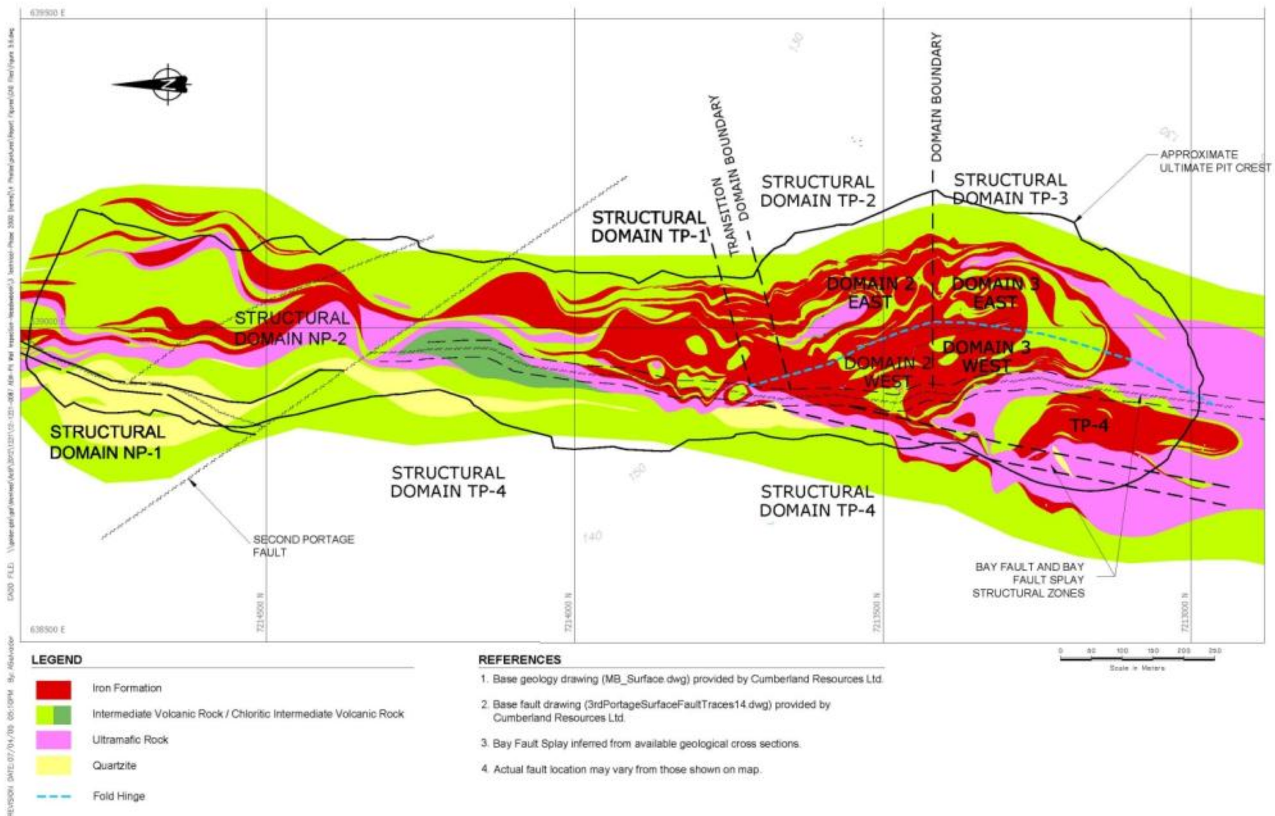


Figure 3: Structural Domains of the Portage Pit based on 2007-design (Golder, 2007)

The Goose Deposit structural domains are shown in Figure 4. The interpretation of these domains has been modified from the 2007 design report based on additional geotechnical field investigations and analytical studies carried out in 2012, and reported in Golder (2012).

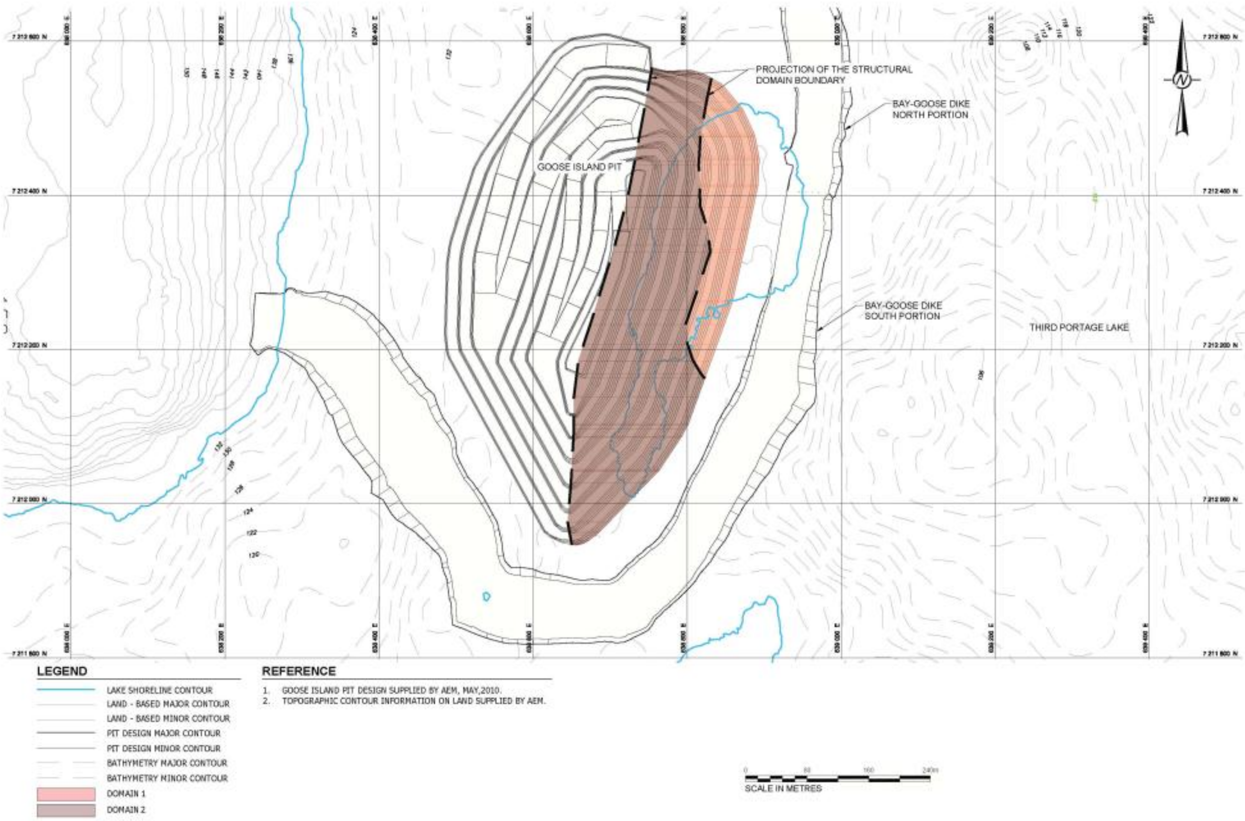


Figure 4: Structural Domains of the Goose Pit showing the pit prior to 2011 redesign (Golder, 2012)

For reference, the following sections briefly describe the main elements of the structural domains at the Portage and Goose Deposits.

2.5.1 Portage Pits A and B (North Portage Deposit)

Portage Pits A and B are within Structural Domains NP-1, NP-2 and NP-3. The domains are separated based on their relationship to the Bay Fault. Structural Domain NP-1 is interpreted as the area west of the Bay Fault zone and is characterized by north trending and westward dipping stratigraphy interpreted as being inclined at angles less than approximately 30 degrees. Structural Domain NP-2 is interpreted as the area east of the Bay Fault zone and is characterized by the same north trending, westward dipping stratigraphy, but inclined at angles less than 20 degrees. Structural Domain NP-3 corresponds to the area adjacent to the Bay Fault zone, ranging from 15 to 50 m into the hanging wall and footwall. Stratigraphy in NP-3 has been interpreted to be drag-folded into steeper orientations.

2.5.2 Portage Pits C, D, and E (Portage Main Deposit)

Portage Pits C, D, and E are defined by four structural domains: TP-1, TP-2, TP-3 and TP-4.

Structural Domain TP-1 is interpreted as the area south of the Second Portage Fault zone and north of a transitional zone, where the foliation begins to steepen at approximately 2+50N of the mine grid. TP-1 is characterized by foliation inclined towards the west at angles less than 20 to 25 degrees.

Structural Domain TP-2 is interpreted as the area south of TP-1 and north of TP-3 at around 0+00N, east of the Bay Fault zone. TP-2 has been subdivided into and East Sector and a West Sector based on the general orientation of the foliation and stratigraphy determined from the drilling investigations, and from interpreted geological cross sections. The East Sector of TP-2 is characterized by foliation and stratigraphy that dip west at angles ranging from less than 15 degrees to greater than 60 degrees. The West Sector of TP-2 is characterized by foliation dipping shallowly to the east at 20-30 degrees. The upper slopes of the east wall are being developed within the steeply dipping stratigraphy in the East Sector, while the lower slopes and the base of the pit will be developed in the shallow dipping stratigraphy later in the mine life.

Structural Domain TP-3 is transitional to the south of TP-2 and results from the re-orientation of the main fold axial plan at around 0+00N, the fold axial plane trends at about 015 degrees azimuth and is inclined to the west. Similar to TP-2, TP-3 has been subdivided into and East and a West Sector based on the general orientation of the foliation and stratigraphy. The East Sector of TP-3 is characterized by foliation and stratigraphy inclined to the west at angles less than about 15 degrees to steeper than 60 degrees. Within the West Sector, the foliation is generally flat lying to 20 to 30 degrees dipping towards the east. As with Domain TP-2, the upper slopes of the east wall will be developed within the steeply dipping stratigraphy in the East Sector, while the lower slopes and the base of the pit will be developed in the shallow dipping stratigraphy.

