

# TRANSMITTAL

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TO:	Mount Polley Mining Corporation P.O. Box 12	DATE:	December 20, 2010	
	Likely, British Columbia Canada, V0L 1N0	FILE NO.:	VA101-1/29-A.01	
ATTENTION:	Mr. Ron Martel	CONT. NO.:	VA10-01952	

RE: 2010 Engineering Support for Mount Polley Mine

ITEM NO.	DESCRIPTION
1.	Pdf copy of the 'Tailings Storage Facility, Report on 2010 Annual Inspection' VA101-1/29-2 Rev
2.	
3.	

**REMARKS:** 

Sent via email

Signed:

Admin Staff

Approved: Greg Johnston

Copy To:

INVESTIGATIONS KP 4-3 Page 128 of 500

# TAILINGS STORAGE FACILITY REPORT ON 2010 ANNUAL INSPECTION



PREPARED FOR

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# TAILINGS STORAGE FACILITY REPORT ON 2010 ANNUAL INSPECTION (REF. NO. VA101-1/29-2)

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# TAILINGS STORAGE FACILITY REPORT ON 2010 ANNUAL INSPECTION (REF. NO. VA101-1/29-2)

### EXECUTIVE SUMMARY

The Mount Polley Copper and Gold Mine is located in central British Columbia approximately 56 kilometres northeast of Williams Lake. Mount Polley Mining Corporation (MPMC) started production in 1997 with an ore reserve of approximately 85 million tonnes of copper and gold in three ore bodies. MPMC milled approximately 27.5 million tonnes of ore prior to suspending operations in October 2001 due to a sustained period of low metal prices. The mine subsequently operated under care and maintenance conditions from October 2001 to March 2005. Exploration activities continued during the care and maintenance period and a new high grade zone, called the northeast zone, was discovered in 2003. The discovery of the northeast zone, along with increased metal prices, resulted in the mine resuming operations again in March 2005.

The ore is processed by selective flotation to produce a copper-gold concentrate at a mill throughput of approximately 20,000 tpd. Mine tailings are deposited by gravity as slurry into the Tailings Storage Facility (TSF) located approximately four kilometers south of the mill. Process water in the TSF is collected and recycled back to the mill for re-use in the milling process. The TSF at Mount Polley consists of one embankment that is approximately 4,200 m long. The TSF embankment is divided into three sections referred to as the Main, Perimeter, and South Embankment. The current crest elevation of the TSF is 958 m. The heights of the TSF embankments are approximately 45 m, 27 m, and 17 m for the Main, Perimeter, and South Embankment, respectively. The tailings embankments have been designed for staged expansion using the modified centreline construction method. The embankments are zoned earthfill/rockfill embankments and include a low permeability core zone which ties into a natural and constructed low permeability basin liner to form a continuous low permeability seepage barrier within the impoundment.

TSF Inspections have occurred on an annual basis, with the exception of 2006, when a formal Dam Safety Review was completed. The next Dam Safety Review should be carried out by 2011, or during detailed closure design, whichever is earlier.

The 2010 TSF inspection of the TSF was completed by Mr. Les Galbraith, P.Eng., of Knight Piésold (KP) on October 7, 2010.

The results and recommendations from the 2010 inspection of the TSF are summarized as follows:

• The TSF classification is currently "Significant", which was a recommendation from the 2006 Dam Safety Review. It is recommended that the TSF classification be reviewed with specific reference to potential damage to downstream fish and/or wildlife habitat following a hypothetical dam breach with the TSF at its ultimate elevation.

- The TSF embankments were observed to be in good condition, however, a tension crack was
  observed at the Perimeter Embankment on the downstream side of the crest in the Zone C rockfill
  material. Although this is likely the result of loosely compacted material on the downstream slope of
  the embankment, it is possible that there may be a connection between the tension crack and the
  excavation of the glacial till borrow area immediately downstream of this area. This should be
  evaluated as part of the Stage 7 design phase and any additional excavation of the borrow area
  should be reviewed and approved by the TSF design engineer.
- The downstream slope of the Main Embankment is approximately 1.4H:1V. This was previously constructed as an interim slope to balance the construction material requirements with the waste production schedule for that particular year. This short term slope configuration still exists. It is recommended that the downstream slope of the Main Embankment be evaluated during the Stage 7 design phase to assess whether it requires flattening at this time.
- Slight deviations measured in the lacustrine unit in Inclinometer SI01-02 resulted in the construction of a buttress at the Main Embankment. The buttress was constructed downstream of Inclinometer SI01-02 to the west of the Seepage Collection and Recycle Pond and this appears to have been effective as the displacements in Inclinometer SI01-02 have stabilized. The Stage 6b design included constructing the buttress along the entire dam as any weak layer in the lacustrine material would likely extend laterally to the east of the Seepage Collection and Recycle Pond as well. It was also recommended that the buttress be constructed prior to the commencement of the Stage 6b embankment raise. The buttress was constructed on the west side of the dam only in 2010. The extent of the buttress should be re-evaluated in 2011, following the Dam Classification review, to assess its timing, lateral extent, and elevation requirements.
- Develop a tailings deposition plan to deposit tailings from around the facility to facilitate the
  development of tailings beaches and manage the location of the tailings pond. The lack of tailings
  beach development was a deficiency identified in a 2008 geotechnical inspection by the Ministry of
  Energy, Mines, and Petroleum Resources (MEMPR). The tailings were being deposited from the
  west abutment of the Perimeter Embankment at the time of the inspection and the supernatant pond
  was up against the South and part of the Main Embankment.
- The minimum freeboard requirement of 1.4 m was achieved in 2010. MPMC has provisions in place to pump water from the TSF to the Cariboo Pit to reduce the storage requirements in the TSF and to ensure that the minimum freeboard requirement is achieved. The implications of water transfer to the Cariboo Pit should be reviewed to ensure that seepage issues to the environment are not occurring.
- The supernatant pond volume was reported to be approximately 650,000 m<sup>3</sup> in June 2010 which is quite low considering the volume was measured after the 2010 freshet. The small supernatant pond may result in suspended solids being returned to the mill with the reclaim water. The mill currently sources its process water from the TSF and it is recommended that the tailings pond have a defined lower operating volume so that there is sufficient settling time for the tailings solids and to ensure that there is enough free water in the TSF to provide process water to the mill through the winter months when there is minimal surface runoff.
- The instrumentation at the TSF consists of vibrating wire piezometers and inclinometers. There have been no unexpected or anomalous instrumentation readings. However, approximately 40% of the vibrating wire piezometers installed at the TSF are no longer functioning. Replacing the lost instrumentation is an outstanding item from the 2006 DSR and a program has been proposed by Knight Piésold to replace the lost instrumentation by the end of 2010. Replacing the lost



instrumentation should be considered a high priority by MPMC and no additional raises should be planned for the TFS until the lost instrumentation has been replaced.

- An instrumentation and flow monitoring plan should be developed that is consistent with the required reading frequencies reported in the Operations, Maintenance and Surveillance Manual.
- MPMC is managing the site water balance and it has not been reviewed by the TSF design engineer in 2010. It is recommended the site water balance be reviewed and updated as part of the Stage 7 design of the TSF and include a stochastic analysis to evaluate wet and dry precipitation conditions.
- The mine site is currently reported by MPMC to be operating with a water surplus. Site surplus water is currently being stored in the TSF and the Cariboo Pit. MPMC is currently exploring ways to discharge water from the site to reduce the increasing site storage requirements in the TSF and the Cariboo Pit.
- The TSF is a key component in the water management plan and it is imperative that MPMC appropriately engage the TSF design engineer with respect to modification to the water management plan and water balance to ensure the design and operational requirements of the TSF are not jeopardized by the transfer of large volumes of water from the Cariboo Pit.
- A preliminary design of the TSF was completed by Knight Piésold in 2005 which considered an ultimate embankment crest elevation of 965 m and provided storage for approximately 85 Mt of tailings. The MPMC mine plan is evolving as new resources are discovered and it is possible that the current resource estimate exceeds the ultimate storage capacity of the TSF from the 2005 study. It is recommended that the tailings storage requirements be re-evaluated to assess whether modifications are required to the TSF layout. Additionally, the closure and reclamation plan for the TSF should be updated to reflect the increased resource and tailings storage requirements. The TSF should be designed for closure at all stages and defining the ultimate storage requirements and closure and reclamation plan for the TSF is a key consideration for future design phases.



# TAILINGS STORAGE FACILITY REPORT ON 2010 ANNUAL INSPECTION (REF. NO. VA101-1/29-2)

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- Appendix C 2009 Annual Inspection Photographs



# TAILINGS STORAGE FACILITY REPORT ON 2010 ANNUAL INSPECTION (REF. NO. VA101-1/29-2)

## SECTION 1.0 - INTRODUCTION

### 1.1 PROJECT DESCRIPTION

The Mount Polley Copper and Gold Mine, which is owned and operated by Mount Polley Mining Corporation (MPMC), is located in central British Columbia approximately 56 kilometres northeast of Williams Lake. The mine is accessible by paved road from Williams Lake to Morehead Lake and then by gravel road for the final 12 km. Mount Polley Mine started production in 1997 with an ore reserve of approximately 85 million tonnes of copper and gold in three ore bodies. The Bell and Cariboo Pits were developed in the early years of operations with pioneering work being completed on the Springer Pit.

MPMC milled approximately 27.5 million tonnes of ore prior to suspending operations in October 2001 due to a sustained period of low metal prices. The mine subsequently operated under care and maintenance conditions from October 2001 to March 2005. Exploration activities continued during the care and maintenance period and a new high grade zone, called the northeast zone, was discovered in 2003. The discovery of the northeast zone, along with increased metal prices, resulted in the mine resuming operations again in March 2005. Current mine production includes the development of the Springer and Southeast deposits (mining the northeast zone as the Wight pit was completed in mid-2009), with ongoing exploration in other zones on the property.

The ore is processed by selective flotation to produce a copper-gold concentrate at a mill throughput of approximately 20,000 tpd. Mine tailings are deposited by gravity as slurry into the Tailings Storage Facility (TSF) located approximately four kilometers south, southeast of the mill. Process water in the TSF is collected and recycled back to the mill for re-use in the milling process. The overall site plan for the mine, showing the Stage 6b footprint of the TSF, is shown on Drawing 101-1/18-100.

#### 1.2 SCOPE OF REPORT

Mount Polley Mining Corporation requested Knight Piésold complete a site inspection of the TSF and prepare an Annual Inspection Report that meets the guidelines outlined by the Ministry of Forests, Mines and Lands, (previously the Ministry of Energy, Mines and Petroleum Resources). Mr. Les Galbraith, P.Eng., of Knight Piésold (KP) conducted the 2010 inspection on October 7, 2010. This report presents the results of the annual inspection. The inspection involved making visual observations of the TSF and includes a review of the instrumentation records. This report also includes a review of the ancillary works, which includes the tailings and reclaim pipelines, the Mill Site Sump, and the South Bootjack Dam.

Selected photographs taken during the site inspection are included in Appendix C.

# SECTION 2.0 - TAILINGS STORAGE FACILITY AND ANCILLARY WORKS

# 2.1 TAILINGS STORAGE FACILITY

### 2.1.1 General

The principal objectives of the TSF are to provide secure containment for tailings solids and to ensure that the regional groundwater and surface water flows are not adversely affected during or after mining operations. An additional requirement for the TSF is to allow for effective reclamation of the tailings impoundment and associated disturbed areas at closure.

The TSF at Mount Polley consists of one embankment which is approximately 4,200 m long. The TSF embankment is divided into three sections referred to as the Main, Perimeter, and South Embankments. The current crest elevation of the TSF, which corresponds to the Stage 6b embankment raise completed in the summer of 2010, is 958 m. The heights of the TSF embankments corresponding to a crest elevation of 958 m are approximately 45 m, 27 m, and 17 m for the Main, Perimeter, and South Embankment, respectively. The tailings embankments have been designed for staged expansion using the modified centreline construction method. The TSF plan and sections, corresponding to the Stage 6b construction program, are shown on the following drawings:

- VA101-1/18-100 Rev 1 Stage 6a Tailings Embankment Overall Site Plan
- VA101-1/18-102 Rev 1 Stage 6a Tailings Embankment General Arrangement
- VA101-1/18-104 Rev 2 Stage 6a Tailings Embankment Material Specifications
- VA101-1/18-210 Rev 2 Stage 6a Main Embankment Plan
- VA101-1/18-215 Rev 2 Stage 6a Main Embankment Section
- VA101-1/18-216 Rev 1 Stage 6a Main Embankment Detail
- VA101-1/18-220 Rev 2 Stage 6a Perimeter Embankment Plan
- VA101-1/18-225 Rev 2 Stage 6a Perimeter Embankment Section
- VA101-1/18-226 Rev 1 Stage 6a Perimeter Embankment Detail
- VA101-1/18-230 Rev 2 Stage 6a South Embankment Plan
- VA101-1/18-235 Rev 2 Stage 6a South Embankment Section 1, and
- VA101-1/18-236 Rev 1 Stage 6a South Embankment Section 2.

# 2.1.2 Tailings Storage Facility Components

The main components of the TSF are as follows:

- TSF embankments. The TSF embankments are zoned earthfill/rockfill embankments that include the following zones and materials:
  - o Zone S Core zone fine grained glacial till.
  - Zone F Filter, drainage zones, and chimney drain processed sand and gravel. Zone F material provides a filter relationship between the Zone S and the Zone T material.
  - Zone T Transition filter zone select well-graded, fine-grained rockfill. Zone T material provides a filter relationship between the Zone F and the Zone C material.
  - Zone C Downstream shell zone rockfill.



- Zone U Upstream shell zone materials vary. Zone U provides upstream support for the Zone S core zone for modified centreline construction.
- A low permeability basin liner (natural and constructed) covers the base of the entire facility at a nominal depth of at least 2 m. The Zone S core zone ties into the basin liner to provide a continuous low permeability seepage barrier within the impoundment.
- Seepage Collection and Recycle Ponds located downstream of the Main, Perimeter and South Embankments. The Seepage Collection and Recycle Ponds were excavated in low permeability soils and collect water from the embankment drains and runoff from the downstream slope of the embankments. Water collected in the ponds is pumped back to the TSF.
- A foundation drain and pressure relief well system located downstream of the Stage 1B Main Embankment. The foundation drain and pressure relief well system prevents the build-up of excess pore pressure in the foundation. Groundwater and/or seepage are transferred to the Main Embankment Seepage Collection Pond.
- Embankment drainage provisions, which include foundation drains, chimney, longitudinal and outlet drains, and upstream toe drains. Flows from the embankment drainage provisions report to their respective Seepage Collection Ponds where the flows are measured prior to being pumped back to the TSF.
- Geotechnical Instrumentation in the tailings, embankment fill materials, embankment drains, and embankment foundation materials. Geotechnical instrumentation includes vibrating wire piezometers and slope inclinometers.
- A system of groundwater quality monitoring wells installed around the TSF.

# 2.2 ANCILLARY WORKS

Ancillary works that are key to the operation of the TSF include the following:

- Tailings and Reclaim Pipelines. The tailings pipeline comprises approximately 7 km of HDPE pipe of varying diameters and pressure ratings extending from the mill down to the crest of the tailings embankment. The tailings pipeline and discharge system extends around the TSF to facilitate tailings beach development. The tailings pipeline has a design flow of 20,000 tpd at 35% solids by dry weight. The reclaim pipeline system returns water from the TSF to the mill site for re-use in the process. The system comprises a pump barge, a reclaim pipeline and a reclaim booster pump station.
- Mill Site Sump. Runoff from the Mill Site is routed and stored in the Mill Site Sump. Excess water from the sump is routed into the tailings pipeline near the mill for storage in the TSF.

# 2.3 <u>2010 CONSTRUCTION ACITIVITIES</u>

The construction activities at the TSF during the past year included the following:

• Completing the Stage 6b expansion of the TSF that involved raising the crest elevation to 958 m, an increase of 4 m from the Stage 6a crest elevation. The Stage 6b construction program was



completed in August 2010. Details of the Stage 6b construction program were issued in the Stage 6b Construction Report<sup>1</sup>.

- Expanding the TSF Main Embankment buttress. The buttress requirements for the Main Embankment were reviewed and revised by Knight Piésold in 2009 resulting from slight displacements measured in inclinometer SI01-02<sup>2</sup>.
- Constructing the Seepage Collection and Recycle Pond at the South Embankment.
- Extending the upstream toe drain installation at the South Embankment west abutment.

<sup>&</sup>lt;sup>1</sup> Knight Piésold report - Tailings Storage Facility – Report on Stage 6b Construction. Ref. No. VA101-1/29-1. December 2010.

<sup>&</sup>lt;sup>2</sup> Knight Piésold Letter – Buttress Requirements for the Main Embankment. Ref. No. VA09-00838), July 3, 2009.



### **SECTION 3.0 - SITE INSPECTION**

### 3.1 <u>GENERAL</u>

Mr. Les Galbraith arrived on site on October 7, 2010, and held discussions with Mr. Ron Martel of MPMC regarding activities and observations at the TSF over the past year. Mr. Martel indicated that a tension crack had been identified at the Perimeter Embankment. No other concerns were raised by Mr. Martel. The 2010 inspection of the TSF occurred that afternoon. The weather conditions at the time of the inspection consisted of clear skies.

### 3.2 TAILINGS STORAGE FACILITY

# 3.2.1 Tailings Dam Classification

The classification of the TSF was reviewed as part of the 2006 Dam Safety Review (DSR)<sup>3</sup>. The Dam Safety Review recommended that the hazard classification be reviewed assuming that the owner's costs were not included in the rating selection. This was discussed with MPMC and the hazard classification for the TSF was subsequently reduced to "LOW" based on the 1999 Canadian Dam Association (CDA) guidelines<sup>4</sup>.

The CDA updated their 'Dam Safety Guidelines' in 2007<sup>5</sup>, which introduced a new rating system that included five classifications from Low to Extreme. The updated classification of the TSF was revised in 2007 to the "Significant" category, which was analogous to the previous "Low" classification from the 1999 CDA guidelines.

The classification of the tailings dams, as recommended in the 2006 Dam Safety Review, was based on potential consequences to the receiving environment and public safety. The environmental impacts resulting from a theoretical dam breach have not been evaluated and it is therefore recommended that a Dam Breach and Inundation Analysis be completed in 2011. The study should evaluate dam breaches at various TSF locations using the ultimate height of the TSF embankments. The Dam Breach and Inundation Analysis will evaluate whether there is significant or major loss to important or critical fish and/or wildlife habitat and whether the "Significant" classification for the tailings dam is still considered appropriate.

The results of the Dam Breach and Inundation Analysis would also be incorporated into the Emergency Preparedness and Response Plan.

<sup>&</sup>lt;sup>3</sup> AMEC Report – Dam Safety Review. December 2006.

<sup>&</sup>lt;sup>4</sup> Canadian Dam Association - Dam Safety Guidelines - 1999

<sup>&</sup>lt;sup>5</sup> Canadian Dam Association - Dam Safety Guidelines - 2007



### 3.2.2 Tailings Storage Facility Embankments

Pertinent observations regarding the condition of the TSF were as follows:

A tension crack was observed at the Perimeter Embankment at an approximate chainage of 3+400. The tension crack is in the Zone C material at the downstream edge of the embankment crest. The tension crack was apparently identified two months earlier by the grader operator and was approximately 10 to 15 m long. The area has since been graded over but portions of the tension crack are still visible. The location of the tension crack in relation to the downstream slope is not an uncommon occurrence in rock slopes as the outer edge of the material typically receives less compaction effort. A tension crack does not necessarily indicate a plane of weakness in fill materials but it can't be ignored either. The tension crack is located on a section of the Perimeter Embankment located upstream of the Zone S borrow area.

It is recommended that a stability assessment be completed for this area to assess whether the borrow area configuration has any impact on the integrity of the current, and ultimate embankment section. It should also be noted that the identification of a tension crack, or any other abnormal observation at the tailings dam, should be reported to the design engineer immediately and prior to any remedial action being taken.

- Other than the tension crack mentioned above, no signs of distress were identified at the tailings embankments. The embankment slopes were approximately planar and there was no evidence of cracking, bulging or slumping in the embankment fill. The embankment crest appeared to be relatively level with no signs of differential settlement or distress. There was no evidence of animal burrowing.
- No major unexpected or uncontrolled seepage was observed from the embankments, including fill slope and foundations.
- The tailings embankments currently have a downstream slope of approximately 1.4H:1V. This was previously constructed as an interim slope to balance the construction material requirements with the waste production schedule for that particular year. This short term slope configuration still exists.

It is recommended that the downstream slope of the Main Embankment be evaluated during the Stage 7 design phase to assess whether it requires flattening at this time.

Slight deviations measured in the lacustrine unit in Inclinometer SI01-02 resulted in the recommendation for constructing a downstream buttress<sup>2</sup>. The results of the stability assessment recommended a buttress be constructed downstream of the Main Embankment to an elevation of 920 m for a crest elevation of 958 m, the crest elevation for the Stage 6b embankment. The Stage 6b buttress footprint, which extends to both sides of the Main Embankment Seepage Collection and Recycle Pond, is shown on Drawing VA101-1/29-210. The letter also recommended that the buttress be constructed prior to the commencement of the Stage 6b construction program, which did not happen.

It is recommended that the Main Embankment buttress requirements and timing be reevaluated as part of the Stage 7 design of the TSF.

# 3.2.3 Tailings Beach

MPMC is currently single point discharging tailings near the northwest corner of the TSF. Prolonged discharge from this location has resulted in the supernatant pond migrating towards the Main and South Embankments where there is a lack of beach development. The beached tailings, when left to drain and consolidate, form the competent foundation required for the modified centerline construction embankment raises.

Knight Piésold has previously recommended to MPMC<sup>6</sup> the following regarding tailings beach development in the TSF:

- A beach width of at least 20 m is to be maintained along the abutments of the embankments (where the embankment contacts natural ground) and at least a 10 m width elsewhere to keep the pond away from the embankments.
- MPMC should develop a plan and schedule to enable the minimum target beach widths to be re-established within a 2 week period should they be infringed upon.
- MPMC shall increase the frequency of measurements for embankment instrumentation systems (piezometers and foundation drains flow rate and turbidity) to at least once per week during any periods that ponded water encroaches within the minimum target beach widths.

It is recommended that MPMC adhere to the previous recommendations and develop a tailings management strategy that results in the MEMPR requirements for beach development along all of the embankments.

# 3.2.4 <u>Operations, Maintenance and Surveillance Manual and the Emergency Preparedness and</u> <u>Response Plan</u>

The Operations, Maintenance and Surveillance Manual and the Emergency Preparedness and Response Plan are live documents updated regularly by MPMC. The Operations, Maintenance and Surveillance Manual was last updated March 30, 2010. The Emergency Preparedness and Response Plan was last updated 2010 (no month provided).

# 3.2.5 Impoundment Freeboard Requirements

The design basis for the TSF includes a freeboard allowance to contain the 72-hour PMP event, which corresponds to approximately 1,070,000 m<sup>3</sup>. This would result in an increase in the TSF pond elevation of approximately 0.6 m. The freeboard requirement for wave run-up is approximately 0.8 m, for a total freeboard requirement of 1.4 m. The supernatant pond was at elevation 952.9 m at the time of Mr. Galbraith's inspection on October 7<sup>th</sup>, 2010 and the freeboard

<sup>&</sup>lt;sup>6</sup> Knight Piésold Memo – Geotechnical Inspection by MEMPR – Ref. VA08-01436. August 5, 2008.



requirement of 1.4 m has been maintained during the previous year by MPMC. MPMC does not have a discharge permit and has provisions in place to pump surplus water from the TSF to the Cariboo Pit, if required, to ensure the minimum freeboard requirements for the TSF are not infringed upon.

MPMC reported that the supernatant pond volume was approximately 650,000 m<sup>3</sup> in June 2010. A small TSF operating pond increases the risk of higher total suspended solids in the reclaim process water. A small pond may also result in operating challenges (insufficient depth to float the reclaim barge, insufficient water available for reclaim from the TSF) associated with drier than expected conditions that are difficult to predict.

The mill currently sources its process water from the TSF and it is recommended that the tailings pond have a defined lower operating volume so that there is sufficient settling time for the tailings solids and also to ensure that there is enough free water in the TSF to provide process water to the mill through the winter months when there is minimal surface runoff.

#### 3.2.6 Seepage Collection Ponds

The Main, Perimeter and South Embankment seepage collection ponds are located immediately downstream of their respective embankments. These ponds were excavated in low permeability glacial till materials and collect water from the embankment drain systems and from local runoff. The seepage collection ponds were observed to be in good condition with no observed erosion activity.

#### 3.2.7 Drain Flow Data

The upstream toe drain and foundation drains at the Main Embankment flow into the sump at the Main Embankment Seepage Collection Pond where the flows are measured. The upstream toe drains at the Perimeter and South Embankment drain into their respective seepage collection ponds via a ditch. The flow rates are currently measured at the end of the pipe. Water from the upstream toe drains and foundation drains is pumped back into the TSF.

The flow rates have been measured since July 2000; however the flow rates from the drains were not monitored during the Care and Maintenance Period. This condition was anticipated as flow monitoring is only possible during operations when the seepage pond level has been pumped down.

The inspection frequency for the upstream toe drains and the foundation drains, as per the Operation, Maintenance and Surveillance (OMS) Manual, is weekly. The inspection includes a visual check on flow clarity, and an estimate of the drain flows. The flows have not been measured since June 2009, which is not in compliance with the OMS Manual.

It is recommended that a monitoring plan be developed by MPMC to allow for drain flow monitoring as per the OMS Manual.



### 3.2.8 Piezometer Data

#### 3.2.8.1 <u>General</u>

Vibrating wire piezometers have been installed at the TSF along nine planes, designated as monitoring planes A to I. Monitoring planes A, B, C and E are located on the Main Embankment, monitoring planes D, G, and H are located on the Perimeter Embankment, and monitoring planes F and I are located on the South Embankment. The location of the TSF monitoring planes are shown on Drawing 255. The Monitoring Planes are shown in section on Drawings 256, 257, 258, and 259. The piezometers are grouped into tailings, foundation, fill and drain piezometers. The results from each group are discussed below. The timeline plots for the piezometers are included in Appendix A.

The reading frequency for the piezometers, as outlined in the Operation, Maintenance and Surveillance Manual, is monthly at a minimum, and weekly during periods of construction. The monthly reading frequency was not maintained during the last year. The reading frequency tends to increase during non-construction periods.

The piezometric levels provide valuable input to the design and operation of the TSF and it is recommended that MPMC develop an instrumentation reading plan to ensure the piezometers are read and reported to the design engineer at the required frequency.

The TSF has been in operation since 1997 and approximately 92 vibrating wire piezometers have been installed in the TSF, of which approximately 60% are still functioning. The 2006 DSR stated that there were "about the right number of piezometers installed in the embankment dams", but also noted that there was little redundancy with respect to the piezometers and lost instrument locations should be re-established with new installations. An instrumentation installation program has been proposed to MPMC to replace the lost instrumentation<sup>7</sup>. This program is expected to be carried out toward the end of 2010.

#### 3.2.8.2 Tailings Piezometers

There are currently 10 functioning tailings piezometers. The tailings piezometers are typically installed close to the embankments and the pore pressures are sensitive to the location of the tailings pond in relation to the embankments. The pore pressures observed in the tailings piezometers at the Main Embankment have shown slight fluctuations during the Stage 6b construction program in response to the development of the tailings beach and the subsequent re-location of the tailings pond away from the embankment. Timeline plots of the tailings piezometer data are included in Appendix A1.

<sup>&</sup>lt;sup>7</sup> Knight Piésold Letter – Mount Polley Tailings Storage Facility – Instrumentation Repair, Productivity Upgrade and remote Monitoring Capacity. Ref VA10-01175. July 22, 2010.



The tailings piezometers show the upstream toe drain is effective in reducing the piezometric head in the tailings mass.

#### 3.2.8.3 Embankment Foundation Piezometers

There are currently 8 functioning embankment foundation piezometers. Artesian conditions are present in 3 of the 7 foundation piezometers installed under the Main Embankment. Artesian conditions have previously been identified in the foundation of the Main Embankment and the piezometers installed in this area are used to confirm that pore pressures remain below the design threshold level of 6 metres above ground level<sup>8</sup>. No unexpected high pore pressure increases were noted during the Stage 6b construction program with the artesian pressures ranging from surface to 2.17 m above ground. The artesian head values (above ground surface level) measured in August 2010 are shown on Table 3.1.

Timeline plots of the embankment foundation piezometers are included in Appendix C2. There are no concerns with the embankment foundation piezometers, however, several of the Main Embankment piezometers are no longer working. There are currently no functioning piezometers located in the Plane A foundation at the Main Embankment. Additional piezometers are planned for installation in this location in the upcoming piezometer installation program.

It is recommended that no additional raises be completed on the TSF until the lost instrumentation has been established.

# 3.2.8.4 Embankment Fill Piezometers

There are currently 23 functioning embankment fill piezometers. There have been no significant changes in the trends of the embankment fill piezometers. Piezometer A2-PE2-03, located at the Main Embankment, showed a slight increase in pore pressures corresponding to fill placement during the Stage 6b construction program. This trend has been observed in the past with this piezometer and it is anticipated that the slightly elevated pore pressures will dissipate following the construction programs as they have previously.

Timeline plots of the embankment fill piezometer data are included in Appendix A3.

# 3.2.8.5 Drain Piezometers

There are currently 15 functioning drain piezometers. The drain piezometers are installed in the foundation drains, chimney drain, upstream toe drains, and outlet drains.

<sup>&</sup>lt;sup>8</sup> Knight Piésold Report – Updated Design Report. Ref. No. 1162/7-2. June 1997.

The majority of the drain piezometers showed near-zero pore pressures, indicating that the drains are functioning as intended. Timeline plots for the drain piezometers are shown in Appendix C4.

# 3.2.9 Slope Inclinometers

A total of five slope inclinometers have been installed at the Main Embankment to measure potential displacements in the lacustrine unit that underlies the embankment. One of the inclinometers (SI01-01) was damaged during the placement of the shell zone material and is no longer functioning. The last reading for SI01-01 was March 2006. There are four functioning inclinometers installed at the Main Embankment.

The results of the inclinometer readings indicate that there have not been any significant deviations measured in three of the inclinometers since their installation. However, inclinometer SI01-02 is showing slight deviations (approximately 4 mm) at an approximate depth of 10 m below ground in the lacustrine silts. This is being closely monitored by MPMC who have expanded the buttress at the Main Embankment as a result of the measured displacements in SI01-02. The results of the readings for inclinometers are included in Appendix B.

# 3.2.10 Survey Monument Data

There are currently no survey monuments installed on the TSF embankment crests due to the ongoing construction of the TSF embankments.

# 3.3 WATER MANAGEMENT

# 3.3.1 General

MPMC mine personnel complete on-going surface water monitoring and water management activities to ensure compliance with the current mine permits. The site inspection evaluated the physical aspects of the water management program at the TSF. Knight Piésold has not reviewed the geochemical characteristics of the water management operations. This report focuses on the aspects of the water management plan that are significant from a dam safety perspective.

# 3.3.2 Surface Water Control

Surface water control at the mine site comprises the interception of runoff from disturbed (and some undisturbed) catchment areas for diversion into the TSF. Surface water control structures include the following:

- Mill Site Area Surface water from the Mill Site Area is routed into the Mill Site Sump where it is transferred to the TSF via the tailings pipeline.
- Southeast Rock Disposal Site Surface water is intercepted by runoff collection ditches and transferred to the Perimeter Embankment Seepage Collection Pond via a runoff collection ditch.
- North East Zone Pit and Waste Dumps Surface and groundwater from the North East Zone are stored in the North East Zone Pit. Surface runoff from the North East Zone Waste



Dumps is directed to the Perimeter Embankment Seepage Collection Pond via a diversion ditch.

• Tailings Storage Facility Area - Clean surface water runoff from the undisturbed catchment area above the impoundment is routed around the TSF to reduce the accumulation of water within the impoundment. The diversion ditch was unobstructed at the time of the inspection and the water flowing in the ditch was clear.

### 3.3.3 <u>Water Balance</u>

MPMC is managing the site water balance and it has not been reviewed by the TSF design engineer in 2010. Short and long term water management planning is an integral component solids waste management at any mine. Furthermore, as with any complex model, it is good practice to employ a review of the water balance model to ensure it is functioning as designed.

It is recommended the site water balance be reviewed and updated as part of the Stage 7 design of the TSF and include a stochastic analysis to evaluate wet and dry precipitation conditions.

The mine site is reported by MPMC to be currently operating with a water surplus, as total inflows from precipitation and surface runoff exceed losses from evaporation, void retention in the tailings mass in the TSF, and seepage loss. Site surplus water is currently being stored in the TSF, the Cariboo Pit and the North East Zone Pit and MPMC is currently exploring ways to discharge surplus water to reduce the increasing site storage requirements in these locations. The site water balance is an important component to the operation of the mine as it not only provides key inputs to the planning, design and operation of the TSF, it also tracks site water to ensure the mine is in compliance with existing storage and discharge permits.

# 3.3.4 External Water

MPMC staff carries out water quality monitoring of external water regularly. The water being monitored includes surface water from ditches, streams, creeks and lakes, as well as groundwater from monitoring wells. The results of the site water quality monitoring are reported by Mount Polley in the Annual Environmental and Reclamation Report.

# 3.4 ANCILLARY WORKS

Ancillary works that are key to the operation of the TSF include the tailings and reclaim pipelines, the Mill Site Sump, and the South Bootjack Dam:

#### 3.4.1 Tailings and Reclaim Pipelines

The tailings pipeline was in operation at the time of the inspection with tailings being single point discharged at the northwest corner of the embankment. There have been no reported problems with the tailings pipeline.

The reclaim pipeline was recycling supernatant water back to the mill for re-use in the process at the time of the inspection. There have been no reported problems with the reclaim pipeline and the pipeline was observed to be in sound condition.

# 3.4.2 Mill Site Sump

Surface water from the Mill Site Area is routed into the Mill Site Sump where it is transferred to the TSF via the tailings pipeline. The embankments at the Mill Site Sump were observed to be in good condition, and no cracks, seepage or slumping was noted. The emergency overflow culvert was clear of obstructions.

# 3.4.3 South Bootjack Dam

The South Bootjack Dam was observed to be in good condition at the time of the inspection. Observations include the following:

- Both upstream and downstream fill slopes were in good condition, with no evidence of seepage or slumping
- No cracks were observed on the dam crest, and
- The spillway contained some minor vegetation, but was generally unobstructed.

### **SECTION 4.0 - SUMMARY AND RECOMMENDATIONS**

The TSF at Mount Polley consists of one embankment approximately 4,200 m long which is divided into three embankment sections; the Main, Perimeter, and South Embankment, which are connected and form. The current crest elevation of the TSF is 958 m. The heights of the TSF embankments are approximately 45 m, 27 m, and 17 m for the Main, Perimeter, and South Embankment, respectively. The tailings embankments have been designed for staged expansion using the modified centreline construction method. The embankments are zoned earthfill/rockfill embankments and include a low permeability core zone which ties into a natural and constructed low permeability basin liner to form a continuous low permeability seepage barrier within the impoundment.

The classification of the TSF is currently "Significant", as per 2007 Canadian Dam Association Dam Safety Guidelines. The environmental impacts resulting from a theoretical dam breach have not been evaluated and it is recommended that a Dam Breach and Inundation Analysis be completed in 2011 to assess whether there is a requirement to modify the classification based on downstream impacts to fish and/or wildlife habitat.

A tension crack was observed at the Perimeter Embankment on the downstream side of the crest in the Zone C rockfill material. Although this is likely the result of loosely compacted material on the downstream slope of the embankment, the stability of this section of the Perimeter Embankment should be evaluated as part of the Stage 7 design phase.

Other than the tension crack, the TSF embankments were observed to be in good condition. No seepage or slumping was observed and no signs of instability were observed in the embankment fill slopes. No major unexpected or uncontrolled seepage was observed from the embankments.

The downstream slope at the Main Embankment is approximately 1.4H:1V. This was previously constructed as an interim slope but the over-steepened slope configuration still exists. It is recommended that the downstream slope of the Main Embankment be evaluated during the Stage 7 design phase to assess whether it requires flattening at this time.

Slight deviations identified in Inclinometer Sl01-02 have resulted in the construction of a buttress at the Main Embankment. An initial buttress was constructed downstream of the measured displacements but was not constructed across the entire embankment as recommended.

The TSF at Mount Polley is required to have a minimum freeboard of 1.4 m at all times for containment of the 72-hour PMP event and wave run-up requirements. The freeboard requirements for the TSF were achieved during the past year.

The instrumentation at the TSF consists of vibrating wire piezometers and inclinometers. There have been no unexpected or anomalous instrumentation readings. However, approximately 40% of the vibrating wire piezometers installed in the tailings embankments are no longer functioning. Replacing the lost instrumentation is an outstanding item from the 2006 DSR. A program has been proposed by Knight Piésold to replace the lost instrumentation by the end of 2010.

The Millsite Sump, and South Bootjack Dam were observed to be in good condition with no geotechnical issues outstanding. The Southeast Sediment Pond is no longer in service and runoff that previously reported to the Southeast Sediment Pond is now being routed to the Perimeter Embankment Seepage Collection Pond.

Recommendations for on-going operations of the TSF are summarized below:

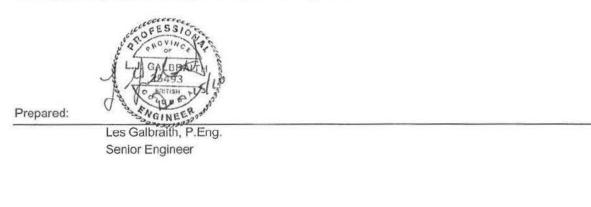
- Develop an instrumentation monitoring plan that is consistent with the reading frequencies reported in the Operations, Maintenance and Surveillance Manual. The schedule for reading the instrumentation and embankment drain flows in as follows:
  - Piezometer and Inclinometer readings monthly as a minimum (weekly during construction programs), and
  - Drain monitoring sumps weekly.
- Continue to update the Operations, Maintenance and Surveillance Manual and the Emergency Preparedness and Response Plan Manuals as required.
- Develop a tailings deposition plan to deposit tailings from around the facility to facilitate the development of tailings beaches and manage the location of the tailings pond.
- Continue regular monitoring of the water quality and levels in the surrounding groundwater wells.
- Continue regular monitoring of the tailings pond elevation.
- Review the Water Management Plan and site water balance on a regular basis to ensure they are consistent with updated plans.
- Define a lower operating volume so that there is sufficient settling time for the tailings solids and also to ensure that there is enough free water in the TSF to provide process water to the mill through the winter months when there is minimal surface runoff.
- Design for closure. All design phases of the TFS should consider the closure and reclamation requirements.

A Dam Safety Review was completed in 2006. The next Dam Safety Review should be carried out by 2011, or during detailed closure design, whichever is earlier.



#### **SECTION 5.0 - CERTIFICATION**

This report was prepared and approved by the undersigned.



Reviewed and Approved:

5

Ken J. Brouwer, P.Eng. Managing Director

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# **TABLE 3.1**

### MOUNT POLLEY MINING CORPORATION MOUNT POLLEY PROJECT

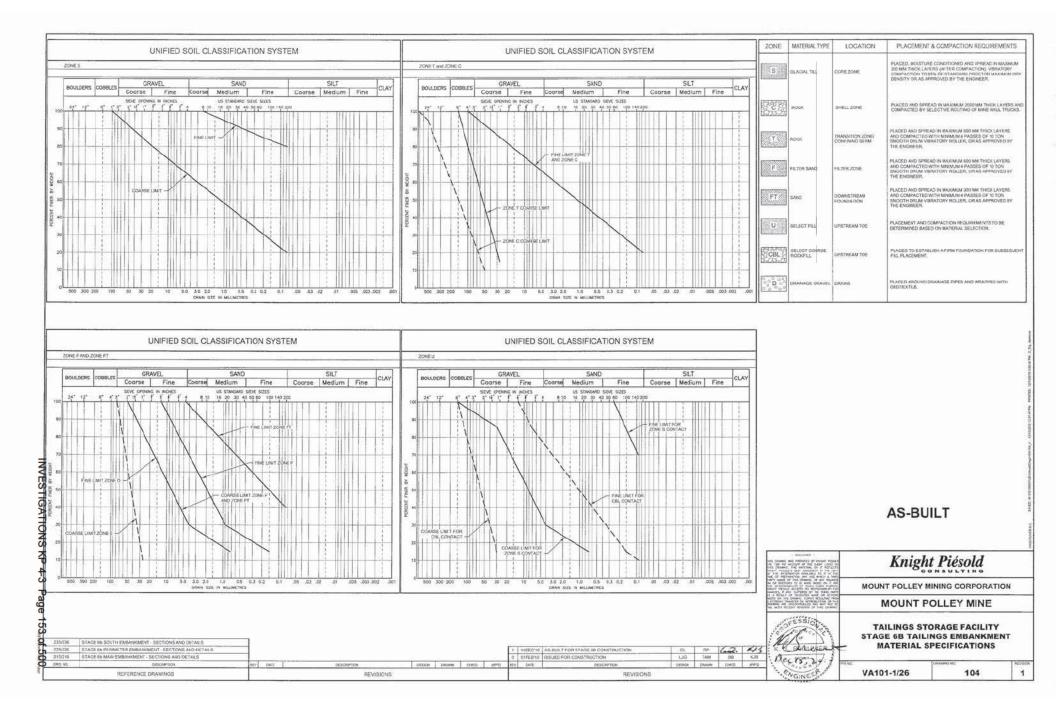
# TAILINGS STORAGE FACILITY EMBANKMENT FOUNDATION PIEZOMETERS

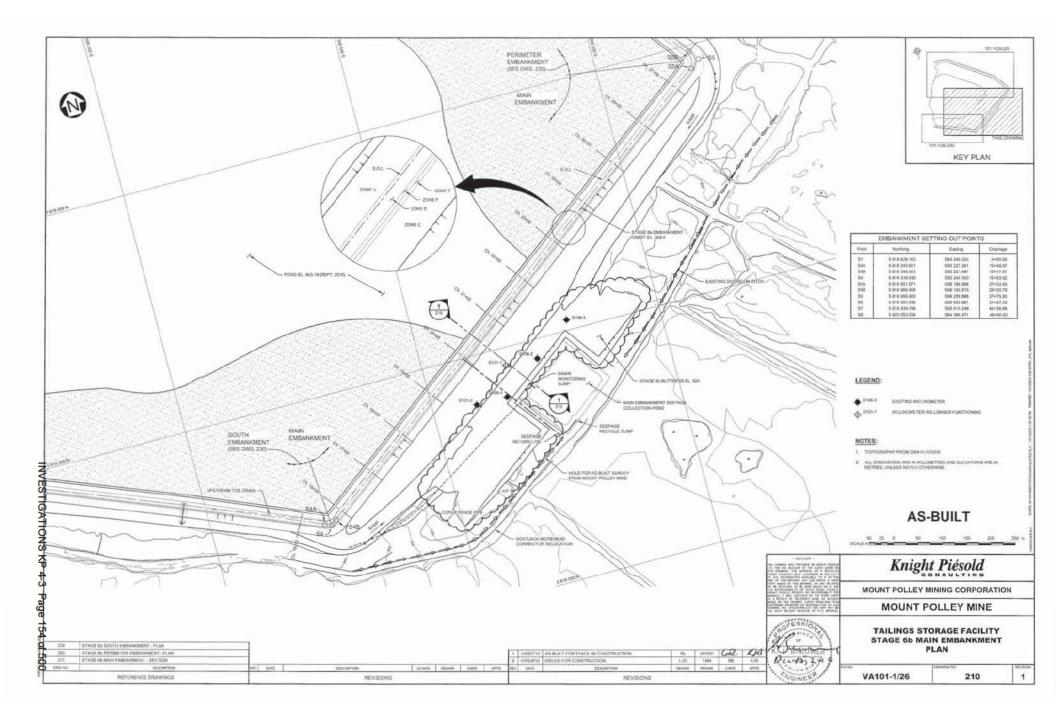
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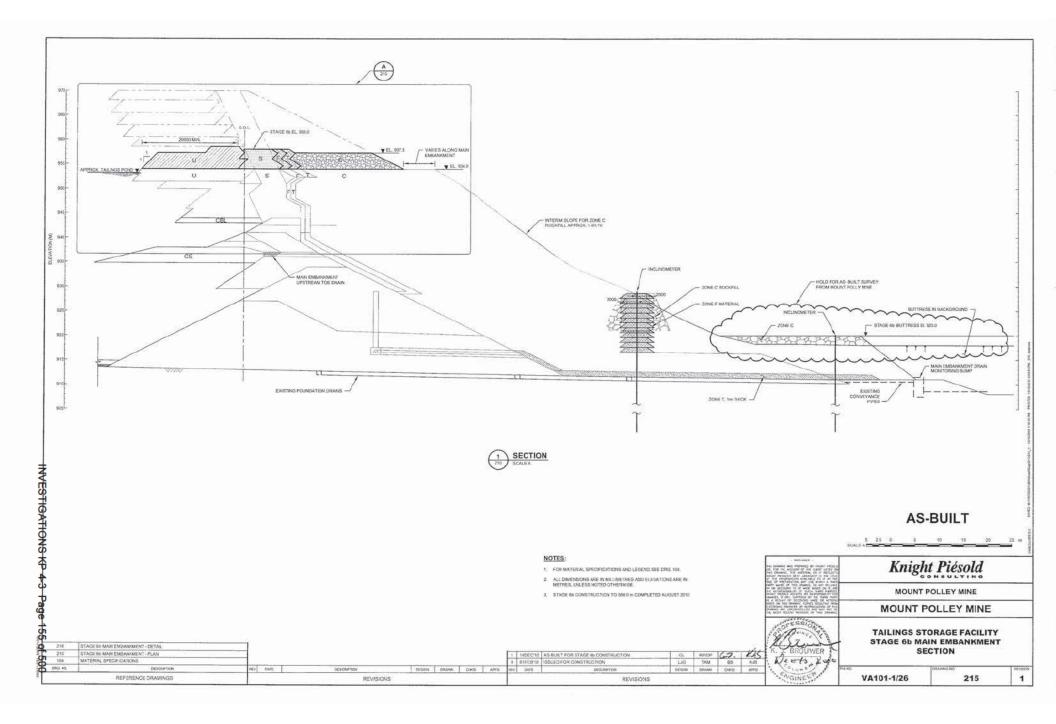
Piezometer	Piezometer Elevation Surface Elevation	Surface Elevation	August 2010 Pressure	August 2010 Artesian
1.020110101			Elevation	Pressure
	(m)	(m)	(m)	(m)
A2-PE2-01	903.68	912.67	No Longer Functioning	-
A2-PE2-02	909.77	912.67	No Longer Functioning	-
A2-PE2-06	898.01	912.91	No Longer Functioning	-
A2-PE2-07	902.81	912.91	No Longer Functioning	-
A2-PE2-08	907.56	913.36	No Longer Functioning	-
B2-PE1-03	914.05	915.55	915.92	0.37
B2-PE2-01	901.98	916.98	No Longer Functioning	-
B2-PE2-02	909.51	916.98	919.15	2.17
B2-PE2-06	914.59	916.89	No Longer Functioning	-
C2-PE1-03	912.59	-	No Longer Functioning	-
C2-PE2-02	910.53	915.71	916.71	1.00
C2-PE2-06	906.84	915.99	914.74	-1.25
C2-PE2-07	912.29	915.99	No Longer Functioning	-
C2-PE2-08	914.03	915.99	914.77	-1.22
D2-PE2-02	927.32	930.92	930.89	-0.03
E2-PE2-01	914.21	918.81	917.27	-1.54
E2-PE2-02	909.66	918.81	916.74	-2.07