Structural Domain TP-4 is located to the west of the interpreted Bay Fault zone. TP-4 is characterized by shallowly inclined foliation and stratigraphy at angle of approximately 20 degrees towards the west, steepening up to 80 degrees adjacent to the Bay Fault zone.

2.5.3 Goose Deposit

Some of the structural domains identified in 2007 were refined further by Golder following the 2012 geotechnical field investigation program that took place as part of the 2012 dike setback study (Golder 2012). Since the focus of the 2012 investigation was on the proposed east wall of the deposit, the structural domains in the east wall were modified while those interpreted for the west wall remain unchanged as the data collected from the investigation are not relevant to that area of the pit.

There were three primary changes made to the Goose east wall structural domains. The first was a reduction in the number of domains in the east wall from three to two, based on the 2012 field investigation and reinterpretation of the structural model. The second was the foliation was determined to be steeper than was assumed when the domains were identified in 2007. The third was a change to the orientation of the orthogonal joint set, from a predominantly west dipping structure (dipping out of the east wall) to a predominantly east dipping structure (dipping in to the east wall). The overall result of these changes was to increase the predicted stability of the Goose Pit east wall.

The west wall of the Goose Pit is being excavated in Structural Domain 4, as interpreted in 2007. This domain is interpreted to be characterized by foliation and stratigraphy shallowly inclined at approximately 20 degrees towards the west.

The east wall of the Goose Pit is being excavated in Structural Domains 1 and 2. Structural Domain 1 is interpreted to extend north from 4750 N on the mine grid and at depths shallower than approximately 35 m below the ground surface. Foliation dips at approximately 50 to 60 degrees to the west, and an orthogonal joint dipping into the pit wall. Structural Domain 2 is interpreted to extend south from 4750 N and is expected to comprise the east wall of the pit south of 4750 N. Within this domain foliation dips steeply to the west at angles of approximately 65 to 70 degrees, and orthogonal joints dipping in to the slope at shallow angles. Steeply north and south dipping joints are also present.

3.0 PORTAGE PIT INSPECTION

The following figure shows the five Portage Pits, and identifies areas visited during the 2012 review.

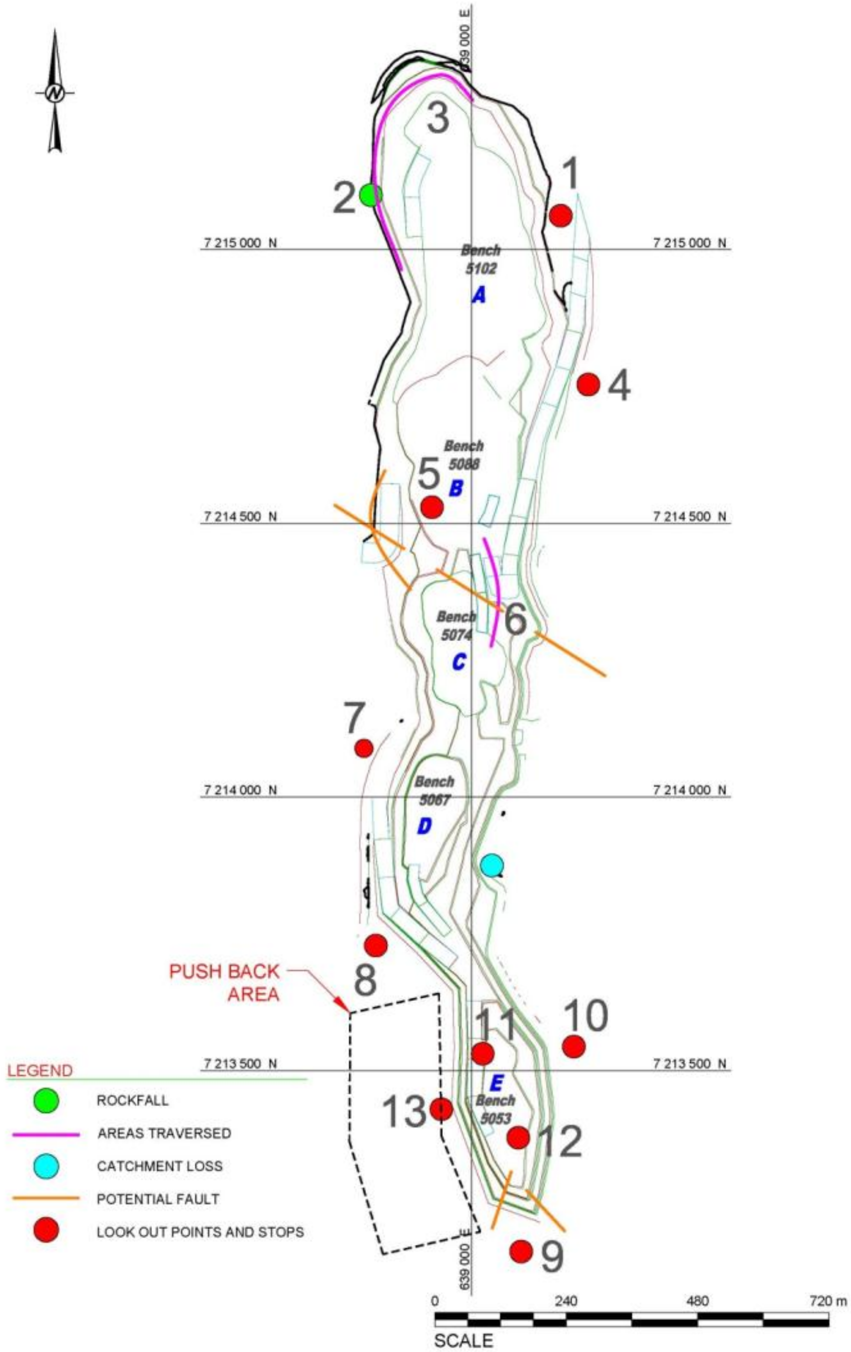


Figure 5: Portage Pit at the time of the site visit, showing areas of interest and areas visited

3.1 Pits A and B Inspection (North Pit)

There has been little development of Pits A and B (North Pit) since the 2011 site visit. At the time of the 2011 site visit, the pit platform was at elevation 5,116 RL; at the time of the 2012 site visit, the pit platform was at 5,102 RL. The inspection consisted primarily of a traverse of the 5123 platform at the north end of Pit A, beginning along the west wall, then along the north, and east walls. The inspection focussed on areas of note identified during the 2011 site visit, such as the ramp area of the east wall, a fault structure identified in the west wall, and any other general observations of rock quality and pit slope performance relative to observations made previously, or newly identified.

The design criteria for the east, north and west walls of the North Portage Pit (Pits A and B) are summarized in the following table and are compared with current practice at the pit.

Table 3-1: Design Criteria for the North Portage Pit (Pit A and Pit B)

	East Wall (Pit A and B)		North Wall (Pit A)		West Wall (Pit A and B)			
	(Approx. 045 through 135 wall azimuth)		(Approx. 315 through 045 wall azimuth)		(Approx. 225 through 315 wall azimuth)			
	Design (2006 Scoping Study)	Current Practice (AEM Design)	Design (2006 Scoping Study)	Current Practice (AEM Design)	Design (2006 Scoping Study)			Current Practice (AEM Design)
					Fault Zone	IF/IV/QTZ	UM	
BH (m)	24 m	21 m	24 m	21 m	12 m	24 m	24 m	21 m
BFA (deg)	//Fol 40 to 70 deg	70 deg pre-shear	//Fol 40 to 70 deg	70 deg pre-shear	65	70	65	80 deg pre-shear
CB (m)	10 m	10 m	10 m	10 m	5 m/8 m	10 m	10 m	14 m
IR (deg)	32 to 52	50	32 to 52	50	45	52	49	50

3.1.1 Pits A and B Overview

A view of Pits A and B looking north is shown in the following photograph.

Photograph 1: Overview of Pits A and B Looking North

The photograph was taken from the east pit crest looking north, between Pits B and C. Shown are the approximate extents of Pits A and B at the time of the site visit. The approximate pit floor elevations are identified on the photograph. Also shown are some important structural features of the west wall of the pit, such as the fault exposed on the 5130 bench and identified during the 2011 site visit which is potentially the Bay Fault, and the possible location of the Second Portage Fault in the west pit wall identified during the 2012 site visit. These features and their implications to slope stability are discussed in greater detail in the following sections.

3.1.2 Pit A Inspection

Pit A is at the north end of the Portage Pit, comprising the northwest through northeast end walls of the Portage Pit.

The northwest through northeast walls of Pit A were inspected from vantage points along the east and west pit crest, and from a traverse on the 5109 platform. The vantage points are shown as Stops 1 and 4 in Figure 5, and the area of traverse as Stop 3.

Photograph 2: Pit A looking northwest (haul truck and shovel are at 5,102 RL, pickup truck is at 5,109 RL) north wall (from Stop 4 in Figure 5)

In general the performance of the Pit A walls is satisfactory. One area of bench scale instability on the west wall was noted and is described below. No potential large-scale, multiple bench instabilities were observed.

3.1.2.1 Pit A West Wall

The west wall bench faces of the pit are being excavated at steeper angles than recommended by the design criteria. With the exception of a local bench scale rock fall, the west wall benches appear to be performing well.

A local bench scale rock fall observed on the west wall was inspected during a traverse along the 5109 platform. The location of the rock fall is identified as Stop 2 in Figure 5. A photograph of the rock fall area is shown below.