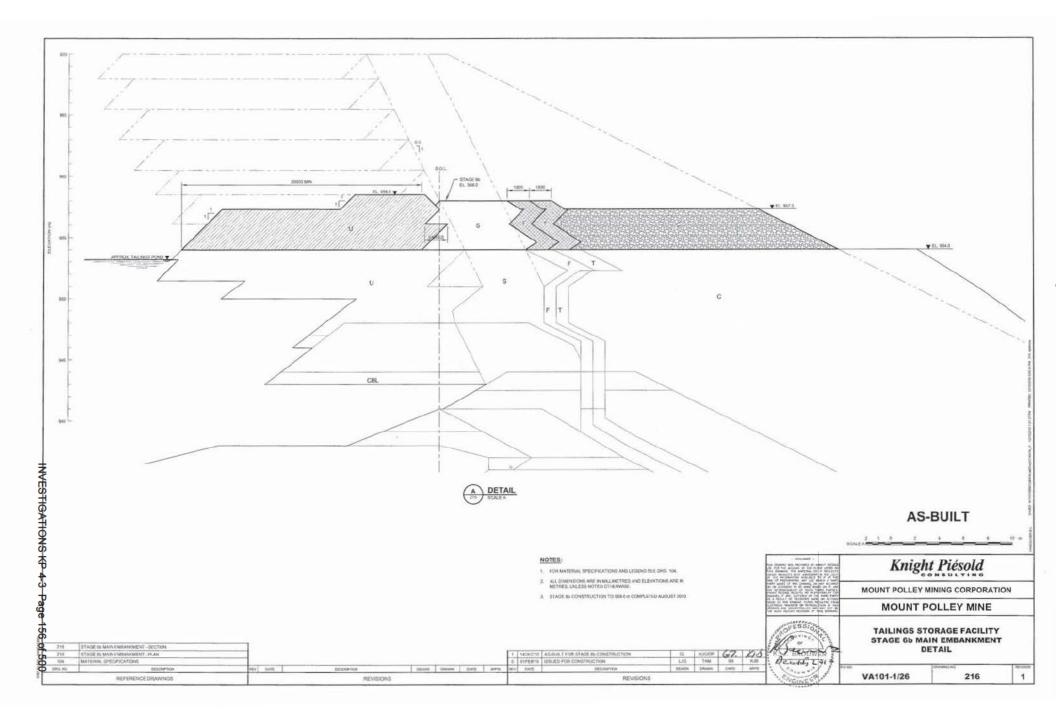
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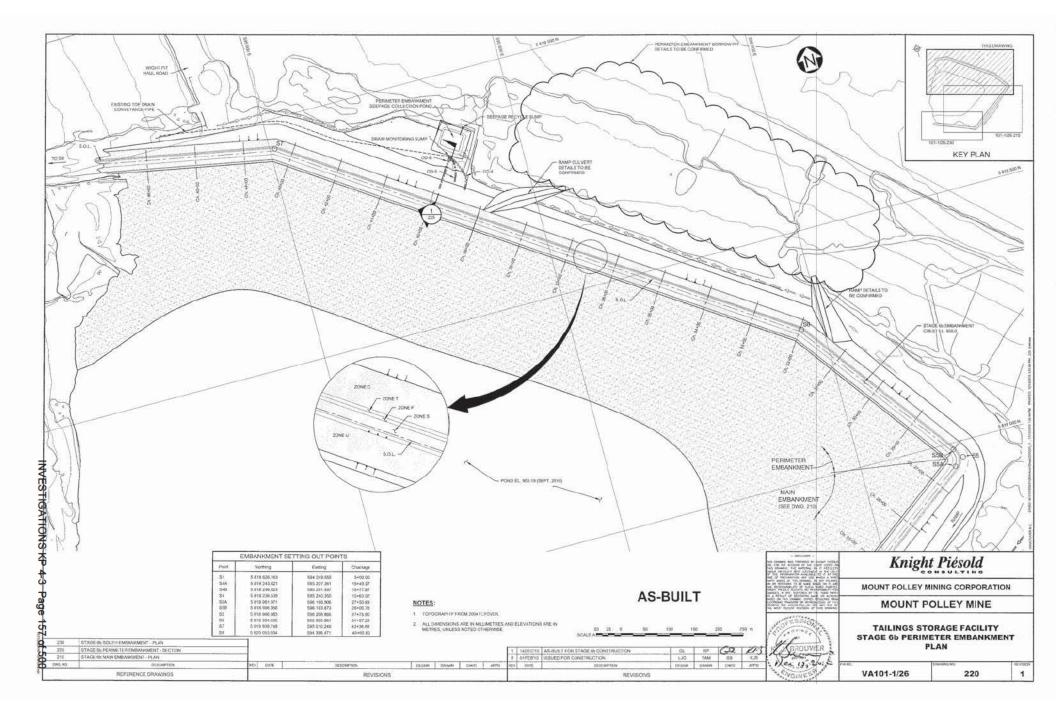
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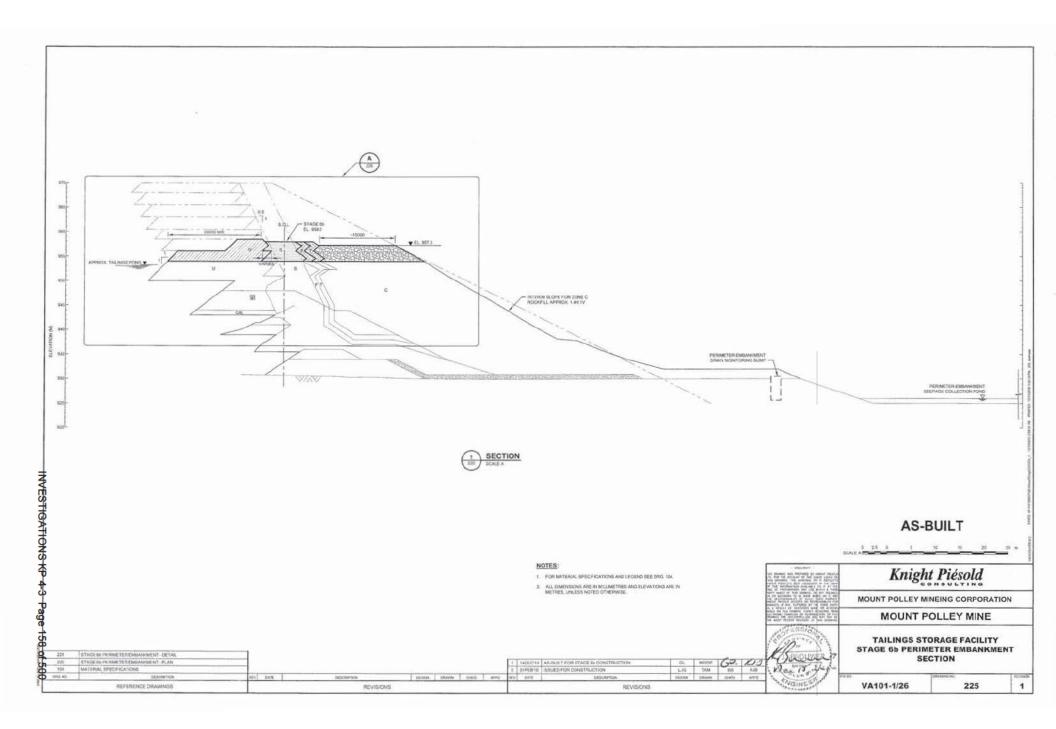


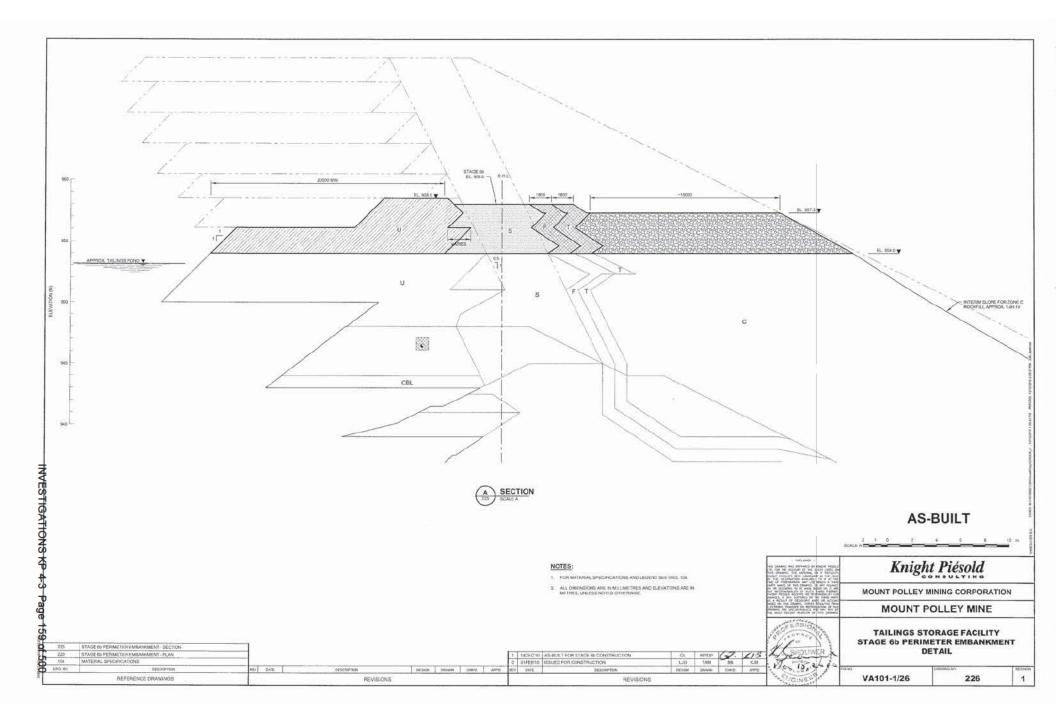


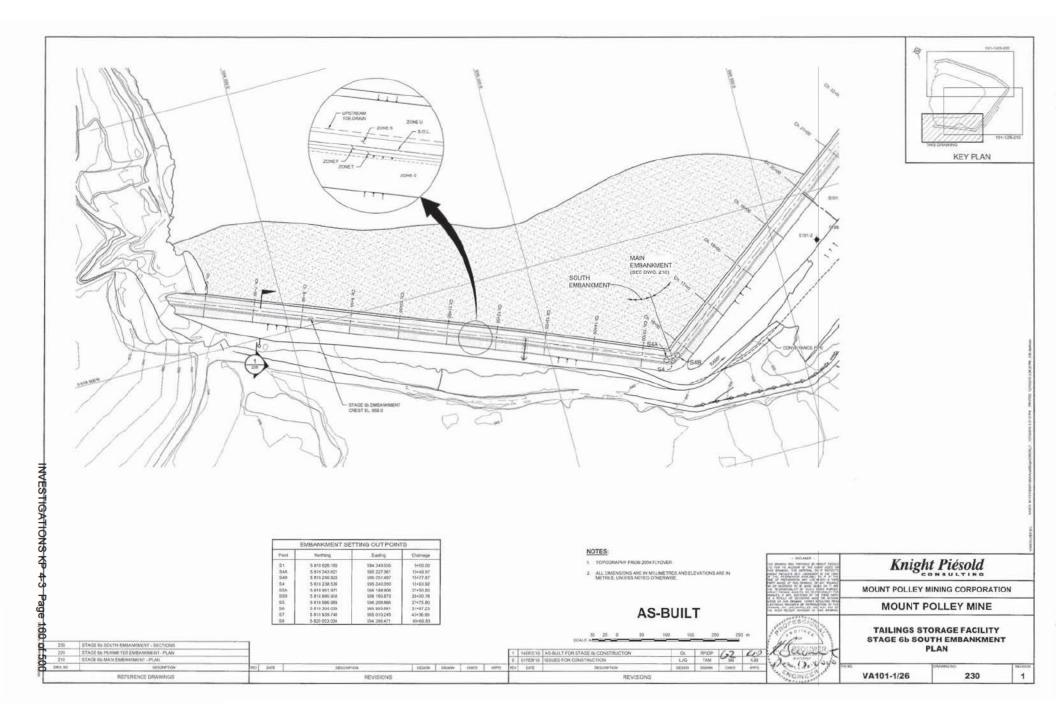


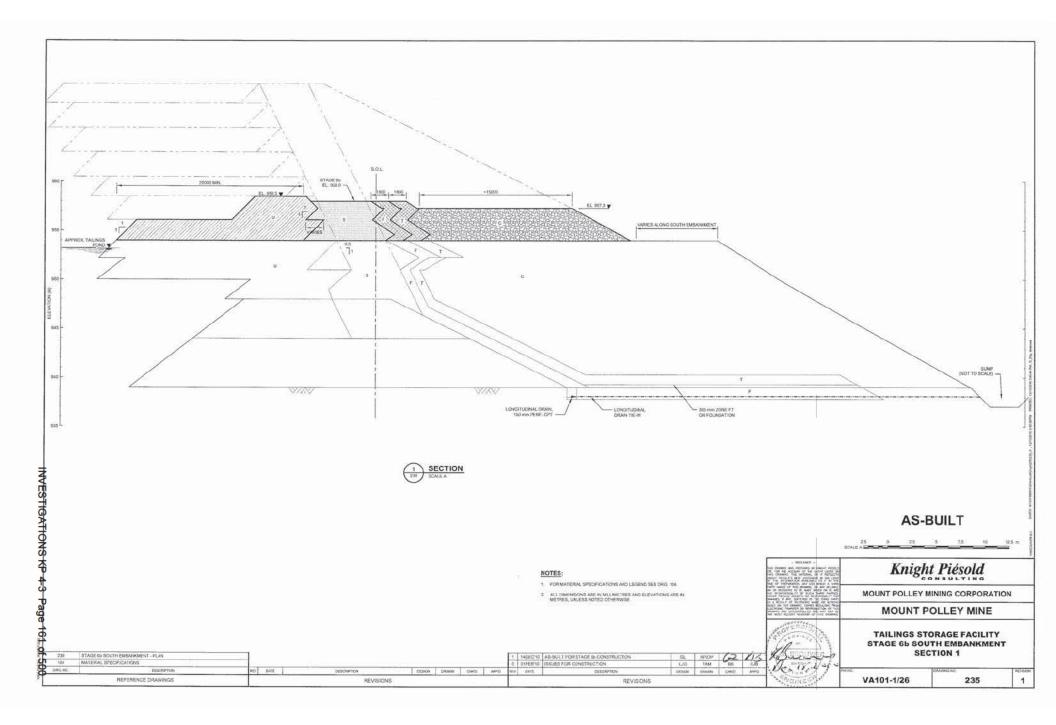


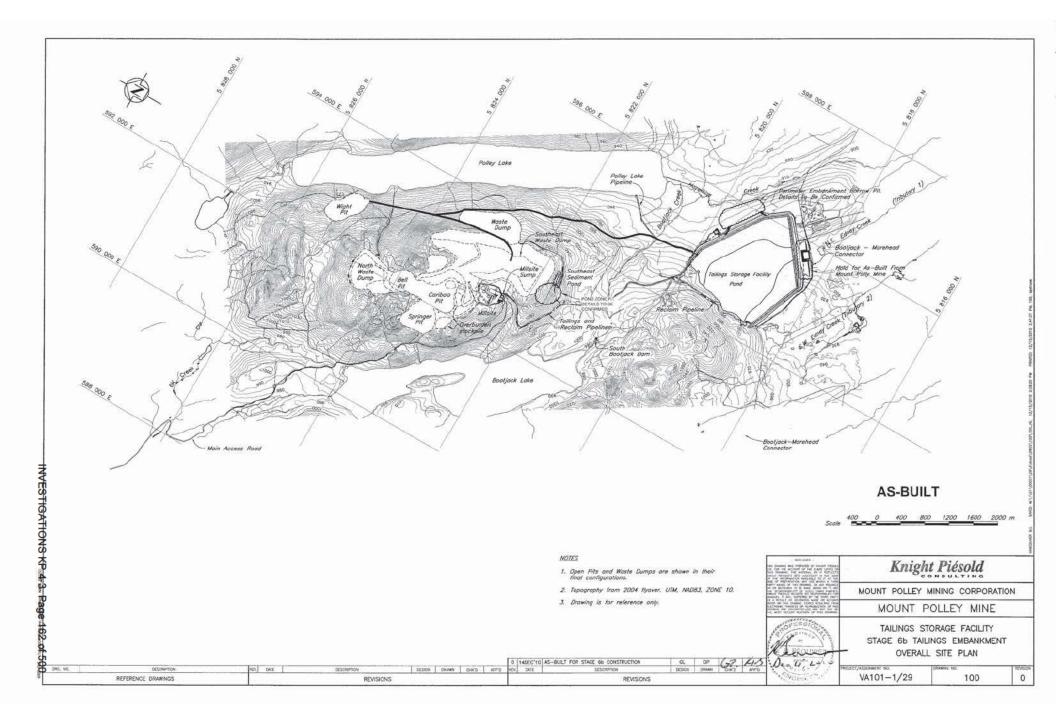


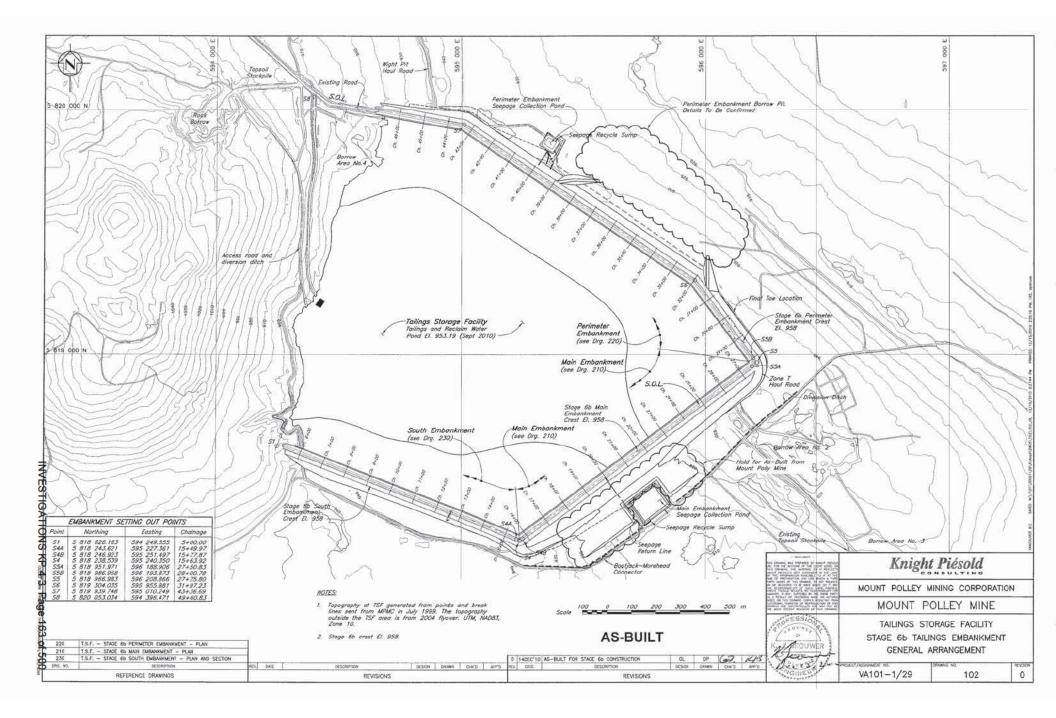


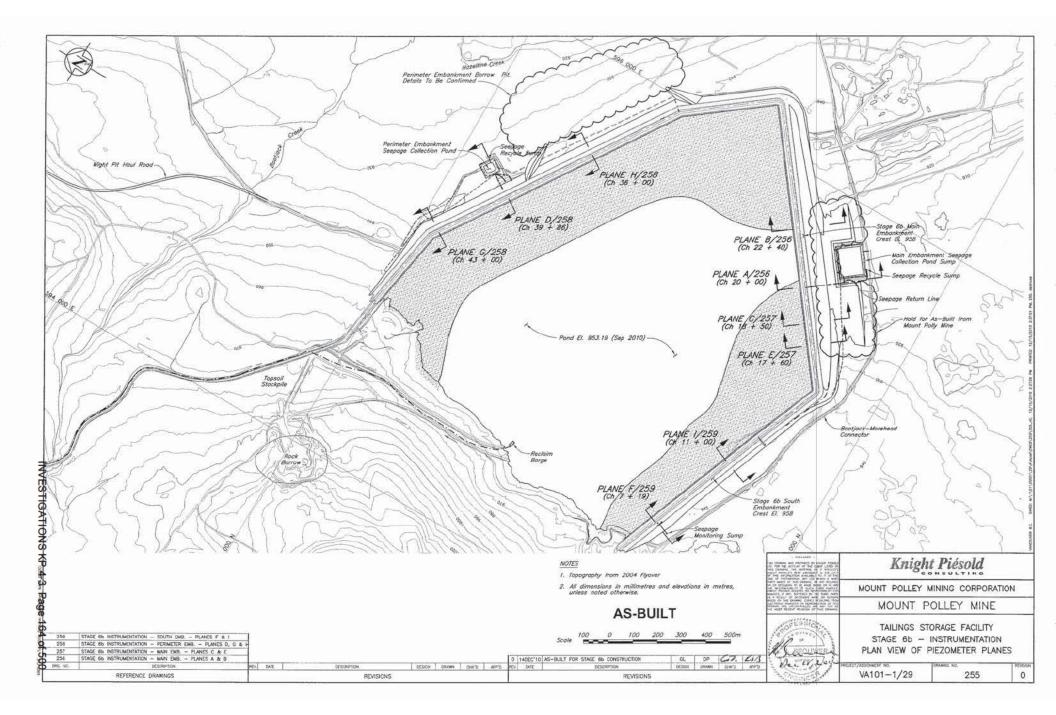


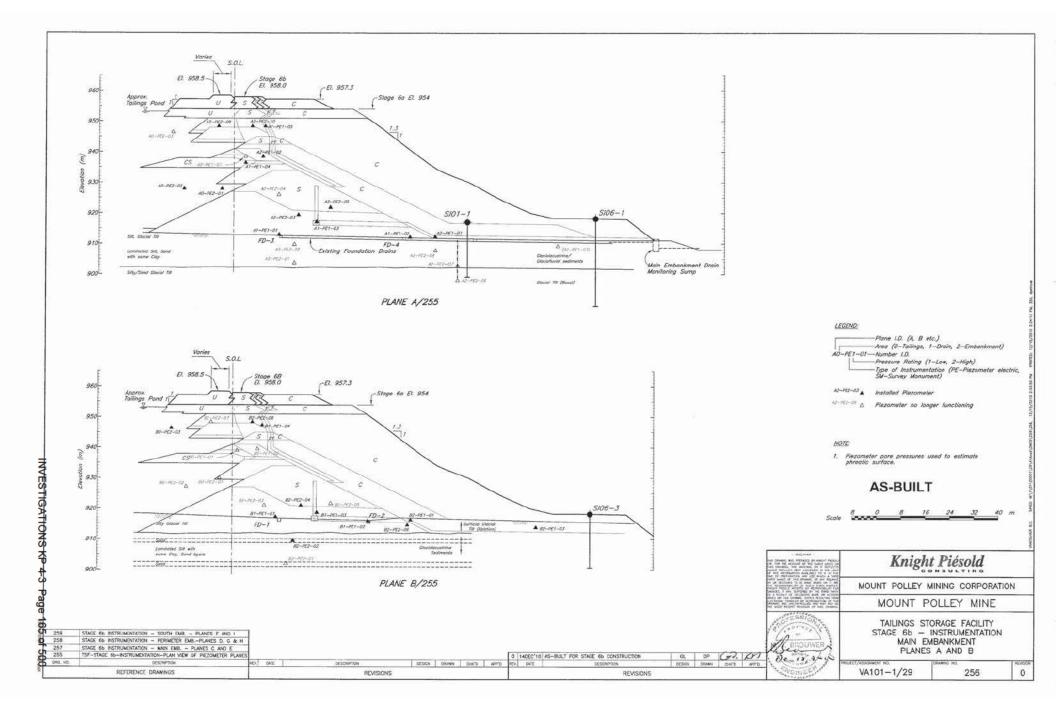


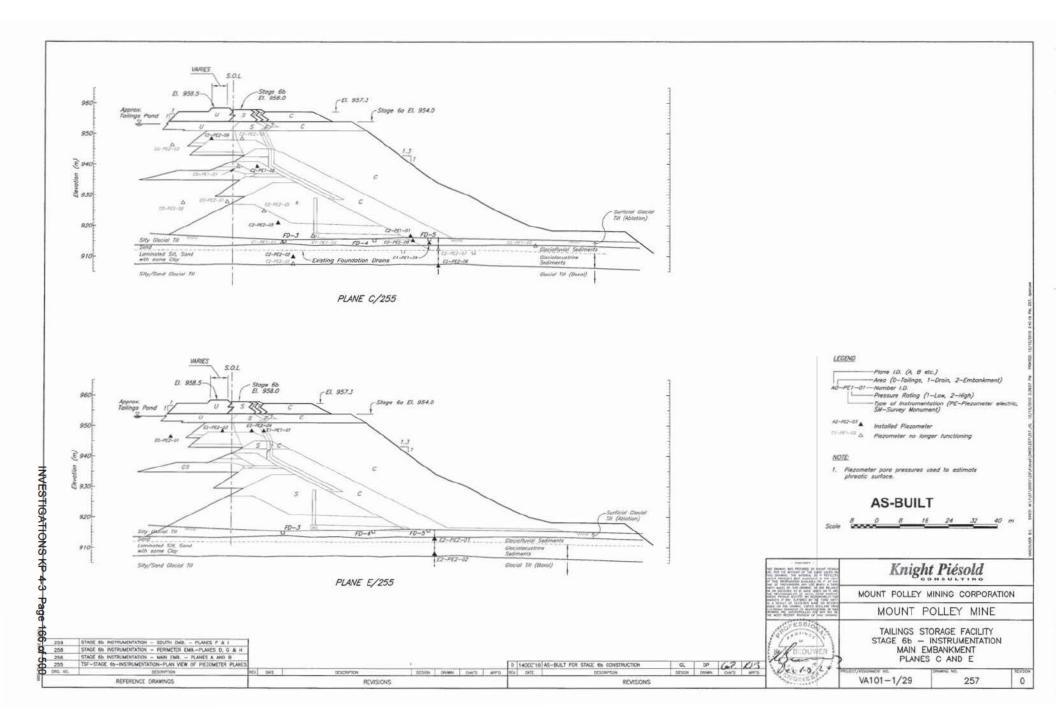


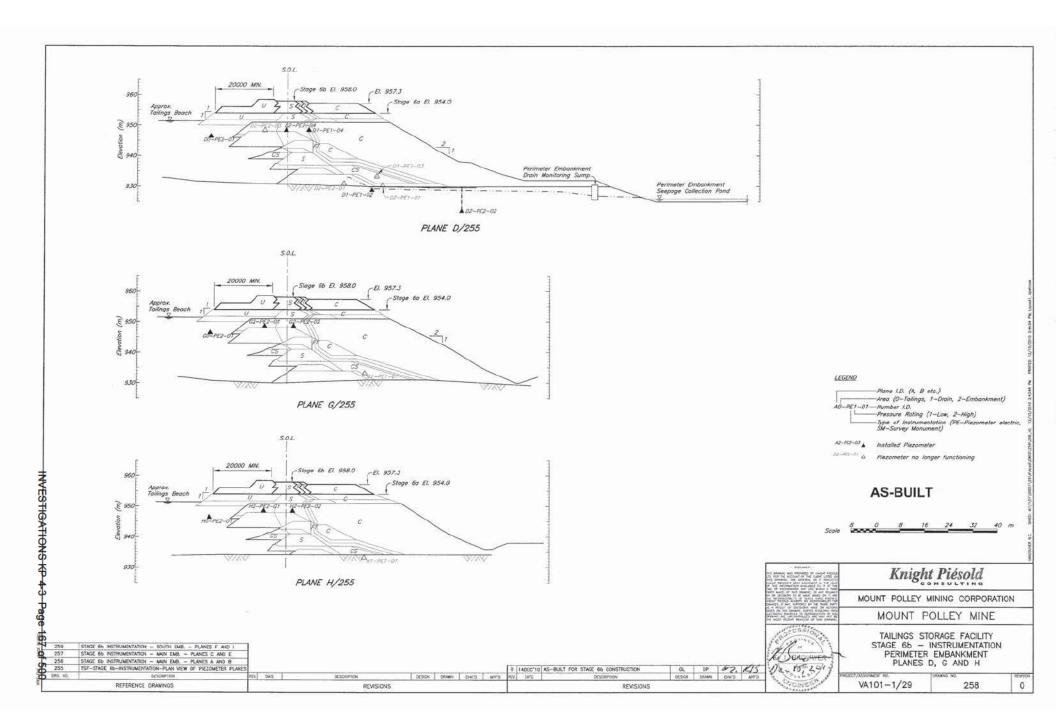


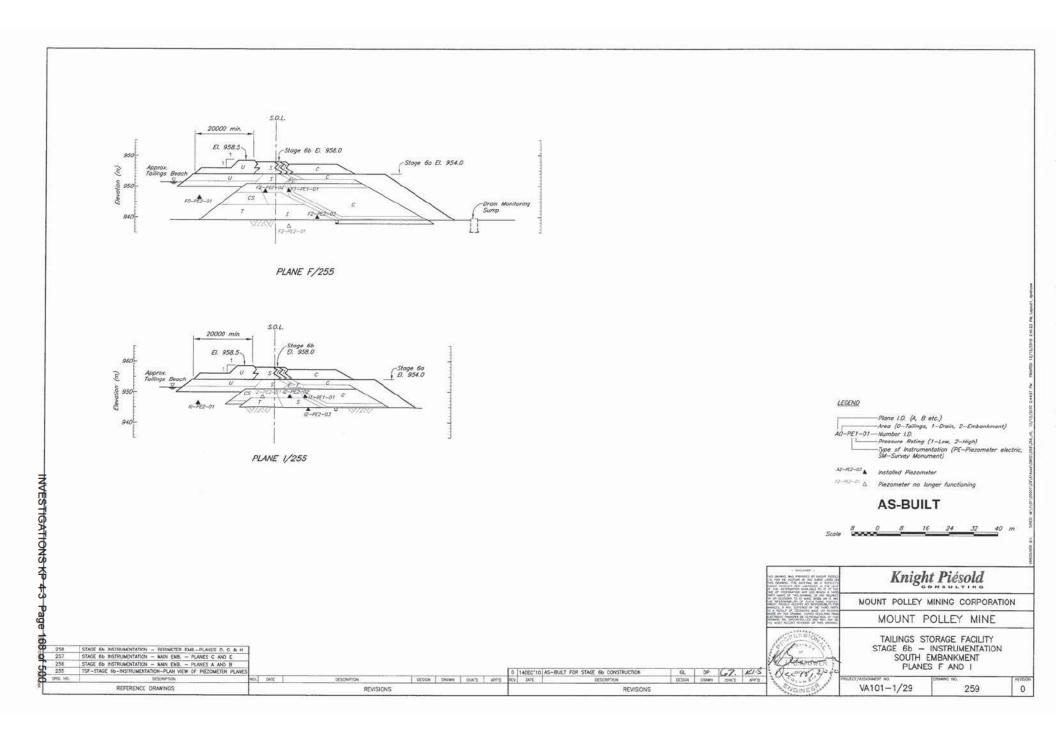














### PIEZOMETER RECORDS

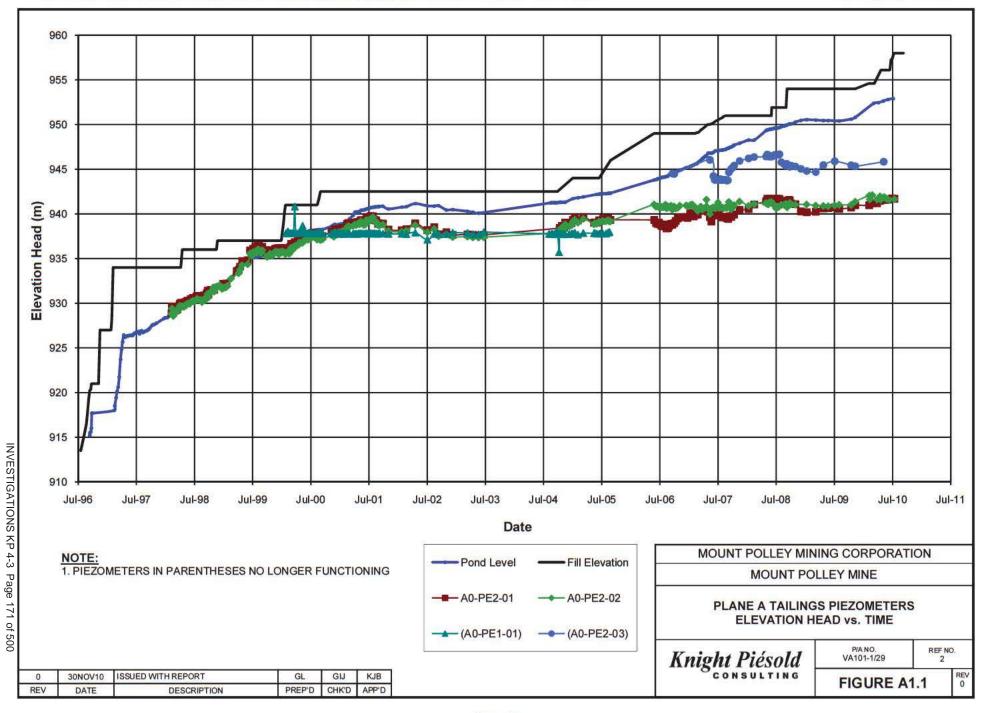
Appendix A1 - Tailings Piezometers Appendix A2 - Foundation Piezometers Appendix A3 - Fill Piezometers Appendix A4 - Drain Piezometers



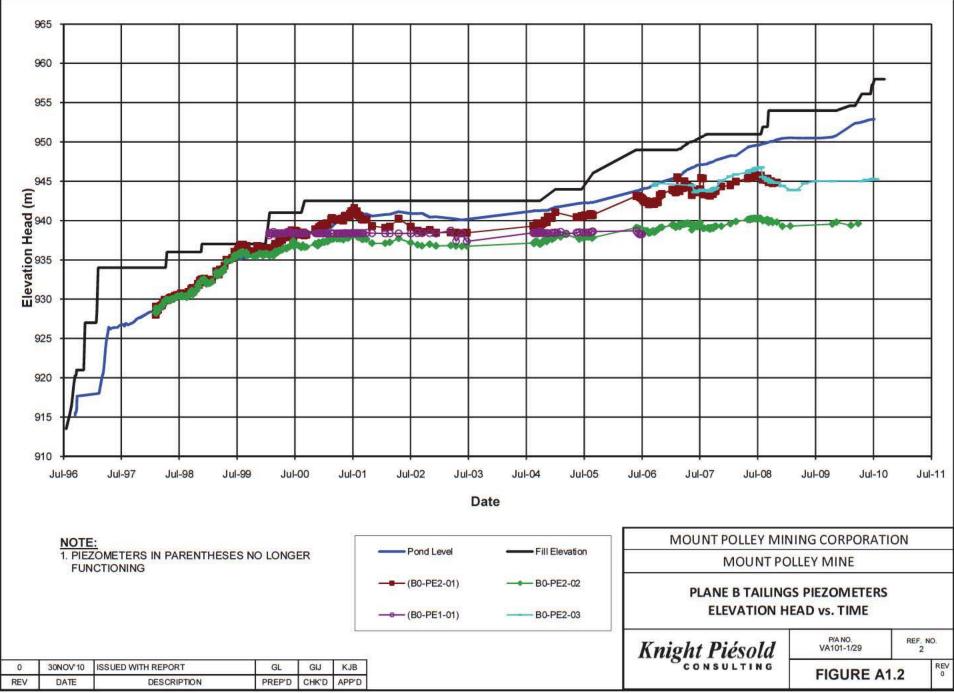
TAILINGS PIEZOMETERS

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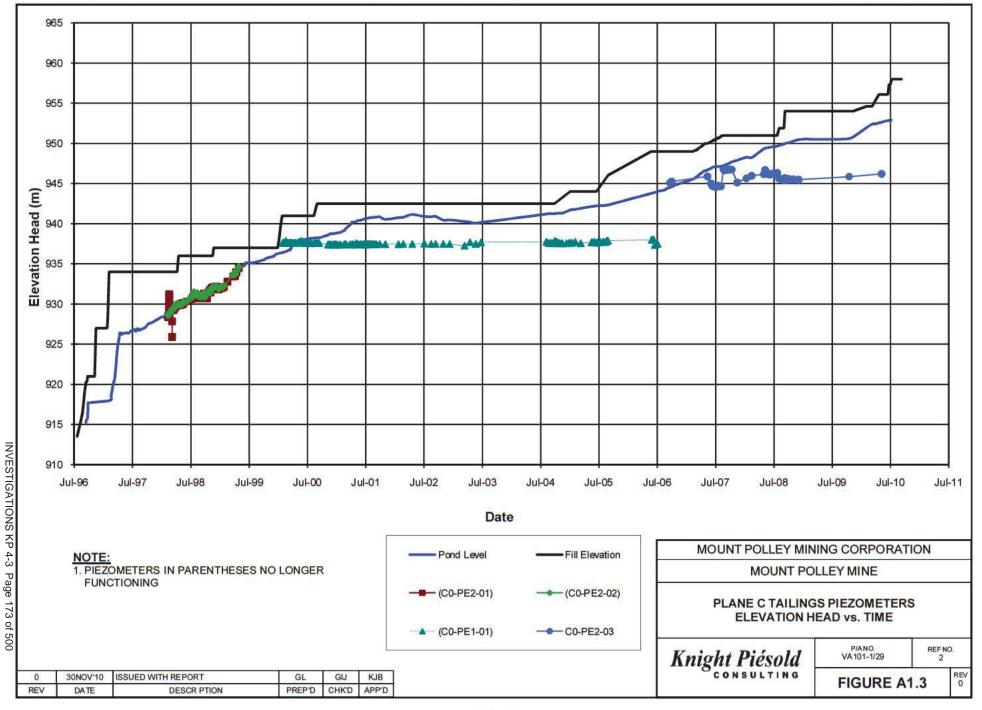
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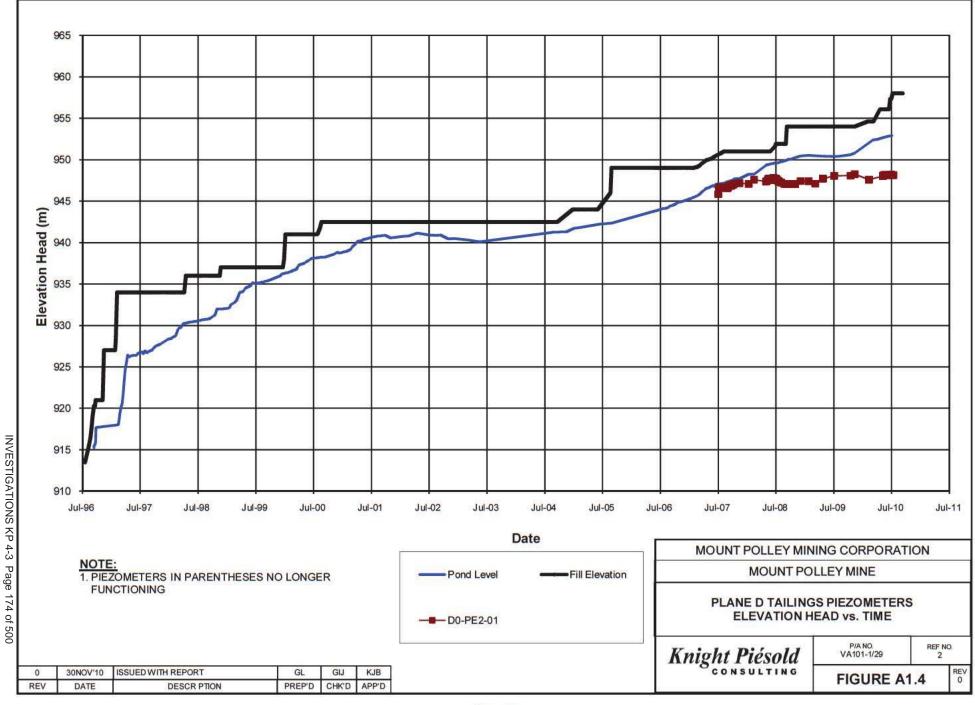


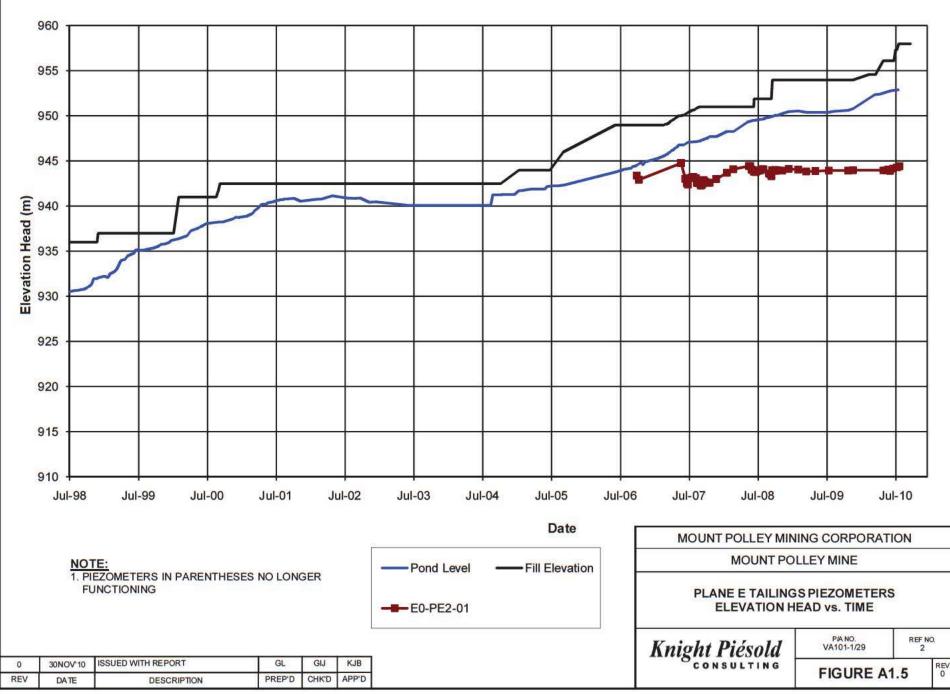
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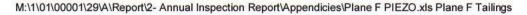


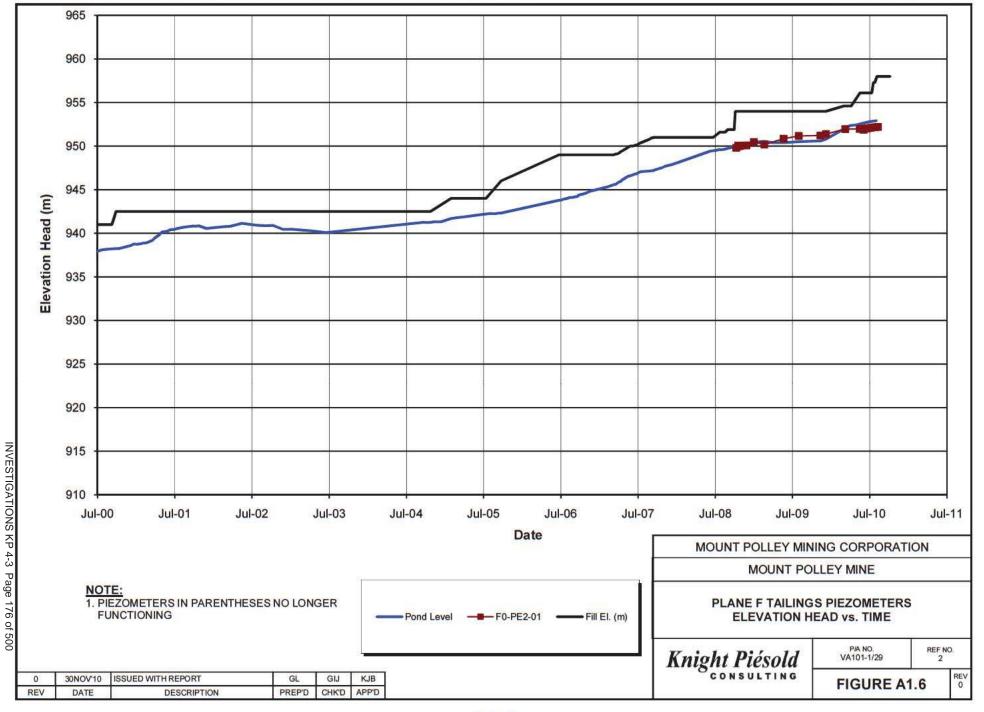
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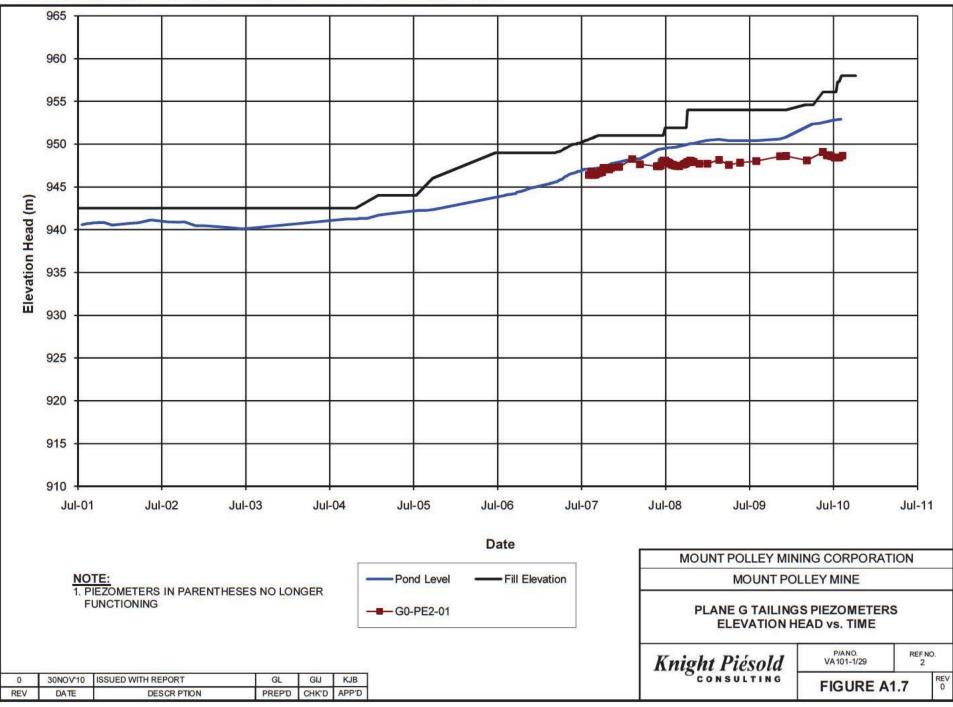


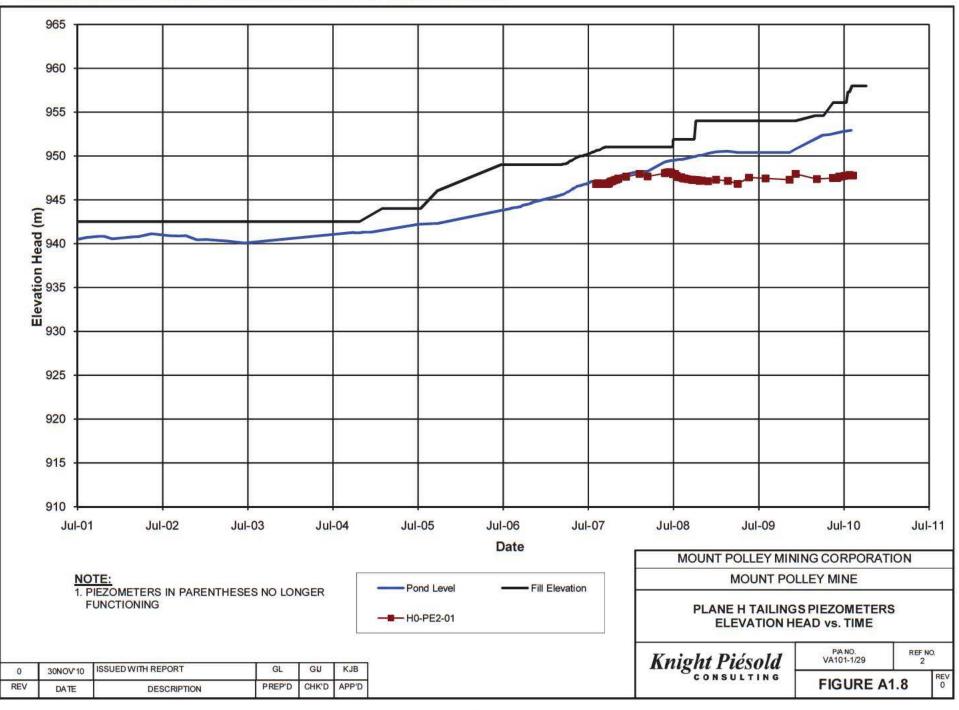


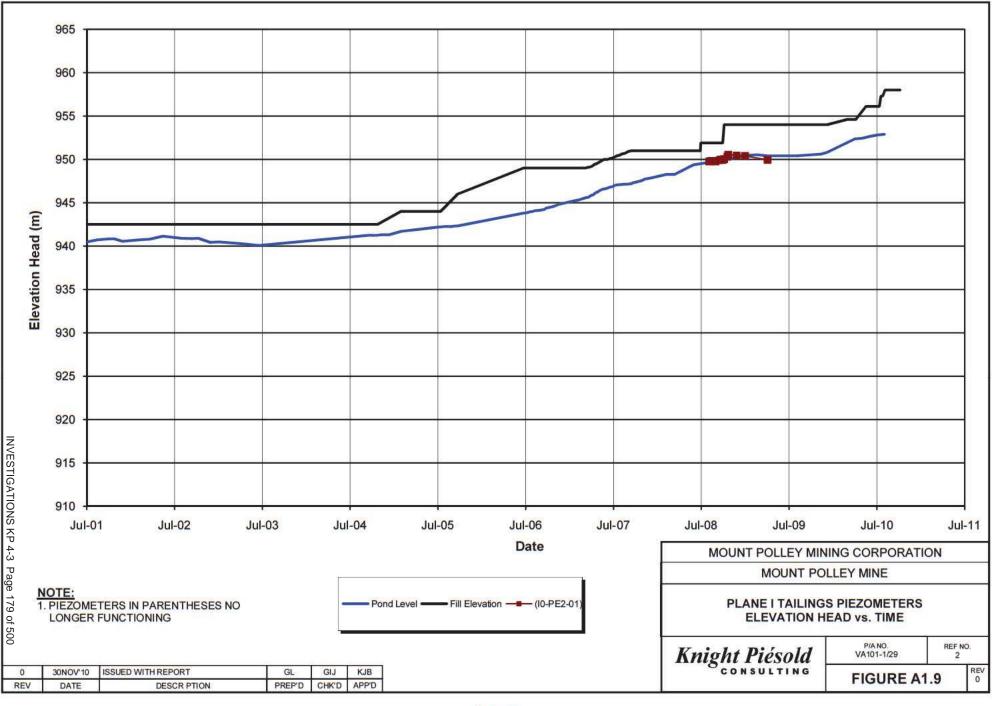












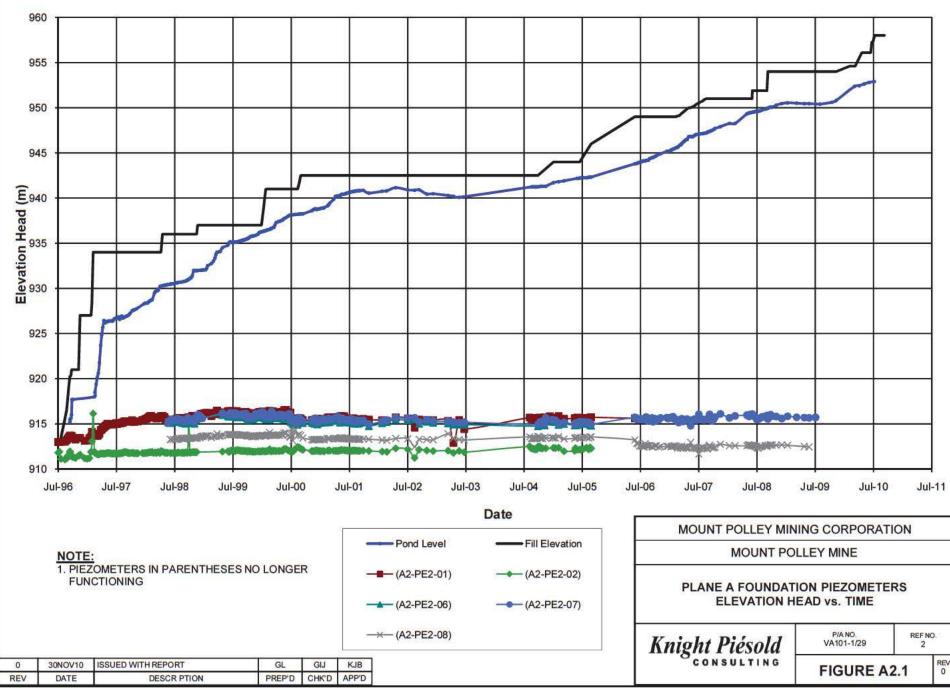
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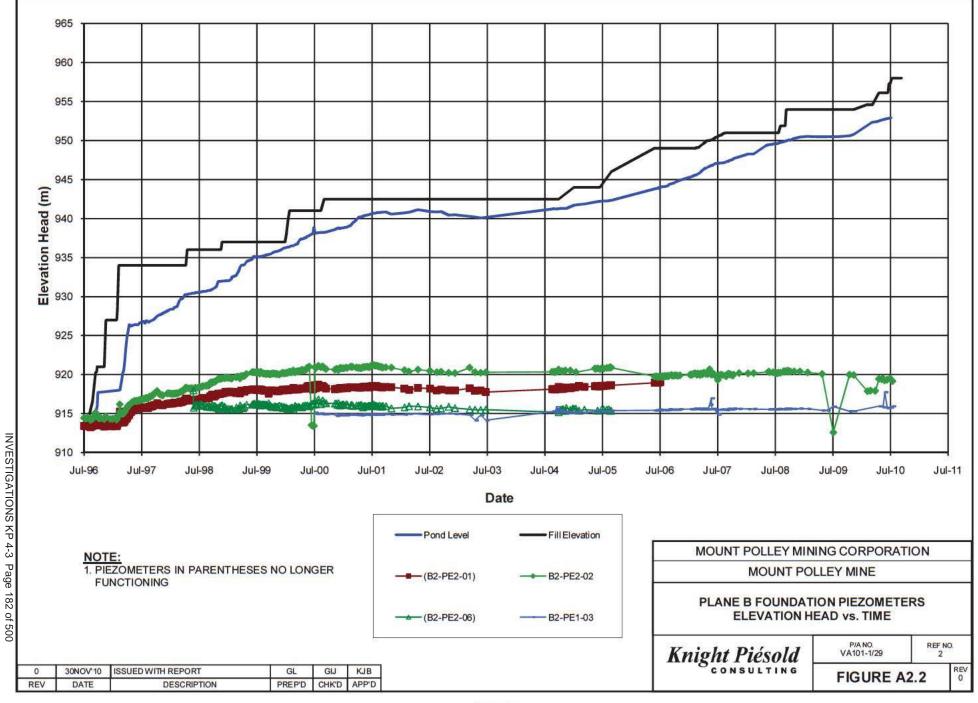


FOUNDATION PIEZOMETERS

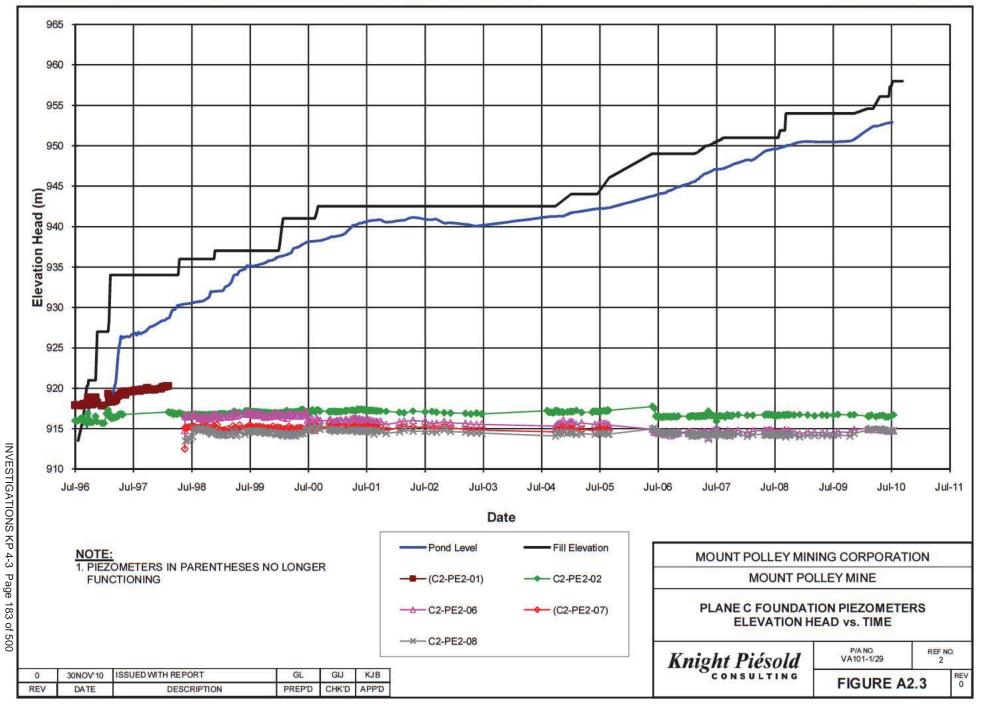
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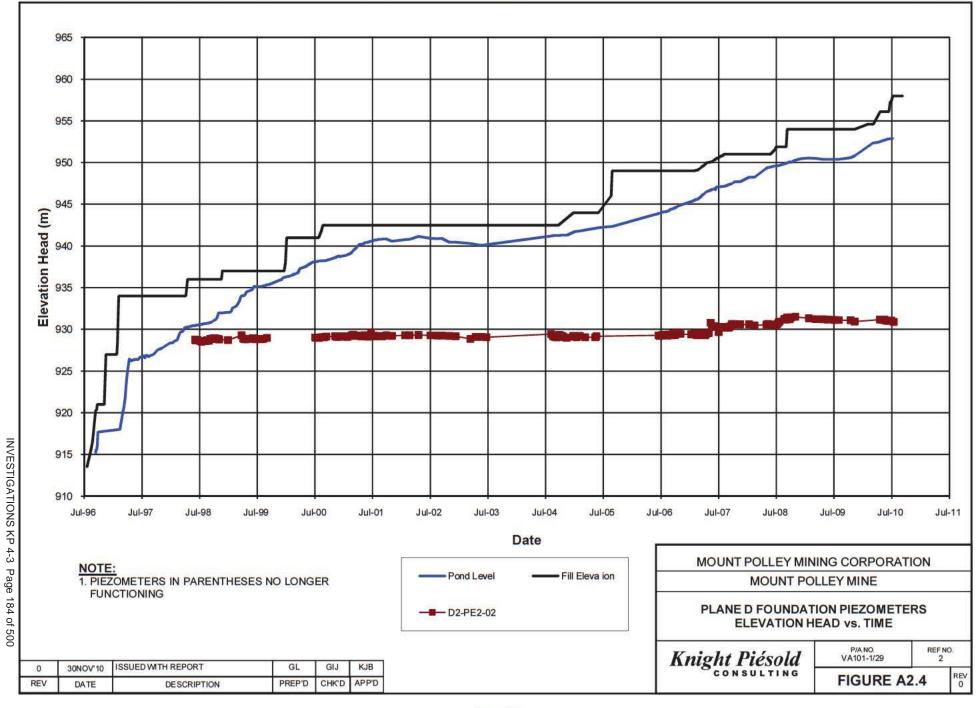


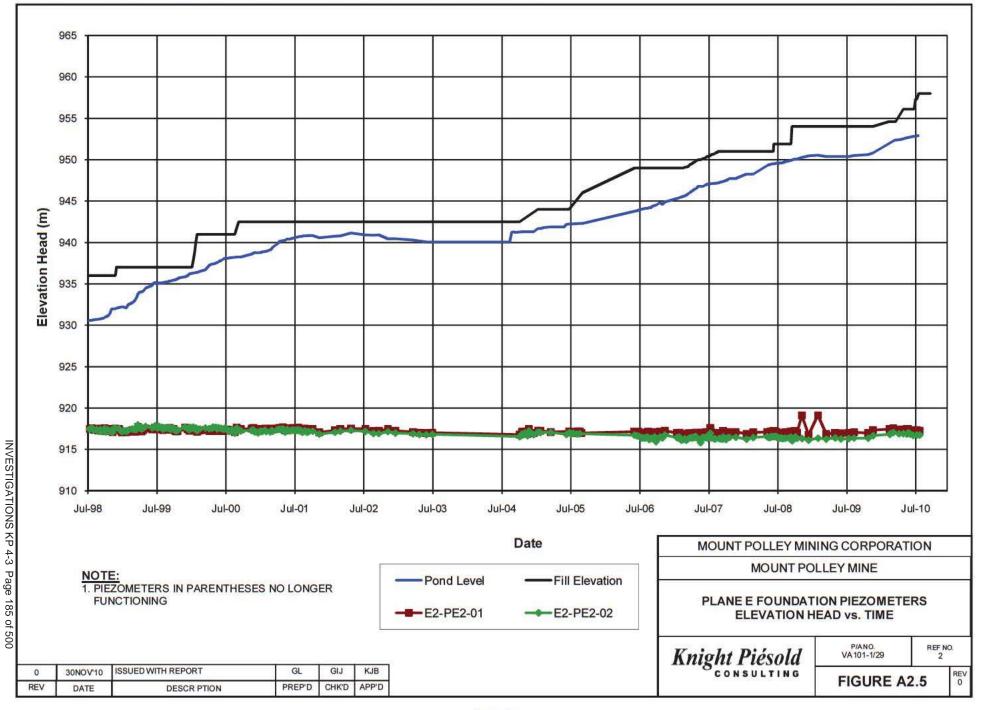


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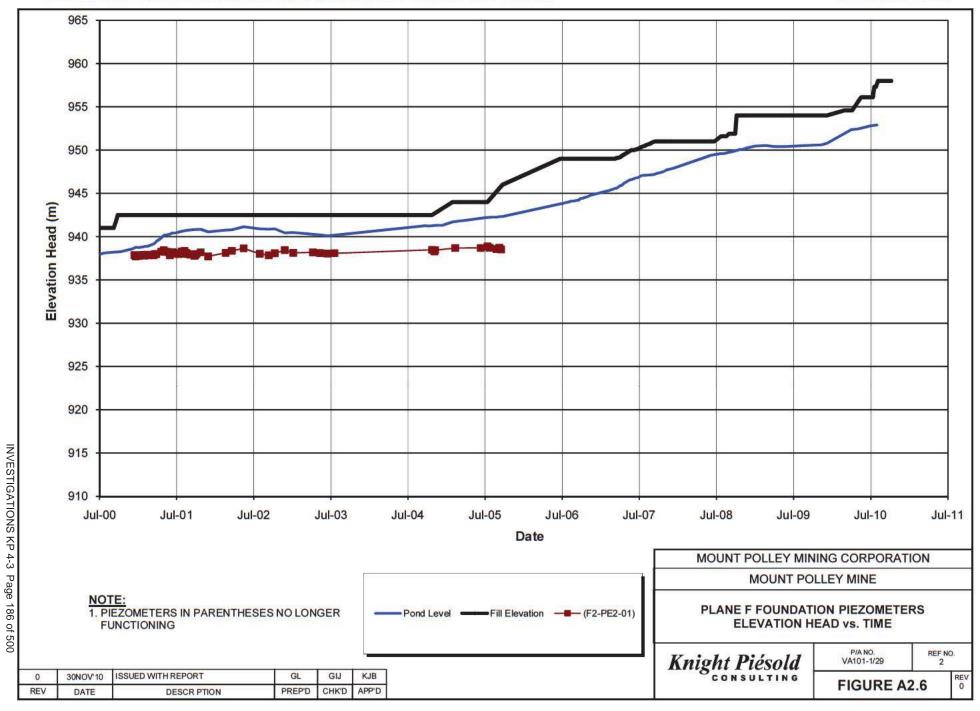


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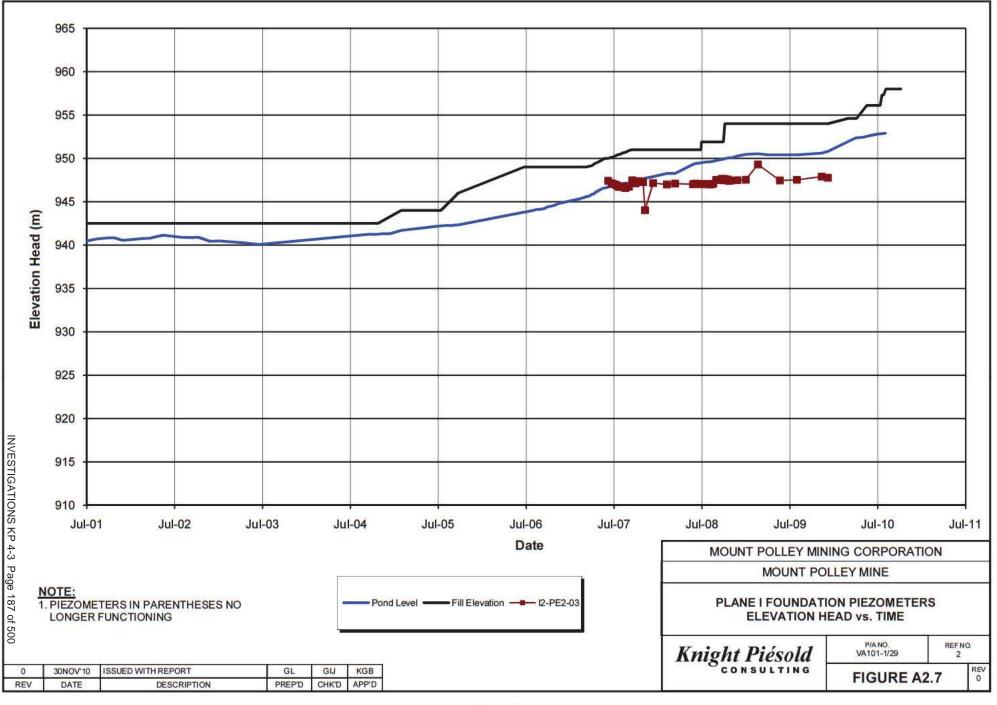




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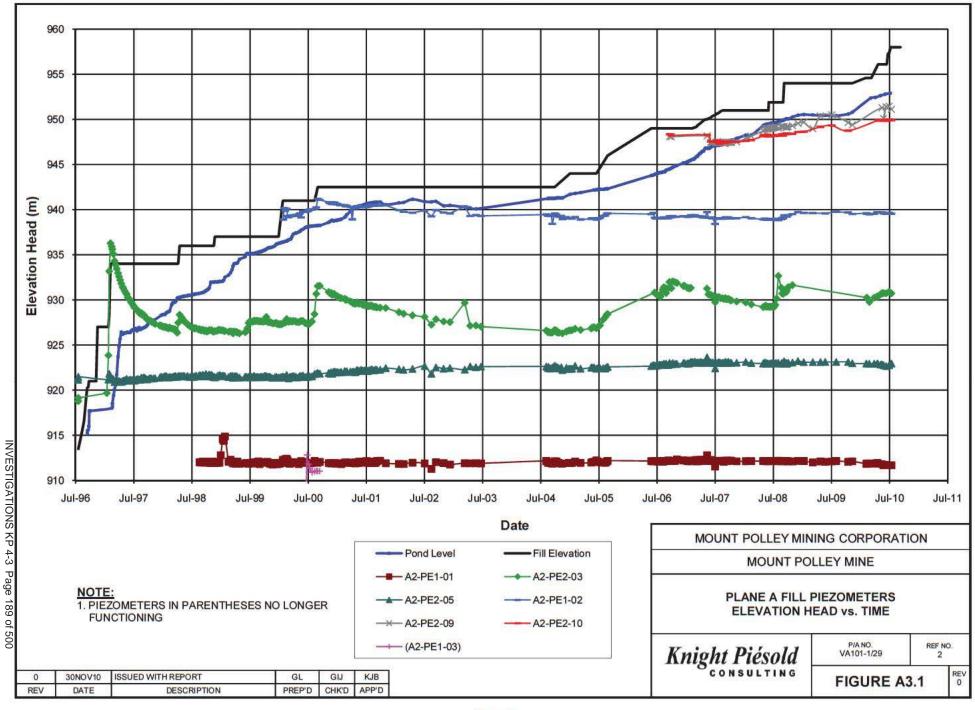
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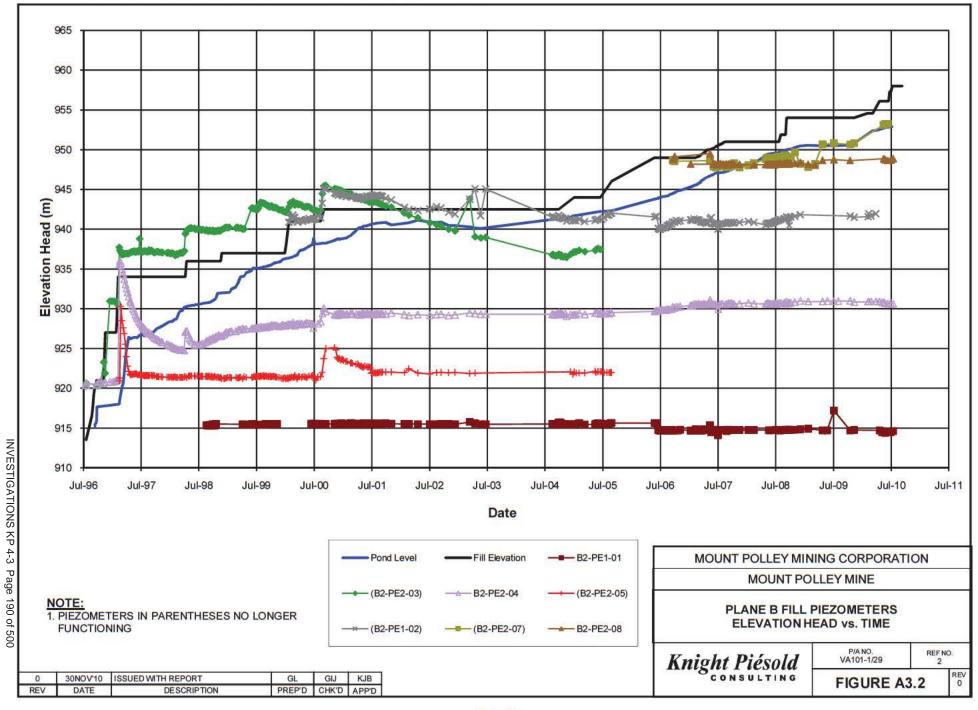


FILL PIEZOMETERS

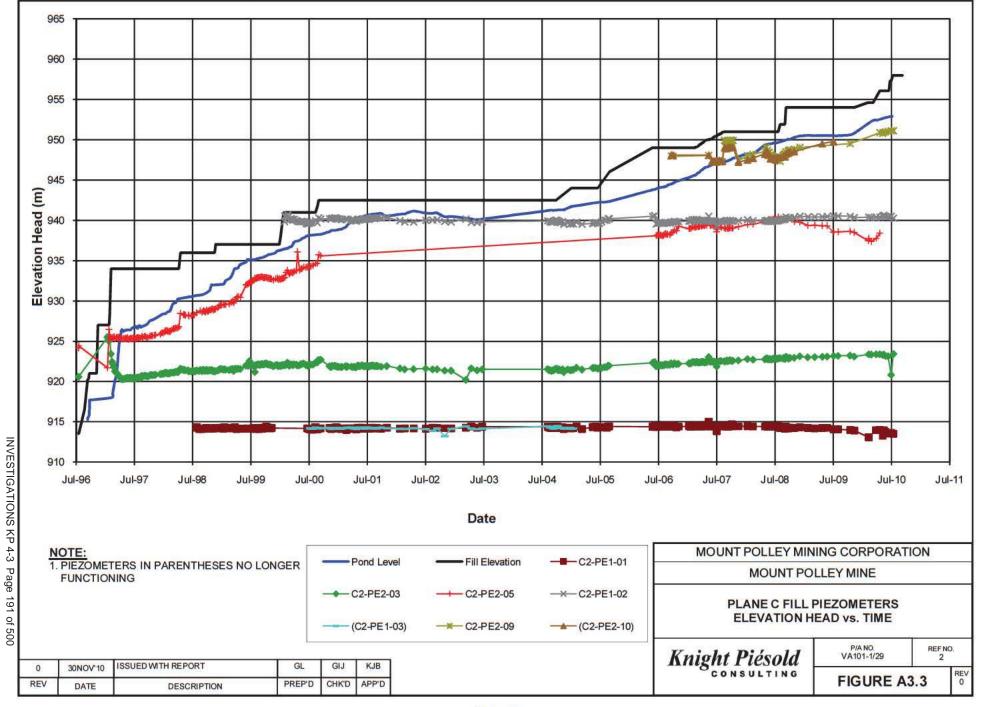
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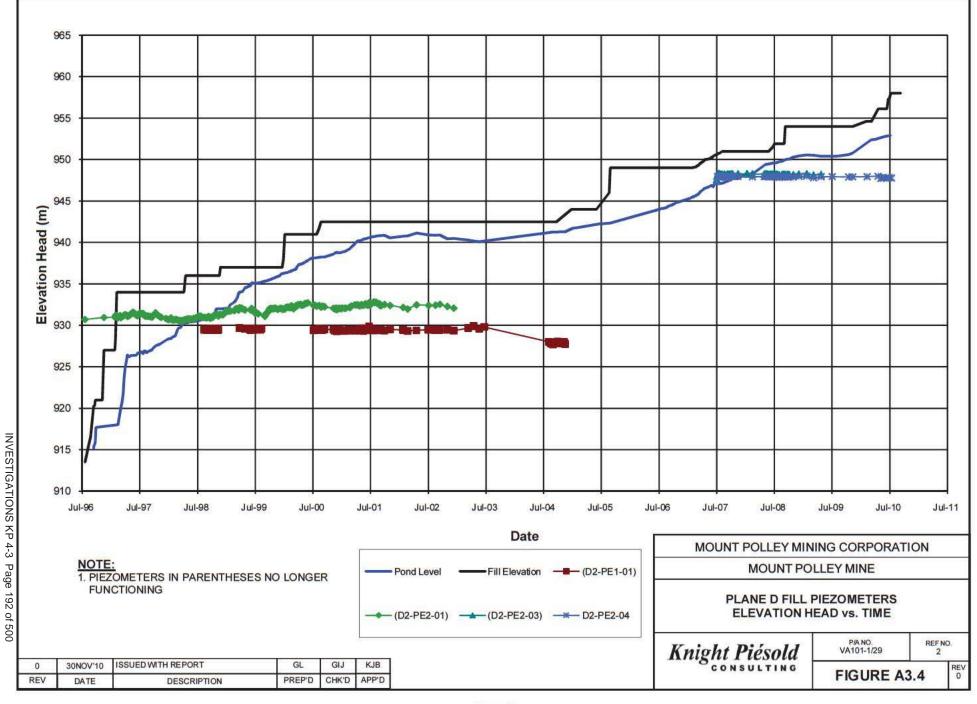
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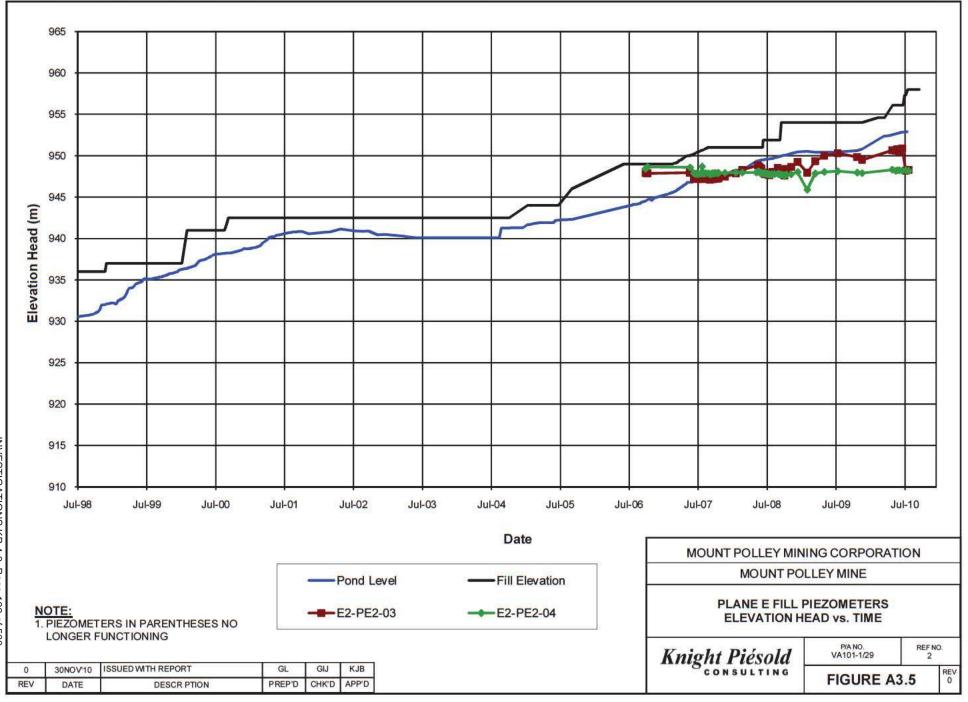


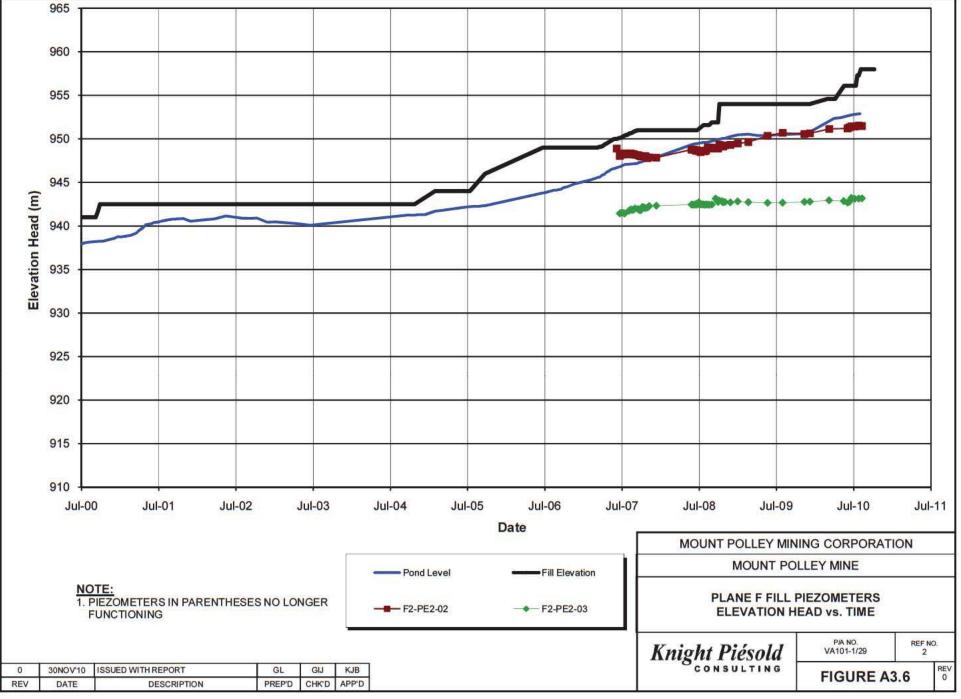
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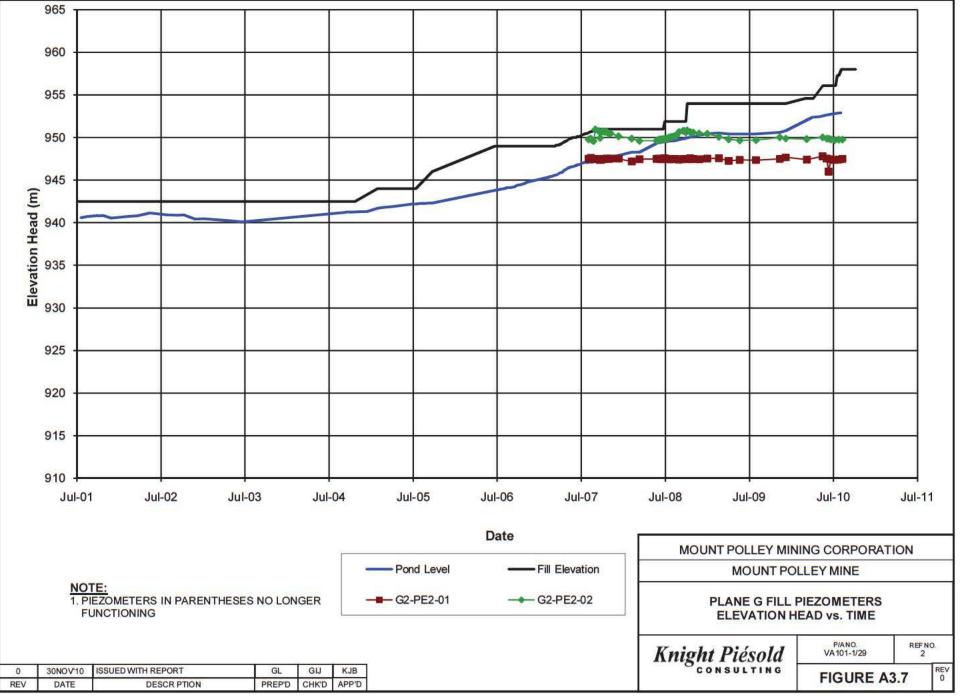


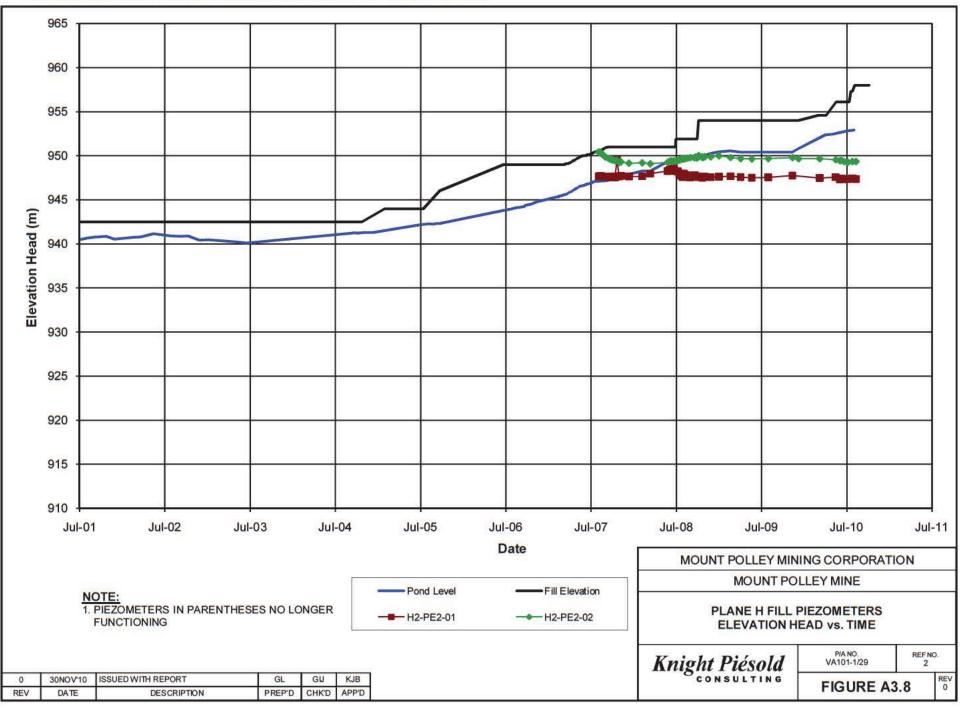


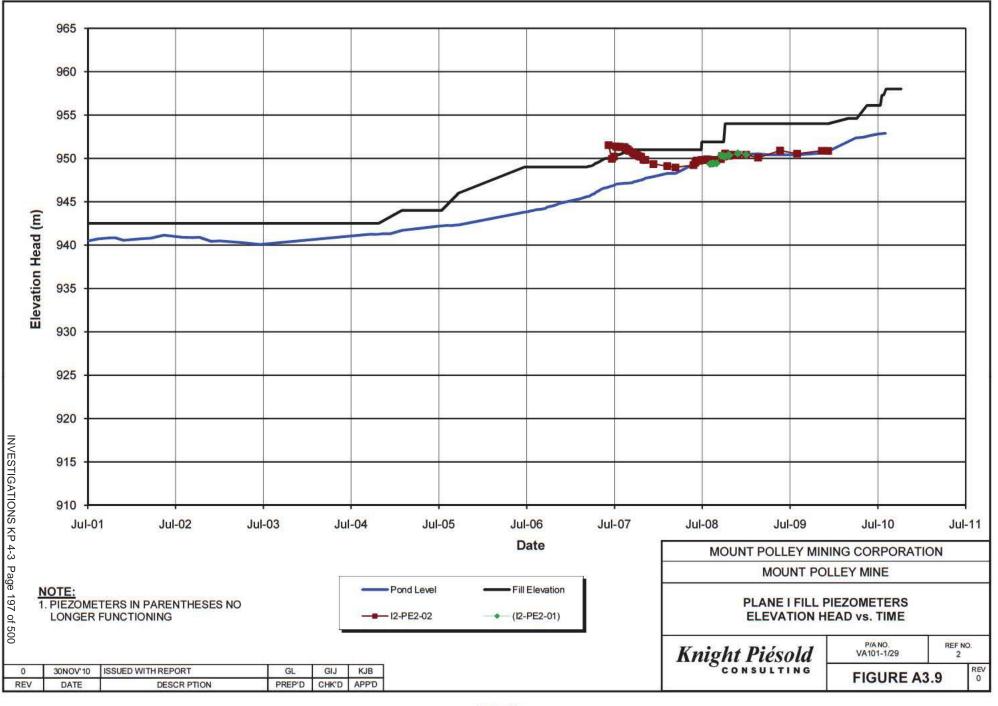
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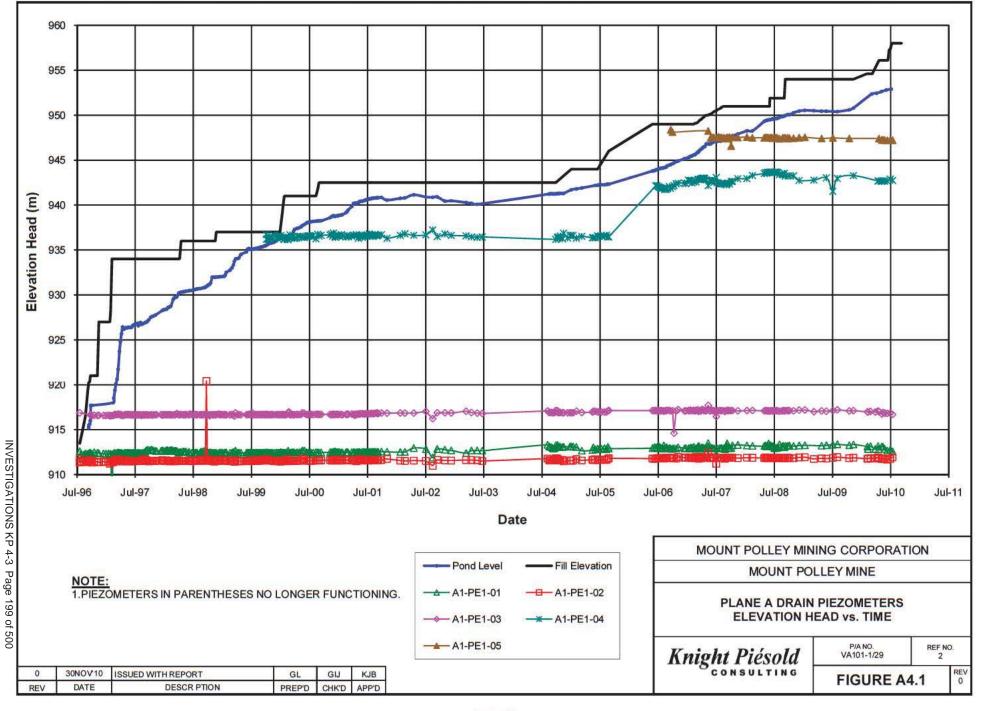
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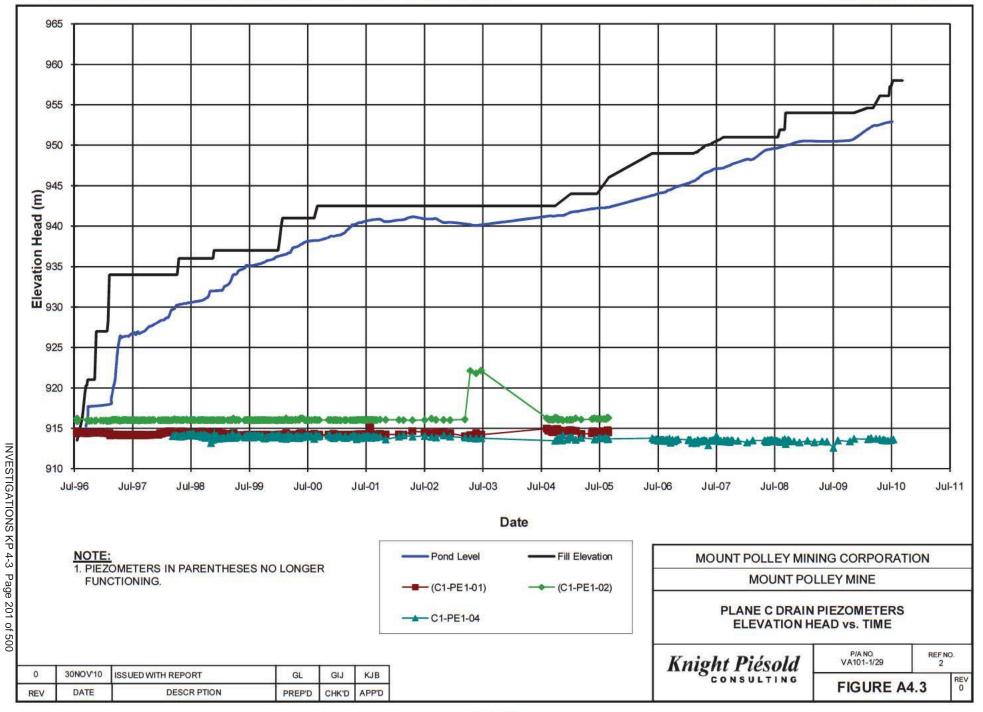
FILL PIEZOMETERS

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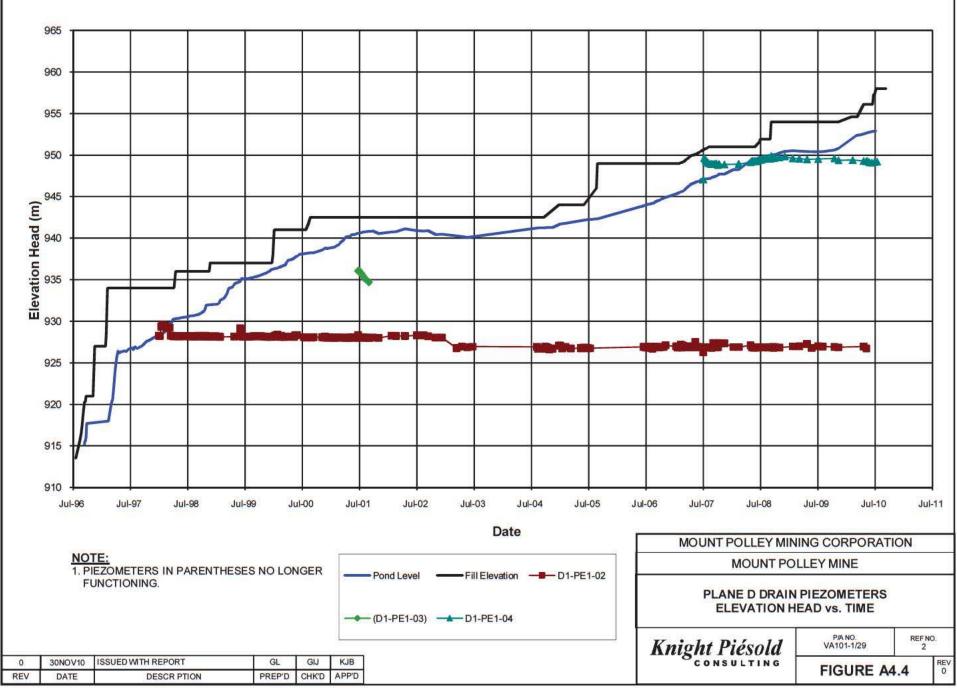
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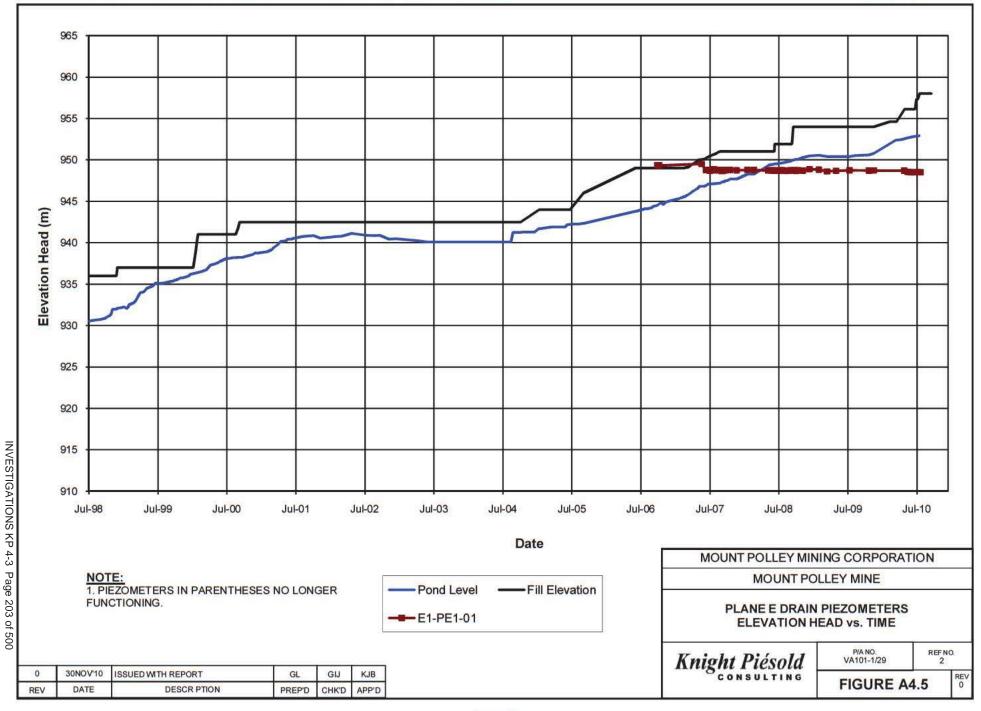