Photograph 3: Rock fall on west wall of Pit A on 5109/5123 bench, Stop 2 in Figure 5 (pickup truck in foreground is at 5,109 RL)

The stratigraphy in this area is very tightly folded, and strikes into the wall. The interaction of the steeply south dipping stratigraphy and closely spaced north dipping joints results in ravelling of material from the formation of wedge structures in the blocky ground. Ongoing ravelling of the material has resulted in filling behind the containment berm, and some over-topping. This is shown in the following photograph.

Photograph 4: Overtopping of deflection berm by rock fall on west wall of Pit A on 5109 bench, Stop 2 in Figure 5

During the site inspection AEM indicated that the deflection berm will be redeveloped, the platform cleaned, and that access to this area will be restricted. The 5109 platform below the rock fall is wide in this area, and it is understood there are currently no plans to decrease the platform width. Consequently, catchment below this area is expected to be sufficient to contain any additional ravelling of material. However, it is noted that a haul road is located approximately 60 m behind the crest in this area. Over time there is the potential for this area to continue to ravel back towards the road. This area should continue to be monitored as part of regular pit geotechnical inspections to gauge whether or not ongoing ravelling of material will impact the operation of the haul road. As this area of the wall continues to ravel it may become self-limiting, eventually reaching a stable angle of repose.

3.1.2.2 Pit A North Wall

A traverse along the north pit wall was completed, and is identified as Stop 3 in Figure 5.

The rock exposed in the north wall of the pit appears more fractured than the west and east pit walls. Jump ramps have been constructed to allow scaling of the walls, as shown in the following figure.

Photograph 5: The north wall of Pit A, showing jump ramps for scaling of the wall (Stop 3, Figure 5)

There are indications of some ravelling of the bench face. However, the 5,109 and 5,102 RL platforms below this area of the wall are broad, and it is understood that mining in this area is complete. It is expected that these broad platforms will provide sufficient catchment for any ongoing ravelling of material.

3.1.2.3 Pit A East Wall and East Ramp

No potentially large-scale instabilities were identified along the east wall of Pit A. In general the performance of the east wall of Pit A is satisfactory. The 5109 bench has been cleaned well, and there is very little evidence of ravelling of material on to the bench.

Photograph 6: Pit A east wall looking south on 5109 bench

In 2011 AEM observed tension cracks at the crest of the east wall ramp (Stop 1 in Figure 5). The area was inspected as part of the 2011 pit slope performance review. Based on observations made during that site visit the tension cracks did not appear to be indicative of a larger scale failure. Recommendations were made that the area be monitored and the ramp be graded to redirect water away from the tension crack area. The area was re-inspected during the 2012 site visit and no tension cracks were observed.

Photograph 7: Pit A east ramp showing area of ramp where tension cracks were observed in 2011 (Stop 1, Figure 5)

3.1.3 Pit B Inspection

Pit B consists of the southward extension of the east and west walls of Pit A. At the time of the site visit the pit floor of Pit B was at approximately 5,088 RL.

3.1.3.1 Pit B West Wall

During the 2011 pit slope inspection, a fault was identified at the transition between Pits A and B in the west wall behind the 5130 bench crest. The fault trends in a northwest to southeast direction, dips steeply into the wall and is approximately 1 to 1.5 m wide. The orientation, measured from the 5116 platform during the 2011 site visit, is 60/220 (dip and dip direction, without correction for magnetic declination). The footwall is characterized by tightly folded intermediate volcanic rocks and quartzite. The fault as observed in 2011 from the 5116 platform is shown in the following figure.

Photograph 8: Pit B west wall fault exposed in the 5116 bench face in 2011

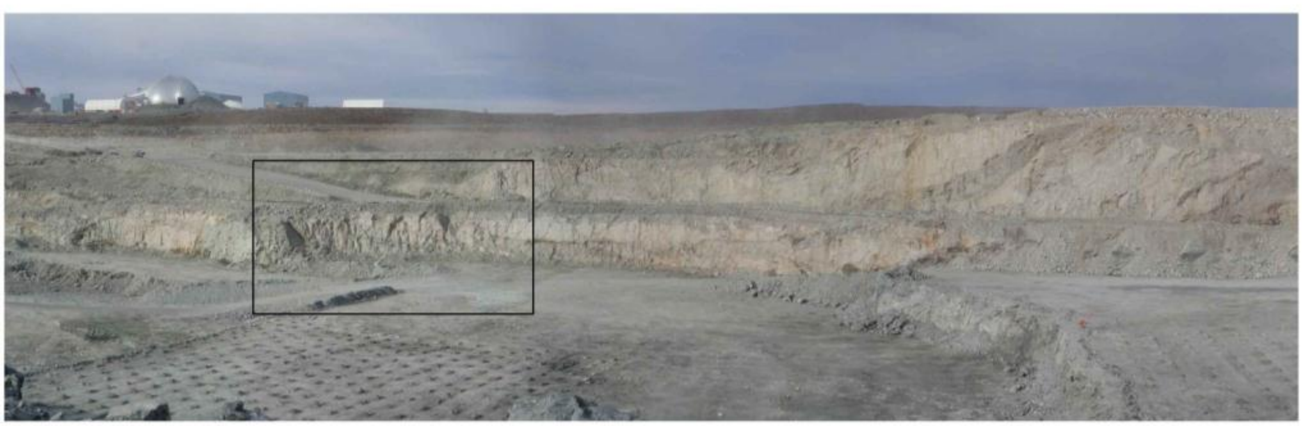
Since the site visit in 2011, the west wall of Pit B has been excavated further, exposing more of the fault. The trace of the fault extends southward from its observed location on the 5116 bench in 2011, and can be traced in the face of the 5088/5095 bench as it trends approximately sub-parallel to the wall. It is possible that this fault is the northern projection of the Bay Fault, or a splay of that fault, which has not clearly been identified to this point.

Photograph 9: Pit B west wall showing the exposure of the fault in the lower bench

The fault location in the existing benches was surveyed after its identification in 2011. The fault trace should continue to be surveyed as it is exposed on each subsequent bench. This provides information about the position of the fault which may be useful in predicting bench scale instability and to assist in mine planning as the pit is excavated. This information can also be used to validate the previous engineering geological interpretation of the main structure predicted to be exposed in the pit walls.

Local ravelling of rock material within and directly adjacent to the fault should be expected; however, the wide catchment berms should be sufficient to contain this material. Large-scale instability is not anticipated in association with this structure as it is oriented vertically or dips into the wall at a steep angle.

A series of small wedge structures were noted in the west wall of Pit B. This area is shown in the following photograph.



Photograph 10: Area of west wall of Pit B with wedge structures noted (viewed from Stop 4 in Figure 5)

Some of the material accumulated at the toe of the bench is a result of small-scale wedge failures. These are shown in the next photograph.

Photograph 11: Small-scale wedge structure noted in west wall of Pit B (viewed from Stop 5 in Figure 5)

At the far left of the photograph can be seen an area where a wedge of rock has been removed, possibly during scaling. The remaining structure shows the relatively steep plunge of the wedge. While these wedges do not currently represent a significant hazard, as the pit continues to be excavated, larger multiple bench wedges could conceivably form. Therefore two or three prisms should be installed on this bench face now so that as the pit continues to be deepened this area of the wall can be monitored for potential movement associated with these wedges. This area of the pit should be specifically included during geotechnical inspections, and should be referenced directly in notes as to the continuity of the joint structure as the pit is deepened, and to the potential for large wedge formation.

3.1.3.2 Pit B East Wall

The east wall of Pit B was inspected from several viewpoints, as well as from within the pit. No significant structures or instabilities were noted on this wall during the site inspection. The wall is performing satisfactorily.

The east wall ramp extends from Pit A into Pit B. No stability concerns were identified with the ramp during the pit inspection.

Photograph 12: The east wall of Pit B, seen from above the west wall of Pit B

3.2 Pits C, D, and E (South Portage Pit)

Pits C, D, and E extend south from Pit B. Pits C and D form the central part of the Portage Pit. Pit E is the southernmost pit, and has been referred to in previous site visit reports as the South Pit.

3.2.1 Pit C Inspection

At the time of the site visit the Pit C floor elevation was at approximately 5,074 RL. A photograph of Pit C, taken from the east wall looking north, is shown below.

Photograph 13: Pit C looking north from east wall showing possible location of Second Portage Fault