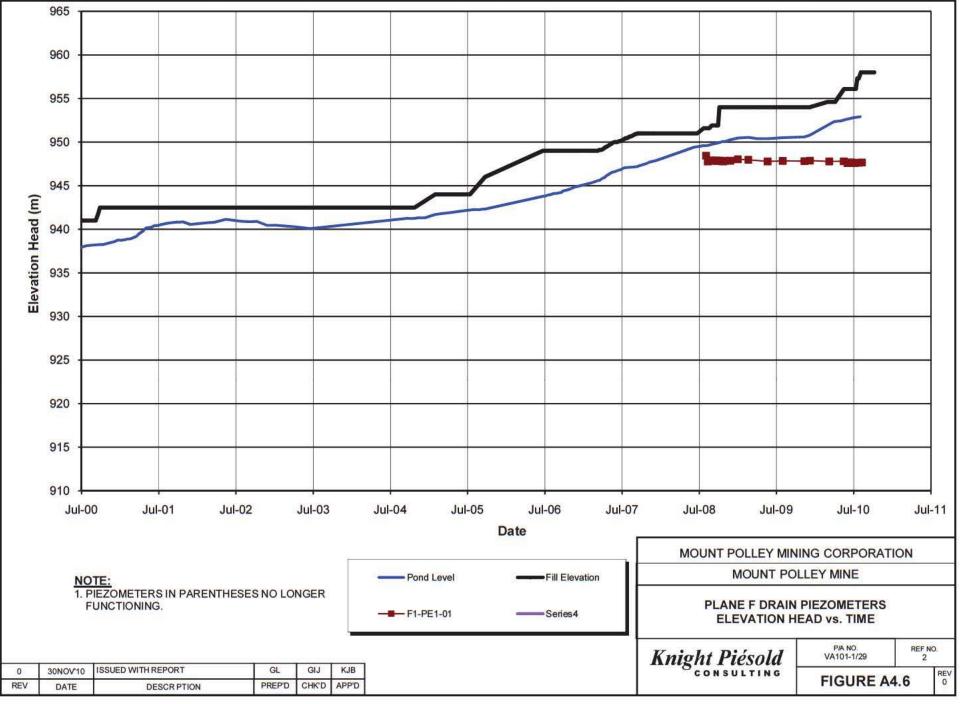


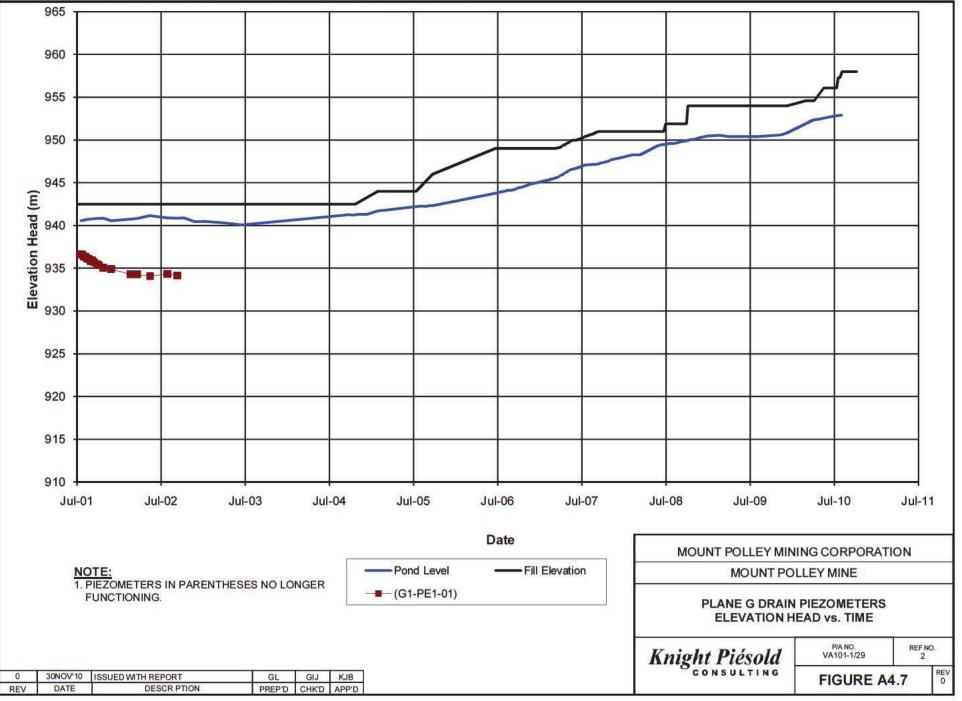


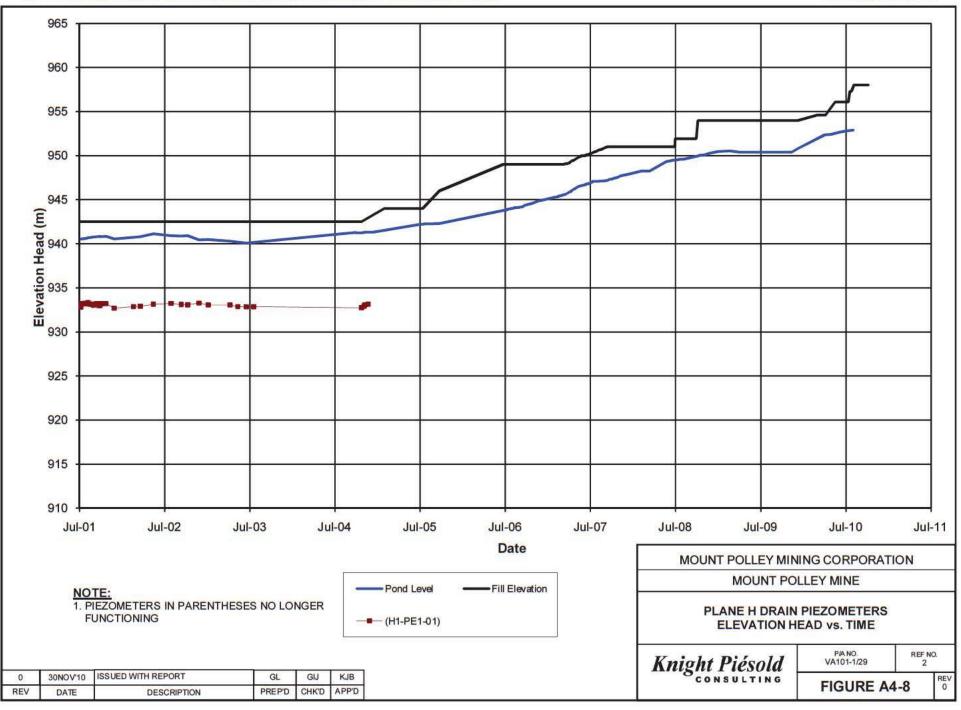
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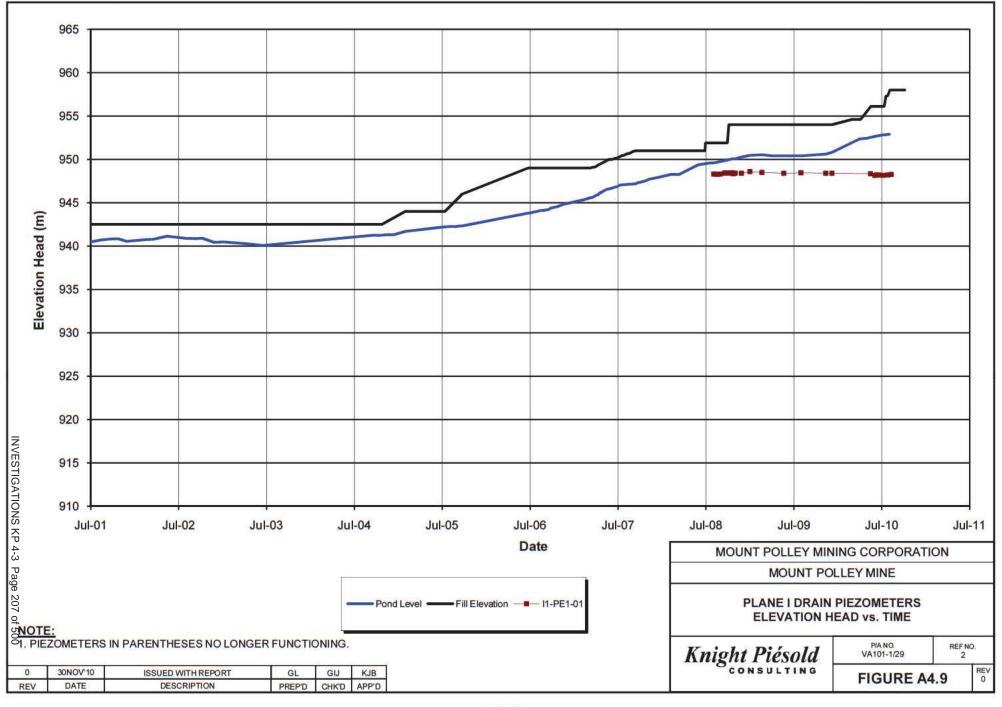








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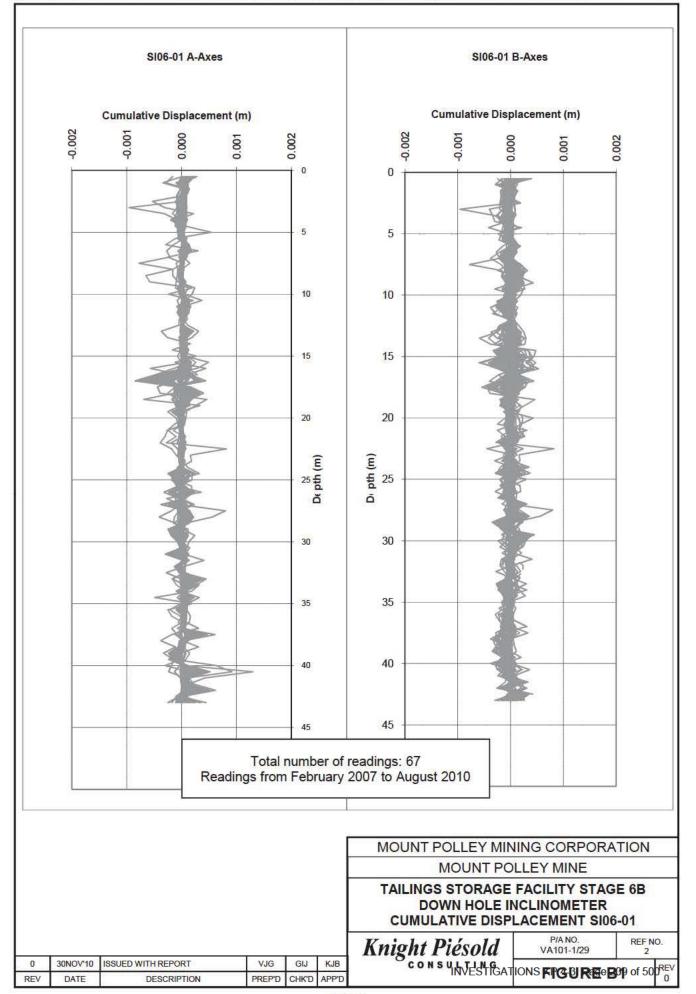


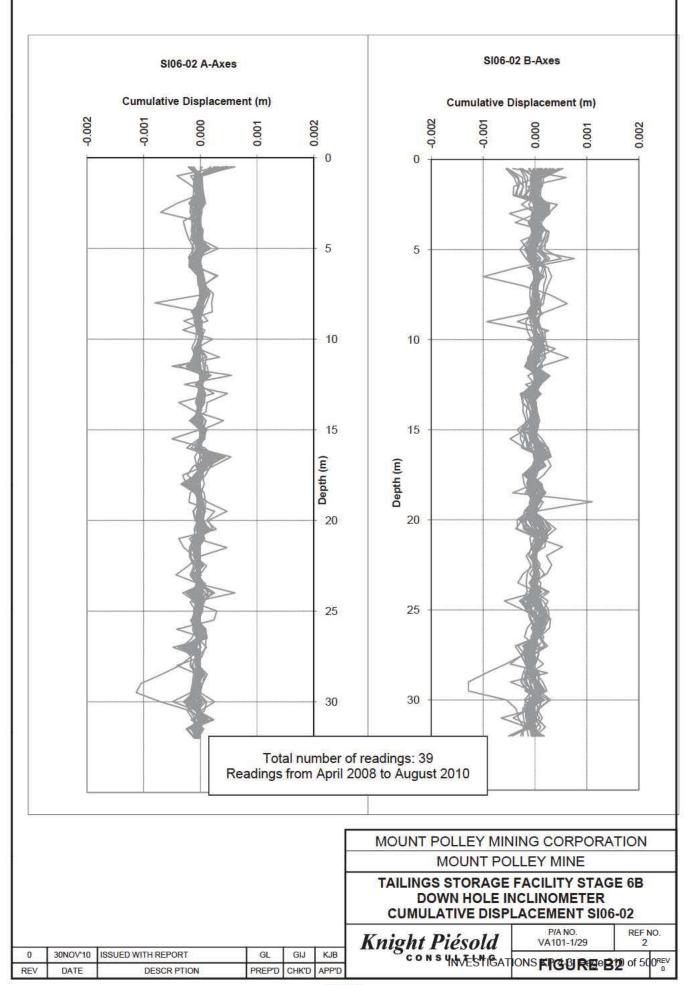
# **APPENDIX B**

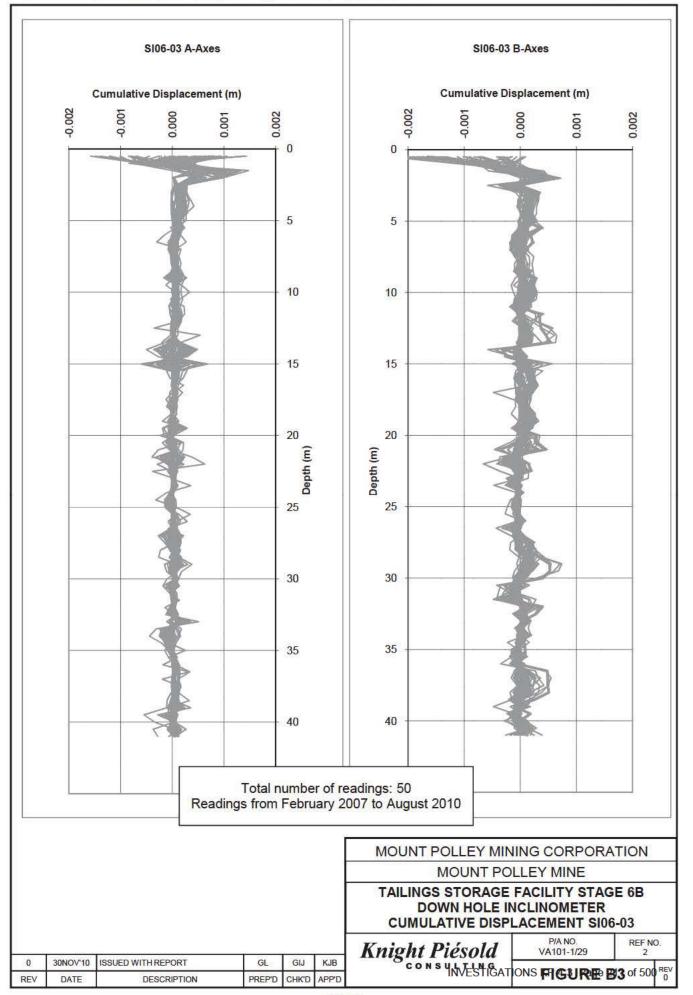
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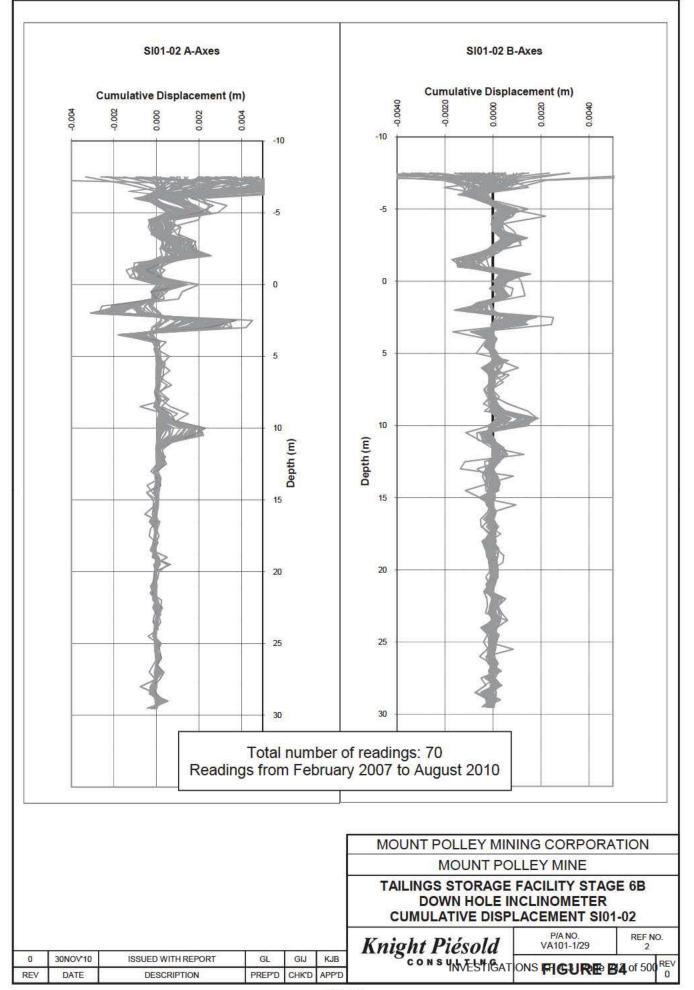
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# APPENDIX C

FILL PIEZOMETERS

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PHOTO 2 – Perimeter Embankment Seepage Collection and Recycle Pond.





PHOTO 3 – Perimeter Embankment Toe Drain Flow.



PHOTO 4 – Glacial Till borrow Downstream of Perimeter Embankment.





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PHOTO 6 - Tension Crack at the Perimeter Embankment.





PHOTO 7 – Downstream Slope of Perimeter Embankment.



PHOTO 8 – Downstream Slope of Main Embankment.





PHOTO 9 – Main Embankment Seepage Collection and Recycle Pond.



PHOTO 10 – Main Embankment Buttress.





**PHOTO 11** – Tailings Beach, From Main Embankment looking towards Perimeter Embankment.



**PHOTO 12** – Downstream Slope of South Embankment.





PHOTO 13 - South Embankment - Supernatant Pond adjacent to the dam



PHOTO 14 – South Embankment Seepage Collection and Recycle Pond.





PHOTO 15 – South Embankment Upstream Toe Drain flow.



PHOTO 16 – South Bootjack Dam.

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# TRANSMITTAL

Suite 1400 - 750 West Pender Street Vancouver, BC V6C 2T8 Tel: 604.685.0543 Fax: 604.685.0147

то:	Imperial Metals Corporation 200 - 580 Hornby Street	DATE:	December 17, 2010
	Vancouver, BC V6C 3B6	FILE NO.:	VA101-1/29-A.01
ATTENTION:	Mr. Ron Martel	CONT. NO .:	VA10-01946

RE: 2010 Engineering Support for Mount Polley Mine

ITEM NO.	DESCRIPTION
1.	7 Copies (Copy No # 1 – 7) Report: MOUNT POLLEY MINING CORPORATION MOUNT POLLEY MINE
	TAILINGS STORAGE FACILITY REPORT ON STAGE 6B CONSTRUCTION VA101-1/29-1 Rev 0 December 15, 2010
2.	6 Copies (Copy No # 1 -6) Report: MOUNT POLLEY MINING CORPORATION MOUNT POLLEY MINE
	TAILINGS STORAGE FACILITY REPORT ON 2010 ANNUAL INSPECTION VA101-1/29-2 Rev 0 December 16, 2010

**REMARKS:** To be forwarded to Ron Martel by Imperial Metals Corp. to the Likely Mount Polley Mining Corporation address.

Signed: d

Alec Whitford

Approved: es Galbraith



# TRANSMITTAL

Suite 1400 - 750 West Pender Street Vancouver, BC V6C 2T8 Tel: 604.685.0543 Fax: 604.685.0147

TO:	Mount Polley Mining Corporation P.O. Box 12	DATE:	Dec 16, 2010
	Likely, British Columbia Canada, V0L 1N0	FILE NO.:	VA101-1/29-A.01
ATTENTION:	Mr. Ron Martel	CONT. NO.:	VA10-01883

RE: 2010 Engineering Support for Mount Polley Mine

DESCRIPTION
e "Tailings Storage facility As-Built Stage 6b Report" (VA101-29/1-1 Rev 0)

REMARKS: Sent via email

Signed:

Admin Staff

Approved: Greg Johnston

Copy To:

# TAILINGS STORAGE FACILITY REPORT ON STAGE 6B CONSTRUCTION







# PREPARED FOR

Mount Polley Mining Corporation P.O. Box 12 Likely, BC V0L 1N0

# PREPARED BY

Knight Piésold Ltd. Suite 1400 – 750 West Pender Street Vancouver, BC V6C 2T8



VA101-1/29-1 Rev 0 December 15, 2010



# TAILINGS STORAGE FACILITY REPORT ON STAGE 6b CONSTRUCTION (REF. NO. VA101-1/29-1)

Description	Date	Approved
Issued in Final	December 15, 2010	KJB

# Knight Piésold Ltd.

Suite 1400 750 West Pender Street Vancouver, British Columbia Canada V6C 2T8 Telephone: (604) 685-0543 Facsimile: (604) 685-0147 www.knightpiesold.com

Knight Piésold CONSULTING



# TAILINGS STORAGE FACILITY REPORT ON STAGE 6b CONSTRUCTION (REF. NO. VA101-1/29-1)

#### EXECUTIVE SUMMARY

The Mount Polley Mine is owned by Mount Polley Mining Corporation (MPMC). It is located 56 kilometers northeast of Williams Lake, in central British Columbia. Mount Polley Mine started production in 1997 and prior to stopping production in October 2001. Mount Polley Mine restarted production in March 2005 and has been in continuous operation. The current mill throughput is approximately 20,000 tpd with the tailings material deposited as slurry in the Tailings Storage Facility (TSF). There has been an estimated 65 Mt of tailings deposited in the TSF by June 2010. The Mount Polley Mine TSF consists of one embankment divided into three sections: the Main Embankment, Perimeter Embankment, and the South Embankment. The Stage 6b construction program was designed for raising the embankments by 4 m to an elevation of 958 m.

The Stage 6b TSF construction program at Mount Polley Mine commenced in October 2009 and was completed in August of 2010. Earthworks for the Stage 6b Tailings Storage Facility construction program comprised the following zones and materials:

- Zone U: Upstream shell zone produced from coarse tailings in sand cells, or from rockfill.
- Zone S: Core zone fine grained glacial till.
- Zone F: Filter, drainage zones, and chimney drain processed sand and gravel.
- Zone T: Transition filter zone select well-graded fine-grained rockfill.
- Zone C: Downstream shell zone rockfill.

The Zones S, F and T were raised to 958 m, Zones C and U vary in elevation around the embankment between 957.3 and 958.5 m.

Technical supervision of the work by Knight Piésold included QA/QC testing and monitoring the existing vibrating wire piezometers and inclinometers. The QA/QC component involved collecting and testing Record and Control samples for Zones S, F and T. The results of the QA/QC testwork indicate that the construction fill materials were placed and compacted within the required material specifications and were in accordance with the Stage 6b design of the TSF. The Zone C material on the downstream shell is constructed at a relatively steep grade of approximately 1.4H:1V. The buttress on the main embankment construction has not been completed as designed. It is recommended a review of the embankment stability is completed prior to further embankment raises.

There are in total fifty six functioning vibrating wire piezometers installed the TSF. No new piezometers were installed during the Stage 6b construction program. The results of the instrumentation monitoring show no unexpected or anomalous pore pressures have developed. It is recommended that additional piezometers be installed to replace piezometers that have been damaged or no longer function.

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There are four operating slope inclinometers in the TSF all are located at the Main Embankment. No new inclinometers were installed during the Stage 6b construction program. There have been no significant deviations in the four inclinometers monitored.

The regular measurement of seepage flow and underdrain flow was not completed during 2010. The regular measurement of seepage is specified in the Operations, Maintenance and Surveillance (OMS) Manual. At present, it is operationally complex to monitor seepage and drainage flows from the TSF. It is recommended that this process is simplified and regular seepage flows are collected.



# TAILINGS STORAGE FACILITY REPORT ON STAGE 6b CONSTRUCTION (REF. NO. VA101-1/29-1)

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VA101-1/26-210 Rev 1	Stage 6b Main Embankment – Plan
VA101-1/26-215 Rev 1	Stage 6b Main Embankment – Section
VA101-1/26-216 Rev 1	Stage 6b Main Embankment – Detail
VA101-1/26-220 Rev 1	Stage 6b Perimeter Embankment – Plan
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# TAILINGS STORAGE FACILITY REPORT ON STAGE 6b CONSTRUCTION (REF. NO. VA101-1/29-1)

# **SECTION 1.0 - INTRODUCTION**

## 1.1 PROJECT DESCRIPTION

The Mount Polley Mine is owned by Mount Polley Mining Corporation (MPMC). It is located 56 kilometers northeast of Williams Lake, in central British Columbia. The project site is accessible by paved road from Williams Lake to Morehead Lake and then by gravel road for the final 12 km. Mount Polley Mine started production in 1997 and had milled approximately 27.5 million tonnes of ore prior to stopping production in October 2001. Mount Polley Mine upgraded the mine facilities in the second half of 2004 and started production again in March 2005.

The resource at Mount Polley Mine is generally developed using open pit mining methods, with the Springer Pit, Pond Zone, and the Southeast Zone being mined or developed in 2009/2010. The open pit mining of the Wight Pit was completed in 2009, however, underground mining operations started in 2010. The tailings material is deposited as slurry into the Tailings Storage Facility (TSF). The process water is reclaimed from the supernatant pond where it is pumped back to the mill for recycle in the milling process. MPMC had milled approximately 65 million tonnes June 2010. The mine throughput is approximately 20,000 tpd. An overall site plan of the Mount Polley Mine is shown on Drawing 100. The general arrangement of the TSF is shown on Drawing 102.

## 1.2 SCOPE OF THE REPORT

This report documents the Stage 6b construction program for the TSF, which involved raising the crest of the TSF embankments to an elevation of 958 m, an increase of 4 m from the previous Stage 6a elevation of 954 m. The report includes a discussion of the construction methods used to complete the work, the results of quality assurance tests, and a review of the instrumentation monitoring results. The report also includes a set of "As-Built" drawings corresponding to the Stage 6b construction program.

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**SECTION 2.0 - STAGE 6B CONSTRUCTION REPORT** 

# 2.1 <u>GENERAL</u>

The TSF at Mount Polley TSF includes the Main, Perimeter and South Embankments. The Stage 6b construction program involved raising the TSF embankments to an elevation of 958 m, an increase in 4 m from the Stage 6a crest elevation of 954 m. The heights of the TSF embankments corresponding to a crest elevation of 958 m are approximately 45 m, 27 m, and 17 m for the Main, Perimeter and South Embankments, respectively. The design of the TSF staged raise to elevation 958 m is described in the Knight Piésold Ltd. report "Stage 6 Design of the Tailings Storage Facility" June 2007 (VA101-18-1). The TSF Stage 6b as-built plan, material specifications, and sections for the Main, Perimeter, and South Embankments are shown on the following drawings:

- VA101-1/26-210 Rev 1: Stage 6b Main Embankment Plan
- VA101-1/26-215 Rev 1: Stage 6b Main Embankment Section
- VA101-1/26-216 Rev 1: Stage 6b Main Embankment Detail
- VA101-1/26-220 Rev 1: Stage 6b Perimeter Embankment Plan
- VA101-1/26-225 Rev 1: Stage 6b Perimeter Embankment Section
- VA101-1/26-226 Rev 1: Stage 6b Perimeter Embankment Detail
- VA101-1/26-230 Rev 1: Stage 6b South Embankment Plan, and
- VA101-1/26-235 Rev 1: Stage 6b South Embankment Section 1.

The Stage 6b construction program began in October 2009 and was completed in August 2010. Select photographs of the construction program are included in Appendix E. Zones S and F were raised to an elevation of 958 m along the entire length of the dam. The elevation of Zones T, U and C vary from 957.3 m to 958.5 m along the embankment.

## 2.2 TAILINGS STORAGE FACILITY COMPONENTS

The TSF consists of the following main components:

- The TSF embankments, which incorporate the following zones and materials:
  - Zone U: Upstream shell zone produced from coarse tailings in sand cells, or from rockfill.
  - Zone S: Core zone fine grained low permeability glacial till to 958 m.
  - Zone F: Filter, drainage zones, and chimney drain processed sand and gravel. The Zone F material has a filter relationship with the Zone S material.
  - Zone T: Transition filter zone select well-graded fine-grained rockfill. The Zone T material has a filter relationship with the Zone F material.
  - Zone C: Downstream shell zone rockfill.
  - Zone CBL: Coarse Bearing Layer rockfill.
  - Zone FT: Filter layer above the downstream foundation materials (till) sand from local borrow area.
- A low permeability basin liner (natural and constructed), which covers the base of the entire facility, at a nominal thickness of at least 2 m. The low permeability basin liner has proven to be effective in minimizing seepage from the TSF as there have been no indications of adverse water quality from the



TSF reporting to the groundwater monitoring wells (refer to the MPMC Annual Reclamation Report for details).

- Embankment drainage provisions, which include foundation drains, upstream toe drains, and chimney, longitudinal and outlet drains. The embankment drains have been incorporated into the design of the TSF to facilitate drainage of the tailings mass, dewater the foundation soils, and to control the phreatic surface within the embankments.
- Seepage collection ponds located downstream of the Embankments. These ponds were excavated in low permeability soils and temporarily store water collected from the embankment drains and from local runoff.
- Instrumentation in the tailings, earthfill embankments, embankment foundations, and drains. This includes vibrating wire piezometers and slope inclinometers.
- A system of groundwater quality monitoring wells installed around the TSF.

# 2.3 QUALITY ASSURANCE/QUALITY CONTROL

Knight Piésold provided the Stage 6b design for the Tailings Embankments, prepared the Technical Specifications, provided technical assistance, and performed Quality Assurance/Quality Control (QA/QC) testing during the construction program. Key items addressed by Knight Piésold included:

- Foundation inspection and approval prior to fill placement
- Assessment of borrow material suitability
- Inspection of fill placement procedures
- In-situ testing of placed and compacted fill for moisture content and density
- Collection and testing of Control and Record samples, and
- Instrumentation monitoring.

Knight Piésold worked under the overall management and administration of MPMC. Lake Excavating Ltd. and MPMC completed the construction work at the TSF. The QA/QC procedures followed by Knight Piésold were similar to previous construction programs at the TSF. Control and Record samples were collected for laboratory testing during the construction program. The Control tests were carried out on materials collected from the borrow areas or from source locations to determine their suitability for use in the construction. Record tests were performed on materials after placement and compaction to document the level of workmanship achieved and to ensure that the design objectives were met. The Control and Record laboratory test results are presented in Appendix A.

## 2.4 STAGE 6B EARTHWORKS

## 2.4.1 <u>General</u>

Earthworks for the Stage 6b Tailings Storage Facility construction program comprised the following zones:

- Zone U Upstream shell zone
- Zone S Core zone
- Zone F Filter zone
- Zone T Transition filter zone, and



## • Zone C – Downstream shell zone.

The fill materials are discussed in the following sections, and the material specifications are shown on Drawing 104.

#### 2.4.2 <u>Zone U</u>

Zone U forms the upstream shell zone immediately adjacent to the Zone S core zone and provides the upstream support of the Zone S material required for modified centerline construction. Zone U was constructed using mine waste rockfill from the Springer, Southeast and Pond Zone pits, and up to 1 meter lifts of low sulphur waste rockfill from the Pond Zone pit. Sand cells were also used for Zone U construction. The sand cell construction process involved discharging tailings into cells constructed upstream of the embankment. The cells contained confining berms that had discharge culverts installed to allow for the water and the fine materials to exit the cells and flow into the TSF. The coarse tailings sand that settled out into the cells was constantly worked with a specialized dozer to distribute the tailings within the cells, to compact the sand, and to expedite the drainage of excess water through the culverts. A photograph is included in Appendix E showing the construction of a sand cell in the earlier phases of Stage 6b. Sand cell construction was suspended for the remainder of Stage 6b in May 2010, to facilitate Zone S construction whilst utilizing economical haulage of mine waste rockfill from the nearby Pond Zone pit.

#### 2.4.3 <u>Zone S</u>

The Zone S material, which is used for the core zone for the TSF Embankments, is comprised of a locally borrowed, low permeability glacial till. The Zone S material for the Stage 6b construction program was sourced from the Perimeter Embankment borrow pit, located downstream of the Perimeter Embankment. The location of the borrow areas are shown on Drawings 102 and 220. The Control test results for the Zone S material are presented in Appendix A1 and summarized on Table 2.1. The results of the Control test particle size analyses on the Zone S material are shown on Figure 2.1.

The Zone S material was placed in maximum 300 mm thick horizontal lifts and compacted with a 10-tonne vibratory smooth drum. The compaction specification was 95 percent of the Standard Proctor Maximum Dry Density. Each lift of Zone S was tested and approved prior to the placement of the subsequent lift. Areas that failed to meet the compaction requirements were re-compacted until the minimum compaction requirements were met. Material that did not meet the compaction requirements was removed from the embankment by pushing the unsuitable material upstream of the crest onto the tailings beach with a dozer.

Record tests on the compacted Zone S fill included the following:

- Moisture Content (ASTM D2216)
- Particle Size Distribution (ASTM D422)
- Laboratory Compaction (ASTM D698)
- Atterberg Limits (ASTM D4318)
- Field Density by Nuclear Methods (ASTM D2922), and



• Field Moisture Content by Nuclear Methods (ASTM D3017).

A total of twelve Zone S Record samples were collected and tested during the Stage 6b construction program. The Record test results indicate that the Zone S material is typically comprised of well graded gravelly sandy silt with some clay. The Record test results for the Zone S material are presented in Appendix A2 and summarized in Table 2.2. The gradation curves of the Zone S Record tests are shown on Figure 2.2. The moisture content of the Record Samples ranged from 8.0 to 14.1 percent, with an average of 10.1 percent. The Standard Proctor Maximum Dry Density ranged from 2,030 to 2,190 kg/m<sup>3</sup>, with an average of 2,117 kg/m<sup>3</sup>. The plastic limits ranged from 12.9 to 16.5 percent, with an average of 14.8 percent. The liquid limits ranged from 3.4 to 7.8 percent, with an average of 20.4 percent. The Zone S Record test results indicate that the Zone S material was within the specified limits for the material and was also consistent with the Zone S materials used in all previous construction programs.

A total of 765 field density and moisture content tests were performed on the Zone S material using a nuclear densometer to assess the compacted density and moisture content. Tests that were repeated due to low compaction were not included in the total number. Several results yielded unreasonably high densities (between 2,426 and 2,671 kg/m<sup>3</sup>) which were most likely due to a temporary gauge malfunction. A criterion of 10% greater than the median density of the total test number was applied. Ten tests (that fell between test numbers 82 and 107) were subsequently removed from the data set, giving a modified data set of 755 field density and moisture tests.

The compacted dry density of the modified data set ranged from 1971 to 2,321 kg/m<sup>3</sup>, with a median of 2,114 kg/m<sup>3</sup>. The compacted moisture content ranged from 2.7 to 20.2%, with a median of 9.0%. The relative compaction, as compared to the average Standard Proctor Maximum Dry Density from the Control Record testwork, ranged from 94.8 to 111.6%, with an average of 101.6%. The compacted dry density results are shown on Figure 2.3, with the percent compaction results shown on Figure 2.4. The compacted moisture content results are shown on Figure 2.5, with the deviation from the average Standard Proctor Optimum Moisture Content results from the Control and Record testwork shown on Figure 2.6. The nuclear densometer results are presented in Appendix B.

#### 2.4.4 Zone F

The Zone F material forms the filter zone immediately downstream of the Zone S core zone on all of the Embankments. The material used in Zone F was mine waste rock that was processed at the mill site using the primary crusher. The material used for Zone F was sourced from the Springer, Southeast Zone and the Pond Zone pits.

Zone F material was placed in maximum 600 mm thick lifts and was compacted with a ten tonne vibrating smooth drum.

Control and Record samples were collected and tested for Particle Size Analyses. A total of 19 control and 38 record tests were performed on Zone F samples during the Stage 6b



construction program. The results of the Control and Record tests are shown in Figures 2.7 and 2.8 respectively. The Zone F material is typically comprised of sand and fine gravel, with trace (<10%) fines. A total of 4 of the 38 Record samples and 4 of the 19 Control samples were slightly coarser than specified for this material. This was not unexpected as the Zone F material is very sensitive to sampling method. Test results indicating that a small fraction of the material is slightly coarser than the specified limit have also been observed in previous construction programs where additional samples collected from stockpiles that appeared to be slightly coarse based on initial testing were found to be within the specified limits after further sampling and testwork was completed.

## 2.4.5 <u>Zone T</u>

Zone T is a transition zone immediately downstream of Zone F. The material used in Zone T was select rock fill from the Springer, Southeast Zone and Pond Zone Pits. Plus six-inch material was selectively removed prior to placement in the embankment. Zone T was placed in maximum 600 mm thick lifts and compacted with a ten tonne vibrating smooth drum roller.

A total of 16 Record Particle Size Analyses were performed during Stage 6b, and the results of these tests are shown in Figure 2.9. The Zone T material is typically comprised of gravel, with some sand and cobbles and trace (<10%) fines. All of the Zone T record test results fell inside the specified limits.

#### 2.4.6 Zone C

Zone C forms the downstream shell zone of the embankments and is immediately downstream of Zone T. The Zone C material provides structural stability for the embankments as well as a large, trafficable surface for haul trucks to drive upon. It was comprised of coarse rock from Springer, Southeast Zone and Pond Zone Pits. Zone C was placed in maximum 2 m thick lifts and compacted with selective routing of the various trucks and construction equipment. No Particle Size Analyses were performed on Zone C material. The outer slope of Zone C at the end of Stage 6b varied for each embankment; the average Zone C downstream slope is 1.4H:1V. Drawings 216 and 215 show that on both the Main and South Embankments the Zone C was overbuilt during the Stage 6a construction program. This will need to be monitored during future construction programs.

The Zone C material was used to partially construct the downstream buttress on the Main Embankment. The Main Embankment buttress was not constructed to the design grades and extent during the Stage 6b construction program. It is recommended the stability of the Main Embankment be reviewed in the next stage design.

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## 2.5 INSTRUMENTATION AND MONITORING

## 2.5.1 Vibrating Wire Piezometers

## 2.5.1.1 General

Vibrating wire piezometers have been installed at the TSF along nine planes, designated as monitoring planes A to I. Monitoring planes A, B, C and E are located at the Main Embankment, monitoring planes D, G, and H are located at the Perimeter Embankment, and monitoring planes F and I are located at the South Embankment. A plan view of the piezometer planes is shown on Drawing 255, and they are shown in section on Drawings 256, 257, 258, and 259. The piezometers are grouped into tailings, foundation, fill and drain piezometers. The piezometers were read on a weekly basis during periods of construction, as defined in the Operation, Maintenance and Surveillance Manual. The results from each piezometer group are discussed below. The timeline plots for the piezometers are presented in Appendix C.

There are currently two gaps in the piezometer data. The first gap, which was from July 30, 2003 to September 2, 2004, was during the Care and Maintenance Period. This data was collected by MPMC but was accidently misplaced. The second gap occurred from September 22, 2005 to April 30, 2006 and was due to a malfunctioning readout box connecter cable.

An instrumentation installation program has been proposed to replace malfunctioning or damaged piezometers. This program is overdue and should be carried out prior to further embankment raises.

## 2.5.1.2 <u>Tailings Piezometers</u>

There are currently 10 functioning tailings piezometers. The tailings piezometers are typically installed close to the embankments and the pore pressures are sensitive to the location of the tailings pond in relation to the embankments. The pore pressures observed in the tailings piezometers at the Main Embankment have shown slight fluctuations during the Stage 6b construction program in response to the development of the tailings beach and the subsequent re-location of the tailings pond away from the embankment. Timeline plots of the tailings piezometer data are included in Appendix C1.

## 2.5.1.3 Embankment Foundation Piezometers

There are currently 8 functioning embankment foundation piezometers. Artesian conditions are present in 3 of the 7 foundation piezometers installed under the Main Embankment. Artesian conditions have previously been identified in the foundation of the Main Embankment and the piezometers installed in this area are used to confirm that pore pressures remain below the design threshold level of 6 metres above ground level (KP Ref. No. 1162/7-2). The functional foundation piezometers have not shown unexpected high pore pressures during the Stage 6b construction program. The

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observed artesian pressures ranging from surface to 2.17 m above ground. The artesian head values (above ground surface level) measured in August 2010 are shown on Table 2.3.

Timeline plots of the embankment foundation piezometers are included in Appendix C2. There are currently no concerns with the pore pressures observed in the functional embankment foundation piezometers. However, several of the Main Embankment piezometers have malfunctioned. As a result there are no functioning piezometers located in the Plane A foundation and it is recommended that this be rectified in the instrument replacement program.

#### 2.5.1.4 Embankment Fill Piezometers

There are currently 23 functioning embankment fill piezometers. There have been no significant changes in the trends of the embankment fill piezometers. Piezometer A2-PE2-03, which is located in the Main Embankment, showed a slight increase in pore pressures corresponding to fill placement during the Stage 6a construction program. The recent data taken during the Stage 6b construction program indicate a slight reduction in pore pressure (from Stage 6a), followed by moderate upward trend. The current moderate upward trend corresponds with additional fill placement during the Stage 6b program. This trend has been observed in the past with this piezometer and it is anticipated that the slightly elevated pore pressures will dissipate following the construction programs as they have previously.

Timeline plots of the embankment fill piezometer data are included in Appendix C3. There are no concerns with the embankment fill piezometers.

## 2.5.1.5 Drain Piezometers

There are currently 15 functioning drain piezometers. The drain piezometers are installed in the foundation drains, chimney drain, upstream toe drains, and outlet drains.

The majority of the drain piezometers showed near-zero pore pressures, indicating that the drains are functioning as intended. Piezometer A1-PE1-04 showed elevated pore pressures starting in approximately June 2006. This piezometer is located in the upstream toe drain at the Main Embankment and the increased pressures are a result of the tailings pond being in close proximity to the Main Embankment. The elevated trend of the pore pressures coincides with the increased flow rates measured from the Main Embankment upstream toe drain. The pore pressures in piezometer A1-PE1-04 are expected to dissipate once the tailings beach has been established in this area and the pond is located away from the embankment.

Timeline plots for the drain piezometers are shown in Appendix C4. There are no concerns with the embankment drain piezometers.



#### 2.5.2 Slope Inclinometers

A total of five slope inclinometers have been installed at the Main Embankment to measure potential displacements in the lacustrine unit that underlies the embankment. One of the inclinometers (SI01-01) was damaged during the placement of the Zone C shell material and is no longer functioning. The last reading for SI01-01 was March 2006. No new inclinometers were installed during the Stage 6b construction program. An instrumentation replacement program to install additional inclinometers in the Main Embankment has been recommended.

The results of the inclinometer readings indicate that there have not been any significant deviations measured in the three of the inclinometers since their installation. However, inclinometer SI01-02 is showing slight deviations (less than 3 mm) at an approximate depth of 10 m below ground in the lacustrine silts. MPMC has partially completed the expansion of the buttress at the Main Embankment. The expansion of the buttress appears to have been effective, as no additional displacements have been measured in inclinometer SI01-02. It is recommended that this area have additional instrumentation installed, and reviewed during the next raise design. The data for slope inclinometers are included in Appendix B.

#### 2.5.3 Survey Monument Data

There are currently no survey monuments installed on the TSF embankment crests due to the ongoing construction of the TSF embankments.

#### 2.5.4 Drain Flow Data

The upstream toe drain and foundation drains at the Main Embankment flow into the sump at the Main Embankment Seepage Collection Pond where the flows are measured. The flow rates have been measured since July 2000. The flow rates from the drains were not monitored during the Care and Maintenance Period as the drain outlets were submerged within the sump. Monitoring the seepage flow into the Main Embankment Seepage Collection Pond requires the seepage pond level to be pumped down.

The upstream toe drain at the Perimeter Embankment drains into the Perimeter Embankment Seepage Collection Pond via a ditch. The flow rates are currently measured at the end of the pipe which exits the concrete encasement. Water from the upstream toe drains and foundation drains flows into the seepage collection ponds where it is temporarily stored prior to being pumped back into the TSF.

The seepage flows are not available for 2010. It is recommended that the seepage flows be monitored at the frequency recommended in the OMS manual. The historic flow rates for the upstream toe drains are shown on Figure 2.10. The flows from the upstream toe drains fluctuate throughout the year in response to the tailings deposition location and the tailings pond location. The historic flow rates for the foundation drains are shown on Figure 2.11.

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## 2.6 DESIGN MODIFICATIONS

Knight Piésold Ltd. employs a formal procedure for making design modifications (changes or substitutions) in the field. All design change requests are submitted in writing by the Resident Engineer to the Knight Piésold Ltd. Vancouver Office for review and evaluation. Design modifications are included in Appendix F.

#### Design change request 2010-001

The embankment design was amended to allow sand cell construction between Ch. 1+000 and 1+550 on the South Embankment.

## Design change request 2010-002

The embankment design was amended to allow waste rock to be used for Zone U, provided there is a sufficient crest width for haul traffic, and waste rock is placed in maximum 2 m lifts compacted by haul traffic. Particles larger than 75mm (3") were also required to be removed from the Zone U/Zone S interface.

#### 2.7 WATER MANAGEMENT

The TSF is required to have sufficient live storage capacity for containment of storm water runoff from the 72-hour PMP volume of approximately 1,100,000 m<sup>3</sup> at all times. The 72-hour PMP allowance is in addition to regular inflows from other precipitation runoff, including the spring freshet. The runoff from the waste dumps is currently being routed to the Perimeter Embankment Seepage Collection Pond via a ditch constructed in 2008. Water from the Perimeter Embankment Seepage Collection Pond is then pumped to the TSF. The total freeboard requirement for the TSF is approximately 1.4 m. The tailings pond elevation is monitored on a regular basis to ensure that the stormwater and freeboard requirements are not infringed upon during operations.



#### SECTION 3.0 - SUMMARY AND RECOMMENDATIONS

Stage 6b of the Mount Polley Mine Tailings Storage Facility was constructed between November 2009 and August 2010. The Stage 6b construction program involved raising the TSF embankments to an elevation of 958 m, a 4 m increase in elevation from the Stage 6a crest of 954 m.

The Stage 6b construction program involved placing the following materials in the TSF Embankments.

- Zone U: Upstream shell zone produced from coarse tailings in sand cells, or from rockfill
- Zone S: Core zone fine grained glacial till
- Zone F: Filter, drainage zones, and chimney drain processed sand and gravel
- Zone T: Transition filter zone select well-graded fine-grained rockfill, and
- Zone C: Downstream shell zone rockfill.