3.2.1.1 Pit C West Wall

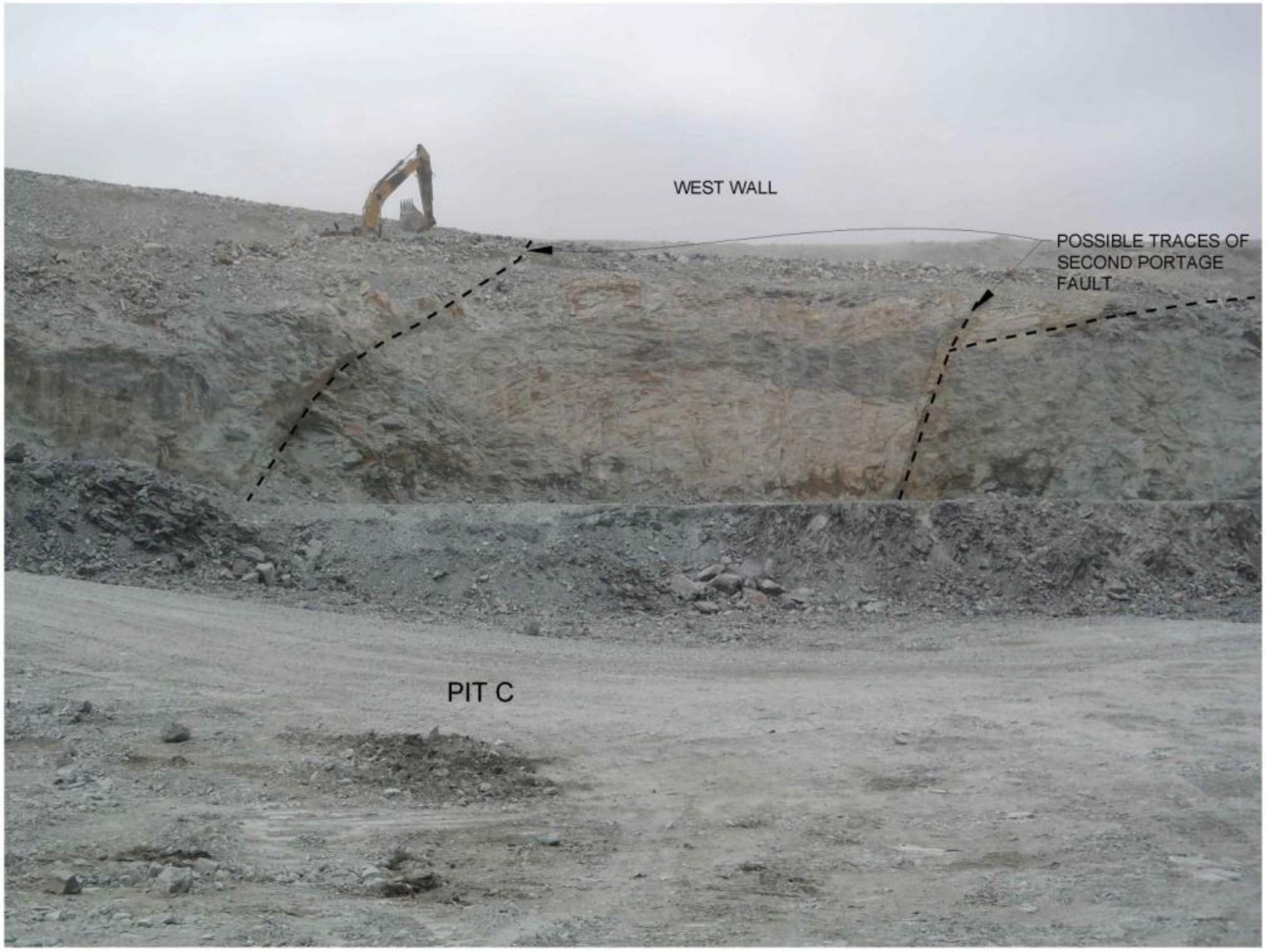
The photograph of the ultramafic rock exposed in the west wall of Pit C appears to show a broad syncline, overlain by quartzite. The rock mass is, in general, of fair quality but it degrades rapidly when exposed. As a consequence, there are broad areas of the wall that are prone to ravelling of material. This is being effectively controlled by the use of catchment berms.

3.2.1.2 Pit C East Wall

A structure was identified intersecting the east wall of Pit C approximately midway along the wall that may be the expression of the Second Portage Fault, or a splay of that fault. The area of the wall that is intersected consists of strongly fractured rock. The fault is shown in the following photograph.

Photograph 14: Possible intersection of Second Portage Fault with east wall of Pit C

A similar structure was identified along strike of this feature in the northern part of the west wall of Pit C, and is shown in the following photograph.



Photograph 15: Possible intersection of Second Portage Fault with west wall of Pit C

A remote estimate of the orientation of the structure taken from across the pit indicated a dip and dip direction of 80/195. Historically, the Second Portage Fault has been reported with a dip and dip direction of about 70 degrees towards 235 degrees azimuth. Remotely estimated orientations are unreliable and a request was made to AEM to have the location and traces of the features surveyed in order to determine more clearly the orientation of the feature, and its possible relationship to the interpreted location and orientation of the Second Portage Fault.

Just south of the location of the fault, shown as Stop 6 in Figure 5, the east wall of the pit was observed to be moderately to strongly fractured. In this area of the wall the foliation is dipping out of the wall at moderate to steep angles, as shown in the following photograph.

Photograph 16: The west wall of Pit C, taken from the 5081 bench (Stop 6, Figure 5)

There is an access road beneath this area, but AEM has indicated that the road is only lightly used and may be completely abandoned by spring. In the event the access road remains open, it is advisable that containment berms be placed below the slope to catch any material ravelling from the slopes.

3.2.2 Pit D Inspection

Pit D is located south of Pit C. At the time of the site visit, the floor elevation of Pit D was at approximately 5067 RL. A blast had been shot, and the area was being mucked, so access to the pit was limited. The final pit floor elevation is planned to be 5046 RL, with a completion date of March 2013.

The east wall of Pit D is currently being excavated in shallow to moderately dipping foliation, extending southwards into a transition zone to more steeply dipping foliation. The west wall of Pit D is being excavated within Structural Domain TP-4 (Design Sector 8 of the 2006 study). A fault (the Bay Fault or a splay of the Bay Fault) has been previously interpreted to intersect the base of the pit, striking north–south and dipping steeply to the west, but the blasted muck prevented any additional observations on this visit.

Photograph 17: North End of Pit D Looking West

3.2.2.1 Pit D West Wall

The west wall of Pit D lies within Design Sector 8B. The design criteria presented previously for Sector 8 are summarized below:

Table 3-2: Design Criteria for Pit D West Wall (Design Sector 8)

Sector 8 Slope Configurations	Applicable Range of Wall Sector Azimuths 225º to 315º					Current Practice (AEM Modified Design)
	Sector 8A Middle to Lower Slopes		Bay Fault Zone and Splay	Sector 8B Upper Slopes		
Slope Component	Iron Fm., Volcanics	Ultramafics		Iron Fm., Volcanics	Ultramafics	
Bench face	70 deg	65 deg	60 deg	70 deg	70 deg	70 deg pre-sheared
Bench height	24 m	24 m	24 m	24 m	24 m	21 m
Catch bench	10 m	10 m	10 m	8 m	10 m	10 m
Inter-ramp	49 deg	49 deg	45 deg	55 deg	52 deg	50 deg

The west wall of Pit D exposes intermediate volcanic and quartzite rock in its upper slopes, and ultramafic rock in the lower slopes. The intermediate volcanic and quartzite are generally good quality rock, whereas the ultramafic rock is generally fair quality. The ultramafic rock is variably altered, and when exposed to water its quality and strength degrade rapidly. The ramp access to Pit D and Pit E is from the west side of the pit, and cuts down through quartzite and then ultramafic rock. Rock falls within the ultramafic rock have undermined and caused damage to the ramp. This has been successfully controlled by buttressing of the slope below the ramp with waste rock, and this is shown in the following photograph. Geotechnical inspections should include ramp inspections to identify any tension cracks forming at the crest which may be an indication of slope movement.

Photograph 18: Buttressing of slope below ramp on the west wall of Pit D

As the west pit wall continues to be excavated within the ultramafic materials, on-going bench scale instability can be expected due to the degradation of the rock on exposure to atmosphere and water. The bench faces within the ultramafic rocks in the lower slopes are currently being pre-sheared at 70 degrees, which is steeper than previously recommended. However, the greatest contributor to the ravelling of the rock material is the poor durability of the ultramafic, and not necessarily the bench face angle. It will therefore be important to continue to use appropriate pre-shearing methods to minimize damage to the rock behind blast lines, to maintain catchment berms beneath the bench faces at full 10 m width, and to clean the catch benches prior to excavating to the next bench elevation. If on-going instability is encountered, then double benching on this wall should be considered.

3.2.2.2 Pit D East Wall

The design criteria for Sector 3 as presented in the 2006 report are summarized in the following table.

Table 3-3: Design Criteria for Pit D East Wall (Design Sector 3)

Sector 3 Slope Configurations	**Applicable Range in Wall Sector Azimuth 045 to 135 deg**		**Current Practice (AEM Modified Design)**
Dip of Faulted Contacts	**Feasibility Design Criteria**		
<30 to 35 deg	Unbenched footwall slope	Parallel to bedding/stratigraphy/ sheared and faulted contacts	70 deg pre-sheared
>30 to 35 deg	Bench face angle	Parallel to bedding/stratigraphy/ sheared and faulted contacts to a maximum 70 deg	70 deg pre-sheared
	Bench height	24 m	21 m
	Catchment bench width	8 m	10 m
	Inter-ramp angle	35 to 55 deg dependent on bench face	50 deg

Where the foliation is inclined at angles greater than about 35 degrees, and has been undercut by bench face angles, significant catchment loss has resulted. This area was identified during the 2010 and 2011 pit inspections. During the 2012 site visit this area could not be safely accessed on foot, but was observed from several vantage points at the crest of the west wall of the pit (Stops 7 and 8 in Figure 5).

Photograph 19: North end of Pit D east wall showing undercut foliation and area of catchment loss, looking northeast (from Stops 7 and 8 in Figure 5)

A wide bench has been left at the base of the slope, and a berm has been constructed along the edge of the bench. The bench and berm are sufficient to contain small-scale ravelling of material, but would not be sufficient to contain a larger scale multiple bench planar failure if it were to develop. Nevertheless, there are no visible signs of any significant further deterioration of the slope beyond the loss of catchment previously noted. It is Golder's understanding that the mine has adopted a single bench design at the base of this slope. This will reduce the inter-ramp slope angle to less than the dip of the foliation which will minimize the potential for a larger scale slope failure to develop. During mining, access to the berms below this area of the wall should be restricted.

There is currently no instrumentation installed on this slope, although this was recommended during the 2011 site visit. AEM have indicated that prisms will be installed in the crest area of this slope since it is not possible to access the slope face. These should be monitored daily in order to establish any movement trend. The most likely period for slope instability will be during the spring thaw period when the introduction of melt water along bedding and foliation planes can contribute significantly to slope instability. Threshold movement values should be agreed on that will trigger a pit evacuation order if exceeded.