Technical supervision of the work by Knight Piésold included QA/QC testing and monitoring the existing vibrating wire piezometers and inclinometers. The QA/QC component involved collecting and testing Record and Control samples for Zones S, F and T. The in-situ density testing of compacted Zone S fill materials was completed using a nuclear densometer. The Zone F and T materials were compacted by a minimum number of passes by compaction equipment. The results of the QA/QC testwork indicate that the construction fill materials were placed and compacted within the required material specifications and were in accordance with the Stage 6b design of the TSF.

No additional vibrating wire piezometers were installed during the Stage 6b construction program. In total there are 56 operating piezometers in the TSF. The piezometers were measured on a weekly basis during the Stage 6b construction program. The inclinometers were measured at least twice a month using a Slope Indicator inclinometer probe. The results of the instrumentation monitoring show no unexpected or anomalous pore pressures were observed during the Stage 6b construction program. The slope inclinometer monitoring show no significant displacements measured during the construction program. The deformation of inclinometer Sl01-02 at an approximate depth of 10 m below ground in the lacustrine silts was closely monitored. This inclinometer has not shown any further significant deviations during the Stage 6b construction.

It is recommended that the instrumentation replacement program (KP letter VA10-1175) be completed. This program will replace instrumentation that has been damage or failed over time. The program will increase understanding of the behavior and performance of the foundation soils under the dam.

The Zone C material in the embankments were placed at a relatively steep grade of 1.4H:1V. The buttress of Zone C material at the Main embankment has not been completely constructed as designed. It is recommended that a review of the stability is completed during the design of further embankment raises.

Regular measurement of drain flows is required as part of the Operations, Maintenance and Surveillance (OMS) Manual. At present, it is operationally complex to monitor drainage flows from the dam. It is recommended to simplify this process in order to improve the frequency of flow measurements in accordance with the OMS Manual.



#### **SECTION 4.0 - CERTIFICATION**

This report was prepared, reviewed and approved by the undersigned.

Prepared: Greg Lewsley, P.Eng Staff Engineer Reviewed: Greg Johnston, M.Sc. Project Manager ROU 10 Approved: Ken Brouwer, P.Eng. Managing Director

This report was prepared by Knight Piésold Ltd. for the account of Mount Polley Mining Corporation. The material in it reflects Knight Piésold's best judgement in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, is the responsibility of such third parties. Knight Piésold Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions, based on this report. This numbered report is a controlled document. Any reproductions of this report are uncontrolled and may not be the most recent revision.

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#### TABLE 2.1

#### MOUNT POLLEY MINING CORPORATION MOUNT POLLEY MINE

#### STAGE 6B CONSTRUCTION PROGRAM ZONE S CONTROL SAMPLES - SUMMARY

Sample ID	Atterberg Limits			МС	Particle Size Distribution (%Passing)			Standard Proctor				Print Dec/15/10 15:00:48	
					Gravel	Sand	Silt	Clay	Uncorrected	Opt.	Corrected	Opt.	Deviation from
	LL (%)	PL (%)	PI (%)	M.C. (%)	>#4 (%)	#4 to #200 (%)	#200 to 0.002 (%)	< 0 002 (%)	Max. D.D.	M.C (%)	Max. D.D.	M.C (%)	Op imum
C-S6b-ZS-01-2010	-	-	-	20.5	0	19	77	4	(kg/m3) 2000	10.5	(kg/m3) -	-	- (%)
C-S6b-ZS-02-2010	20.0	14.0	6.0	12.9	22	29	41	9	2050	10.5	2140	9.0	3.9
C-S6b-ZS-03-2010	18.5	16.3	2.2	9.3	25	31	37	8	2020	9.0	2120	7.5	1.8
C-S6b-ZS-04-2010	19.8	13.8	6.0	12.7	10	32	46	13	2000	11.0	2040	10.5	2.2
C-S6b-ZS-05-2010	22.3	14.7	7.6	12.7	23	28	35	14	2020	11.5	2120	9.5	3.2
MEAN	20.2	14.7	5.5	13.6	16	28	47	9	2018	10.5	2105	9.1	2.8
MAXIMUM	22 3	16.3	7.6	20.5	25	32	77	14	2050	11.5	2140	10.5	3.9
MINIMUM	18 5	13.8	2.2	9.3	0	19	35	4	2000	9.0	2040	7.5	1.8

M:\1\01\00001\29\A\Report\1 - Stage 6b Construction Report\Tables\[TABLE 2.1 (ZS Control Samples Summary).xls]TABLE 2.1

0	26JUL'10	ISSUED WITH REPORT VA101-1/29-1	GL	GIJ	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

#### **TABLE 2.2**

#### MOUNT POLLEY MINING CORPORATION MOUNT POLLEY MINE

#### STAGE 6B CONSTRUCTION PROGRAM ZONE S RECORD SAMPLES - SUMMARY

Sample ID	ļ	Atterberg Limit	s	MC	Part	ticle Size Dist	ibution (%Pass	sing)	Standard Proctor				MC
	LL	PL	PI	M.C.	Gravel >#4	Sand #4 to #200	Silt #200 to 0.002	Clay < 0.002	Uncorrected Max. D.D.	Opt. M.C	Corrected Max. D.D.	Opt. M.C	Deviation from Optimum
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(kg/m3)	(%)	(kg/m3)	(%)	(%)
R-S6b-ZS-01-2010	-	-	-	14.1	24	27	26	24	1940	13.0	2030	11.0	3.1
R-S6b-ZS-02-2010	19.5	14.9	4.6	9.0	28	33	38	1	2070	9.0	2190	70	2.0
R-S6b-ZS-2(b)-2010	-	-	-	9.0	25	33	39	3	2080	9.5	2170	8 0	1.0
R-S6b-ZS-04-2010	-	-	-	10.6	21	30	37	13	2050	10.5	2130	90	1.6
R-S6b-ZS-05-2010	21.7	14.8	6.9	9.9	27	32	31	11	2020	11.0	2140	8 5	1.4
R-S6b-ZS-06-2010	21.8	14.0	7.8	11.3	31	27	35	8	1990	10.0	2120	8 0	3.3
R-S6b-ZS-07-2010	19.3	15.9	3.4	13.1	19	29	43	9	2000	11.5	2080	10 0	3.1
R-S6b-ZS-08-2010	20.7	15.5	5.2	9.5	23	25	38	14	1990	12.0	2080	10 0	-0.5
R-S6b-ZS-09-2010	19.3	12.9	6.4	8.4	25	24	39	12	2040	11.0	2140	90	-0.6
R-S6b-ZS-10-2010	20.0	15.6	4.4	9.7	25	22	35	18	1960	12.0	2070	10.0	-0.3
R-S6b-ZS-11-2010	19.4	13.3	6.1	9.0	21	32	31	17	2000	12.0	2110	10.0	-1.0
R-S6b-ZS-12-2010	21.6	16.5	5.1	8.0	27	28	39	6	2030	11.0	2140	90	-1.0
MEAN	20.4	14.8	5.5	10.1	24.6	28.4	35.8	11 2	2014	11.0	2117	9.1	1.0
MAXIMUM	21.8	16.5	7.8	14.1	30.9	33.1	42.6	23.7	2080	13.0	2190	11.0	3.3
MINIMUM	19.3	12.9	3.4	8.0	19.1	22.0	26.3	0.9	1940	9.0	2030	70	-1.0

M:\1\01\00001\29\A\Report\1 - Stage 6b Construction Report\Tables\[TABLE 2 2 (ZS Record Samples Summary).xls]TABLE 2.2

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1	REV	DATE	DESCRIPTION	PREP'D	CHK D	APP'D



## **TABLE 2.3**

#### MOUNT POLLEY MINING CORPORATION MOUNT POLLEY PROJECT

## TAILINGS STORAGE FACILITY EMBANKMENT FOUNDATION PIEZOMETERS

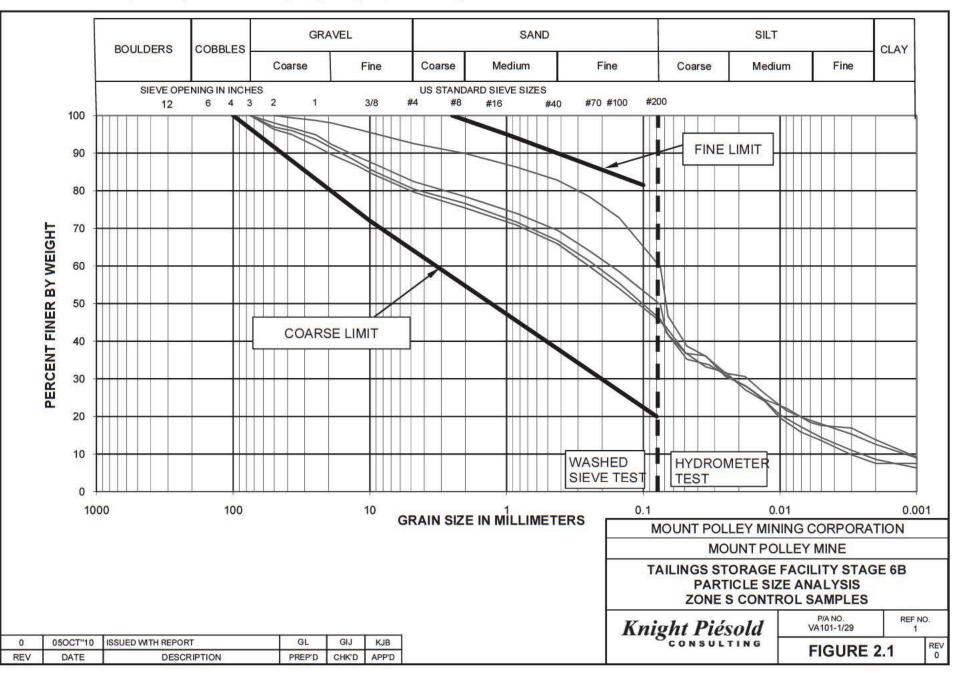
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Print Dec/08/10 1							
Piezometer	Piezometer Elevation	Surface Elevation	August 2010 Pressure	August 2010 Artesian			
T lezometer			Elevation	Pressure			
	(m)	(m)	(m)	(m)			
A2-PE2-01	903.68	912.67	No Longer Functioning	-			
A2-PE2-02	909.77	912.67	No Longer Functioning	-			
A2-PE2-06	898.01	912.91	No Longer Functioning	-			
A2-PE2-07	902.81	912.91	No Longer Functioning	-			
A2-PE2-08	907.56	913.36	No Longer Functioning	-			
B2-PE1-03	914.05	915.55	915.92	0.37			
B2-PE2-01	901.98	916.98	No Longer Functioning	-			
B2-PE2-02	909.51	916.98	919.15	2.17			
B2-PE2-06	914.59	916.89	No Longer Functioning	-			
C2-PE1-03	912.59	-	No Longer Functioning	-			
C2-PE2-02	910.53	915.71	916.71	1.00			
C2-PE2-06	906.84	915.99	914.74	-1.25			
C2-PE2-07	912.29	915.99	No Longer Functioning	-			
C2-PE2-08	914.03	915.99	914.77	-1.22			
D2-PE2-02	927.32	930.92	930.89	-0.03			
E2-PE2-01	914.21	918.81	917.27	-1.54			
E2-PE2-02	909.66	918.81	916.74	-2.07			

M:\1\01\00001\29\A\Report\1 - Stage 6b Construction Report\Tables\[TABLE 2.3 (Foundation Piezos).xls]Foundation piezos

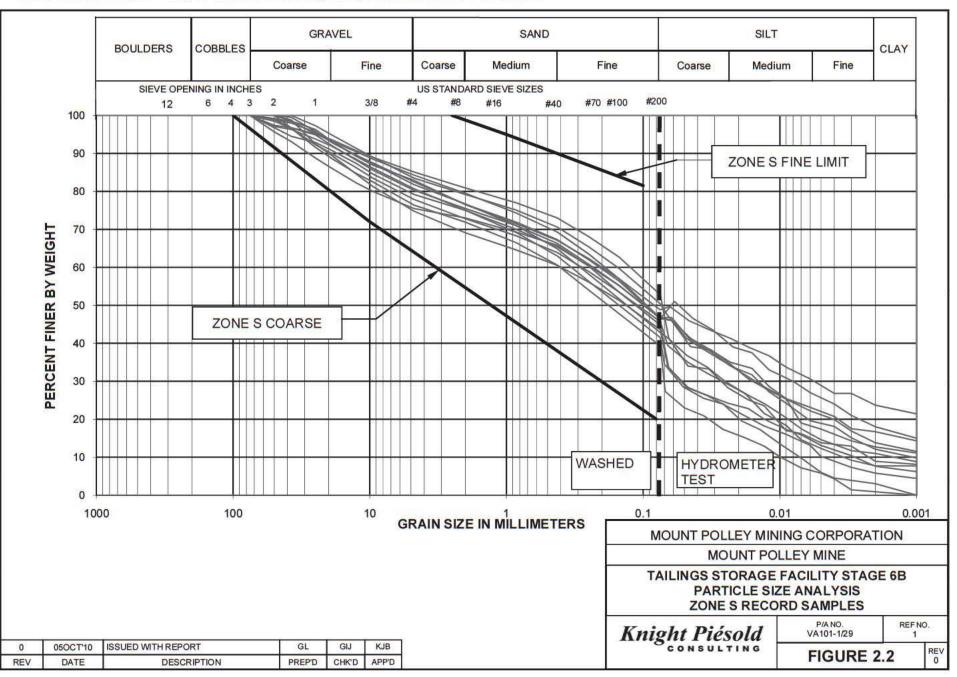
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REV	DATE	DESCR PTION	PREP'D	CHK'D	APP'D

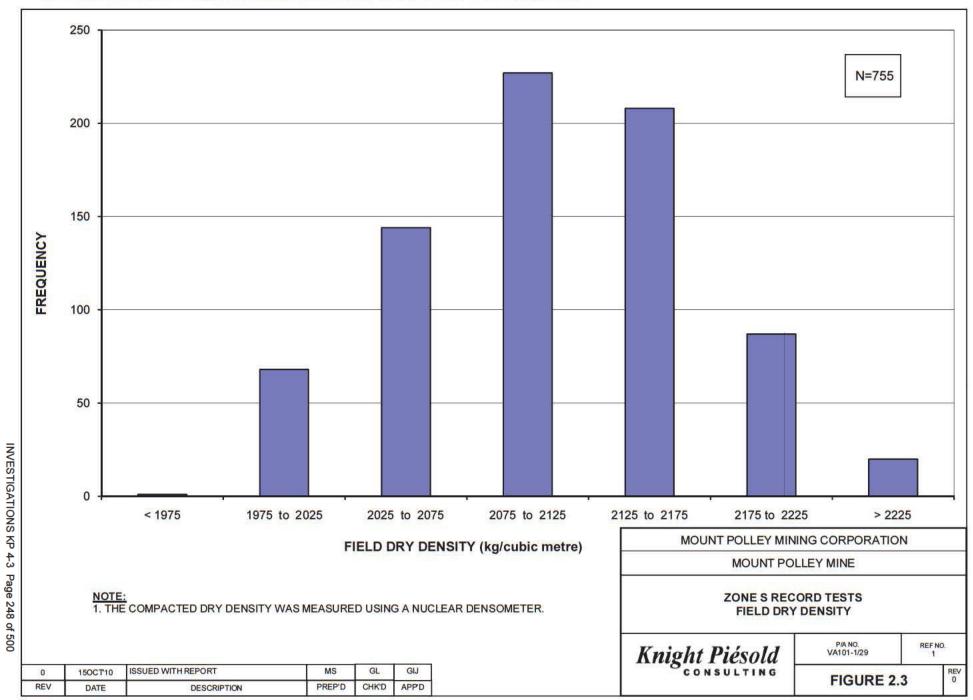


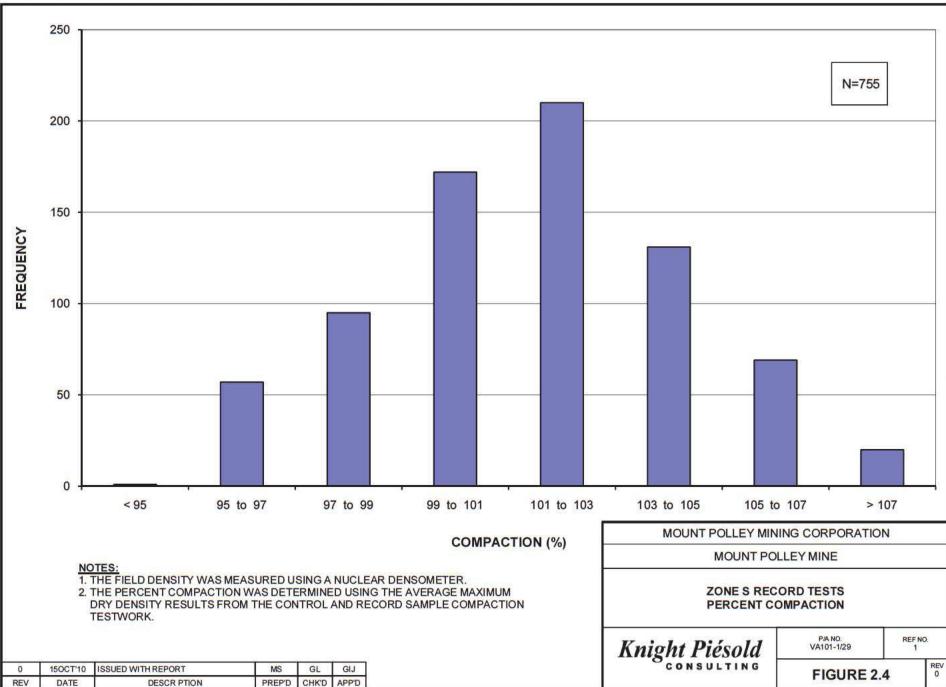


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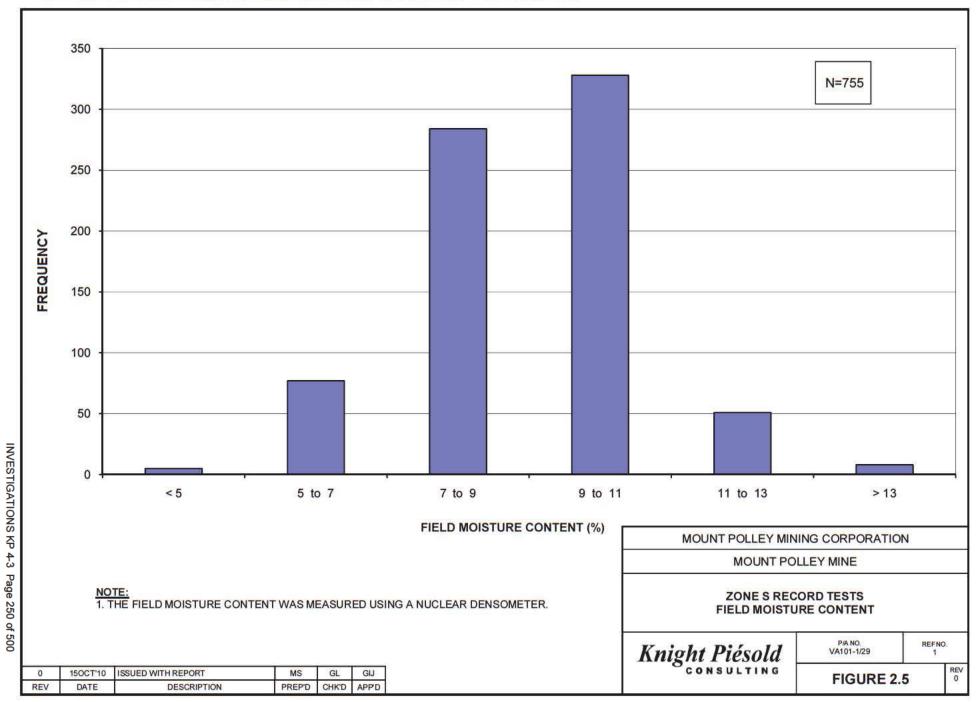




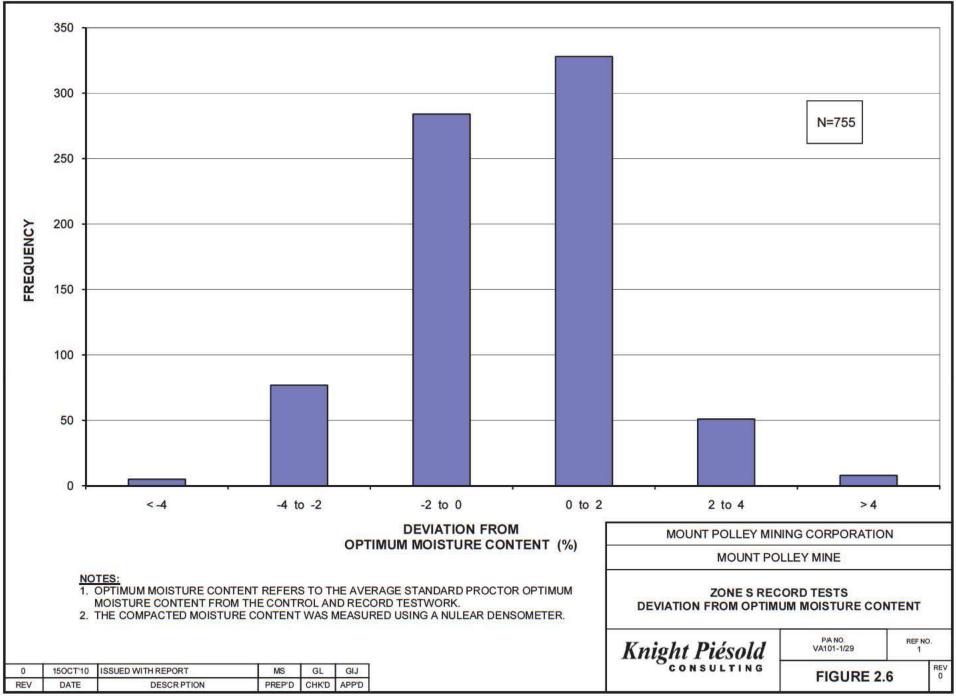


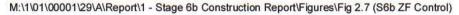


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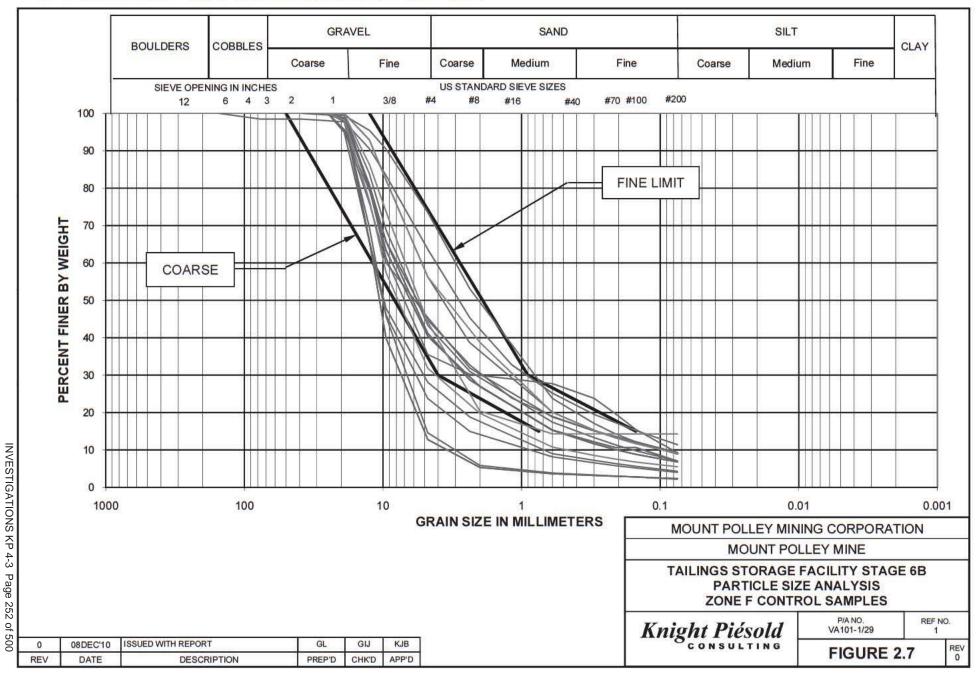


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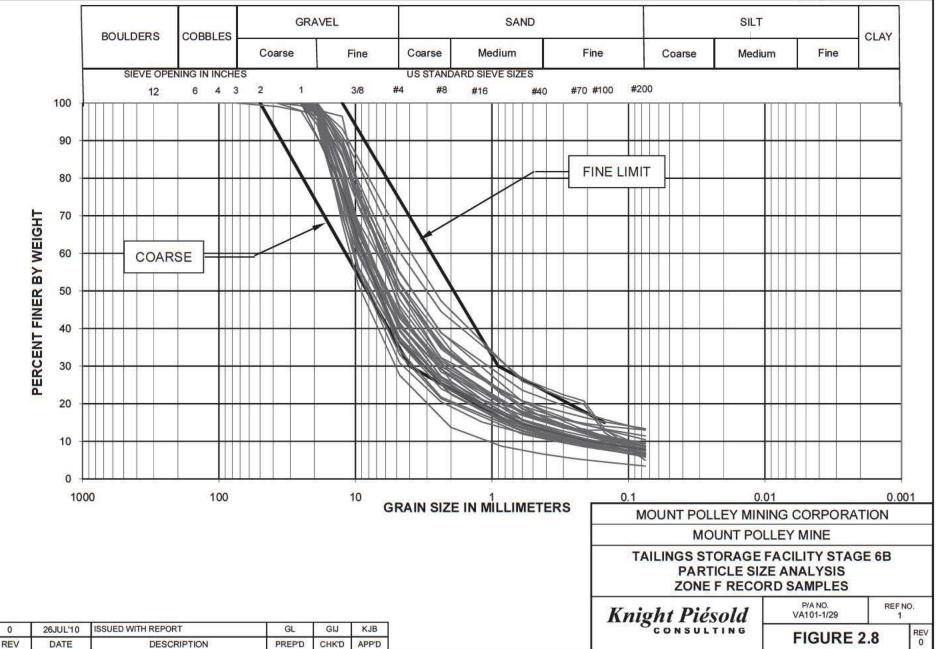




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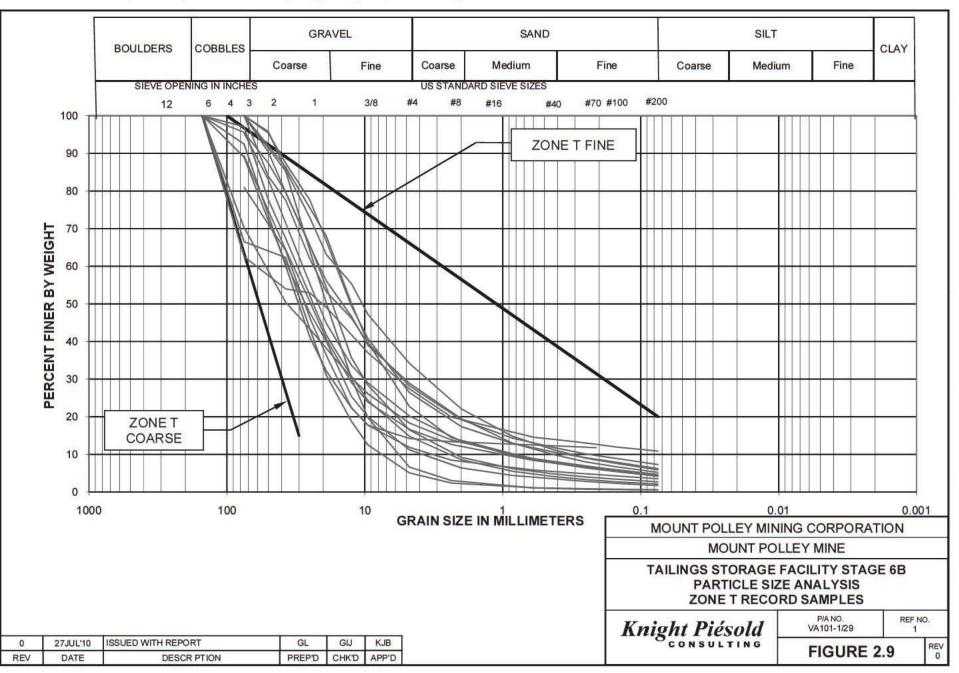


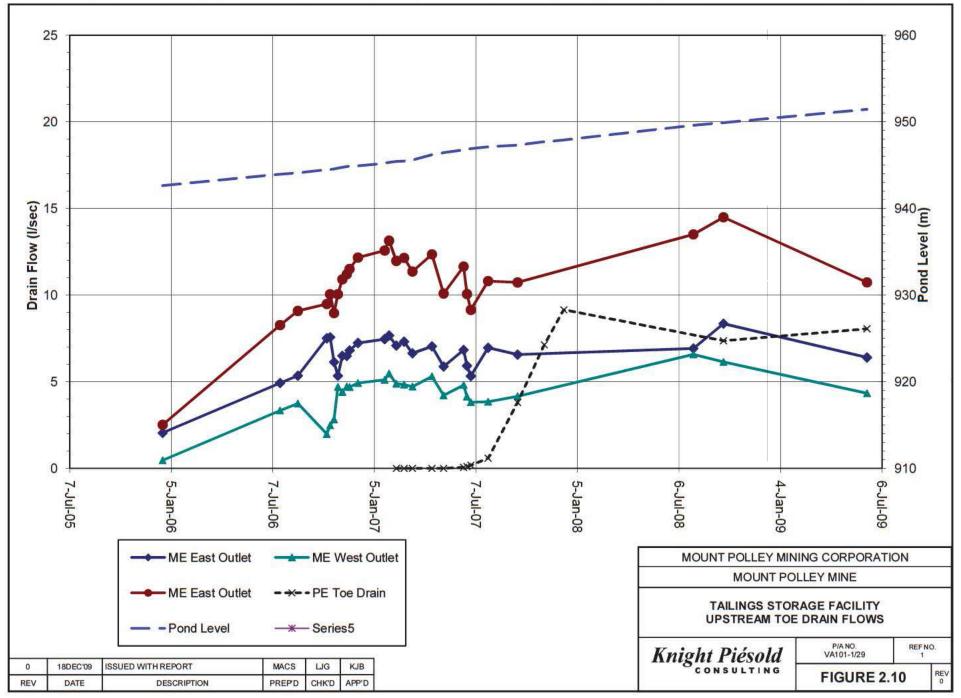




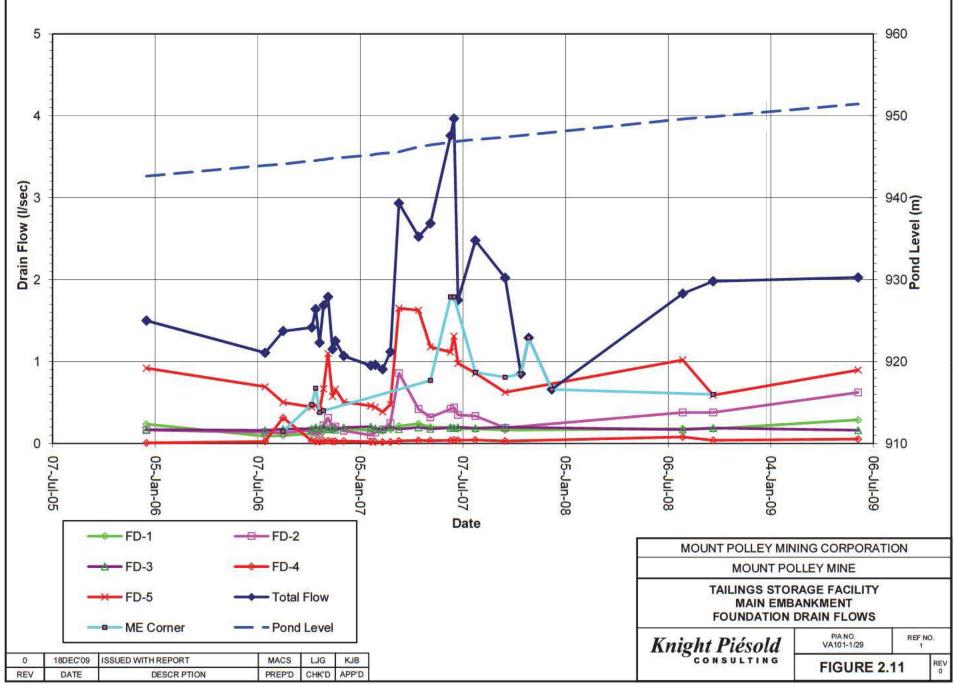
INVESTIGATIONS KP 4-3 Page 254 of 500

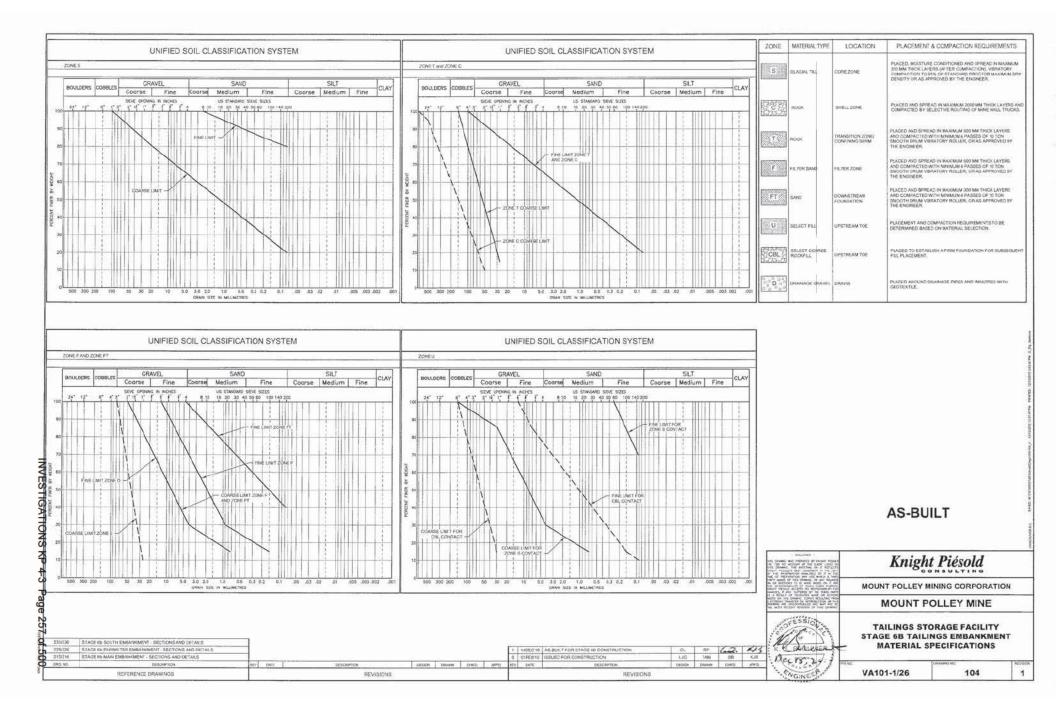
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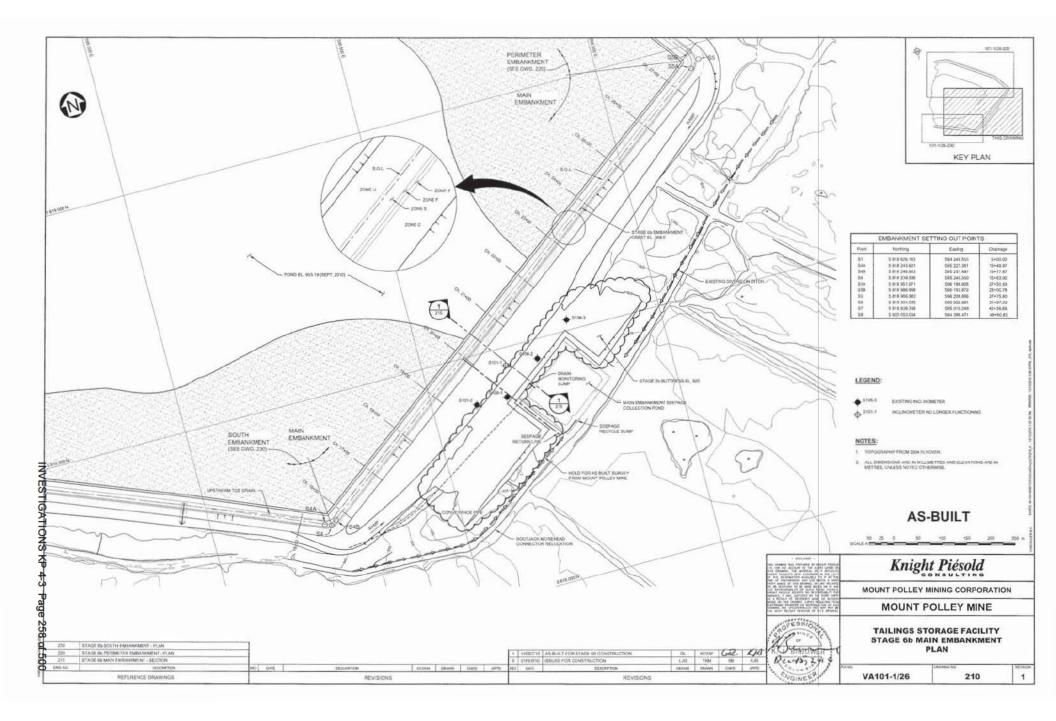


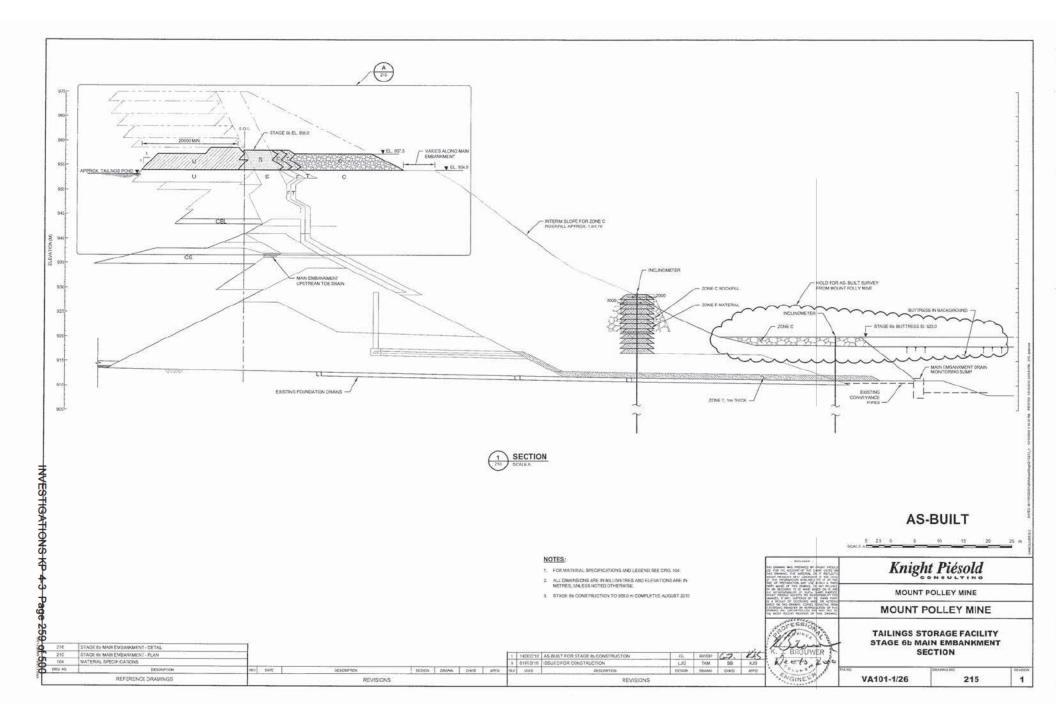


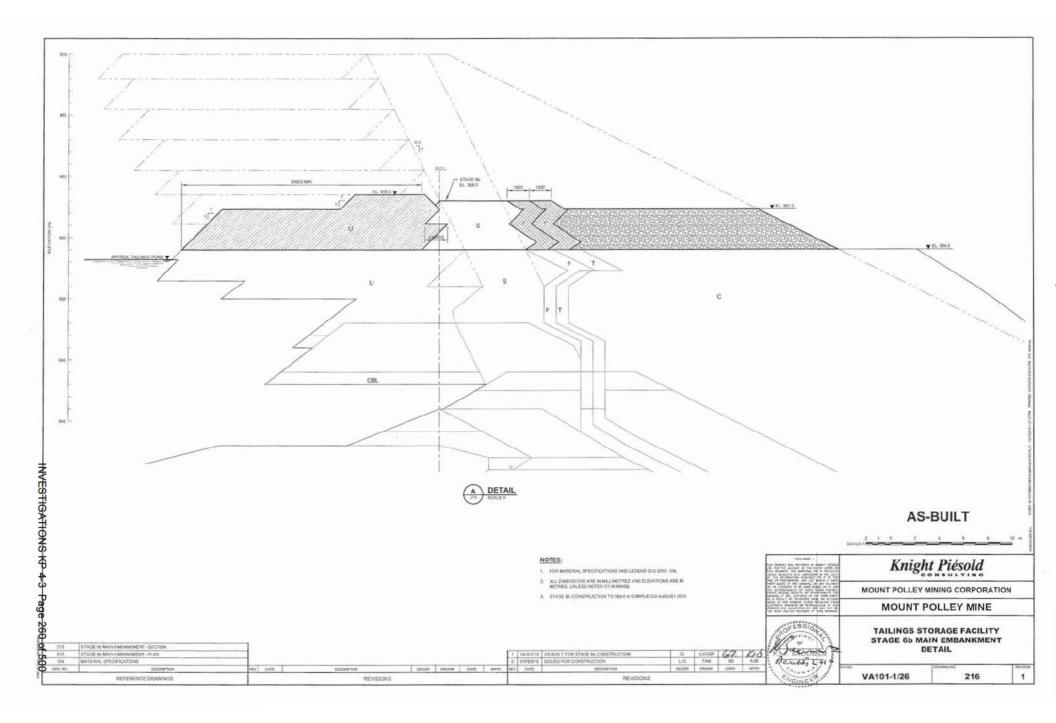


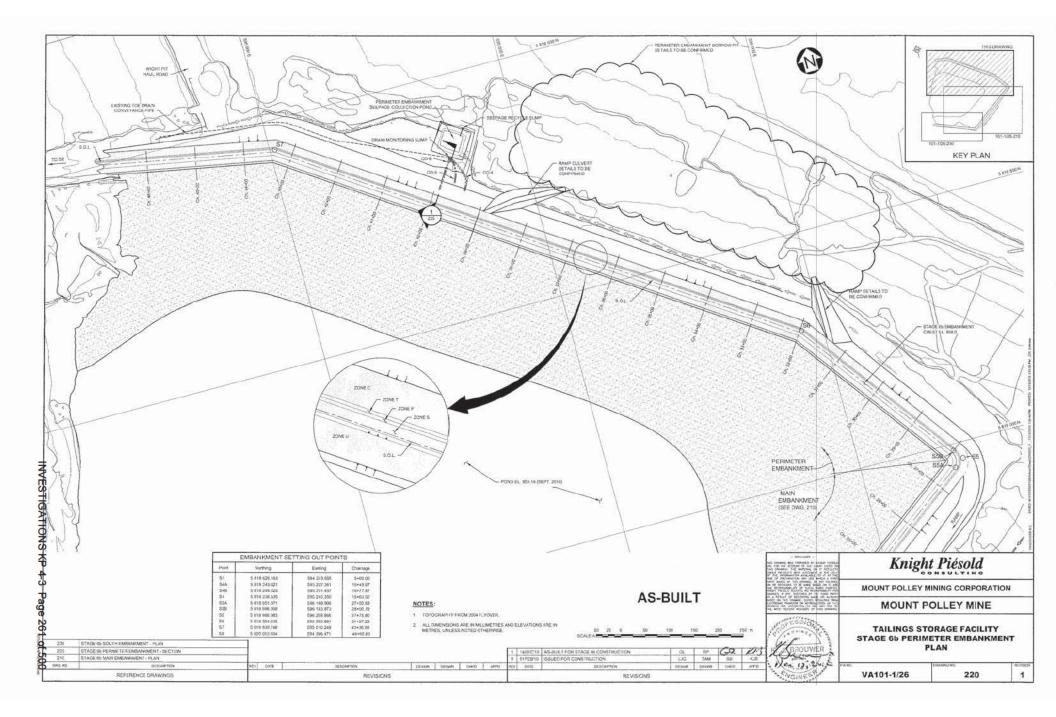


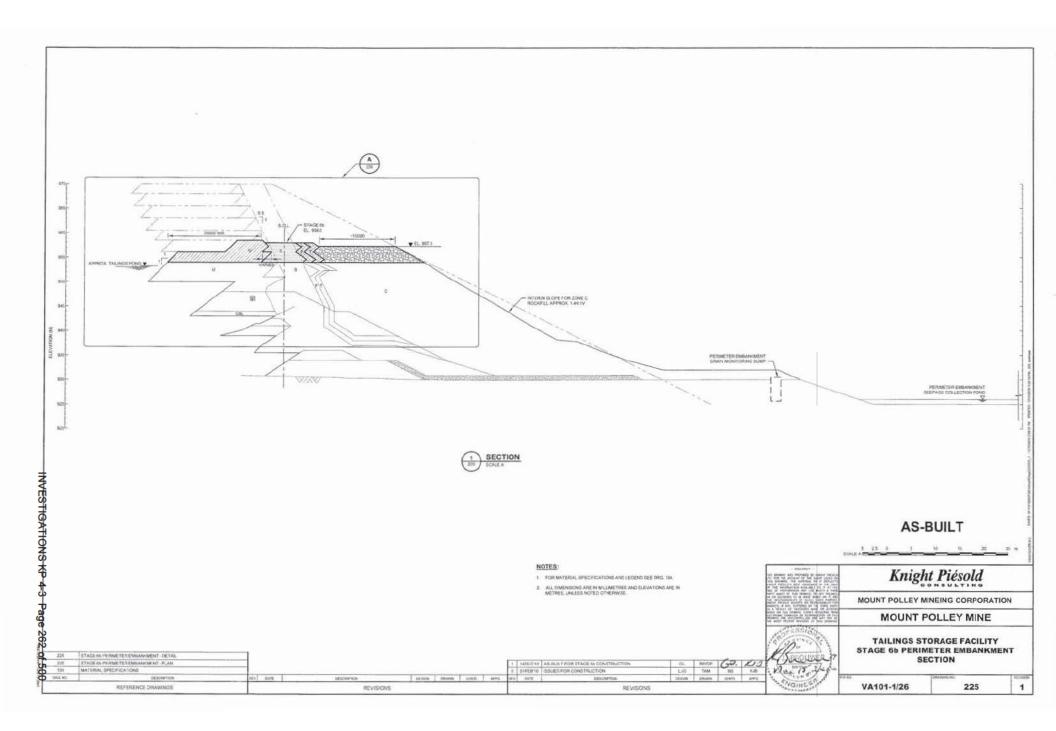


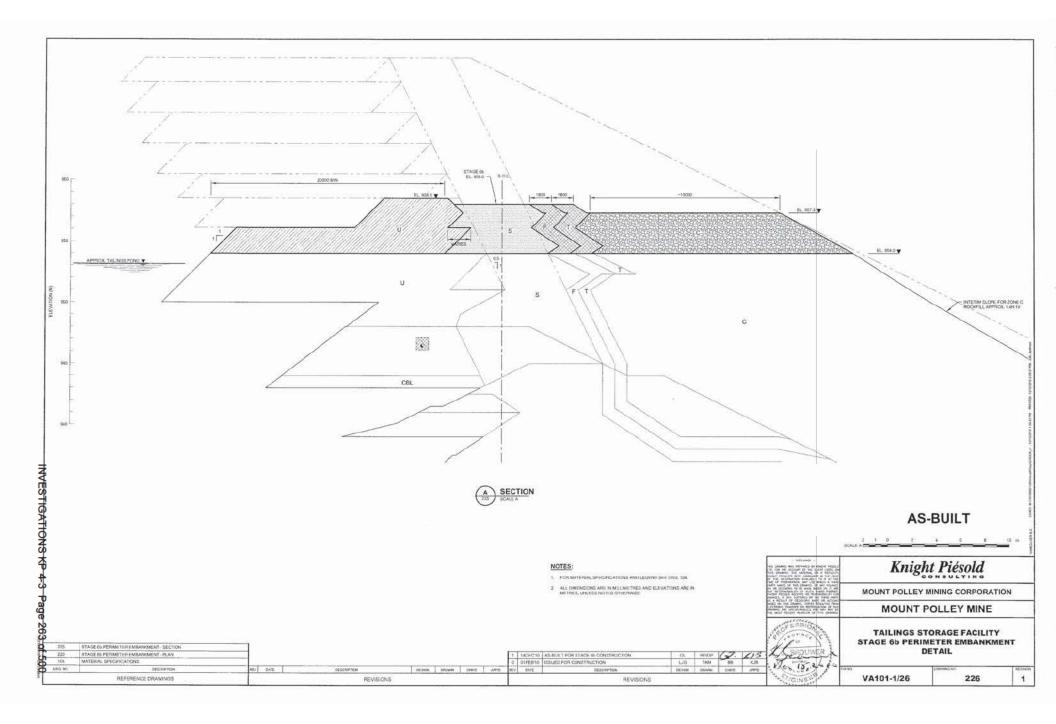


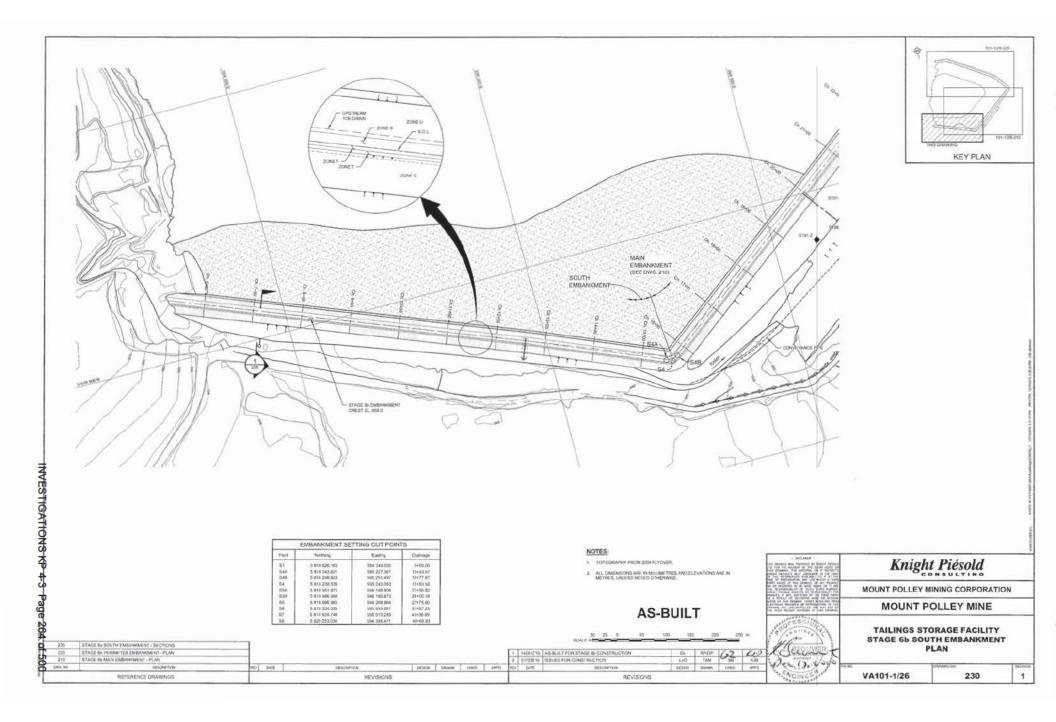


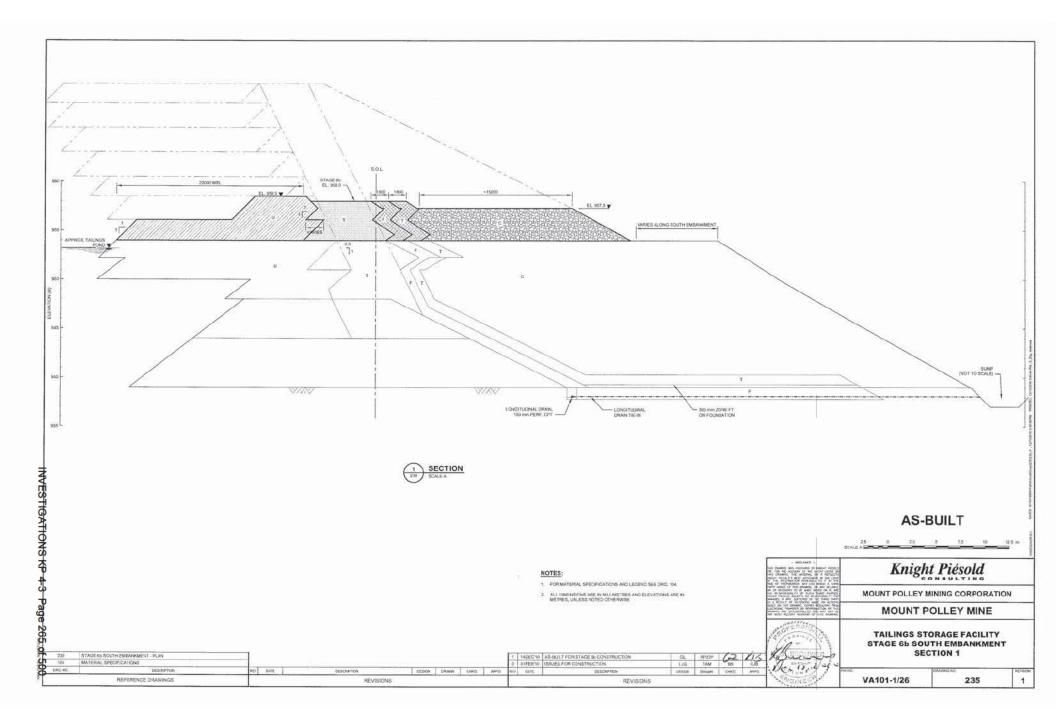


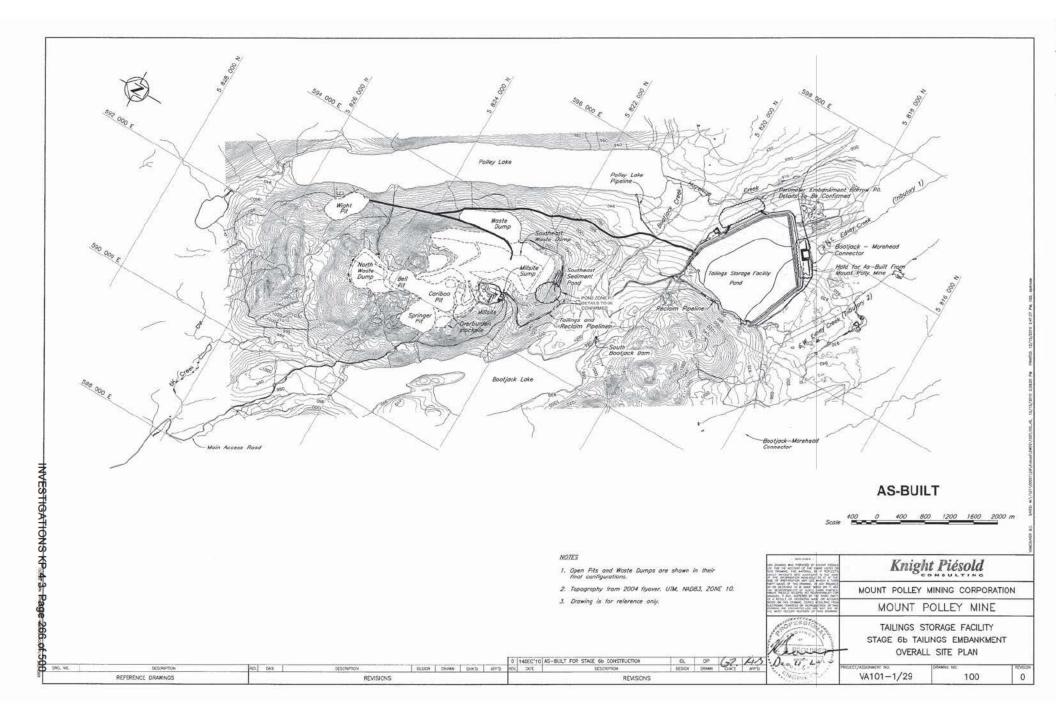


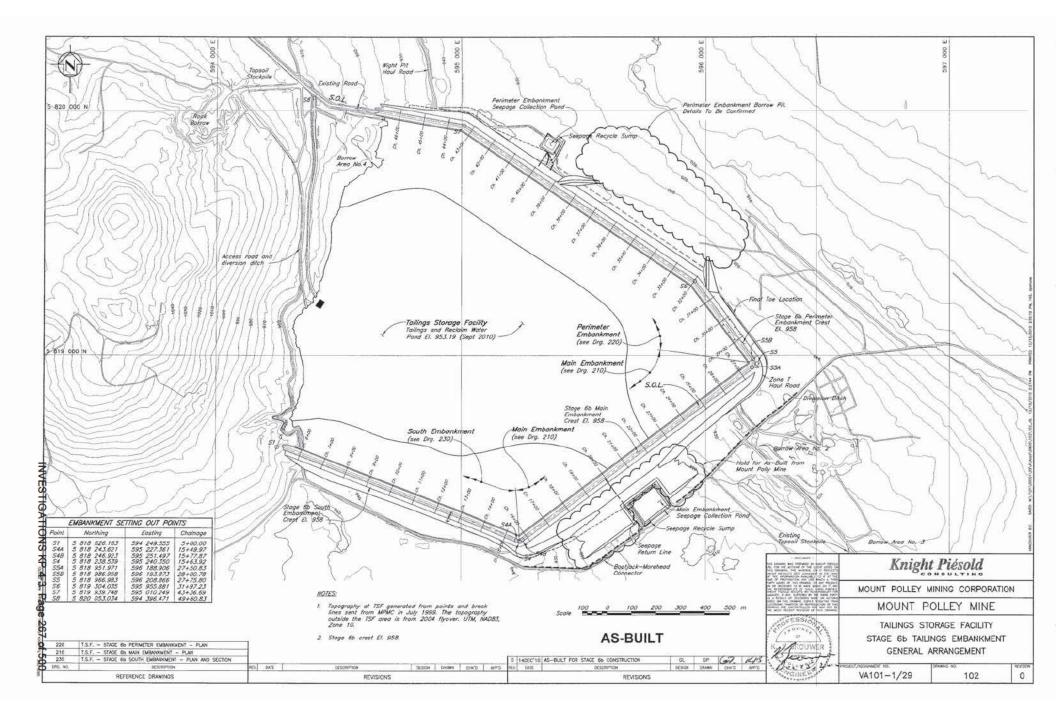


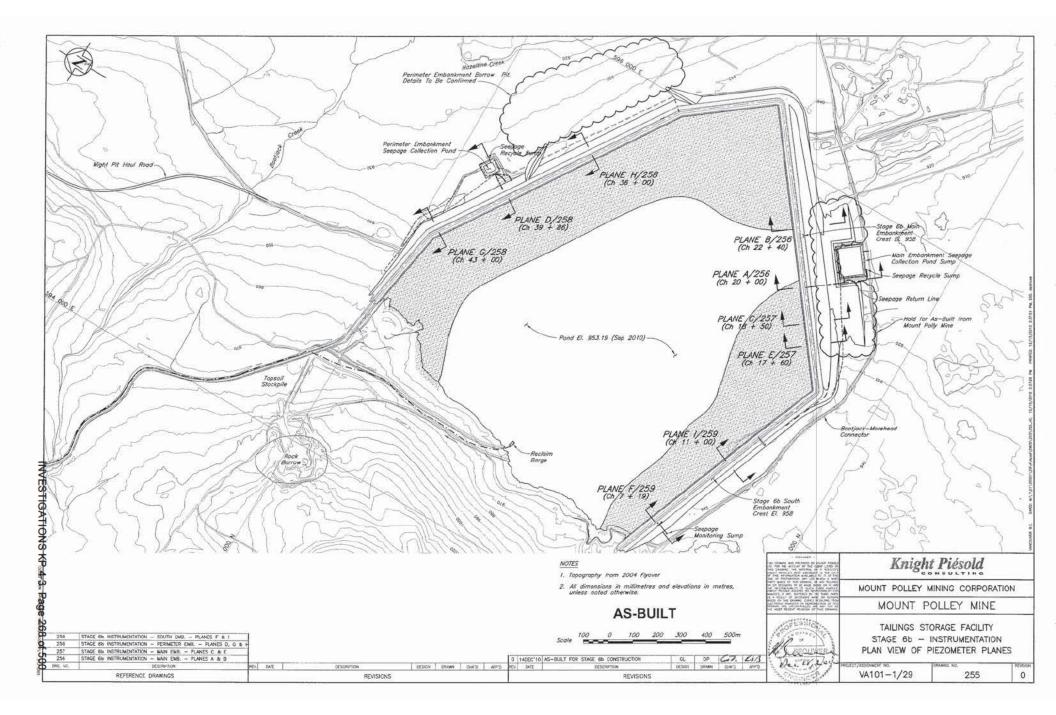


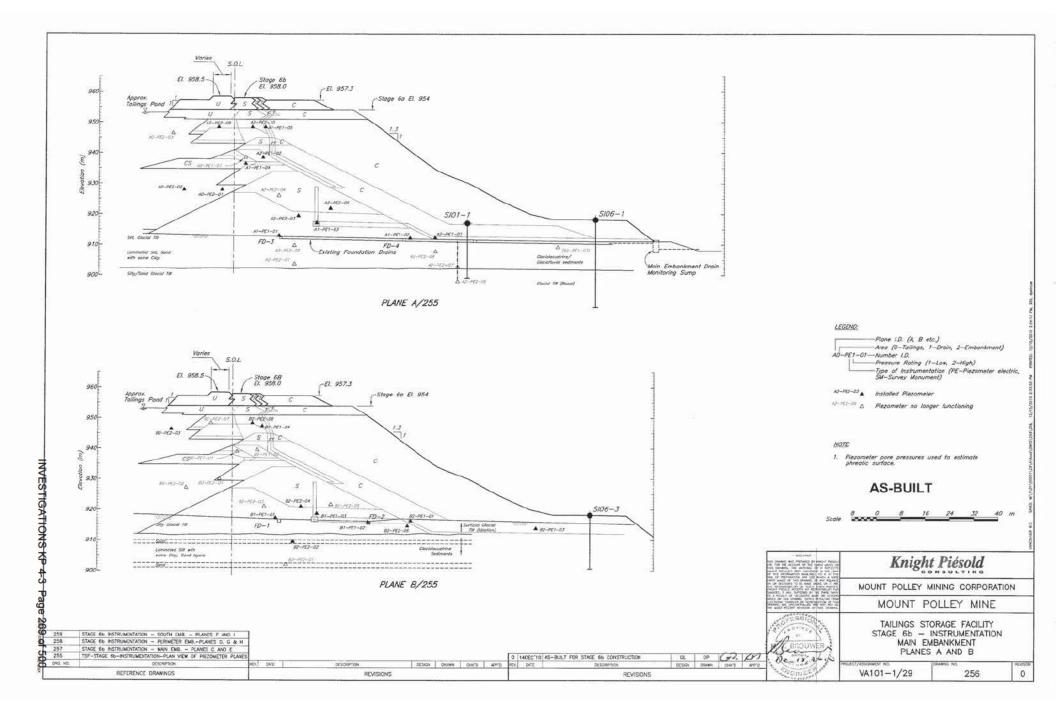


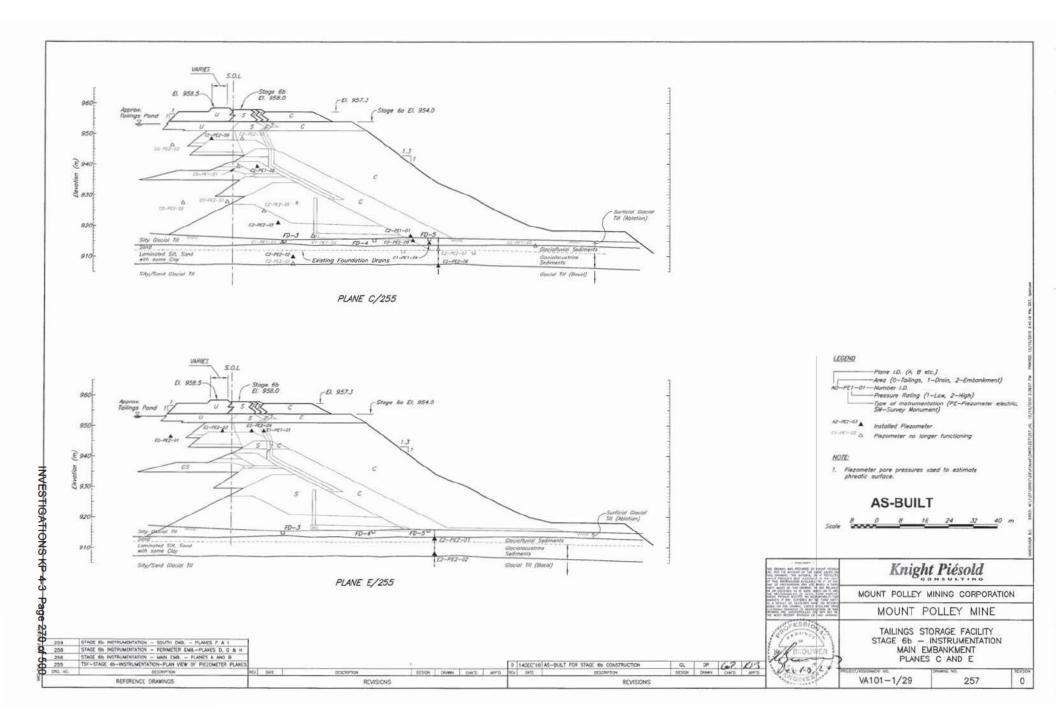


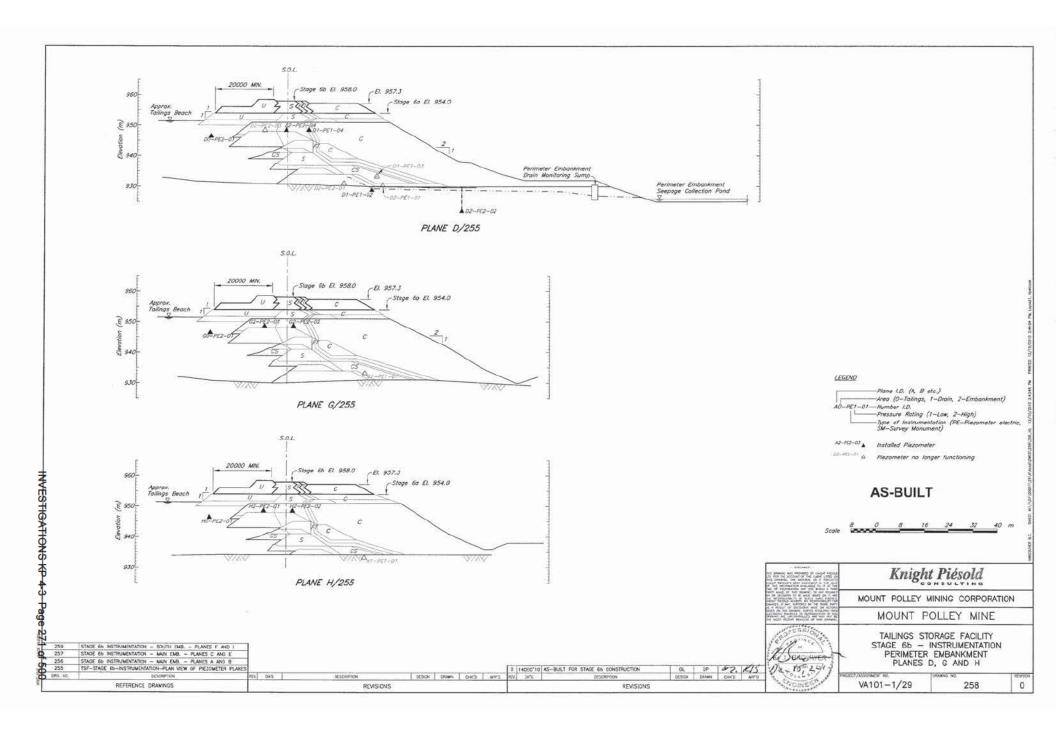


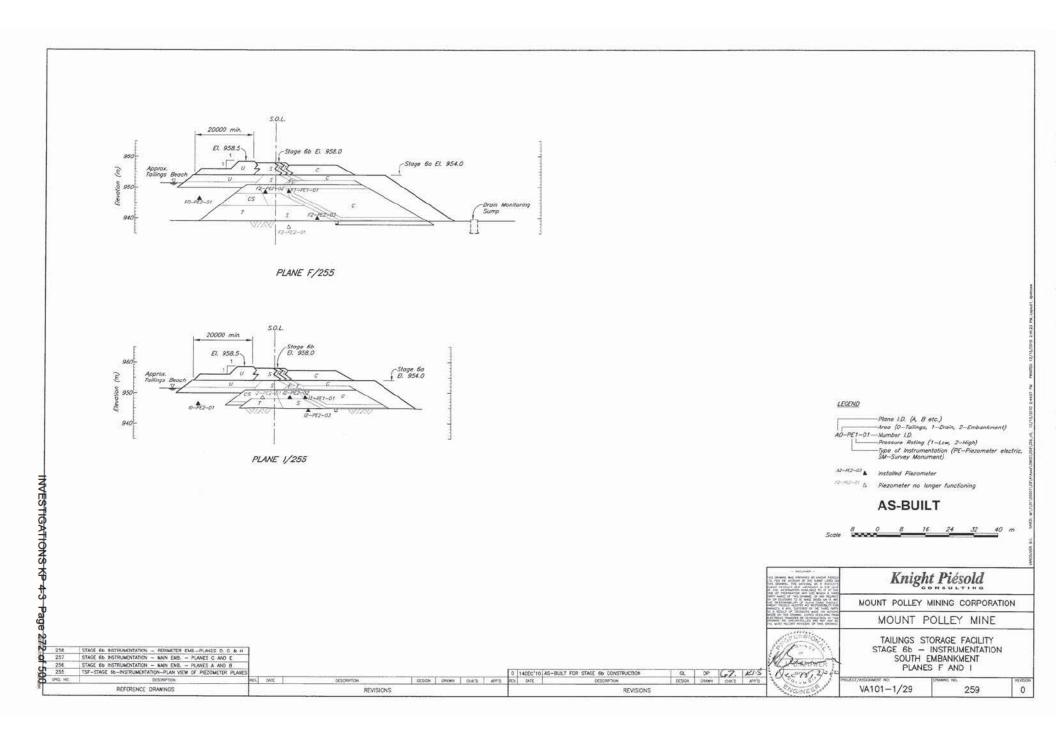














#### **APPENDIX A**

#### LABORATORY TEST RESULTS - OFFSITE

Appendix A1	Zone S Control
Appendix A2	Zone S Record
Appendix A3	Zone F Record
Appendix A4	Zone T Record



#### **APPENDIX A1**

ZONE S CONTROL

(Pages A1-1 to A1-25)

VA101-1/29-1 Rev 0 December 15, 2010 INVESTIGATIONS KP 4-3 Page 274 of 500 file:///El/Stage%206b/Soil%20Testing/Zone%20S/2010/Control%20Testing/%231/C-S6b-ZS-01-2010\_additional%20data htm

From: Nancy Kovacevic [n.kovacevic@geonorth.ca] Sent: Friday, April 09, 2010 10:11 AM To: Ron Martel Cc: Greg Johnston; Mark Smith **Subject:** Mount Polley Hi ron, I will be away until Tuesday April 13th. Here are verbal results for C-S6B-ZS-01-2010 (you already have the proctor)

Fine specific gravity = 2.70 Grain size: GRAVEL 0.1% / SAND 18.6% / SILT 77.3% / CLAY 4.0% Atterberg = CLM/C = 20.5%

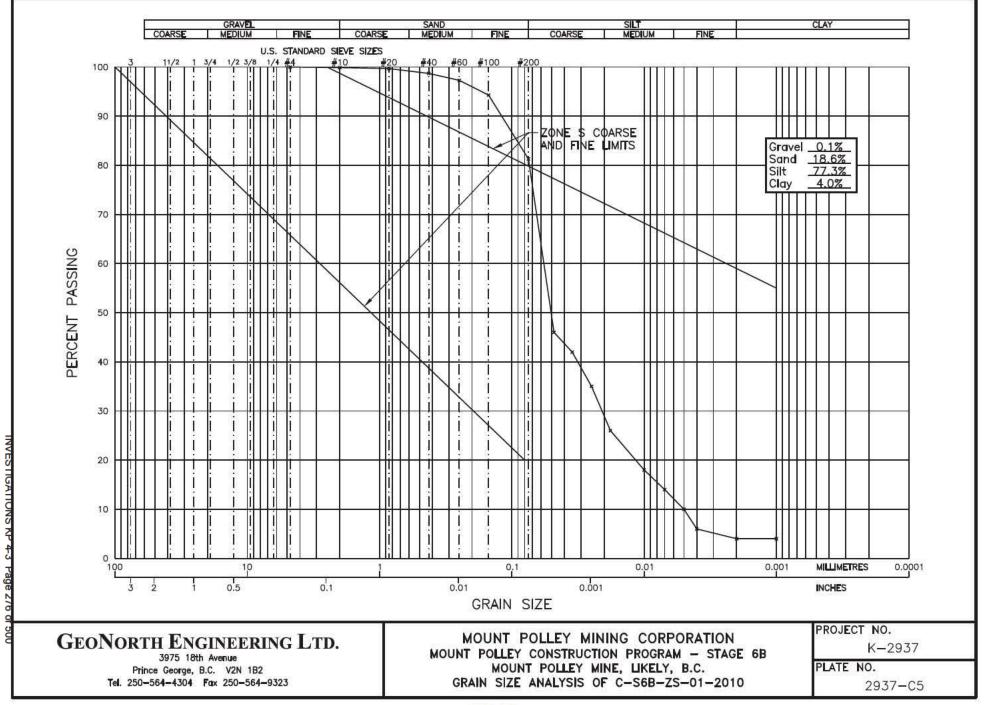
I will PDF results after I proof the reports when I get back

cheers Nancy Kovacevic Technician, ACI Certified **GeoNorth Engineering Ltd.** 

3975 18th Avenue Prince George, BC V2N 1B2 Phone250-564-4304 ext 213 Fax 250-564-9323 Cell 250-612-9091 email n.kovacevic@geonorth.ca

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3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

#### MOISTURE - DENSITY RELATIONSHIP REPORT

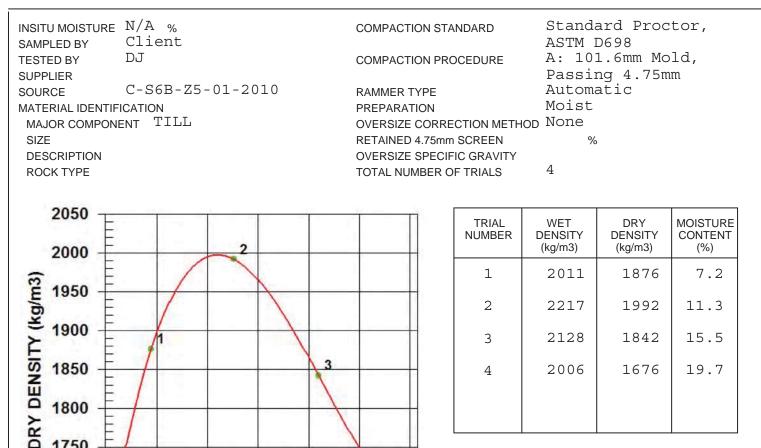
PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

то Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR

Mount Polley Mine Likely

DATE TESTED 2010. Apr. 06 DATE RECEIVED 2010. Apr. 01 DATE SAMPLED 2010. Mar. 30 PROCTOR NO. 3



	MAXIMUM DRY DENSITY (kg/m3)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED OVERSIZE CORRECTED	2000	10.5

Page 1 of 1 2010.Apr.07 GeoNorth Engineering Ltd.

10.0

12.5

MOISTURE CONTENT (%)

15.0

17.5

1750

1700

COMMENTS

5.0

7.5

PER. -

20.0

#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Apr.09 DATE TESTED 2010. Apr.13 DATE SAMPLED 2010. Apr.07 SIEVE TEST NO. 17 MS-Client SUPPLIER SAMPLED BY C-S6B-ZS-02-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE TILL 11/2 1 3/4 % 3/8 =4 #10 #20 #40 #60 #100 #200 2-100 0 = 90 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 11 60 40 50 50 40 - 60 1111 30 70 IIII 20 - 80 11111111 10 - 90 - 100 0 9,5 mm 10 50 4.75 0,85 37.5 mn 22 425 250 19 12.5 150 µm TIT mm mm H mm F F Ξ Ξ Ξ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING 3" 75 mm 100.0 No. 4 4.75 mm 82.4

2" 50 98.0 mm  $1 \ 1/2"$ 37.5 mm 94.9 1" 25 mm 92.3 3/4" 19 mm 1/2" 12.5 mm 89.2 3/8" 87.3 9.5 mm

No. 10 2.00 mm 78.4 No. 20 74.0 850 µm No. 40 69.5 425 um No. 60 250 µm 64.1 No. 100 58.5 150 µm No. 200 49.7 75 µm

COMMENTS Re: Plate C8 and B3, Proctor #6 Location: PE Borrow, Elevation: Top of Grey Till Layer

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PER. -

Client: Mo	unt Polley	Mining Corp.							Date: April	15, 2010	
Project Na	me: Mount	Polley Constr	uction Pro	gram Stage	e 6B				Project #:		
Source/Lo	cation: C-S	6B-ZS-02-201	0						Type: Till		
Sample #:			Test #:	Hole #: Depth:			Depth:	Time:			
Sampled B			•	Tested By: Deb					Checked B		
Date Samp	oled: 04/07/	10		Date Rece	ived: 04/09/	10			Date Teste	d: 04/13/10	
Initia	al Moisture	Content		Sieve A	nalysis			Hydrom	eter Sieve	Analysis	
			Ciaux Na	Weight	Total Wt.	% Finer Than Orig.	Oissus Na	Weight	Total Wt. Finer	% Finer	% Finer Than Orig
Toro No				Retained	Passing	Samp.	Sieve No.	Retained	Than	Than	Samp.
Fare No. Vet Wt. & `	Toro	837.1	38.1 25.4				10 20	1.0	50.0 48.1	100.0 96.2	78. 75.
Dry Wt. & T		762.2	25.4				20 40	1.9 3.2	48.1	96.2 89.8	75. 70.
Water Wt.	ale	762.2	19.0				40 60	3.2	44.9	83.0	65.
Tare Wt.		179.8	9.5				100		37.7	75.4	
Wt. Of Dry	Soil	582.4	4.75		I VE TEST #	17	200		31.3	62.6	49.
Moisture C		12.9	10		TE No. C8		Pan	31.3	01.0	02.0	-10
		Initial Moisture					Total	50.0			
	•						Unwashed				
(100xWet So	oil Wt.)/(100 +	Initial Moisture) =	Total	582.4			Tare		Wt. Passin	a #200 =	
						Corr.				<u> </u>	
Starting Wt. (g)	% - #10	Elapsed Time (min)	Reading R	Temp (0C)	к	Reading R`	Zr (cm)	SQRT(Zr)/T (min)	D (mm)	N (%)	N*(%-#10)
50.0	0.784	0.5	35.0	18.0	0.01399	27.0	11.8	4.866	0.068	. ,	. ,
50.0	0.784	1	31.5	18.0	0.01399	23.5	12.4	3.524	0.049	47.0	36.
50.0	0.784	2	31.0			23.0	12.5	2.500	0.035	46.0	36.
50.0	0.784	4			0.01399	19.5	13.1	1.808	0.025	39.0	30.
				10.0						00.0	28.
50.0	0.784	8	26.0	18.0	0.01399	18.0	13.3	1.291	0.018	36.0	
50.0	0.784	15	23.5	18.0 18.0	0.01399	15.5	13.3 13.7	0.957	0.013	31.0	24.
50.0 50.0	0.784 0.784	15 30	23.5 21.0	18.0 18.0	0.01399 0.01399	15.5 13.0	13.7 14.2	0.957 0.687	0.013 0.010	31.0 26.0	24. 20.
50.0 50.0 50.0	0.784 0.784 0.784	15 30 60	23.5 21.0 19.0	18.0 18.0 19.0	0.01399 0.01399 0.01382	15.5 13.0 11.0	13.7 14.2 14.5	0.957 0.687 0.491	0.013 0.010 0.007	31.0 26.0 22.0	24. 20. 17.
50.0 50.0 50.0 50.0	0.784 0.784 0.784 0.784	15 30 60 120	23.5 21.0 19.0 17.0	18.0 18.0 19.0 19.0	0.01399 0.01399 0.01382 0.01382	15.5 13.0 11.0 9.0	13.7 14.2 14.5 14.8	0.957 0.687 0.491 0.351	0.013 0.010 0.007 0.005	31.0 26.0 22.0 18.0	24. 20. 17. 14.
50.0 50.0 50.0 50.0 50.0	0.784 0.784 0.784 0.784 0.784	15 30 60 120 240	23.5 21.0 19.0 17.0 15.0	18.0 18.0 19.0 19.0 19.0	0.01399 0.01399 0.01382 0.01382 0.01382	15.5 13.0 11.0 9.0 7.0	13.7 14.2 14.5 14.8 15.1	0.957 0.687 0.491 0.351 0.251	0.013 0.010 0.007 0.005 0.003	31.0 26.0 22.0 18.0 14.0	24. 20. 17. 14. 11.
50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.784 0.784 0.784 0.784 0.784 0.784	15 30 60 120 240 480	23.5 21.0 19.0 17.0 15.0 13.5	18.0 18.0 19.0 19.0 19.0 20.0	0.01399 0.01399 0.01382 0.01382 0.01382 0.01382 0.01365	15.5 13.0 11.0 9.0 7.0 5.5	13.7 14.2 14.5 14.8 15.1 15.4	0.957 0.687 0.491 0.351 0.251 0.179	0.013 0.010 0.007 0.005 0.003 0.003	31.0 26.0 22.0 18.0 14.0 11.0	24, 20, 17, 14, 11, 8,
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.784 0.784 0.784 0.784 0.784 0.784 0.784	15 30 60 120 240 480 1440	23.5 21.0 19.0 17.0 15.0 13.5 12.0	18.0 18.0 19.0 19.0 19.0 20.0 20.0	0.01399 0.01399 0.01382 0.01382 0.01382 0.01382 0.01365	15.5 13.0 11.0 9.0 7.0 5.5 4.0	13.7 14.2 14.5 14.8 15.1 15.4 15.4	0.957 0.687 0.491 0.351 0.251 0.179 0.104	0.013 0.010 0.007 0.005 0.003 0.003	31.0 26.0 22.0 18.0 14.0 11.0 8.0	24. 20. 17. 14. 11. 8. 6.
50.0 50.0 50.0 50.0 50.0 50.0 50.0 Hydromete	0.784 0.784 0.784 0.784 0.784 0.784 0.784 0.784 er <b>#: 7904</b> 1	15 30 60 120 240 480 1440	23.5 21.0 19.0 17.0 15.0 13.5	18.0 18.0 19.0 19.0 19.0 20.0 20.0	0.01399 0.01399 0.01382 0.01382 0.01382 0.01382 0.01365	15.5 13.0 11.0 9.0 7.0 5.5 4.0	13.7 14.2 14.5 14.8 15.1 15.4	0.957 0.687 0.491 0.351 0.251 0.179 0.104	0.013 0.010 0.007 0.005 0.003 0.003	31.0 26.0 22.0 18.0 14.0 11.0	24. 20. 17. 14. 11. 8. 6.
50.0 50.0 50.0 50.0 50.0 50.0 50.0 <b>50.0</b> <b>Hydromete</b> Density of S	0.784 0.784 0.784 0.784 0.784 0.784 0.784 0.784 er <b>#: 7904</b> 1	15 30 60 120 240 480 1440 <b>4</b>	23.5 21.0 19.0 17.0 15.0 13.5 12.0	18.0 18.0 19.0 19.0 19.0 20.0 20.0	0.01399 0.01399 0.01382 0.01382 0.01382 0.01382 0.01365	15.5 13.0 11.0 9.0 7.0 5.5 4.0	13.7 14.2 14.5 14.8 15.1 15.4 15.4	0.957 0.687 0.491 0.351 0.251 0.179 0.104	0.013 0.010 0.007 0.005 0.003 0.003	31.0 26.0 22.0 18.0 14.0 11.0 8.0	24. 20. 17. 14. 11. 8. 6.

3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

#### MOISTURE - DENSITY RELATIONSHIP REPORT

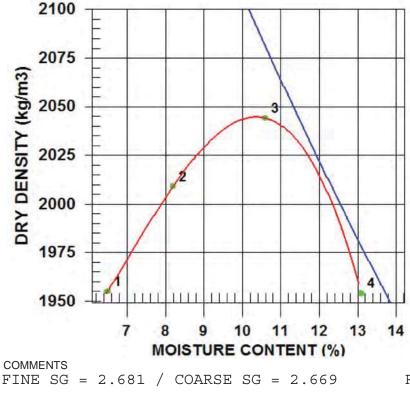
PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

PROCTOR NO. 6 DATE TESTED 2010. Apr. 13 DATE RECEIVED 2010. Apr. 09 DATE SAMPLED 2010. Apr. 07

INSITU MOISTURE		COMPACTION STANDARD	Standard Proctor,
SAMPLED BY	MS-Client		ASTM D698
TESTED BY	SR	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	C-S6-ZS-02-2010	RAMMER TYPE	Automatic
MATERIAL IDENTIF	ICATION	PREPARATION	Moist
MAJOR COMPONI	ENT TILL	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	50MM	RETAINED 4.75mm SCREEN	18.0%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.67
ROCK TYPE		TOTAL NUMBER OF TRIALS	4



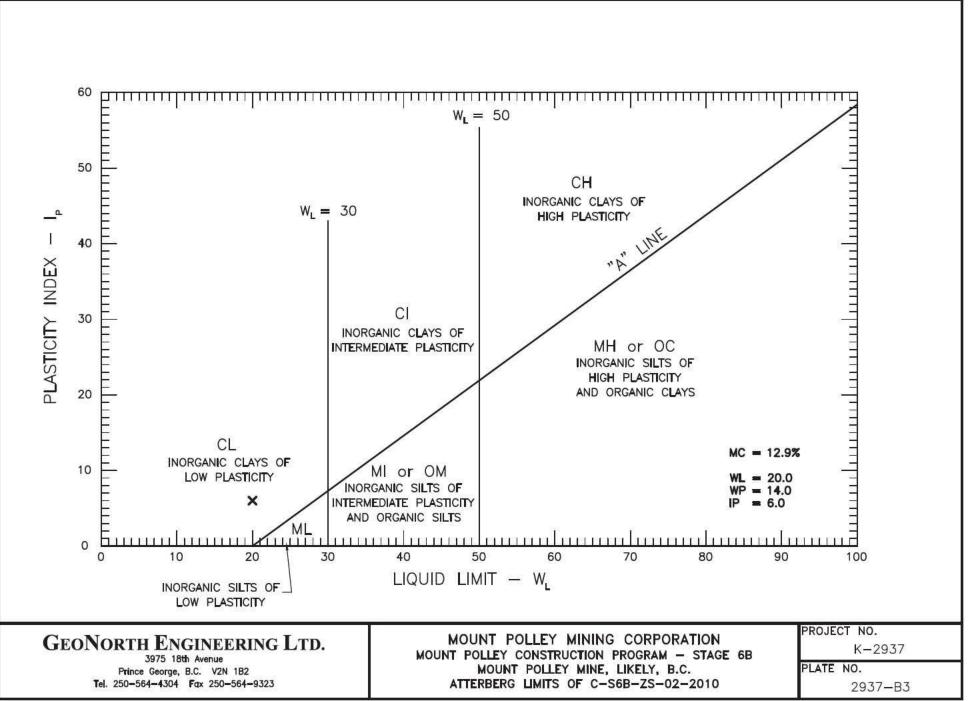
TRIAL NUMBER	WET DENSITY (kg/m3)	DRY DENSITY (kg/m3)	MOISTURE CONTENT (%)
1	2082	1955	6.5
2	2174	2009	8.2
3	2261	2044	10.6
4	2210	1954	13.1

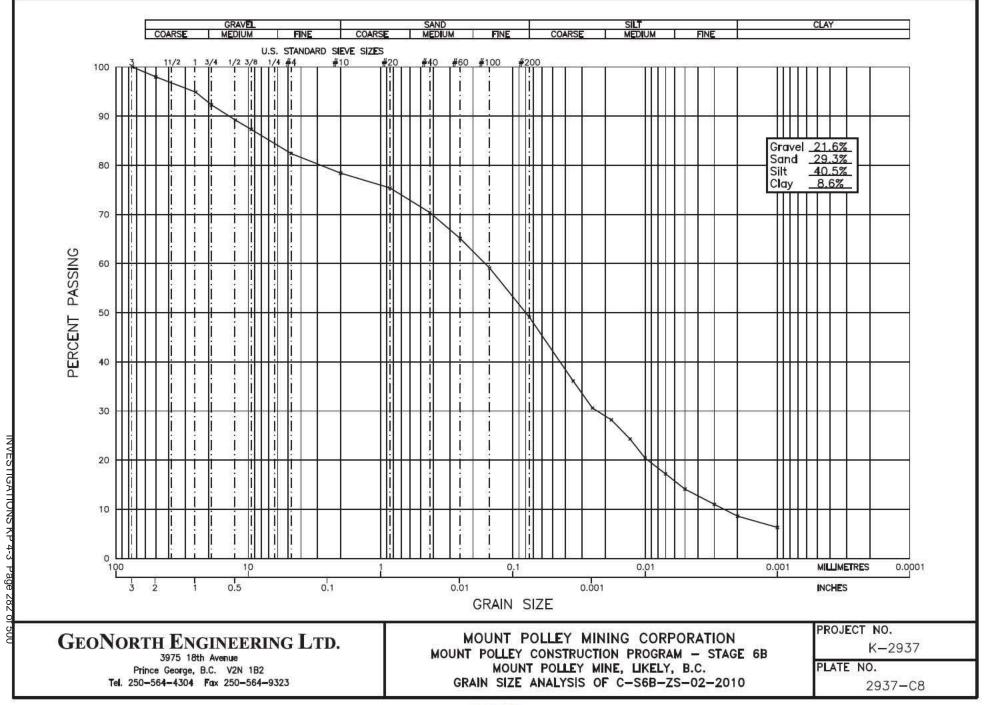
ZERO AIR VOIDS CURVE	MAXIMUM	OPTIMUM
FOR ESTIMATED	DRY	MOISTURE
SPECIFIC GRAVITY	DENSITY	CONTENT
OF 2.67	(kg/m3)	(%)
CALCULATED	2050	10.5
OVERSIZE CORRECTED	2140	9.0

Re: Plate C8 and B3, Sieve #17.

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PER. \_





#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. TO Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Apr.09 DATE TESTED 2010. Apr.13 DATE SAMPLED 2010. Apr.07 SIEVE TEST NO. 18 MS-Client SUPPLIER SAMPLED BY C-S6B-ZS-03-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE TILL 1%7 1 3/4 % 3/8 =4 #10 #20 #40 #60 #100 #200 2-100 0 = 90 10 1111 80 20 PERCENT PASSING -----PERCENT RETAINED 70 30 111 60 40 1111 50 50 40 60 1111 30 70 1111 20 80 11111111 10 - 90 - 100 0 10 9,5 mm 4.75 0,85 50 37.5 mn 26 425 250 19 12.5 150 mm mm H TIC mm F hun LI Ξ Ξ Ξ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING 3" 75 mm 100.0 No. 4 4.75 mm 79.6 2" 96.3 No. 10 75.4 50 mm 2.00 mm $1 \ 1/2"$ 95.0 No. 20 70.9 37.5 mm 850 µm 91.9 No. 40 65.9 1" 25 mm 425 um 89.6 3/4" 19 mm No. 60 250 µm 60.0 1/2" 12.5 mm 86.7 No. 100 54.0 150 µm 84.4 No. 200 45.2 3/8" 9.5 mm 75 µm COMMENTS

Re: Plate C9 and B4, Proctor #7 Re: Location: PE Borrow, Elevation: Bottom of Grey Till

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Apr.20 GeoNorth Engineering Ltd.

PER. \_

#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Apr.09 DATE TESTED 2010. Apr.13 DATE SAMPLED 2010. Apr.07 SIEVE TEST NO. 18 MS-Client SUPPLIER SAMPLED BY C-S6B-ZS-03-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE TILL 1%7 1 3/4 % 3/8 =1 #10 #20 #40 #60 #100 #200 2-100 0 = 90 10 1111 80 20 PERCENT PASSING -----PERCENT RETAINED 70 30 111 60 40 1111 50 50 40 60 1111 30 70 1111 20 80 11111111 10 - 90 - 100 0 9,5 mm 10 50 4.75 0.85 37.5 mn 26 425 250 19 12.5 150 µm TIT mm mm H mm F hun Ξ Ξ Ξ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION PASSING LIMITS PASSING LIMITS 3 " 75 mm 100.0 No. 4 4.75 mm 79.6 No. 10 75.4 2.00 mm

2" 96.3 50 mm  $1 \ 1/2"$ 37.5 mm 95.0 91.9 1" 25 mm 89.6 3/4" 19 mm 1/2" 12.5 mm 86.7 3/8" 84.4 9.5 mm

 19
 mm
 89.6

 12.5
 mm
 86.7

 9.5
 mm
 84.4

 No.
 200
 75 μm

Page 2 of 3

COMMENTS

2010.Apr.20 GeoNorth Engineering Ltd.

PER.