The blast shot during the site visit was to elevation 5060 RL, and there are two remaining single benches to be shot and mined before the pit is completed in March 2013. Once mining activities in this pit have finished, the area should be bermed to prevent future access below this slope. Buttressing of the slope could be an effective solution to potential slope instability, if longer-term access below this slope is required. Such an approach would need to be reviewed in detail prior to implementation.

Photograph 20: East wall of Pit D showing loss of catchment looking southeast

3.2.3 Pit E Inspection

At the time of the site visit, the base of Pit E was at approximately 5,053 RL. Pit E is planned to be mined to a final elevation of 4,990 RL with an expected completion date of December 2016. This will include a pushback of the current west wall of the pit.

Access to the pit during the site visit was limited as the area being mined is constricted and there was significant mining traffic in the base.

Photograph 21: Pit E looking north (viewed from Stop 9 in Figure 5)

The east and south walls of Pit E are currently being excavated in structural domains TP-2 and TP-3 east; the west wall is being excavated in these domains as well as TP-2 and TP-3 west. The design sectors of the current Pit E are 4a, 4b, 5a, 5b, and 6 for the east and south walls and 1 and 2 for the west wall. Figure 10 shows the design sectors in this region of the pit.

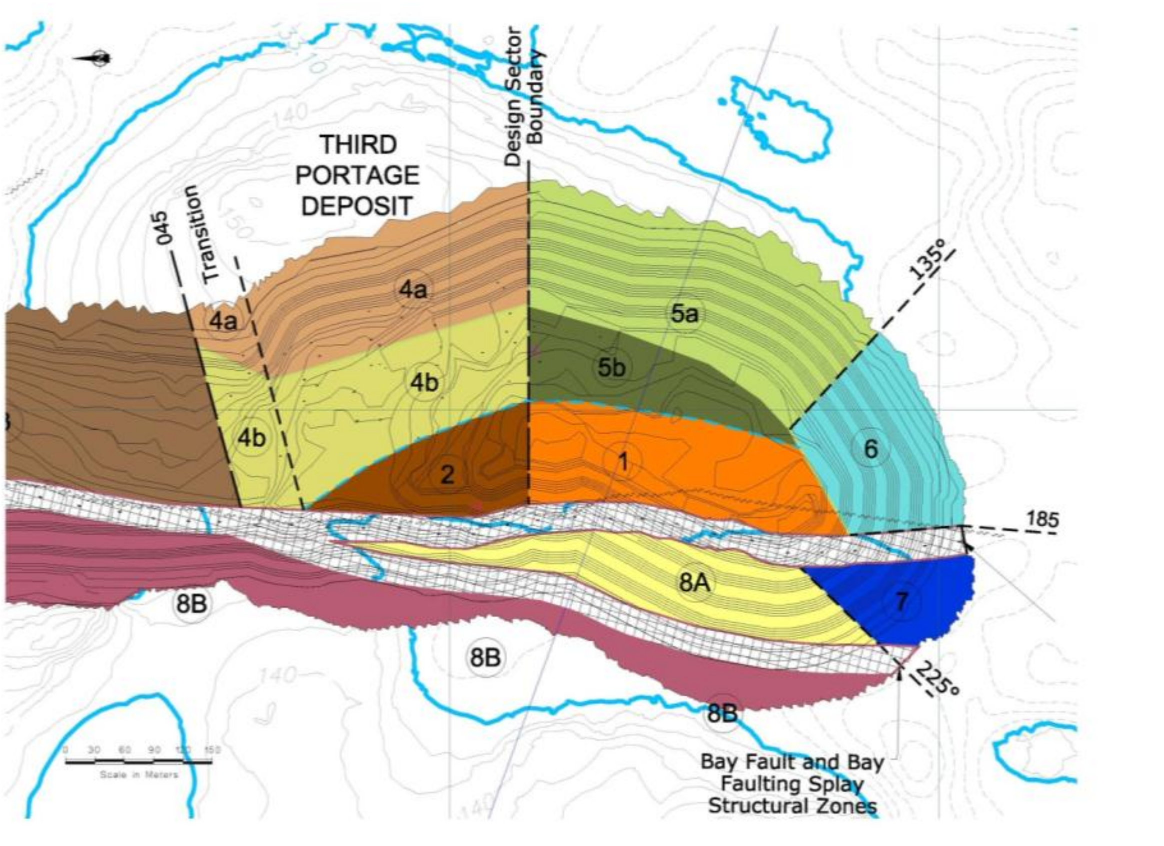


Figure 6: Design sectors in Portage Pit E (Golder, 2007)

3.2.3.1 Pit E West Wall

At the time of the site visit, the pit floor was at elevation 5,053 RL, with a planned final depth of 4,990 RL. The design criteria presented in the 2006 study for Sector 8 are summarized below:

Table 3-4: Design Criteria for Pit E West Wall (Design Sector 8)

Sector 8 Slope Configurations	Applicable Range of Wall Sector Azimuths 225 to 315 deg					Current Practice (AEM Modified Design)
	Sector 8A Middle to Lower Slopes		Bay Fault Zone and Splay	Sector 8B Upper Slopes		
Slope Component	**Iron Fm., Volcanics**	**Ultramafics**		**Iron Fm., Volcanics**	**Ultramafics**	
Bench face	70 deg	65 deg	60 deg	70 deg	70 deg	70 deg pre-sheared
Bench height	24 m	24 m	24 m	24 m	24 m	21 m
Catch bench	10 m	10 m	10 m	8 m	10 m	10 m
Inter-ramp	49 deg	49 deg	45 deg	55 deg	52 deg	50 deg

The west wall of Pit E currently exposes intermediate volcanic and iron formation rock in its upper slopes and ultramafic rock in the lower benches. The intermediate volcanic and iron formation are generally good quality rock, whereas the ultramafic rock is generally fair quality. Seepage was noted on the west wall, apparently associated with a discrete, south dipping stratigraphic contact on a fold limb. This is shown in the following photograph.

Photograph 22: Pit E viewed from above showing the generally good performance of the west wall (viewed from Stop 10 in Figure 5)

The ultramafic rock is significantly weaker and more talcose than the other rock types, and does not respond as well to pre-shear blasting methods in this area of the pit because of the orientation of the stratigraphy and foliation. Over-digging of the ultramafic rock has resulted in the development of some overhangs due to the relatively flat-lying orientation of the stratigraphy exposed in this wall.

Photograph 23: Over-digging of ultramafic rock leading to overhangs (Stop 12 in Figure 5)

As stated previously, the original design criteria for the sections of this wall in ultramafic rock recommended a shallower bench face angle of 65 degrees to account for the weaker rock mass, and with a 10 m wide bench to accommodate increased ravelling. As the pit is mined deeper using the current design additional care should be taken not to over-excavate within the ultramafic rock. This may result in the continued creation of overhangs which may require scaling and which may result in ongoing ravelling of material and filling of catch benches.

Some areas of the west wall adjacent to the road display bench scale ravelling associated with “scallop-type” structure (Figure 5, Stop 11). These are relatively shallow failures resulting from undulations in secondary foliation. A scallop-type structure is shown in the following photograph.

Photograph 24: Scallop-type structure in the west wall of Pit E, adjacent to ramp, with containment berm at base

While the failures are bench scale and do not pose a hazard to the overall stability of the wall, they do pose a potential hazard to equipment and personnel. Where these structures are identified during regular geotechnical inspections, containment berms should be constructed, as shown below.

Photograph 25: Scallop-type structure in west wall of Pit E, adjacent to ramp and showing additional containment berm at toe of bench

3.2.3.1.1 Pit E West Wall Pushback

AEM intends to begin a pushback of the west wall of Pit E very shortly after the pit inspection site visit. The general area of the pushback is shown in Figure 5.

During the initial pushback, a ridge will be left standing between the Phase 2 pushback area and the current Pit E (Phase 1) mining area. The ridge will run in a north to south direction, separating the operations in Pit E from the area mined by the pushback. Based on the information provided by AEM, the ridge will be 30 m wide at its crest and will be approximately 14 m above the bottom of the Phase 2 mining area. The ridge walls will be formed of single benches 7 to 9 m in height. This ridge will begin to be mined out after the completion of Pit E at the end of September.

The current west wall of the South Portage Pit lies within Structural Domains 2 West and 3 West and within Design Sectors 4b and 5b. As the pushback advances westward, the west wall will also encounter Structural Domain 4.

Based on the current engineering geological model, as the wall is pushed back areas of east dipping foliation and stratigraphy will be encountered. The foliation could provide a shallow dipping persistent plane to serve as the base plane to a failure. This may result in local instability for the interim bench faces if the foliation and stratigraphy are undercut where dipping more than about 35 degrees. This instability may be exacerbated where the ultramafic rock is serpentinized; this alteration type results in foliation friction angles lower than about 30 degrees, and so bench scale planar failure can be expected where the foliation is undercut.

During the pushback careful geotechnical mapping should continue so that areas of potential planar failure of temporary bench faces can be identified and managed accordingly. The orientation of the foliation should be carefully considered with respect to the location of the ridge left to separate the Pit E and Phase 2 areas of the pit. This north-south ridge could be susceptible to failure along planes dipping toward either to the east or the west, depending on local fold structure. Care should be taken to avoid locating this ridge in areas of steeply dipping foliation.

It is expected that for the most part bench instability will be managed by the wide catch benches that are planned, by careful blasting, and by minimizing the length of time that benches may be exposed. As the wall continues to be pushed westward to its final location, it will extend beyond the region of the east dipping foliation, becoming re-oriented to dip at shallow to moderate angles to the west, into the wall. This orientation is more favourable to longer-term bench stability, with stability issues limited to bench scale block failure and ravelling.