850 µm

425 um

70.9

65.9

60.0

54.0

45.2

No. 20

No. 40

#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Apr.09 DATE TESTED 2010. Apr.13 DATE SAMPLED 2010. Apr.07 SIEVE TEST NO. 18 MS-Client SUPPLIER SAMPLED BY C-S6B-ZS-03-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE TILL 1%7 1 3/4 % 3/8 =1 #10 #20 #40 #60 #100 #200 2-100 0 = 90 10 1111 80 20 PERCENT PASSING -----PERCENT RETAINED 70 30 111 60 40 1111 50 50 40 - 60 1111 30 70 1111 20 - 80 11111111 10 - 90 0 - 100 9,5 mm 10 50 4.75 0.85 37.5 mn 26 425 250 19 12.5 150 TIT mm mm H m F hun LI E E Ξ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING No. 4 4.75 mm 79.6 No. 10 75.4 2.00 mm

				1	1
3 "	75	mm	100.0		
2 "	50	mm	96.3		
1 1/2"	37.5	mm	95.0		
1"	25	mm	91.9		
3/4"	19	mm	89.6		
1/2"	12.5	mm	86.7		
3/8"	9.5	mm	84.4		

No. 20

No. 40

No. 60

70.9

65.9

60.0

850 µm

425 um

250 µm

3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

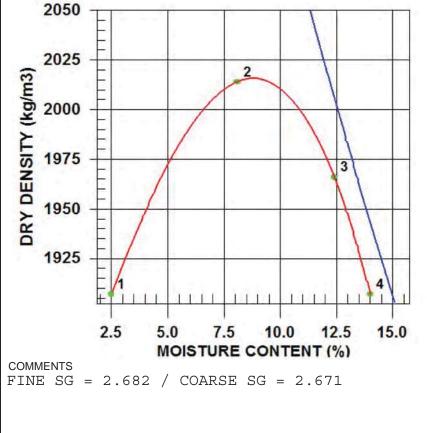
PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

PROCTOR NO. 7 DATE TESTED 2010. Apr. 13 DATE RECEIVED 2010. Apr. 09 DATE SAMPLED 2010. Apr. 07

INSITU MOISTURE	N/A % MS - Client	COMPACTION STANDARD	Standard Proctor, ASTM D698
SAMPLED BY TESTED BY	SR/EM	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	C-S6B-ZS-03-2010	RAMMER TYPE	Automatic
MATERIAL IDENTIF	ICATION	PREPARATION	Moist
MAJOR COMPONI	ENT TILL	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	50MM	RETAINED 4.75mm SCREEN	20.0%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.67
ROCK TYPE		TOTAL NUMBER OF TRIALS	4



TRIAL NUMBER	WET DENSITY (kg/m3)	DRY DENSITY (kg/m3)	MOISTURE CONTENT (%)
1	1955	1907	2.5
2	2177	2014	8.1
3	2210	1966	12.4
4	2174	1907	14.0

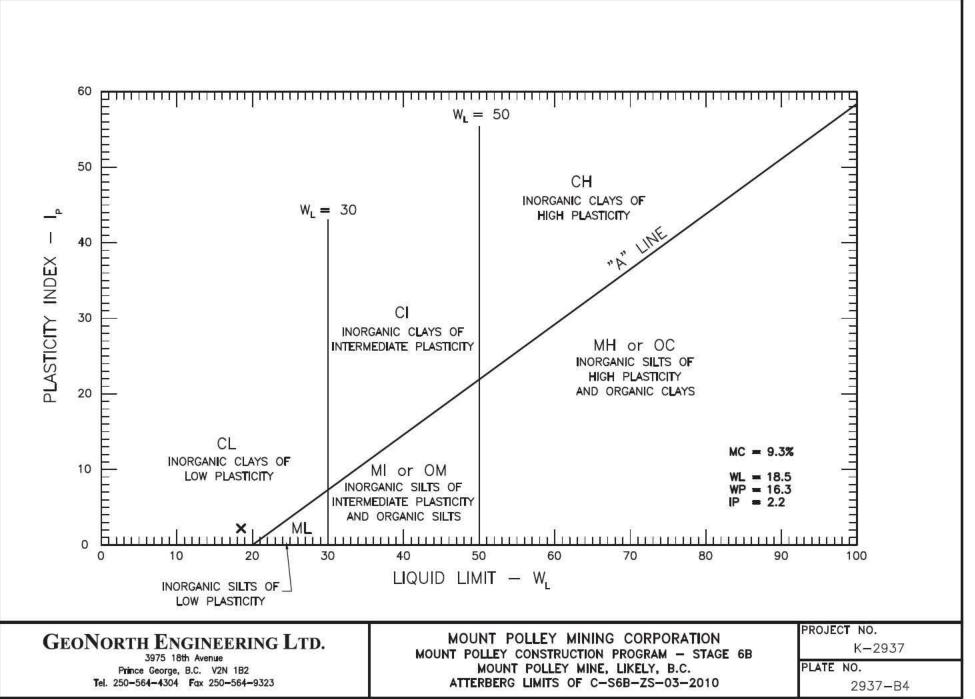
ZERO AIR VOIDS CURVE	MAXIMUM	OPTIMUM
FOR ESTIMATED	DRY	MOISTURE
SPECIFIC GRAVITY	DENSITY	CONTENT
OF 2.67	(kg/m3)	(%)
CALCULATED	2020	9.0
OVERSIZE CORRECTED	2120	7.5

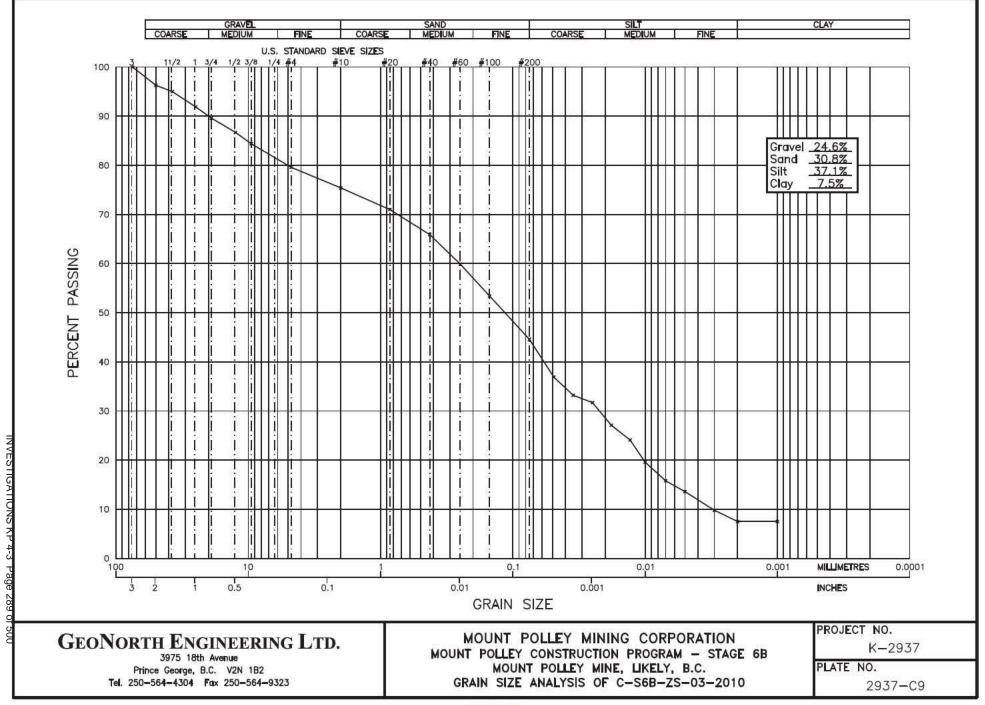
Re: Plate C9 and B4, Sieve #18

Page 1 of 1 2010.Apr.20 GeoNorth Engineering Ltd.

PER. -

		Mining Corp.							Date: April		
		Polley Constr		Jra Stage 6	В				Project #:	K-2937	
Source/Location: C-S6B-ZS-03-2010								Type: Till			
Sample #:			Test #:				Depth:	th: Time:			
Sampled B				Tested By: Deb					Checked B		
	oled: 04/07/			Date Received: 04/09/10				ed: 04/13/10			
Initia	al Moisture	Content		Sieve A	nalysis			Hydrom	eter Sieve	Analysis	
			Sieve No.	Weight Retained	Total Wt. Passing	% Finer Than Orig. Samp.	Sieve No.	Weight Retained	Total Wt. Finer Than	% Finer Than	% Finer Than Orig Samp.
Tare No.			38.1	Relaineu	rassing	Samp.	10		50.0		
Net Wt. &	Taro	627.2	25.4				20		47.1	94.2	73
Dry Wt. & T		589.7	19.0				40		47.1	87.4	
Nater Wt.		37.5	13.0				40 60		39.7	79.4	
Tare Wt.		181.5	9.5				100		35.4	70.8	
Nt. Of Dry	Soil	408.2	4.75		EVE TEST	#18	200		29.6	59.2	
	Content %	9.2	10			29.6					
Dry Wt. Of S	Sample from	Initial Moisture					Total	50.0			
							Unwashed Wt.=				
(100xWet So	oil VVt.)/(100 +	Initial Moisture) =	Total	408.2			Tare		Wt. Passin	g #200 =	
Starting Wt. (g)	% - #10	Elapsed Time (min)	Reading R	Temp (0C)	к	Corr. Reading R`	Zr (cm)	SQRT(Zr)/T (min)	D (mm)	N (%)	N*(%-#10)
50.0	0.754	0.5	37.0	18.0	0.01399	29.0	. ,	4.798	0.067	58.0	
50.0	0.754	1	32.5	18.0	0.01399	24.5	12.3		0.049	49.0	
50.0	0.754	2	30.0	18.0	0.01399	22.0	12.7	2.516	0.035	44.0	33
50.0		4				21.0	12.8		0.025		
50.0	0.754	8	26.0	18.0	0.01399	18.0	13.3		0.018	36.0	
50.0	0.754	15	24.0	18.0	0.01399	16.0	13.7	0.954	0.013	32.0	
50.0			21.0	18.0	0.01399	13.0	14.2	0.687	0.010	26.0	
50.0	0.754	30					440	0.400	0.007	01.0	15
50.0 50.0	0.754	60	18.5			10.5	14.6		0.007	21.0	
50.0 50.0 50.0	0.754 0.754	60 120	18.5 17.0	19.0	0.01382	9.0	14.8	0.351	0.005	18.0	13
50.0 50.0 50.0 50.0	0.754 0.754 0.754	60 120 240	18.5 17.0 14.5	19.0 19.0	0.01382 0.01382	9.0 6.5	14.8 15.2	0.351 0.252	0.005 0.003	18.0 13.0	13 9
50.0 50.0 50.0 50.0 50.0 50.0	0.754 0.754 0.754 0.754	60 120 240 480	18.5 17.0 14.5 13.0	19.0 19.0 20.0	0.01382 0.01382 0.01365	9.0 6.5 5.0	14.8 15.2 15.5	0.351 0.252 0.180	0.005 0.003 0.002	18.0 13.0 10.0	13 9 7
50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.754 0.754 0.754 0.754 0.754	60 120 240 480 1440	18.5 17.0 14.5 13.0 13.0	19.0 19.0 20.0 20.0	0.01382 0.01382 0.01365	9.0 6.5 5.0 5.0	14.8 15.2 15.5 15.5	0.351 0.252 0.180 0.104	0.005 0.003	18.0 13.0 10.0 10.0	13 9 7
50.0 50.0 50.0 50.0 50.0 50.0 Hydromete	0.754 0.754 0.754 0.754 0.754 er <b>#: 7904</b> 1	60 120 240 480 1440	18.5 17.0 14.5 13.0	19.0 19.0 20.0 20.0	0.01382 0.01382 0.01365	9.0 6.5 5.0 5.0	14.8 15.2 15.5	0.351 0.252 0.180 0.104	0.005 0.003 0.002	18.0 13.0 10.0	13 9 7
50.0 50.0 50.0 50.0 50.0 50.0 50.0 <b>Tydromete</b> Density of S	0.754 0.754 0.754 0.754 0.754 er <b>#: 7904</b> 1	60 120 240 480 1440 <b>4</b>	18.5 17.0 14.5 13.0 13.0	19.0 19.0 20.0 20.0	0.01382 0.01382 0.01365	9.0 6.5 5.0 5.0	14.8 15.2 15.5 15.5	0.351 0.252 0.180 0.104	0.005 0.003 0.002	18.0 13.0 10.0 10.0	13 9 7 7





#### SIEVE ANALYSIS REPORT GeoNorth Engineering Ltd. 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то C.C. Knight Piesold Ltd. Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010.JUN.01 DATE TESTED 2010.JUN.03 DATE SAMPLED 2010.May.27 SIEVE TEST NO. 34 CLIENT SUPPLIER SAMPLED BY C-S6B-ZS-04-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE TILL 2-1%-1 3/4 1/2-3/8" =4 #10 #20 #40 #60 #100 #200 100 0 = 90 10 1111 80 20 PERCENT PASSING 111 PERCENT RETAINED 70 30

10

mm

0.85

E

425 µm

250 µm

GRAVE	EL SIZES		PERCENT PASSING	GRADATION LIMITS
3" 2" 1 1/2" 1" 3/4" 1/2" 3/8"	75 50 37.5 25 19 12.5 9.5	mm mm mm mm mm mm	100.0 99.4 98.7 98.0 96.4 95.3	

37.5 mm

26

E mm

3

50

mm

9,5 mm

12.5 mn

4.75

Ξ

SAN	ND SIZE	S AND FINE	ΞS	PERCENT PASSING	GRADATION LIMITS
	10 20	4.75 2.00 850 425 250 150 75	mm µm	92.5 89.9 86.3 82.8 78.5 72.8 59.7	

150 µm

40 1111 50

60 111 70

80

90 - 100

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15

H

COMMENTS Location: PE Borrow

60

50 40

30

20

10

0

20

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Page 1 of 1 2010.Jun.03 GeoNorth Engineering Ltd.

PER.

3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

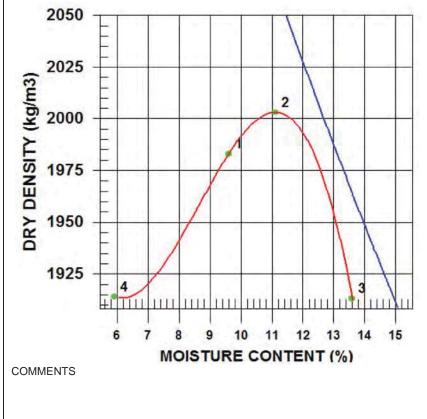
PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

PROCTOR NO. 9 DATE TESTED 2010.Jun.03 DATE RECEIVED 2010.Jun.01 DATE SAMPLED 2010.May.27

INSITU MOISTURE SAMPLED BY	N/A % CLIENT	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	JM	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	C-S6B-ZS-04-2010	RAMMER TYPE	Automatic
MATERIAL IDENTIF	ICATION	PREPARATION	Moist
MAJOR COMPON	ENT TILL	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	37mm	RETAINED 4.75mm SCREEN	7.0 %
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.68
ROCK TYPE		TOTAL NUMBER OF TRIALS	4

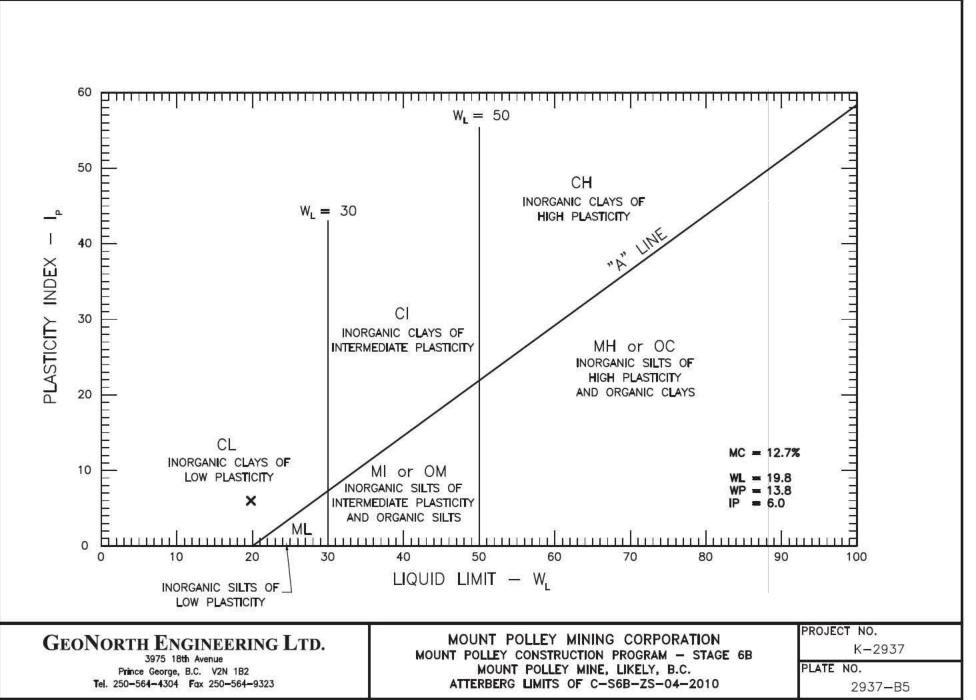


TRIAL NUMBER	WET DENSITY (kg/m3)	DRY DENSITY (kg/m3)	MOISTURE CONTENT (%)
1	2173	1983	9.6
2	2225	2003	11.1
3	2173	1913	13.6
4	2027	1914	5.9

ZERO AIR VOIDS CURVE	MAXIMUM	OPTIMUM
FOR ESTIMATED	DRY	MOISTURE
SPECIFIC GRAVITY	DENSITY	CONTENT
OF 2.68	(kg/m3)	(%)
CALCULATED	2000	11.0
OVERSIZE CORRECTED	2040	10.5

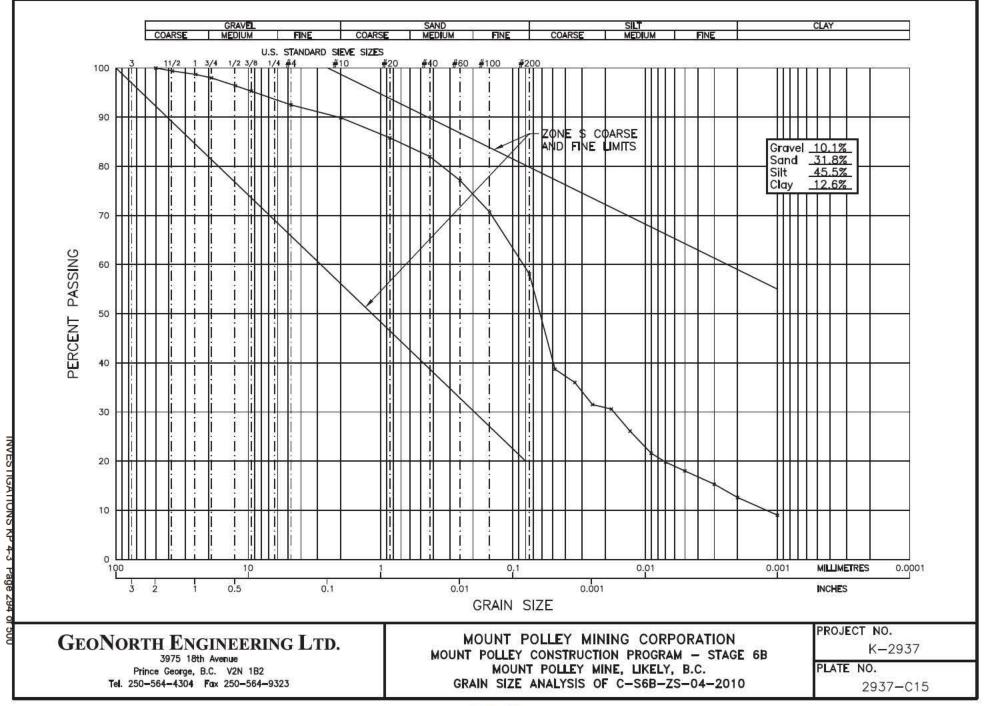
Page 1 of 1 2010.Jun.04 GeoNorth Engineering Ltd.

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# NVESTIGATIONS KP 4-3 Page 292 of 500

	unt Polley	Mining Corpor	ation						Date: June	3,2010		
	me: MPCP								Project #: K-2937			
Source/Lo	cation: C-S	6B-ZS-04-201	0						Type: Till			
Sample #:			Test #:		Hole #:		Depth:		Time:			
Sampled B			•	Tested By:					Checked By:			
Date Samp	led: May 27	7,2010			Date Received: June 1,2010					Date Tested: June 2,2010		
Initia	al Moisture	Content		Sieve A	nalysis			Hydrom	eter Sieve	Analysis		
						% Finer						
1						Than			Total Wt.		% Finer	
				Weight	Total Wt.	Orig.		Weight	Finer	% Finer	Than Orig	
				Retained	Passing	Samp.	Sieve No.		Than	Than	Samp.	
Tare No.			38.1				10		50.0			
Wet Wt. &		1043.3	25.4				20		47.7	95.4	85.	
Dry Wt. & 1	Tare	945.9	19.0				40		45.6	91.2	82.	
Water Wt.		97.4	12.5		<u> </u>		60		42.9	85.8	77.	
Tare Wt.	<u> </u>	179.9	9.5		Sieve Test N	10.34	100		39.3		70.	
Wt. Of Dry		766.0	4.75				200		32.3	64.6	58.	
Moisture C		12.7	10			89.9		32.3				
Dry Wt. Of Sample from Initial Moisture							Total	50.0				
-(100xWet Soil Wt.)/(100 + Initial Moisture) =							Unwashed	Wt.=				
-(100,1101,01	511 771.)/(100-1		Total	766.0			Tare		Wt. Passin	g #200 =		
						Corr.						
Starting		Elapsed	Reading	Temp		Reading		SQRT(Zr)/T				
Wt. (g)	% - #10	Time (min)	R	(0C)	K	R`	Zr (cm)	(min)	D (mm)	N (%)	N*(%-#10)	
50.0	0.899				0.04040	00.0	40.0	4 0 0 0	0.000	50.0	46.	
		0.5				26.0			0.066		-	
50.0	0.899	1	29.5	21.0	0.01348	21.5	12.7	3.570	0.048	43.0	38.	
50.0	0.899 0.899	1	29.5 28.0	21.0 21.0	0.01348 0.01348	21.5 20.0	12.7 13.0	3.570 2.549	0.048 0.034	43.0 40.0	38. 36.	
50.0 50.0	0.899 0.899 0.899	1 2 4	29.5 28.0 25.5	21.0 21.0 21.0	0.01348 0.01348 0.01348	21.5 20.0 17.5	12.7 13.0 13.4	3.570 2.549 1.831	0.048 0.034 0.025	43.0 40.0 35.0	38. 36. 31.	
50.0 50.0 50.0	0.899 0.899 0.899 0.899	1 2 4 8	29.5 28.0 25.5 25.0	21.0 21.0 21.0 21.0	0.01348 0.01348 0.01348 0.01348	21.5 20.0 17.5 17.0	12.7 13.0 13.4 13.5	3.570 2.549 1.831 1.299	0.048 0.034 0.025 0.018	43.0 40.0 35.0 34.0	38. 36. 31. 30.	
50.0 50.0 50.0 50.0	0.899 0.899 0.899 0.899 0.899	1 2 4 8 15	29.5 28.0 25.5 25.0 22.5	21.0 21.0 21.0 21.0 21.0 21.0	0.01348 0.01348 0.01348 0.01348 0.01348	21.5 20.0 17.5 17.0 14.5	12.7 13.0 13.4 13.5 13.9	3.570 2.549 1.831 1.299 0.963	0.048 0.034 0.025 0.018 0.013	43.0 40.0 35.0 34.0 29.0	38. 36. 31. 30. 26.	
50.0 50.0 50.0 50.0 50.0 50.0	0.899 0.899 0.899 0.899 0.899 0.899	1 2 4 8 15 30	29.5 28.0 25.5 25.0 22.5 20.0	21.0 21.0 21.0 21.0 21.0 21.0 21.0	0.01348 0.01348 0.01348 0.01348 0.01348 0.01348	21.5 20.0 17.5 17.0 14.5 12.0	12.7 13.0 13.4 13.5 13.9 14.3	3.570 2.549 1.831 1.299 0.963 0.691	0.048 0.034 0.025 0.018 0.013 0.009	43.0 40.0 35.0 34.0 29.0 24.0	38. 36. 31. 30. 26. 21.	
50.0 50.0 50.0 50.0 50.0 50.0	0.899 0.899 0.899 0.899 0.899 0.899 0.899	1 2 4 8 15 30 60	29.5 28.0 25.5 25.0 22.5 20.0 19.0	21.0 21.0 21.0 21.0 21.0 21.0 21.0 21.0	0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348	21.5 20.0 17.5 17.0 14.5 12.0 11.0	12.7 13.0 13.4 13.5 13.9 14.3 14.3	3.570 2.549 1.831 1.299 0.963 0.691 0.491	0.048 0.034 0.025 0.018 0.013 0.009 0.007	43.0 40.0 35.0 34.0 29.0 24.0 22.0	38. 36. 31. 30. 26. 21. 19.	
50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899	1 2 4 8 15 30 60 120	29.5 28.0 25.5 25.0 22.5 20.0 19.0 18.0	21.0 21.0 21.0 21.0 21.0 21.0 21.0 21.0	0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348	21.5 20.0 17.5 17.0 14.5 12.0 11.0 10.0	12.7 13.0 13.4 13.5 13.9 14.3 14.3 14.5 14.6	3.570 2.549 1.831 1.299 0.963 0.691 0.491 0.349	0.048 0.034 0.025 0.018 0.013 0.009 0.007 0.005	43.0 40.0 35.0 34.0 29.0 24.0 22.0 20.0	38. 36. 31. 30. 26. 21. 19. 18.	
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899	1 2 4 8 15 30 60 120 240	29.5 28.0 25.5 25.0 22.5 20.0 19.0 18.0 16.5	21.0 21.0 21.0 21.0 21.0 21.0 21.0 21.0	0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348	21.5 20.0 17.5 17.0 14.5 12.0 11.0 10.0 8.5	12.7 13.0 13.4 13.5 13.9 14.3 14.5 14.6 14.6 14.9	3.570 2.549 1.831 1.299 0.963 0.691 0.491 0.349 0.249	0.048 0.034 0.025 0.018 0.013 0.009 0.007 0.005 0.003	43.0 40.0 35.0 29.0 24.0 22.0 20.0 17.0	38. 36. 31. 30. 26. 21. 19. 18. 15.	
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899	1 2 4 8 15 30 60 120 240 480	29.5 28.0 25.5 25.0 22.5 20.0 19.0 18.0 16.5 15.0	21.0 21.0 21.0 21.0 21.0 21.0 21.0 21.0	0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348	21.5 20.0 17.5 17.0 14.5 12.0 11.0 10.0 8.5 7.0	12.7 13.0 13.4 13.5 13.9 14.3 14.5 14.6 14.6 14.9 15.1	3.570 2.549 1.831 1.299 0.963 0.691 0.491 0.349 0.249 0.249 0.178	0.048 0.034 0.025 0.018 0.013 0.009 0.007 0.005 0.003 0.002	43.0 40.0 35.0 29.0 24.0 22.0 20.0 17.0 14.0	38. 36. 31. 30. 26. 21. 19. 18. 15. 12.	
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899	1 2 4 8 15 30 60 120 240 480 1440	29.5 28.0 25.5 25.0 22.5 20.0 19.0 18.0 16.5 15.0 13.0	21.0 21.0 21.0 21.0 21.0 21.0 21.0 21.0	0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348	21.5 20.0 17.5 17.0 14.5 12.0 11.0 10.0 8.5 7.0 5.0	12.7 13.0 13.4 13.5 13.9 14.3 14.5 14.6 14.6 14.9 15.1 15.5	3.570 2.549 1.831 1.299 0.963 0.691 0.491 0.349 0.249 0.178 0.104	0.048 0.034 0.025 0.018 0.013 0.009 0.007 0.005 0.003 0.002	43.0 40.0 35.0 34.0 29.0 24.0 22.0 20.0 17.0 14.0 10.0	38. 36. 31. 30. 26. 21. 19. 18. 15. 12. 9.	
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899	1 2 4 8 15 30 60 120 240 480 1440	29.5 28.0 25.5 25.0 22.5 20.0 19.0 18.0 16.5 15.0	21.0 21.0 21.0 21.0 21.0 21.0 21.0 21.0	0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348	21.5 20.0 17.5 17.0 14.5 12.0 11.0 10.0 8.5 7.0 5.0	12.7 13.0 13.4 13.5 13.9 14.3 14.5 14.6 14.6 14.9 15.1	3.570 2.549 1.831 1.299 0.963 0.691 0.491 0.349 0.249 0.178 0.104	0.048 0.034 0.025 0.018 0.013 0.009 0.007 0.005 0.003 0.002	43.0 40.0 35.0 29.0 24.0 22.0 20.0 17.0 14.0	38. 36. 31. 30. 26. 21. 19. 18. 15. 12. 9.	
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899 0.899	1 2 4 8 15 30 60 120 240 240 480 1440	29.5 28.0 25.5 25.0 22.5 20.0 19.0 18.0 16.5 15.0 13.0	21.0 21.0 21.0 21.0 21.0 21.0 21.0 21.0	0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348 0.01348	21.5 20.0 17.5 17.0 14.5 12.0 11.0 10.0 8.5 7.0 5.0	12.7 13.0 13.4 13.5 13.9 14.3 14.5 14.6 14.6 14.9 15.1 15.5	3.570 2.549 1.831 1.299 0.963 0.691 0.491 0.349 0.249 0.178 0.104	0.048 0.034 0.025 0.018 0.013 0.009 0.007 0.005 0.003 0.002	43.0 40.0 35.0 34.0 29.0 24.0 22.0 20.0 17.0 14.0 10.0	38. 36. 31. 30. 26. 21. 19. 18. 15. 12. 9.	



#### **GeoNorth Engineering Ltd.** SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR

SIEVE TEST NO. 35 DATE RECEIVED 2010.Jun.01 DATE TESTED 2010.Jun.03 DATE SAMPLED 2010.May.27

SUPPLIER SOURCE SPECIFICATION MATERIAL TYPE			ZS-	-05-2	2010				TI	AMPLEE ESTED E EST ME	BY	DJ	I ENT SHED		
PERCENT PASSING	100 3 <sup>-</sup> 90 40 80 70 60 50 40 30 10 10 10 10 10 10 10 10 10 10 10 10 10	2 50 mm	157 37.5 mg	17 3	/4" %	4,/5 mm	#10		0.85 mm	#40 426 µm	#60	#100 150 Jun		0 10 20 30 40 50 60 70 80 90 100	PERCENT RETAINED
GRAVEL	SIZES	;		PERCI PASS		ADATI( IMITS		SAN	ND SIZE	S AND F	INES		PERCENT	Г	GRADATION LIMITS
3" 2" 1 1/2" 1" 3/4" 1/2" 3/8"	75 50 37. 25 19 12. 9.	m m 5 m	m m m m m	100 96 93 91 87 85	.9 .0 .7 .4 .8			No. No. No. No. No. No.	100	2.0 85 42 25 15	5 μr 0 μr	n n n n n	80.4 76.6 71.7 66.8 61.4 55.4 45.8		
COMMENTS Location:]	PE B	orr	OW												

Weight Tare No.         Weight Netained         Total Wt. Passing         Orig. Samp.         Sieve No.         Weight Retained         Finer Than         % Finer Than         Than           Tare No.         38.1         Image: Samp.         10         50.0         100.0         50.0         100.0           Wet Wt. & Tare         1052.7         25.4         Image: Samp.         10         50.0         100.0         50.0         100.0           Dry Wt. & Tare         954.6         19.0         Image: Samp.         40         3.1         44.7         89.4           Water Wt.         98.1         12.5         Image: Samp.         60         3.5         41.2         82.4           Tare Wt.         179.4         9.5         See Sieve Test No.35         100         4.1         37.1         74.2           Wt. Of Dry Soil         775.2         4.75         Image: Samp.         200         5.6         31.5         63.0           Moisture Content %         12.7         10         Image: Samp.         Total         50.0         Image: Samp.	n Orig p. 76. 73.	% Fine	<b>K-2937</b> By: ed: June 2,20	Project #: I Type: Till Time: Checked By Date Tested		Depth:					Stage 6B	me: MPCP	Project Na						
Source/Location: C-S6B-ZS-05-2010         Type: Till           Sample #:         Test #:         Hole #:         Depth:         Time:           Sampled By: Client         Tested By: DJ         Checked By:         Date Tested: June 2,2010           Initial Moisture Content         Sieve Analysis         Hydrometer Sieve Analysis         Total Wt.           Sieve No.         Retained         Passing         Samp.         Sieve No.         Retained         % Finer         % Finer         % Finer         % Finer         Than         % Finer         % Finer <th>n Orig p. 76. 73.</th> <th>% Fine</th> <th>By: ed: June 2,20</th> <th>Type: Till Time: Checked By Date Tester</th> <th></th> <th>Depth:</th> <th></th> <th></th> <th></th> <th>0</th> <th></th> <th></th> <th colspan="7"></th>	n Orig p. 76. 73.	% Fine	By: ed: June 2,20	Type: Till Time: Checked By Date Tester		Depth:				0									
Sampled By: Client       Checked By:         Date Sampled: May 27,2010       Date Received: June 1,2010       Date Tested: June 2,2010         Initial Moisture Content       Sieve Analysis       Total Wt.       Checked By:         Initial Moisture Content       Sieve Analysis       Total Wt.       Checked By:         Initial Moisture Content       Sieve Analysis       Total Wt.       Checked By:         Initial Moisture Content       Sieve Analysis       Total Wt.       Total Wt.       Checked By:         Initial Moisture Content       Sieve Analysis       Total Wt.       Print Than       Total Wt.       Finer Than       Than       Sieve No.       Sieve No.       Sieve No.       Sieve No.       Sieve No.       Sieve No.       Total Wt.       Finer Than       Than       Sieve No.       Sieve No.       Colspan="4">Colspan="4">Colspan= 40       Sieve No.       Sieve No.       Sieve No.       Sieve No.       Sieve No.       S	n Orig p. 76. 73.	% Fine	ed: June 2,20	Checked By Date Tester		Depth:		Hala #											
Date Sampled: May 27,2010         Date Received: June 1,2010         Date Tested: June 2,2010           Initial Moisture Content         Sieve Analysis         Hydrometer Sieve Analysis           Verget         Sieve No.         Retained         Total Wt.         Total Wt.         Total Wt.         Finer         Ketained         % Finer         Ketained         % Finer         Ketained         Meight         Total Wt.         Sieve No.         Retained         Sieve No.         Sieve No. <td>n Orig p. 76. 73.</td> <td>% Fine</td> <td>ed: June 2,20</td> <td>Date Tested</td> <td></td> <td></td> <td colspan="4"></td> <td></td> <td></td> <td>Sample #:</td>	n Orig p. 76. 73.	% Fine	ed: June 2,20	Date Tested									Sample #:						
Initial Moisture Content         Sieve Analysis         Hydrometer Sieve Analysis           Initial Moisture Content         Sieve No.         Weight         Total Wt.         % Finer         Total Wt.         % Finer	n Orig p. 76. 73.	% Fine				Tested By: DJ						y: Client	Sampled B						
Weight         Weight         Total Wt.         Weight         Total Wt.         Orig.         Weight         Total Wt.         Finer         Total Wt.         % Finer         Than         Total Wt.         % Finer         %         %         %	n Orig p. 76. 73.		Analysis								7,2010	led: May 27	Date Samp						
Image: Constraint of the second sec	n Orig p. 76. 73.			eter Sieve	Hydrometer Sieve Analysis						Content	al Moisture	Initia						
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	n Orig p. 76. 73.						% Finer	-											
Sieve No.       Retained       Passing       Samp.       Sieve No.       Retained       Than       Samp.         Tare No.       38.1       38.1       10       10       10       50.0       100.0       100.0         Wet Wt. & Tare       1052.7       25.4       10       10       20       2.2       47.8       95.6       95.6         Dry Wt. & Tare       954.6       19.0       10       10       44.7       89.4       10         Water Wt.       98.1       12.5       10       100       44.7       89.4       10         Tare Wt.       179.4       9.5       See Sieve Test No.35       100       4.1       37.1       74.2       10         Wt. Of Dry Soil       775.2       4.75       10       1	р. 76. 73.	Than (					Than												
Tare No.       38.1       10       50.0       100.0         Wet Wt. & Tare       1052.7       25.4       20       2.2       47.8       95.6         Dry Wt. & Tare       954.6       19.0       40       3.1       44.7       89.4         Water Wt.       98.1       12.5       60       3.5       41.2       82.4         Tare Wt.       98.1       12.5       60       3.5       41.2       82.4         Wt. Of Dry Soil       775.2       4.75       200       5.6       31.5       63.0         Moisture Content %       12.7       10       76.6       Pan       31.5           ory Wt. Of Sample from Initial Moisture       10       775.2       Total       50.0           e(100xWet Soil Wt.)/(100 + Initial Moisture) =       Total       775.2       Tare       Wt. Passing #200 =	76. 73.	l man v	% Finer	Finer	Weight		Orig.	Total Wt.	Weight										
Wet Wt. & Tare       1052.7       25.4       20       2.2       47.8       95.6         Dry Wt. & Tare       954.6       19.0       40       3.1       44.7       89.4         Water Wt.       98.1       12.5       60       3.5       41.2       82.4         Tare Wt.       179.4       9.5       See Sieve Test No.35       100       4.1       37.1       74.2         Wt. Of Dry Soil       775.2       4.75       200       5.6       31.5       63.0         Moisture Content %       12.7       10       76.6       Pan       31.5       1         Dry Wt. Of Sample from Initial Moisture       10       775.2       Unwashed Wt.=       1       1         e(100xWet Soil Wt.)/(100 + Initial Moisture) =       Total       775.2       Tare       Wt. Passing #200 =	73.	Samp.	Than	Than	Retained	Sieve No.	Samp.	Passing	Retained	Sieve No.									
Dry Wt. & Tare       954.6       19.0       40       3.1       44.7       89.4         Water Wt.       98.1       12.5       60       3.5       41.2       82.4         Tare Wt.       179.4       9.5       See Sieve Test No.35       100       4.1       37.1       74.2         Wt. Of Dry Soil       775.2       4.75       200       5.6       31.5       63.0         Moisture Content %       12.7       10       76.6       Pan       31.5       10         Dry Wt. Of Sample from Initial Moisture       10       10       76.6       Pan       31.5       63.0         e(100xWet Soil Wt.)/(100 + Initial Moisture) =       10       775.2       10 <td< td=""><td></td><td></td><td>100.0</td><td>50.0</td><td></td><td>10</td><td></td><td></td><td></td><td>38.1</td><td></td><td></td><td>Tare No.</td></td<>			100.0	50.0		10				38.1			Tare No.						
Water Wt.       98.1       12.5       60       3.5       41.2       82.4         Tare Wt.       179.4       9.5       See Sieve Test No.35       100       4.1       37.1       74.2         Wt. Of Dry Soil       775.2       4.75       200       5.6       31.5       63.0         Moisture Content %       12.7       10       76.6       Pan       31.5       10         Dry Wt. Of Sample from Initial Moisture       Total       50.0       100       10       10         =(100xWet Soil Wt.)/(100 + Initial Moisture) =       Total       775.2       Tare       Wt. Passing #200 =	00																		
Tare Wt.       179.4       9.5       See Sieve Test No.35       100       4.1       37.1       74.2         Wt. Of Dry Soil       775.2       4.75       200       5.6       31.5       63.0         Moisture Content %       12.7       10       76.6       Pan       31.5       63.0         Dry Wt. Of Sample from Initial Moisture       Total       50.0       100       100       100         e(100xWet Soil Wt.)/(100 + Initial Moisture) =       Total       775.2       100       100       100	68.											Fare							
Wt. Of Dry Soil       775.2       4.75       200       5.6       31.5       63.0         Moisture Content %       12.7       10       76.6       Pan       31.5       63.0         Dry Wt. Of Sample from Initial Moisture       Total       50.0       0       0         =(100xWet Soil Wt.)/(100 + Initial Moisture) =       Total       775.2       Tare       Wt. Passing #200 =	63.																		
Moisture Content %         12.7         10         76.6         Pan         31.5         Image: Content %         10         Total         50.0         Image: Content %         10 <th10< th="">         10         <th10< th=""></th10<></th10<>	56.						0.35	ieve Test N	See S										
Dry Wt. Of Sample from Initial Moisture       Total       50.0         =(100xWet Soil Wt.)/(100 + Initial Moisture) =       Total       775.2         Total       Tare       Wt. Passing #200 =	48.		63.0	31.5															
=(100xWet Soil Wt.)/(100 + Initial Moisture) = Total 775.2 Unwashed Wt.= Unwashed Wt.= Wt. Passing #200 =						Pan	76.6			10	12.7	Content %	Moisture C						
Total 775.2 Tare Wt. Passing #200 =					50.0	Total					Dry Wt. Of Sample from Initial Moisture								
i otal 775.2   Tare   Wt. Passing #200 =					Wt.=	Unwashed													
			g #200 =	Wt. Passing		Tare			775.2	Total	- miliai Moisture) =	511 991.)/(100 +	=(100xwel Sc						
							Corr.												
Starting Elapsed Reading Temp Reading SQRT(Zr)/T					SQRT(Zr)/T		Reading		Temp	Reading	Elapsed		Starting						
	o <b>-#10)</b>	N*(%-#	N (%)	D (mm)			R`	К	(0C)	R	Time (min)	% - #10	Wt. (g)						
50.0 0.766 0.5 35.0 21.0 0.01328 27.0 11.8 4.866 0.065 54.0	41.		54.0	0.065	4.866	11.8	27.0	0.01328	21.0	35.0	0.5	0.766	50.0						
50.0 0.766 1 31.0 21.0 0.01328 23.0 12.5 3.536 0.047 46.0	35.		46.0	0.047	3.536	12.5	23.0	0.01328	21.0	31.0	1	0.766	50.0						
50.0 0.766 2 30.0 21.0 0.01328 22.0 12.7 2.516 0.033 44.0	33.							0.01328		30.0			50.0						
50.0 0.766 4 28.0 21.0 0.01328 20.0 13.0 1.802 0.024 40.0	30.									28.0									
50.0 0.766 8 26.0 21.0 0.01328 18.0 13.3 1.291 0.017 36.0	27.																		
50.0 0.766 15 24.0 21.0 0.01328 16.0 13.7 0.954 0.013 32.0	24.																		
50.0 0.766 30 22.5 21.0 0.01328 14.5 13.9 0.681 0.009 29.0	22.																		
50.0 0.766 60 20.0 21.0 0.01328 12.0 14.3 0.488 0.006 24.0	40																		
50.0         0.766         120         19.5         21.0         0.01328         11.5         14.4         0.346         0.005         23.0	18.																		
	17.		22.0	0.003	0.246	14.5	11.0	0.01328	21.0	19.0		0.766	50.0						
	17. 16.			0.002															
50.0 0.766 480 17.0 21.0 0.01328 9.0 14.8 0.176 0.002 18.0	17. 16. 13.				0 103	15.3	6.0	0.01344											
50.00.76648017.021.00.013289.014.80.1760.00218.050.00.766144014.020.00.013446.015.30.1030.00112.0	17. 16.		12.0	0.001							A	or # 700/11	Hydromete						
50.0         0.766         480         17.0         21.0         0.01328         9.0         14.8         0.176         0.002         18.0           50.0         0.766         1440         14.0         20.0         0.01344         6.0         15.3         0.103         0.001         12.0           Hydrometer #: 790414         Graduate #:         Dispersing Agent: Sodium Hex         Amount: 125ml	17. 16. 13.		12.0	0.001		Agent: Sod	Dispersing			Graduate #	4								
50.00.76648017.021.00.013289.014.80.1760.00218.050.00.766144014.020.00.013446.015.30.1030.00112.0	17. 16. 13.		12.0	0.001		Agent: Sod	Dispersing			Graduate #		Solids:	Density of S						

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#### MOISTURE - DENSITY RELATIONSHIP REPORT

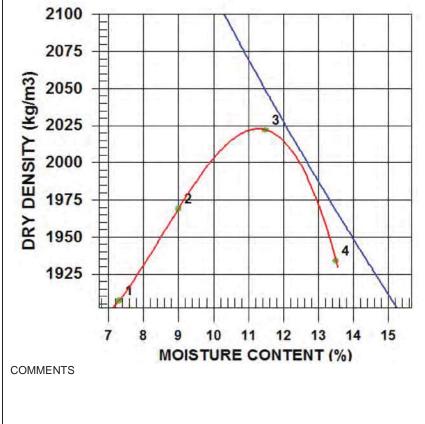
PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

PROCTOR NO. 10 DATE TESTED 2010.Jun.03 DATE RECEIVED 2010.Jun.01 DATE SAMPLED 2010.May.27

INSITU MOISTURE	N/A % CLIENT	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	JM	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	C-S6B-ZS-04-2010	RAMMER TYPE	Automatic
MATERIAL IDENTIF	ICATION	PREPARATION	Moist
MAJOR COMPONE	ENT TILL	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	50mm	RETAINED 4.75mm SCREEN	18.6%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.68
ROCK TYPE		TOTAL NUMBER OF TRIALS	4
DESCRIPTION	Somm	OVERSIZE SPECIFIC GRAVITY	2.68



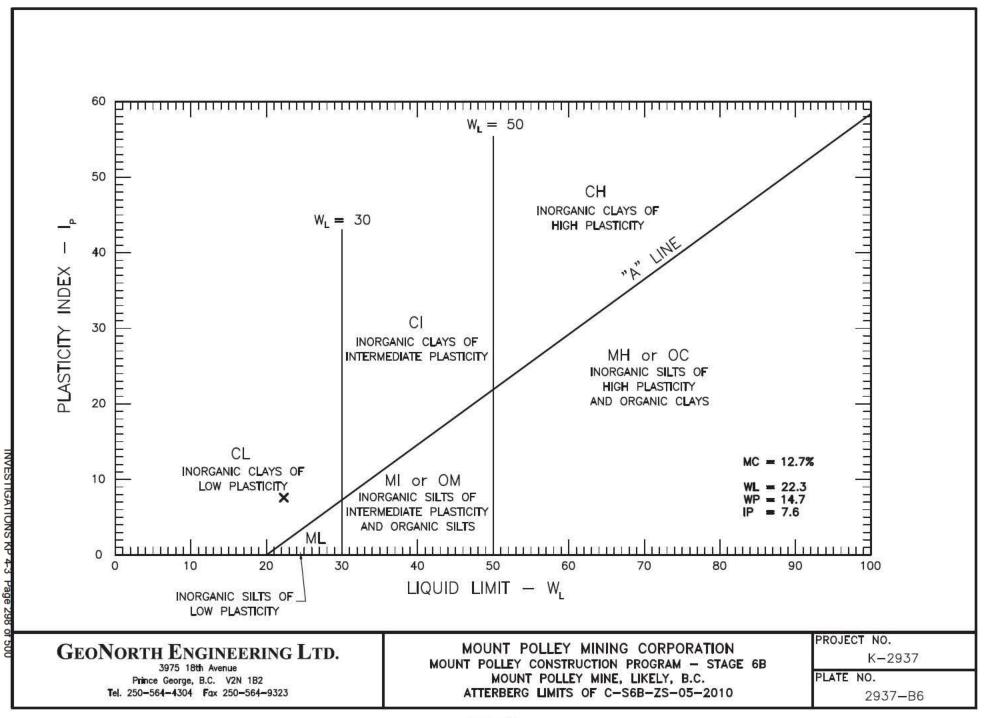
TRIAL NUMBER	WET DENSITY (kg/m3)	DRY DENSITY (kg/m3)	MOISTURE CONTENT (%)
1	2046	1907	7.3
2	2146	1969	9.0
3	2254	2022	11.5
4	2195	1934	13.5

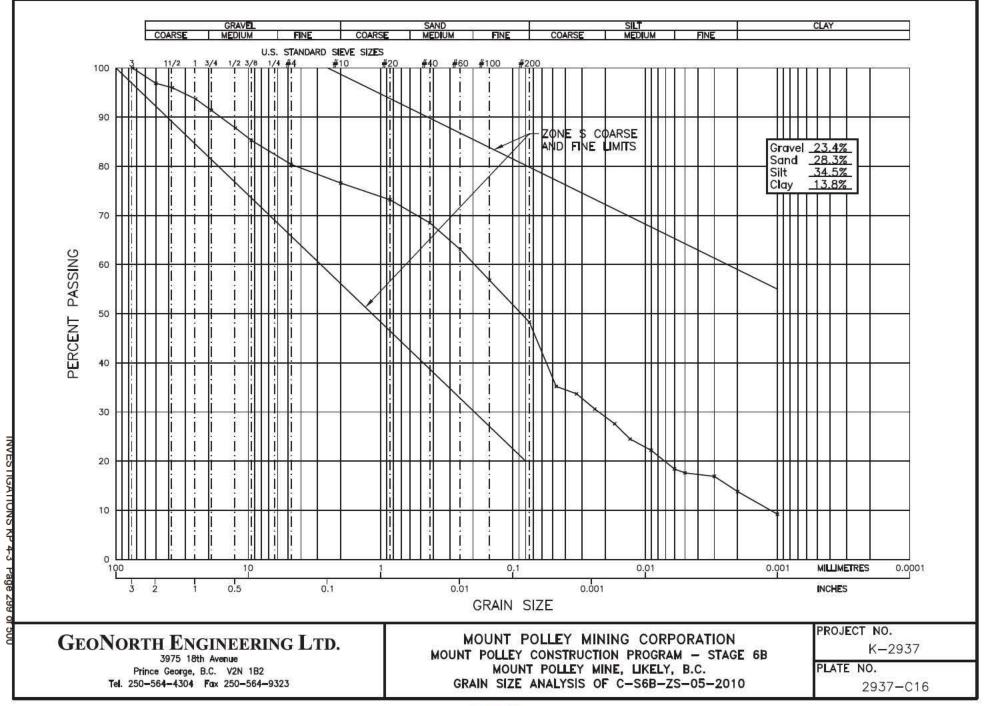
ZERO AIR VOIDS CURVE	MAXIMUM	OPTIMUM
FOR ESTIMATED	DRY	MOISTURE
SPECIFIC GRAVITY	DENSITY	CONTENT
OF 2.68	(kg/m3)	(%)
CALCULATED	2020	11.5
OVERSIZE CORRECTED	2120	9.5

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2010.Jun.04 GeoNorth Engineering Ltd.