The Bay Fault has not yet been encountered during mining in the South Portage Pit. It is interpreted to lie to the west of the current Phase 1 mining area, and thus may be encountered during the pushback of the wall. A fault identified on the west wall of the Portage Pit during the 2012 site visit may be the northern projection of this fault. The current interpretation suggests that the fault will dip into the west wall at a steep angle. Based on previous intersections of fault structures in the drill core, the fault is expected to be a discrete structure with little alteration of the hanging wall and footwall. Nevertheless, the presence of this in-dipping structure may contribute to some bench scale ravelling and some potential toppling failures. Furthermore, depending on where the fault is intersected in the interim bench faces, the orientation of this feature could form a back release plane for block sliding.

The final wall orientation and location for the west wall is not expected to present significant stability issues apart from local bench scale ravelling of material, block failure, and some toppling failure. The most important aspect of the pushback will be identifying and managing the potential stability issues associated with the interim bench faces. If these undercut east-dipping stratigraphy and foliation, and if a back release plane, such as the Bay Fault, is present, a sliding block failure may occur. It is expected that such instability can be managed at an operational level by careful geotechnical mapping during the pushback to confirm the engineering geological model upon which this evaluation has been based. If the actual orientations observed in the wall differ from the previously interpreted orientations, then a revision to the model may be required, including modifications to the mine plan. Where practical mine planning should avoid undercutting of the foliation and stratigraphy in the interim benches, and should excavate parallel to these structures where they dip out of the slope at angles greater than 35 degrees. Where dips are very adverse and bench scale instability is encountered, it may be appropriate not to fully muck each temporary bench before drilling the next blast pattern, allowing some buttressing. This would need to be evaluated as mining proceeds. If possible the pushback should be advanced through this area as single benches at a time, which will limit the exposure of adverse dipping structures.

Some of the key aspects and areas of the above discussions are shown in Figure 7.

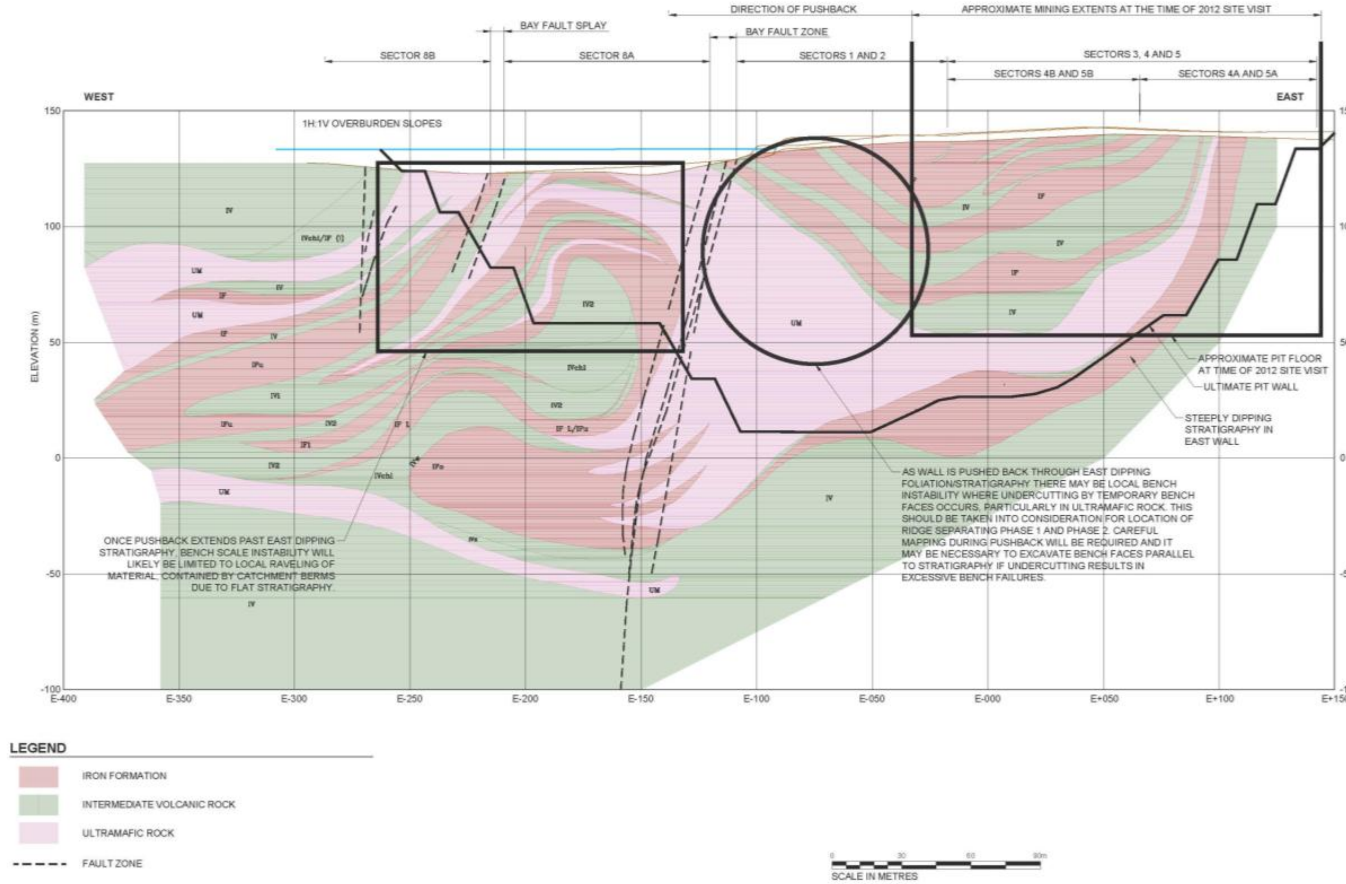


Figure 7: Section of the Final Design of Portage Pit E showing the proposed pushback and highlighting areas of concern

3.2.3.2 Pit E South Wall

The design criteria for the south wall of the pit are summarized in the following table:

Table 3-5: Design Criteria for Pit E West Wall (Design Sector 6 and 7)

Sector 8 Slope Configurations	Applicable Range of Wall Sector Azimuths 135 to 185 deg		Applicable Range of Wall Sector Azimuths 185 to 225 deg		Current Practice (AEM Modified Design)
	Sector 6 (East of Bay Fault)		Sector 6 (West of Bay Fault)		
Slope Component	**Iron Fm., Intermediate Volcanic**	**Ultramafic**	**Iron Fm., Intermediate Volcanic**	**Ultramafic**	
Bench face	65 deg	65 deg	65 deg	60 deg	70 deg pre-sheared
Bench height	24 m	24 m	24 m	24 m	21 m
Catch bench	8 m	10 m	10 m	10 m	10 m
Inter-ramp	51 deg	49 deg	49 deg	45 deg	50 deg

The south wall of the pit currently exposes intermediate volcanic rock to the east, iron formation and ultramafic rock through the centre, and ultramafic rock to the west. The foliation, stratigraphy, and north–south trending joint and fault structures trend into the wall. The overall performance of the wall is satisfactory. Pre-shear blasting methods are shown to be effective at minimizing damage behind blast lines. There is some build-up of talus material on the lowest bench due to ravelling of ultramafic rock but, the 10 m wide catch benches are adequately containing this material.

Photograph 26: The south wall of Pit E, looking southwest, viewed from the crest of the east wall (Stop 10 in Figure 5)

3.2.3.3 Pit E East wall

The design criteria for the east wall of Pit E are summarized in the following table:

Table 3-6: Design Criteria for Sectors 4 and 5, the East Wall of Pit E

Sector 4 and 5 Slope Configurations	Applicable Range in Wall Sector Azimuth 045 to 135 deg		Current Practice (AEM Modified Design)
Dip of Faulted Contacts	**Feasibility Design Criteria**		
<30 to 35 deg	Unbenched footwall slope	Parallel to bedding/stratigraphy/ sheared and faulted contacts	70 deg pre-sheared
>30 to 35 deg	Bench face angle	Parallel to bedding/stratigraphy/ sheared and faulted contacts to a maximum 70 deg	70 deg pre-sheared
	Bench height	24 m	21 m
	Catchment bench width	8 m	10 m
	Inter-ramp angle	35 to 55 deg dependent on bench face	50 deg

The foliation and stratigraphy exposed in the east wall of Pit E are inclined at steep angles to the west. Pre-shear blasting is taking advantage of the steep orientation of the dominant structure, and the pit walls are performing satisfactorily. Catch benches are generally clean, and currently there do not appear to be any significant stability concerns with the wall. As the east wall continues to be exposed during mining, ultramafic rock with shallower dipping foliation may be encountered, as discussed in the 2011 site visit report. As the foliation becomes shallower with depth, care will need to be taken to minimize undercutting of the structure as this may lead to multiple bench failure particularly in ultramafic rock. Bench faces should be excavated parallel to the foliation as it becomes shallower. Once this is no longer practical for operational or equipment reasons, single benching may be required for the final two or three benches, or until the foliation and stratigraphy are dipping less than 30 degrees. Careful geotechnical mapping should continue with emphasis placed on understanding how the orientation of the foliation and stratigraphy exposed in the east wall may be changing as the pit is mined. The east wall was observed from Stops 12 and 13 in Figure 5.

Photograph 27: East and southeast wall of Pit E showing generally good bench performance

Photograph 28: Pit E east wall showing bench faces breaking to foliation

4.0 GOOSE PIT INSPECTION

At the time of the site visit the Goose Pit base was at approximately 5,123 to 5,116 RL. The east wall pit crest is at its final location, and is approximately 70 m from the toe of the Bay Goose dike. It is currently planned to mine the pit to a final elevation of 4,990 RL, with an approximate completion date of June 2015.

The inspection of the Goose Pit comprised a series of stops around the outside of the pit for an overview (Stops 1 and 2 in Figure 8), two traverses along the east wall on the 5130 and 5116 benches (Stops 3 and 4 in Figure 8), and a visit to the working area in the south end of the pit. At the time of the site visit very little work had been completed in developing the west wall, and so no observations were made relating to the west wall performance.

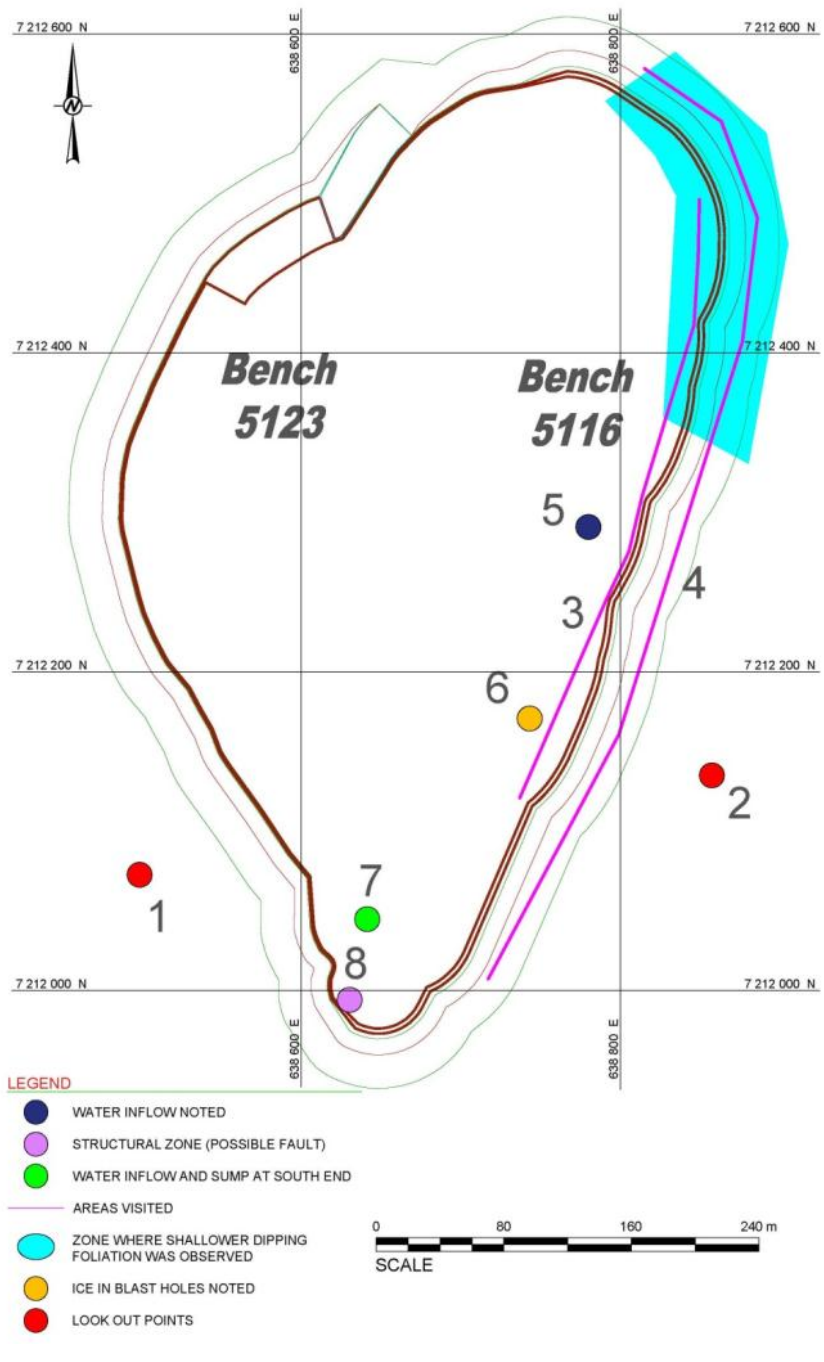


Figure 8: The current state of the Goose Pit showing areas visited and features of interest

4.1 Goose Pit East Wall Observations

The east wall of the Goose Pit is being excavated predominantly in intermediate volcanic rock. The current design criteria being used in the east wall are summarized in the table below.

Table 4-1: Goose East Wall Design Criteria

Goose Pit Design Criteria	East Wall
Bench face angle	70 deg pre-sheared (65 deg pre-sheared for first bench)
Bench height	21 m
Catchment bench	10 m
Inter-ramp angle	50 deg

The following photograph shows the east wall of the Goose Pit, looking south, and illustrates the relatively smooth bench faces achieved by careful pre-shear blasting methods breaking to foliation.

Photograph 29: East wall of the Goose Pit, viewed from the North Crest

4.1.1 Goose Pit East Wall 5116 Bench Traverse

The east wall of the Goose Pit was observed to be in very good condition. Angled pre-shear blasting methods are being used effectively to break the rock parallel to the steeply west-dipping foliation. The following figure shows the east wall with clearly visible pre-shear half barrels. It was noted that there is very little deviation in the blast holes.

Photograph 30: East wall of Goose Pit showing pre-shear half barrels and west dipping foliation

In a few locations along the toe of the east wall, hard toes were observed. AEM staff indicated that these had been observed and will be blasted or broken with a rock breaker to remove.

Photograph 31: Hard toes at 5,116 RL, Goose Pit east wall

Some seepage and flowing water were noted on the east wall, primarily associated with the orthogonal joint set. It was not possible to estimate the rate of flow from this feature as the source is not discrete. The approximate location of the seepage and flowing water are shown as Stop 5 in Figure 8.

A narrow (20 to 30 cm) steeply south dipping fault was observed midway along the east wall, and AEM were requested to survey the location and orientation of this feature. The feature is shown in the following photograph.

Photograph 32: Discrete fault structure (south dipping) exposed in east wall of Goose Pit

During a brief mapping training exercise on the east wall, a bench scale wedge was identified.

Photograph 33: Bench scale wedge formed by south dipping joint and north dipping sheared joint in the east wall of the Goose Pit. Viewed from 5,116 RL.

The orientation of the planes was measured; however, the dip direction of the planes is unreliable due to the influence of the magnetic iron formation. Nevertheless, an estimate of the plunge of this wedge was possible, and was determined to be approximately 10 degrees out of the face. Therefore, this wedge is expected to be stable. This wedge was used as an example of the types of features that should be identified during geotechnical mapping exercises.

4.1.2 Goose Pit East Wall 5130 Bench Traverse

A traverse along the 5130 bench, identified as Stop 4 in Figure 8, noted that at the north end of the bench where the foliation is shallower and was undercut locally, some catchment loss resulted.

Photograph 34: Shallower dipping foliation at north end of Goose Pit

The orientation of the foliation at the north end has been interpreted by the engineering geological model to be shallower dipping near surface and steepening with depth. This was confirmed during the site visit.

The 5130 bench of the pit was noted to be hummocky and poorly cleaned in areas. This may result from greater exposure of the near surface rock to freeze and thaw cycles prior to excavation. Efforts should be made to improve cleaning of benches as the pit is deepened to preserve the catchment.

Photograph 35: The 5130 bench of the Goose Pit, showing hummocky appearance and poor cleaning in areas

4.1.3 Goose Pit East Wall Instrumentation

There are currently prisms in place at approximately 25 m spacing along the east wall. AEM has indicated that reading of these prisms will begin in the two-week rotation following the pit wall inspection. The prisms are to be read every week until a baseline pattern is established, at which point readings may be reduced to once per rotation, weather permitting.

The monitoring prisms which are in place on the wall should begin to be read regularly beginning as soon as possible. There is an opportunity to gain important baseline data about current pit behaviour, which will be lost if regular weekly readings of the prisms do not begin very soon.

Photograph 36: East wall of Goose Pit showing prism density

4.1.3.1 Confirmation of the Goose Pit Engineering Geology Model

The engineering geology model for the Goose Pit east wall was revised following the 2012 field geotechnical investigation program. During the 2012 Goose Pit inspection particular attention was given to identifying geometrical and physical/environmental aspects that confirm the assumptions and interpretations made to revise the engineering geology model. Several key observations were made that validate the current model, and these are listed below:

- Foliation was observed to be steeply west dipping.
- The semi-continuous to continuous side release joints interpreted from previous drilling, and observed in Portage Pit E south wall, were confirmed to be present.
- Infrequent but continuous horizontal trending (orthogonal) joints dipping into the wall were present with significant rock bridging between co-planar joints.
- On the upper bench at the north end of the pit, the foliation was observed to dip at a shallower angle but steepening with depth more quickly than anticipated.
- Ice was observed in pre-shear half barrels at the southern end of the east wall, which implies that the ground at that location is in permafrost.

The following photographs are provided to illustrate the features identified above.

Photograph 37: Continuous orthogonal joint in the east wall showing significant rock bridgin

Photograph 38: Steep north- and south-dipping continuous joints exposed in east wall (potential side release planes)

Photograph 39: Ice in blast holes near the south end of the current Goose Pit (Stop 6 in Figure 8)

4.2 Goose Pit South Wall

At the time of the site visit, there was little bedrock exposure of the south wall. Consequently the general wall performance of the south wall cannot be assessed at this time.

On September 10, 2012, a significant inflow of water was encountered in the active working area at the south end of the Goose Pit. A sump was excavated to manage the water inflow which was estimated by AEM to be approximately 30 L/sec. The location of the inflow, identified in Figure 8 as Stop 7, was visited early in the afternoon of September 10. At that time the sump was turned off and there was no noticeable movement in the level of the ponded water, suggesting that the inflow was due to the release of stored water from a local, confined aquifer, and not due to flow along a potential structure such as a fault. It is possible that the absence of water level change is a result of sump leakage, however AEM have not reported any additional or on-going water problems in this area. The current engineering geological model suggests a north–south trending fault may be encountered in this area of the south wall. However, the poor exposure of bedrock did not allow the clear identification of any tectonic structure. During the ongoing excavation of the pit in this area, care should be taken to identify this potential structure if it exists, and to survey its location.

This inflow occurred adjacent to a contact between the intermediate volcanic rock and the ultramafic rock, marked in Figure 8 as Item 8. The ultramafic rock is talcose and fissile, and there is significant local variability in the foliation in the rock around this location. AEM was requested to survey the contact as this may be helpful for future interpretation of the engineering geological model for the south wall as the pit continues to be deepened.

Photograph 40: Location of inflow in the South Goose Pit showing irregularly foliation and highly fissile material

5.0 SUMMARY OF KEY OBSERVATIONS AND RECOMMENDATIONS

5.1 Portage Pit

The Portage Pit is subdivided into five pits, labelled A through E from north to south.

5.1.1 Pit A

Based on the observations made during the site visit, the performance of the existing benches is satisfactory. Since Golder's 2011 inspection, there has been little advance of mining depth at the north end of the pit, and there are no noteworthy changes to the performance of the bench faces of the west, north, or east walls of the pit. The northwest through west walls typically exhibit poorer performance than the east through northeast walls and this is attributed primarily to changes in the orientation of the general stratigraphy. The current catchment is sufficient to contain ravelling of material. Jump ramps had been constructed in local areas for wall scaling.

During the site visit, an area of rock fall was observed in the west wall. This is a bench scale failure, and does not indicate a risk for large-scale wall instability. However the material has overtopped a berm at the base of the rock fall and if it continues to ravel could pose a risk to the haul road running above and behind this wall. AEM has indicated that the deflection berm will be reconstructed, the platform cleaned, and access to the area restricted. Monitoring of this area should continue as part of regular geotechnical inspections in the event that the rock fall continues to ravel back towards the haul road behind the crest. If this were to occur, it is possible that the area would eventually reach a stable angle of repose.

During the site visit, the pit access ramp on the east wall was inspected for tension cracks that were identified during the 2011 inspection. No tension cracks were observed, and the ramp appears stable.

5.1.2 Pit B

During the 2011 pit inspection, a 1.5m wide fault was identified in the west wall of Pit B, trending in a northwest-southeast direction, and dipping steeply into the 5116/5130 bench. At the time of the site visit, the base of Pit B was at 5,088 RL, exposing an additional 28 m of wall. The fault can now be traced southward along the west wall to the lower benches. It continues to trend roughly sub-parallel to the pit wall, dipping at a steep angle into the wall. As indicated in the 2011 inspection report, the orientation of this feature is such that it is not expected to contribute to large-scale wall instability, but may result in ongoing ravelling and some toppling failure. AEM have been requested to survey the hanging wall and footwall location of this feature as the pit continues to be developed.

An area of bench scale wedge structures has been noted on the west pit wall, on the 5088 bench of Pit B. These appear to be formed by a series of northeast and southeast dipping joints. The wedge structures formed by these joints plunge out of the wall, and at least one small-scale wedge failure can be noted in this area. While these structures do not present a significant stability concern at this time, as the pit is deepened it is possible that these features could contribute to a larger, multiple bench wedge structure. This will depend to a large degree on the continuity and persistence of these features which cannot be estimated at this time. This area should be included specifically as part of regular geotechnical inspections, and the potential development of larger scale wedge structures should be identified and reported.

5.1.3 Pit C

A section of the east wall of Pit C near its south end was observed to be heavily fractured. The area is bermed off, but there is a lightly used road maintained along this portion. A fault was observed in this area of Pit C, and a similar feature in the west wall of Pit C, approximately along strike, was also observed. It is possible that this is the Second Portage Fault, or a parallel splay to the Second Portage Fault. While the presence of the Second Portage Fault does not present a significant stability concerns, its identification contributes to the validation of the engineering geological model.

5.1.4 Pit D

Pit D, to the south of Pit C, is the transition zone from the more shallowly dipping foliation in the north part of the Portage Pit, to the steeper dipping foliation to the south. In the past, undercutting of this shallow foliation has led to significant loss of catchment on the east wall of Pit D. This was identified during the 2011 Pit slope inspection. It was not possible to safely approach the wall in 2012, but it was observed from multiple viewpoints around the pit. There are no apparent signs of further deterioration, or additional loss of catchment on the benches. A wide bench has been left at the base of the slope, and includes a rock fill containment berm at its crest.rock fall Currently this slope is un-instrumented and AEM have indicated that prisms will be installed in the crest area of this slope. These should be monitored daily in order to establish any movement trend. The most likely period for slope instability will be the spring thaw period when the introduction of melt water along bedding and foliation planes can contribute significantly to slope instability.

The west wall of Pit D had previously exposed ultramafic rock below the ramp. Exposure of the ultramafic rock had resulted in progressive failure and undermining of the ramp. AEM have placed a buttress of rock fill on the slope below the ramp for stabilization. A berm has been placed at the toe of the buttress to prevent inadvertent access to the toe area. The buttress appears to be effective in preventing further deterioration of the ultramafic rock and undermining of the ramp. Regular site geotechnical inspections should include inspection of the ramp edge above the buttress to identify the possible formation of tension cracks.

5.1.5 Pit E

The walls of Pit E, the south most portion of the Portage Pit, were observed from numerous vantage points around the pit, and the upper portions of the walls appear to be performing quite well. The east wall of Pit E is excavated largely in intermediate volcanic rock, but the lower parts of the south and west walls are excavated in the much softer ultramafic volcanic rock. This has resulted in excavation beyond dig lines and over-steepening of the bench faces within the ultramafic rock, leading to overhangs and bench scale failures. Overhangs adjacent to the ramp may need to be scaled. AEM should continue to use pre-shear controlled blasting. To reduce overhangs, AEM should instruct equipment operators not to excavate beyond dig lines, which results in undercutting of the sub-horizontal foliation and stratigraphy in this area. Since the ultramafic rock is relatively weak, it is prone to failure if undercut. Scallop failures (shallow bench scale features) were also observed in the ultramafic rock. In some areas containment berms have been constructed below these, and if other areas are identified additional containment berms may need to be constructed to prevent travel on the ramp directly beneath these.

As this area of the pit continues to be mined, care will need to be taken not to over-excavate within the ultramafic rock.

5.2 Goose Pit

The east wall of the Goose Pit was inspected along the 5116 bench and the 5130 bench. The pre-shear blasting of the east wall is effective. Pre-shear half barrels can be clearly seen in the east wall and the rock is breaking well to the foliation. The wall performance is satisfactory.

Monitoring prisms are installed in the east wall at approximately 20 to 25 m spacing. AEM intends to take readings of these prisms at a rate of once per week until a pattern is established, and then at a rate of once per two weeks, weather permitting.

A number of small features worth noting were observed, particularly while traversing the 5130 bench. The upper bench is uneven, hummock and poorly cleaned in areas. This may be a result of greater exposure of the upper bench to annual freeze-thaw processes resulting in greater fracturing of the bedrock, hence greater irregularity in the bench surface. It is expected that as the pit is mined deeper the quality of bench cleaning will improve.

A small number of hard toes were also noted on both the upper and current bench. AEM has indicated these will be removed.

A narrow fault was also noted in the east wall. Finally, a bench scale wedge was observed, although the plunge of the wedge is about 10 degrees, and so it is expected to be stable. The wedge was noted to AEM staff as an example of types of structure to identify during geotechnical inspections.

Several small inflows of water were noted on the wall. Most of these appeared to originate from sub-horizontal orthogonal joints dipping shallowly into the wall. In a few cases water was actually flowing. Such inflows should be noted during geotechnical inspections and should be marked on plan maps. If possible, estimates of inflow rate should be made.

Water inflow to the pit was also encountered at the south wall on September 10, 2012. The inspection of the pit walls around the inflow identified a contact between the intermediate volcanic rock East wall and the weaker ultramafic volcanic rock. The ultramafic rock is very fissile and talcose, and the foliation is complexly folded, with highly variable orientation near the contact. The water inflow subsided rapidly, suggesting this to be the result of release of water from a confined aquifer rather than flow along a potential structure hydraulically connected to the lake. The location of the inflows roughly coincides with the projected location of a north–south trending fault approximately through the centre of the Goose Deposit area.

5.3 Geotechnical Mapping and Surveying

Any major structural features that are encountered during daily pit inspections, such as faults, re-oriented stratigraphic contacts, or fold hinges, should be surveyed. Where stratigraphic contacts and faults are exposed over significant distances, a survey along the trend of such structures will provide useful information to update the deposit model and to better understand the significance of such structures as the pit is struck.

The locations of any water inflows to the pit should be noted, surveyed, and identified on plan maps. Estimates of water inflow rates should be attempted.

Mapping and surveying of features and pit wall faces in the Goose and Portage Pits as they are excavated will provide valuable data that can be used to supplement the current understanding of the engineering geology model. Continual updating of the model based on experience and observations in the pit will allow AEM to make more informed decisions relating to the ongoing mine plan. In 2010 AEM commenced a program of geotechnical mapping, and in 2012 brief instruction was provided by Golder personnel to AEM staff on the process of mapping pit walls.

The permafrost model is an important part of the engineering geology model and stability assessment, especially for the east wall of the Goose Pit. Where ice is encountered on the wall at times when the ambient temperature is consistently above freezing, the locations of these features should be noted, surveyed, and identified on plan maps to provide information about the permafrost conditions.

6.0 CLOSURE

We trust this report meets your requirements at this time. Should you have any questions or concerns, please do not hesitate to contact the undersigned.

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