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#### **APPENDIX A2**

ZONE S RECORD

(Pages A2-1 to A2-62)

VA101-1/29-1 Rev 0 December 15, 2010 INVESTIGATIONS KP 4-3 Page 300 of 500

#### SIEVE ANALYSIS REPORT 10 20 40 60 SERIES

3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Les Galbraith @ 604-685-0147 PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2009. Dec. 15 DATE TESTED 2009. Dec. 16 DATE SAMPLED 2009. Dec. 10 SIEVE TEST NO. 3 CLIENT SUPPLIER SAMPLED BY CH 6+25, SE RO SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE TILL 2-1567 17 3/4-% 3/8 =4 #10 #20 #40 #60 #100 #200 100 0 = 90 10 1111 80 20 PERCENT PASSING 111 PERCENT RETAINED 70 30 60 40 111 50 50 40 60 30 70 1111 20 80 11111111 10 90 - 100 0 9,5 mm 10 50 4.75 0,85 37.5 mn 26 425 250 19 12.5 150 µm TIC mm mm H mm F hun Ξ Ξ Ξ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING 3 " 75 mm 100.0 No. 4 4.75 mm 81.8 2" 50 98.9 No. 10 2.00 mm 76.7 mm  $1 \ 1/2"$ 37.5 mm 98.0 No. 20 71.0 850 µm 95.6 No. 40 64.9 1" 25 mm 425 um 58.2 3/4" 19 mm 93.0 No. 60 250 µm 1/2" 12.5 mm 89.4 No. 100 51.7 150 µm 3/8" 87.3 No. 200 42.8 9.5 mm 75 µm COMMENTS RE: Plate No. 2937-B1

Page 1 of 1 2009.Dec.21 GeoNorth Engineering Ltd.

PER. .

		lining Corpora	tion							ember 18, 2	009	
		- Stage 6B			late No. 293			ysis)	Project #: K-2937			
	cation: CH	6+25, SE		Re: Washed Sieve Test No. 3			Type: Till					
Sample #:			Test #:		Hole #:		Depth:		Time:			
Sampled B				Tested By: SR					Checked By: NK			
	led: 12/10/2				ived: 12/15/	2009			Date Tested: 12/17/2009			
Initia	I Moisture	Content		Sieve A	nalysis			Hydrom	eter Sieve	Analysis		
				Weight	Total Wt.	% Finer Than Orig.		Weight	Total Wt. Finer	% Finer	% Finer Than Orig	
			Sieve No.	Retained	Passing	Samp.	Sieve No.	Retained	Than	Than	Samp.	
Fare No.			38.1	Retaineu	assing	camp.	10		50.0			
Wet Wt. &	Tare		25.4				20		46.6	93.2		
Dry Wt. & T			19.0		<u> </u>		40		42.5			
Water Wt.			12.5				60		37.9	75.8		
Tare Wt.			9.5				100		33.5	67.0		
Wt. Of Dry	Soil		4.75				200	5.8	27.7	55.4	42	
Moisture C	Content %	9.3	10	SEE V	VASHED SI	EVE	Pan	27.7				
Dry Wt. Of S	Sample from	Initial Moisture				Total	50.0					
(100x)Mat S	SIL \\// 100 \	<ul> <li>Initial Moisture) =</li> </ul>					Unwashed	Wt.=				
	JII VVI.)/(100 +	- miliai woisture) =	Total	•			Tare		Wt. Passin	g #200 =	•	
Starting	0/ #40	Elapsed	Reading	Temp		Corr. Reading	7. ()	SQRT(Zr)/T				
Wt. (g)	% - #10	Time (min)	R	(0C)	K	R`	Zr (cm)	(min)	D (mm)	N (%)	N*(%-#10)	
50.0	0.767	0.5				27.0			0.066			
50.0 50.0	0.767	1	32.0 30.0	20.0 20.0		24.0 22.0	12.3 12.7	3.512 2.516	0.048	48.0 44.0		
50.0	0.767	2	27.5			22.0	12.7		0.034	44.0 39.0		
50.0	0.767	8	27.5	20.0		19.5	13.1		0.025	39.0		
50.0	0.767	15	23.3	20.0		14.0	14.0		0.013	28.0		
50.0	0.767	30	20.0	20.0		12.0	14.3		0.009	24.0		
50.0	0.767	60		20.0		9.5	14.7	0.495	0.007	19.0		
50.0	0.767	120	16.0	20.0		8.0		0.353	0.005	16.0	12	
	0.767	240	14.0	20.0	0.01365	6.0	15.3	0.253	0.003	12.0	9.	
50.0		480	13.0	20.0		5.0	15.5		0.002	10.0	7.	
50.0	0.767		10.0	19.0	0.01382	5.0	15.5	0.104	0.001	10.0	7.	
50.0 50.0	0.767	1440	13.0		0.01002							
50.0 50.0 Hydromete	0.767 er # <b>: 79041</b> /		13.0 Graduate #		0.01002		Agent: Sod	ium Hex		Amount: 12	25ml	
50.0 50.0 Hydromete Density of S	0.767 er # <b>: 79041</b> /	4			0.01002		Agent: Sod	ium Hex		Amount: 12	25ml	

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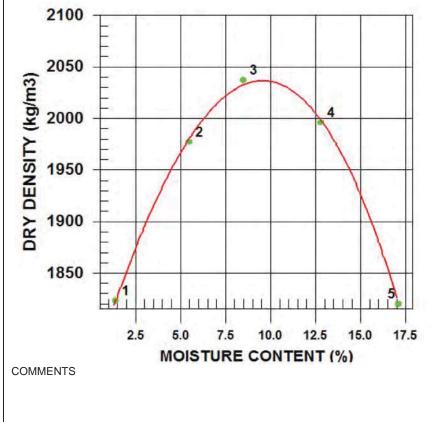
PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Les Galbraith @ 604-685-0147

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

PROCTOR NO. 1 DATE TESTED 2009.Dec.17 DATE RECEIVED 2009.Dec.15 DATE SAMPLED 2009.Dec.10

INSITU MOISTURE SAMPLED BY	N/A % CLIENT	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	RO	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	CH 6+25, SE	RAMMER TYPE	Automatic
MATERIAL IDENTIF	ICATION	PREPARATION	Moist
MAJOR COMPON	ENT TILL	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	75MM	RETAINED 4.75mm SCREEN	18.0%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.65
ROCK TYPE		TOTAL NUMBER OF TRIALS	5

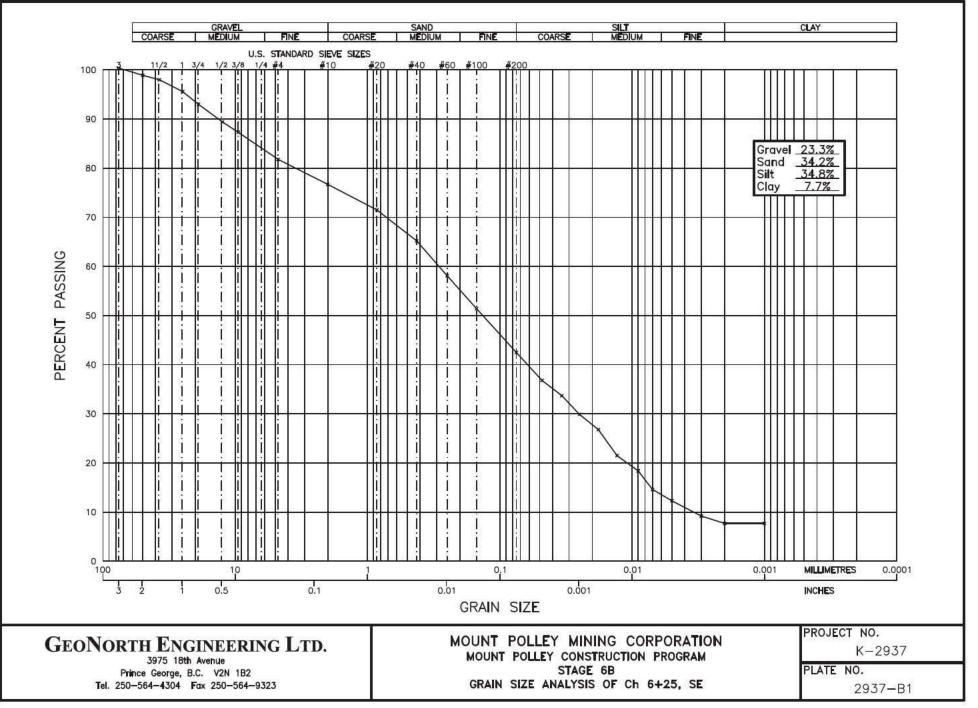


TRIAL NUMBER	WET DENSITY (kg/m3)	DRY DENSITY (kg/m3)	MOISTURE CONTENT (%)
1	1849	1823	1.4
2	2086	1977	5.5
3	2210	2037	8.5
4	2252	1996	12.8
5	2131	1820	17.1

	MAXIMUM DRY DENSITY (kg/m3)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	2040	9.5
OVERSIZE CORRECTED	2130	8.0

Page 1 of 1 2009.Dec.21 GeoNorth Engineering Ltd.

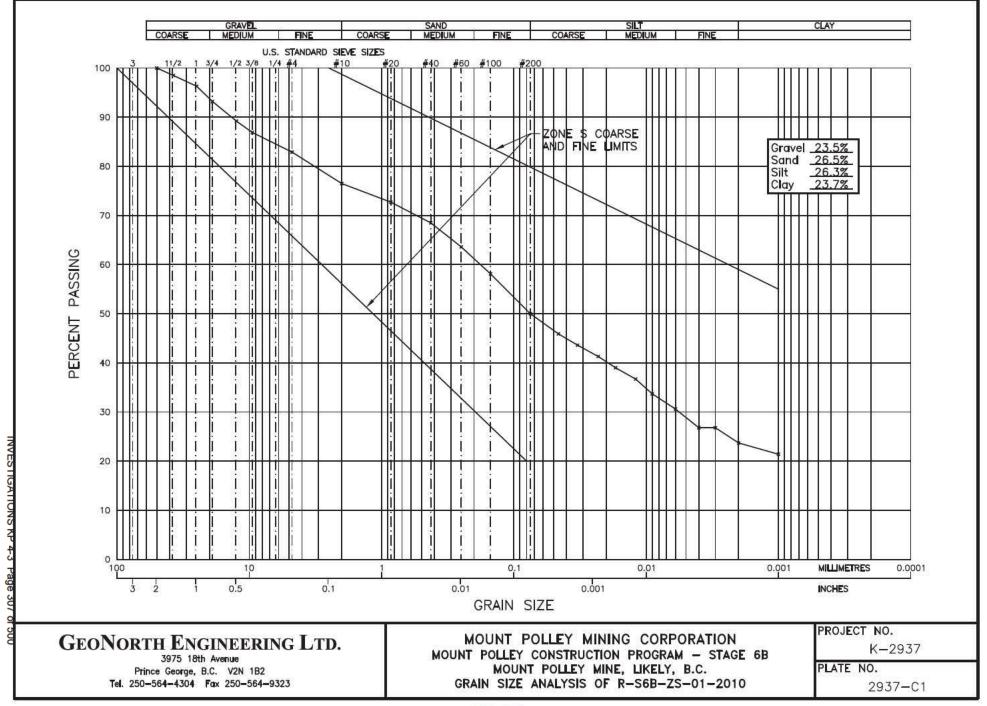
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#### **GeoNorth Engineering Ltd.** SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то C.C. Knight Piesold Ltd. Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ email PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010.Mar.03 DATE TESTED 2010.Mar.04 DATE SAMPLED 2010.Feb.27 SIEVE TEST NO. 4 CLIENT SUPPLIER SAMPLED BY R-S6B-ZS-01-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE TILL 1%-1 3/4 % 3/8 =4 #10 #20 #40 #60 #100 #200 2-100 0 -90 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 3 60 40 50 50 40 60 H 30 70 1111 20 80 11111111 10 - 90 - 100 0 10 50 9,5 mm 4.75 0,85 37.5 mn 22 12:0 425 250 19 150 mm mm H TIC mm TH hun LI Ξ Ξ Ξ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION PASSING LIMITS PASSING LIMITS 3" 75 mm No. 4 4.75 mm 82.9 2" 100.0 No. 10 2.00 mm 76.5 50 mm $1 \ 1/2"$ 37.5 mm 98.5 No. 20 71.5 850 µm No. 40 96.3 67.1 1" 25 mm 425 um 3/4" 19 mm 93.2 No. 60 250 µm 62.3 1/2" 12.5 mm 89.2 No. 100 57.0 150 µm 86.9 48.8 3/8" 9.5 mm No. 200 75 µm MOISTURE CONTENT 14.1% COMMENTS RE: PROCTOR REPORT No. 2 and PLATE No. 2937-C1 Location: PE, Chainage: 4050, Elevation: 954.6, Offset: c/l to Zone S Page 1 of 1 2010.Mar.09 GeoNorth Engineering Ltd. PER. -

	unt Polley	Mining Corpor	ation						Date: Marc	h 5, 2010	
Project Na	me: MPCP								Project #:		
		unt Polley Min	e, Likely B.	C.					Type: TILL		
Sample #:	R-S6B-ZS-	01-2010	PE Chainage: 4050 Elevation: 954.6			Offset: c/l to Zone S					
Sampled By: Client				Tested By: DJ					Checked By: NK		
Date Sampled: 02/27/10				Date Received: 03/03/10					Date Tested: 03/04/10		
Initial Moisture Content				Sieve Analysis				Hydrometer Sieve Analysis			
						% Finer					
						Than			Total Wt.		% Finer
				Weight	Total Wt.	Orig.		Weight	Finer	% Finer	Than Orig
				Retained	Passing	Samp.	Sieve No.	Retained	Than	Than	Samp.
Tare No.			38.1				10		50.0		
Net Wt. &		987.1	25.4				20		47.5	95.0	72.
Dry Wt. & T	are	887.6	19.0				40		44.8	89.6	
Water Wt.		99.5	12.5				60		41.6	83.2	
Tare Wt.		179.9	9.5				100		38.0		
Wt. Of Dry		707.7	4.75				200		32.7	65.4	50.
Moisture C		14.1	10	SEE SIE	VE REPOR	RT #4	Pan	32.7			
Dry Wt. Of Sample from Initial Moisture						Total	50.0				
=(100xWet Soil Wt.)/(100 + Initial Moisture) =						Unwashed	Wt.=				
-(100,000,000	JII VVI. <i>JI</i> (100 +		Total				Tare		Wt. Passin	g #200 =	
						Corr.					
						Reading					
Starting		Elapsed	Reading	Temp		Reading		SQRT(Zr)/T			
	% - #10	Elapsed Time (min)	Reading R	Temp (0C)	к	R`	Zr (cm)	(min)	D (mm)	N (%)	N*(%-#10)
<b>Wt. (g)</b> 50.0	0.765		<b>R</b> 40.5	( <b>0C)</b>	0.01365	<b>R`</b> 32.5	10.9	(min) 4.676	0.064	65.0	49.
Wt. (g) 50.0 50.0	0.765 0.765	<b>Time (min)</b> 0.5	R 40.5 38.0	(0C) 20.0 20.0	0.01365 0.01365	<b>R</b> ` 32.5 30.0	10.9 11.3	(min) 4.676 3.368	0.064	65.0 60.0	49. 45.
Wt. (g) 50.0 50.0 50.0	0.765 0.765 0.765	Time (min) 0.5 1 2	R 40.5 38.0 36.5	(0C) 20.0 20.0 20.0	0.01365 0.01365 0.01365	<b>R</b> ` 32.5 30.0 28.5	10.9 11.3 11.6	(min) 4.676 3.368 2.408	0.064 0.046 0.033	65.0 60.0 57.0	49. 45. 43.
Wt. (g) 50.0 50.0 50.0 50.0	0.765 0.765 0.765 0.765	Time (min) 0.5 1 2 4	R 40.5 38.0 36.5 35.0	(0C) 20.0 20.0 20.0 20.0	0.01365 0.01365 0.01365 0.01365	<b>R</b> ` 32.5 30.0 28.5 27.0	10.9 11.3 11.6 11.8	(min) 4.676 3.368 2.408 1.720	0.064 0.046 0.033 0.023	65.0 60.0 57.0 54.0	49. 45. 43. 41.
Wt. (g) 50.0 50.0 50.0 50.0 50.0	0.765 0.765 0.765 0.765 0.765	Time (min) 0.5 1 2 4 8	R 40.5 38.0 36.5 35.0 33.5	(0C) 20.0 20.0 20.0 20.0 20.0	0.01365 0.01365 0.01365 0.01365 0.01365 0.01365	<b>R</b> ` 32.5 30.0 28.5 27.0 25.5	10.9 11.3 11.6 11.8 12.1	(min) 4.676 3.368 2.408 1.720 1.229	0.064 0.046 0.033 0.023 0.017	65.0 60.0 57.0 54.0 51.0	49. 45. 43. 41. 39.
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.765 0.765 0.765 0.765 0.765 0.765	Time (min) 0.5 1 2 4 8 15	R 40.5 38.0 36.5 35.0 33.5 32.0	(0C) 20.0 20.0 20.0 20.0 20.0 20.0	0.01365 0.01365 0.01365 0.01365 0.01365 0.01365	<b>R</b> ` 32.5 30.0 28.5 27.0 25.5 24.0	10.9 11.3 11.6 11.8 12.1 12.3	(min) 4.676 3.368 2.408 1.720 1.229 0.907	0.064 0.046 0.033 0.023 0.017 0.017	65.0 60.0 57.0 54.0 51.0 48.0	49. 45. 43. 41. 39. 36.
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.	0.765 0.765 0.765 0.765 0.765 0.765 0.765	Time (min) 0.5 1 2 4 4 8 15 30	R 40.5 38.0 36.5 35.0 33.5 32.0 30.0	(0C) 20.0 20.0 20.0 20.0 20.0 20.0 20.0	0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01365	<b>R</b> ` 32.5 30.0 28.5 27.0 25.5 24.0 22.0	10.9 11.3 11.6 11.8 12.1 12.3 12.7	(min) 4.676 3.368 2.408 1.720 1.229 0.907 0.650	0.064 0.046 0.033 0.023 0.017 0.012 0.009	65.0 60.0 57.0 54.0 51.0 48.0 44.0	49. 45. 43. 41. 39. 36. 33.
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.	0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765	Time (min) 0.5 1 2 4 4 8 15 30 60	R 40.5 38.0 36.5 35.0 33.5 32.0 30.0 27.5	(0C) 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.	0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01332	<b>R</b> ` 32.5 30.0 28.5 27.0 25.5 24.0 22.0 20.0	10.9 11.3 11.6 11.8 12.1 12.3 12.7 13.0	(min) 4.676 3.368 2.408 1.720 1.229 0.907 0.650 0.465	0.064 0.046 0.033 0.023 0.017 0.012 0.009 0.006	65.0 60.0 57.0 54.0 51.0 48.0 44.0 40.0	49. 45. 43. 41. 39. 36. 33. 30.
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765	Time (min) 0.5 1 2 4 8 15 30 60 120	R 40.5 38.0 36.5 35.0 33.5 32.0 30.0 27.5 25.0	(0C) 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 22.0 22.0	0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01332 0.01332	<b>R</b> ` 32.5 30.0 28.5 27.0 25.5 24.0 22.0 20.0 17.5	10.9 11.3 11.6 11.8 12.1 12.3 12.7 13.0 13.4	(min) 4.676 3.368 2.408 1.720 1.229 0.907 0.650 0.465 0.334	0.064 0.046 0.033 0.023 0.017 0.012 0.009 0.006 0.004	65.0 60.0 57.0 54.0 51.0 48.0 44.0 40.0 35.0	49. 45. 43. 41. 39. 36. 33. 30. 26.
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765	Time (min) 0.5 1 2 4 8 15 30 60 120 240	R 40.5 38.0 36.5 35.0 33.5 32.0 30.0 27.5 25.0 25.0	(0C) 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 22.0 22.0 22.0	0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01332 0.01332 0.01332	R` 32.5 30.0 28.5 27.0 25.5 24.0 22.0 20.0 17.5 17.5	10.9 11.3 11.6 11.8 12.1 12.3 12.7 13.0 13.4 13.4	(min) 4.676 3.368 2.408 1.720 1.229 0.907 0.650 0.465 0.334 0.236	0.064 0.046 0.033 0.023 0.017 0.012 0.009 0.006 0.004 0.003	65.0 60.0 57.0 54.0 51.0 48.0 44.0 40.0 35.0 35.0	49. 45. 43. 41. 39. 36. 33. 30. 26. 26.
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480	R 40.5 38.0 36.5 35.0 33.5 32.0 30.0 27.5 25.0 25.0 25.0 23.0	(0C) 20.0 20.0 20.0 20.0 20.0 20.0 20.0 22.0 22.0 22.0 22.0	0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01332 0.01332 0.01332 0.01332	<b>R</b> ` 32.5 30.0 28.5 27.0 25.5 24.0 22.0 20.0 17.5 17.5 15.5	10.9 11.3 11.6 11.8 12.1 12.3 12.7 13.0 13.4 13.4 13.4 13.7	(min) 4.676 3.368 2.408 1.720 1.229 0.907 0.650 0.465 0.334 0.236 0.169	0.064 0.046 0.033 0.023 0.017 0.012 0.009 0.006 0.004 0.003 0.002	65.0 60.0 57.0 54.0 51.0 48.0 44.0 40.0 35.0 35.0 31.0	49. 45. 43. 41. 39. 36. 33. 30. 26. 26. 26. 23.
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480 1440	R 40.5 38.0 36.5 35.0 33.5 32.0 30.0 27.5 25.0 25.0 23.0 22.0	(0C) 20.0 20.0 20.0 20.0 20.0 20.0 20.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01332 0.01332 0.01332 0.01332	<b>R</b> ` 32.5 30.0 28.5 27.0 25.5 24.0 22.0 20.0 17.5 17.5 15.5 14.0	10.9 11.3 11.6 11.8 12.1 12.3 12.7 13.0 13.4 13.4 13.4 13.7 14.0	(min) 4.676 3.368 2.408 1.720 1.229 0.907 0.650 0.465 0.334 0.236 0.169 0.099	0.064 0.046 0.033 0.023 0.017 0.012 0.009 0.006 0.004 0.003	65.0 60.0 57.0 54.0 51.0 48.0 44.0 40.0 35.0 35.0 31.0 28.0	49. 45. 43. 41. 39. 36. 33. 30. 26. 26. 26. 23. 21.
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480 1440	R 40.5 38.0 36.5 35.0 33.5 32.0 30.0 27.5 25.0 25.0 25.0 23.0	(0C) 20.0 20.0 20.0 20.0 20.0 20.0 20.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01332 0.01332 0.01332 0.01332	<b>R</b> ` 32.5 30.0 28.5 27.0 25.5 24.0 22.0 20.0 17.5 17.5 15.5 14.0	10.9 11.3 11.6 11.8 12.1 12.3 12.7 13.0 13.4 13.4 13.4 13.7	(min) 4.676 3.368 2.408 1.720 1.229 0.907 0.650 0.465 0.334 0.236 0.169 0.099	0.064 0.046 0.033 0.023 0.017 0.012 0.009 0.006 0.004 0.003 0.002	65.0 60.0 57.0 54.0 51.0 48.0 44.0 40.0 35.0 35.0 31.0	49. 45. 43. 41. 39. 36. 33. 30. 26. 26. 26. 23. 21.
Wt. (g) 50.0 50.	0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765 0.765	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480 1440 4	R 40.5 38.0 36.5 35.0 33.5 32.0 30.0 27.5 25.0 25.0 23.0 22.0	(0C) 20.0 20.0 20.0 20.0 20.0 20.0 20.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01365 0.01332 0.01332 0.01332 0.01332	<b>R</b> ` 32.5 30.0 28.5 27.0 25.5 24.0 22.0 20.0 17.5 17.5 15.5 14.0	10.9 11.3 11.6 11.8 12.1 12.3 12.7 13.0 13.4 13.4 13.4 13.7 14.0	(min) 4.676 3.368 2.408 1.720 1.229 0.907 0.650 0.465 0.334 0.236 0.169 0.099	0.064 0.046 0.033 0.023 0.017 0.012 0.009 0.006 0.004 0.003 0.002	65.0 60.0 57.0 54.0 51.0 48.0 44.0 40.0 35.0 35.0 31.0 28.0	49. 45. 43. 41. 39. 36. 33. 30. 26. 26. 26. 23. 21.



3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

#### MOISTURE - DENSITY RELATIONSHIP REPORT

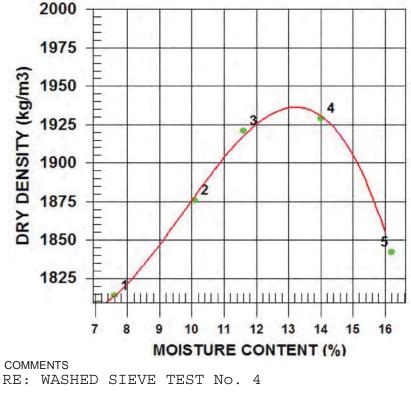
PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ email

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

PROCTOR NO. 2 DATE TESTED 2010.Mar.05 DATE RECEIVED 2010.Mar.03 DATE SAMPLED 2010.Feb.27

INSITU MOISTURE	N/A %	COMPACTION STANDARD	Standard Proctor,
SAMPLED BY	CLIENT		ASTM D698
TESTED BY	DJ	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER	CLIENT		Passing 4.75mm
SOURCE	R-S6B-ZS-01-2010	RAMMER TYPE	Automatic
MATERIAL IDENTIF	ICATION	PREPARATION	Moist
MAJOR COMPON	ENT TILL	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	37.5mm	RETAINED 4.75mm SCREEN	17.0%
DESCRIPTION	SILTY	OVERSIZE SPECIFIC GRAVITY	2.65
ROCK TYPE		TOTAL NUMBER OF TRIALS	5
10000			



TRIAL NUMBER	WET DENSITY (kg/m3)	DRY DENSITY (kg/m3)	MOISTURE CONTENT (%)
1	1952	1814	7.6
2	2065	1876	10.1
3	2144	1921	11.6
4	2199	1929	14.0
5	2140	1842	16.2

	MAXIMUM DRY DENSITY (kg/m3)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1940	13.0
OVERSIZE CORRECTED	2030	11.0

Page 1 of 1 2010.Mar.09 GeoNorth Engineering Ltd.

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#### **GeoNorth Engineering Ltd.** SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то C.C. Knight Piesold Ltd. Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Apr. 07 DATE TESTED 2010. Apr. 08 DATE SAMPLED 2010. Apr. 05 SIEVE TEST NO. 15 R-S6B-ZS-02-2010 Client SUPPLIER SAMPLED BY Main Embankment SR SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Glacial Till - Core Material 1%7 1" 3/4" %" 3/8" =4 #10 #20 #40 #60 #100 #200 2-100 0 = 90 10 1111 80 20 PERCENT PASSING -----PERCENT RETAINED 70 30 1 60 40 1111 50 50 40 60 70 30 IIII 20 80 11111111 10 - 90 - 100 0 9,5 mm 10 50 4.75 0,85 37.5 mn 26 425 250 19 12.5 150 µm mm mm H TIC mm F F Ξ Ξ Ξ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING 3" 75 mm 100.0 No. 4 4.75 mm 76.4 2" 98.5 No. 10 2.00 mm 71.9 50 mm $1 \ 1/2"$ 37.5 mm 96.6 No. 20 66.5 850 µm No. 40 91.6 60.6 1" 25 mm 425 um 3/4" 19 mm 88.7 No. 60 250 µm 54.0 1/2" 12.5 mm 84.7 No. 100 47.8 150 µm 3/8" 82.5 No. 200 39.3 9.5 mm 75 µm COMMENTS Location: ME, Chainage: 2550, Elevation: 955.8, Offset: Zone S See Plate B2 and C6

Page 1 of 1 2010. Apr. 13 GeoNorth Engineering Ltd.

0	unt Polley	Mining Corp.							Date: April	12, 2010	
Project Na									Project #:		
		6B-ZS-02-2010	)							ial Till - Cor	e Material
Sample #: Test #: Hole #: Depth:								Time:			
Sampled By			•	Tested By:	DJ				Checked B		
Date Samp				Date Rece	ived: 04.07.	10				ed: 04.09.10	
Initia	I Moisture	Content		Sieve A	nalysis			Hydrom	eter Sieve	Analysis	
				Weight	Total Wt.	% Finer Than Orig.		Weight	Total Wt. Finer	% Finer	% Finer Than Orig
			Sieve No.	Retained	Passing	Samp.	Sieve No.	Retained	Than	Than	Samp.
Tare No.			38.1				10		50.0	100.0	
Wet Wt. & T	Tare	1112.5	25.4				20	3.2	46.8		67.3
Dry Wt. & T	are	1035.8	19.0				40	4.7	42.1	84.2	60.
Water Wt.		76.7	12.5				60		37.1	74.2	
Tare Wt.		181.1	9.5				100		31.7	63.4	
Wt. Of Dry		854.7	4.75				200		27.2	54.4	39.
Moisture C		9.0	10		HED SIEVE	No. 15	Pan	27.2			
Dry Wt. Of S	Dry Wt. Of Sample from Initial Moisture		PLAT	E No. C6		Total	50.0				
-(100xWet So	oil Wt )/(100 +	Initial Moisture) =					Unwashed Wt.=				
-(100,110, 00	,		Total	854.7			Tare		Wt. Passin	g #200 =	
Starting Wt. (g)	% - #10	Elapsed Time (min)	Reading R	Temp (0C)	к	Corr. Reading R`	Zr (cm)	SQRT(Zr)/T (min)	D (mm)	N (%)	N*(%-#10)
50.0	0.719	0.5		21.0			. ,	· /	0.069		. ,
50.0	0.719	0.0	24.0	21.0		16.0		3.695	0.003		
50.0	0.719	2	22.5	21.0		14.5			0.036		
50.0	0.719	4	20.0	21.0		12.0			0.026		
50.0	0.719	8	18.5	21.0		10.5			0.018		
50.0	0.719	15	17.0	21.0	0.01348	9.0	14.8		0.013		12.
50.0	0.719	30	15.0	20.0		7.0		0.710	0.010		
50.0	0.719	60	13.0	20.0		5.0			0.007	10.0	7.2
50.0	0.719	120	12.0	20.0		4.0			0.005	8.0	
50.0	0.719	240	11.0	20.0		3.0			0.004	6.0	
50.0	0.719	480	9.0	20.0		1.0		0.183	0.003	2.0	1.4
50.0	0.719	1440	8.0	20.0	0.01365	0.0			0.001	0.0	
	er #: 790414	4	Graduate #	:		Dispersing	Agent: Sod	ium Hex		Amount: 12	25ml
Density of S Description	of Sample:										Noelo

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#### MOISTURE - DENSITY RELATIONSHIP REPORT

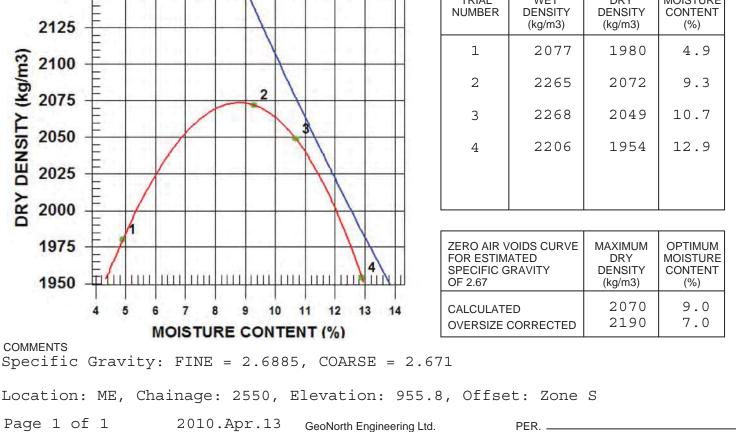
PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

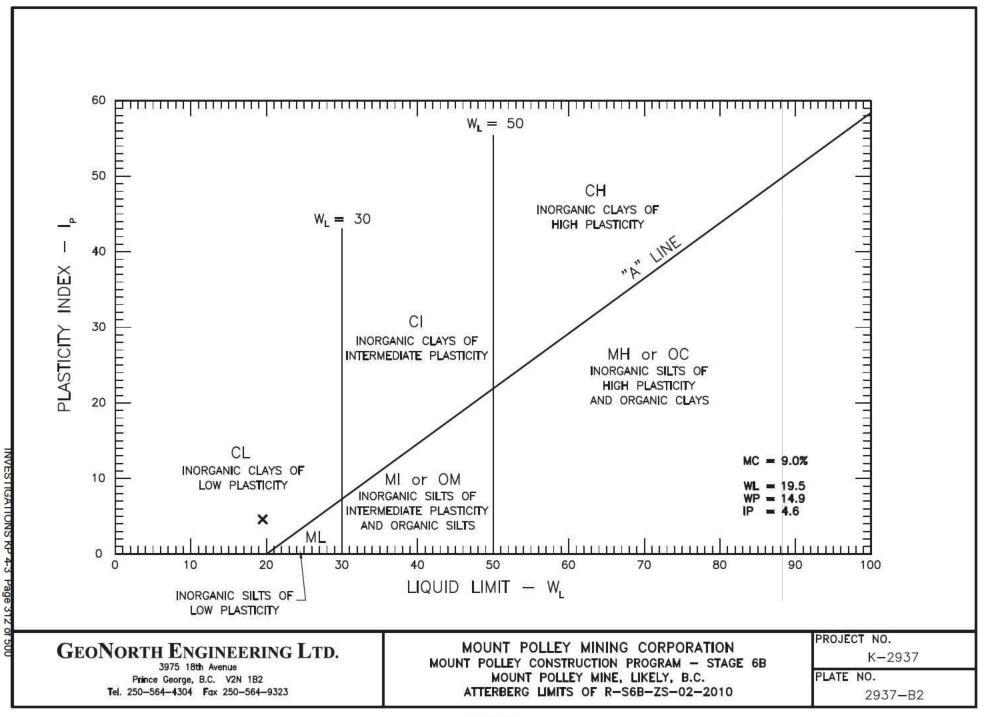
TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

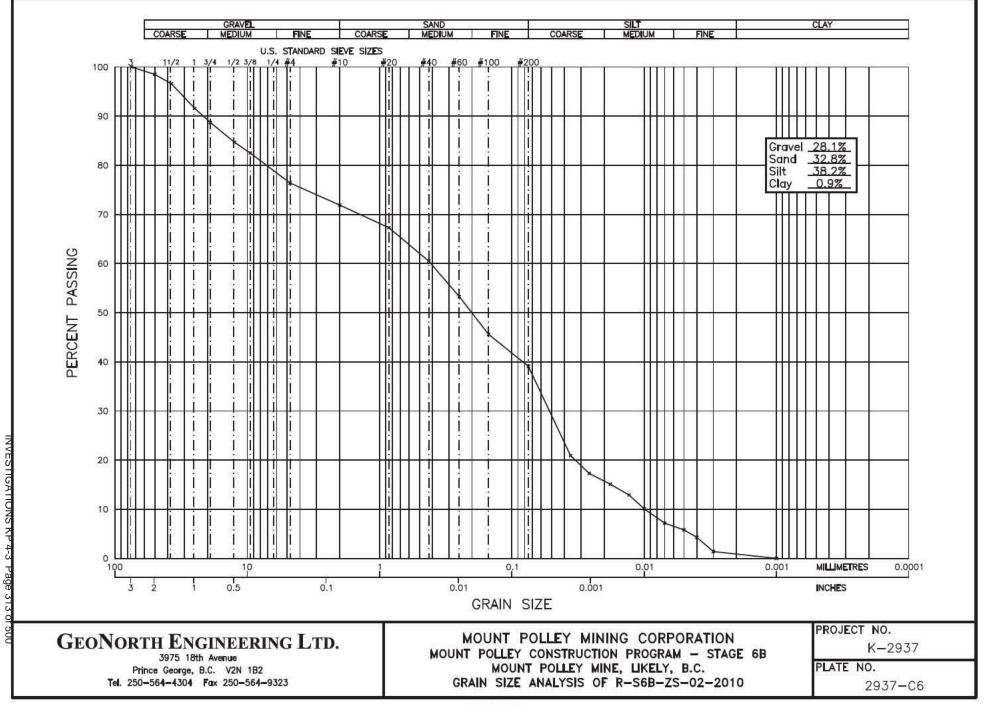
PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

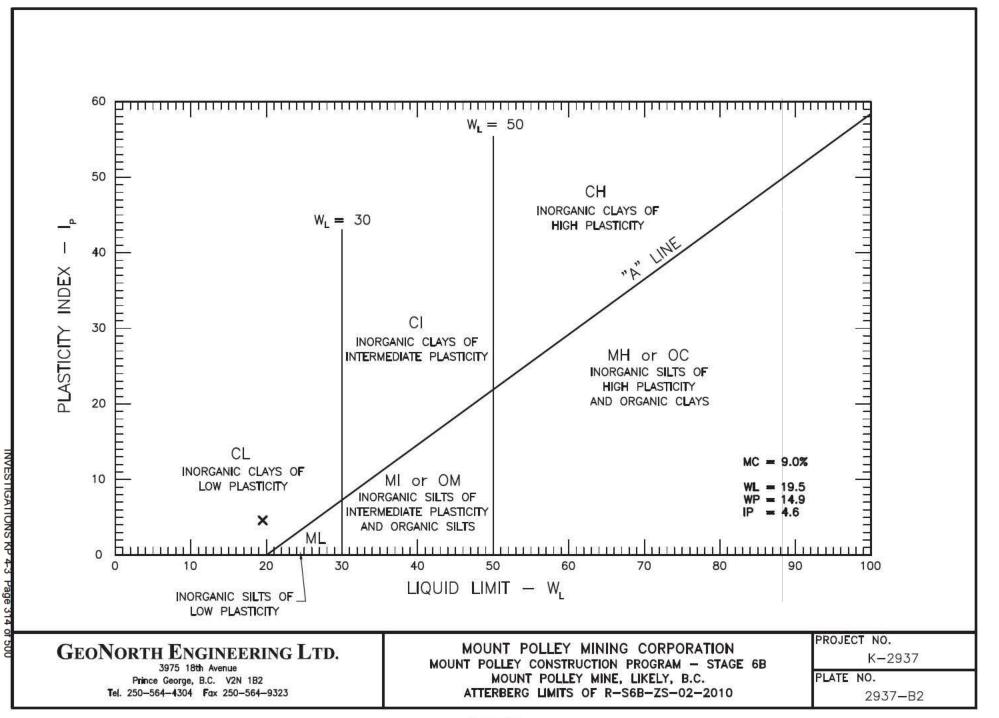
PROCTOR NO. 4 DATE TESTED 2010. Apr.09 DATE RECEIVED 2010. Apr.07 DATE SAMPLED 2010. Apr.05

INSITU MOISTURE N/A %	COMPACTION STAN	NDARD	Standa	ard Proc	tor,
SAMPLED BY Client			ASTM 1	D698	
TESTED BY DJ	COMPACTION PRO	CEDURE	A: 10	1.6mm Mc	old,
SUPPLIER			Passi	ng 4.75m	ım
SOURCE R-S6B-ZS-02-2	D10 RAMMER TYPE		Autom	atic	
MATERIAL IDENTIFICATION	PREPARATION		Moist		
MAJOR COMPONENT TILL	OVERSIZE CORREC	CTION METH	od ASTM 4	4718	
SIZE 50MM	RETAINED 4.75mm	SCREEN	24.0%	)	
DESCRIPTION	OVERSIZE SPECIFIC	C GRAVITY	2.67		
ROCK TYPE	TOTAL NUMBER OF	TRIALS	4		
2450				1	1
2150		TRIAL	WET	DRY	MOISTURE
E Barris Barris and States and St		NUMBER	DENSITY	DENSITY	CONTENT









#### **GeoNorth Engineering Ltd.** SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Apr.09 DATE TESTED 2010. Apr.12 DATE SAMPLED 2010. Apr.07 SIEVE TEST NO. 16 MS-Client SUPPLIER SAMPLED BY R-S6B-ZS-02-2010 (b) DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Compacted TILL 1%-1 3/4 % 3/8 =4 #10 #20 #40 #60 #100 #200 100 0 = 90 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 60 40 111 50 50 40 - 60 30 70 1111 20 80 11111111 10 90 - 100 0 9,5 mm 10 50 4.75 0.85 37.5 mn 26 425 250 19 12.5 150 µm mm mm H TIC mm F hun Ξ Ξ Ξ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING 3" 75 mm 100.0 No. 4 4.75 mm 80.7 2" 97.1 No. 10 2.00 mm 75.0 50 mm $1 \ 1/2"$ 37.5 mm 96.3 No. 20 69.2 850 µm No. 40 93.8 63.0 1" 25 mm 425 um 91.9 3/4" 19 mm No. 60 250 µm 56.3 1/2" 12.5 mm 88.4 No. 100 50.0 150 µm 3/8" 86.1 No. 200 41.5 9.5 mm 75 µm COMMENTS Re: Plate C7 Location: PE, Chainage: 4650, Elevation: 956.1, Offset: Zone S Page 1 of 1 2010.Apr.19 GeoNorth Engineering Ltd. PER.

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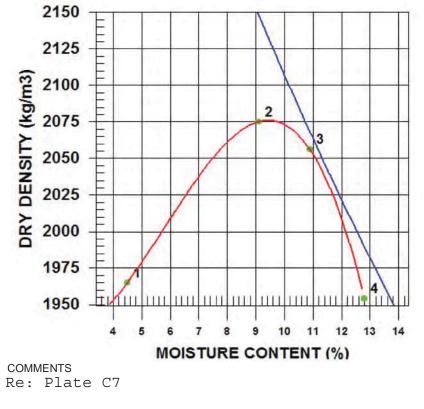
PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

PROCTOR NO. 5 DATE TESTED 2010. Apr. 12 DATE RECEIVED 2010. Apr. 09 DATE SAMPLED 2010. Apr. 07

INSITU MOISTURE	N/A %	COMPACTION STANDARD	Standard Proctor,
SAMPLED BY	MS-Client		ASTM D698
TESTED BY	DJ	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	R-S6B-ZS-02-2010 (b)	RAMMER TYPE	Automatic
MATERIAL IDENTIF	ICATION	PREPARATION	Moist
MAJOR COMPONE	ENT TILL	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	50MM	RETAINED 4.75mm SCREEN	18.0%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.67
ROCK TYPE		TOTAL NUMBER OF TRIALS	4



TRIAL NUMBER	WET DENSITY (kg/m3)	DRY DENSITY (kg/m3)	MOISTURE CONTENT (%)
1	2053	1965	4.5
2	2264	2075	9.1
3	2280	2056	10.9
4	2204	1954	12.8

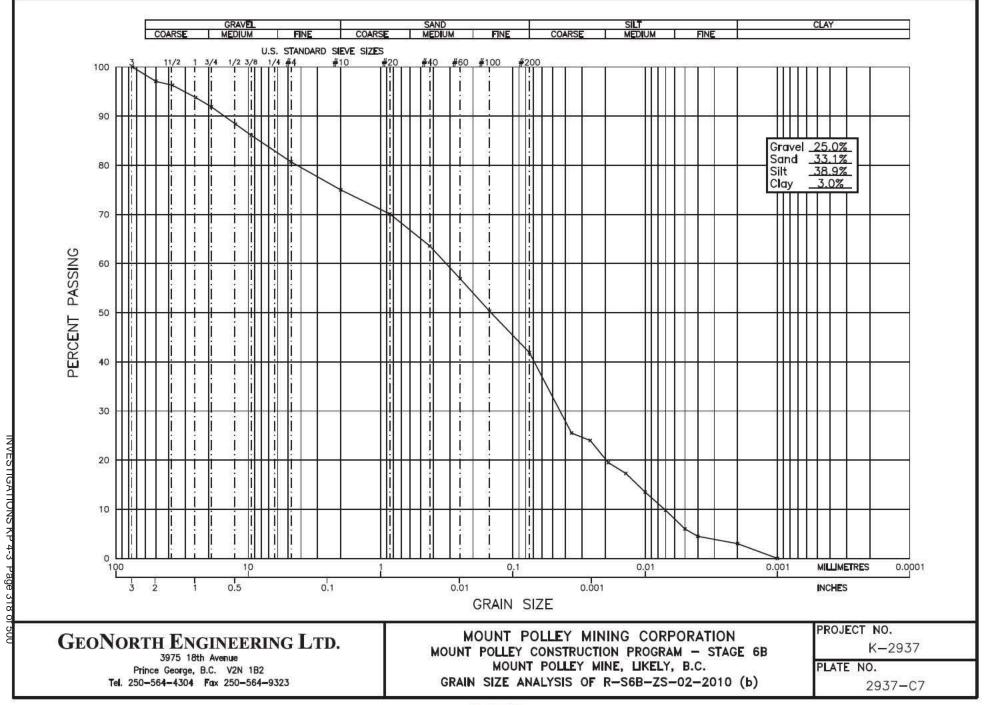
ZERO AIR VOIDS CURVE	MAXIMUM	OPTIMUM
FOR ESTIMATED	DRY	MOISTURE
SPECIFIC GRAVITY	DENSITY	CONTENT
OF 2.67	(kg/m3)	(%)
CALCULATED	2080	9.5
OVERSIZE CORRECTED	2170	8.0

Location: PE, Chainage: 4650, Elevation: 956.1, Offet: Zone S

Page 1 of 1 2010. Apr. 19 GeoNorth Engineering Ltd.

PER.

	unt Pollev	Mining Corp.							Date: April	15, 2010	
Project Name: MPCP - Stage 6 Project #: K-2937											
		6B-ZS-02-201	0 (b)						Type: TILL		
							Time:				
Sampled By	y: MS		1	Tested By:	DJ		-		Checked B	y: NK	
Date Samp	led: 04.07.1	0		Date Rece	ived: 04.09.	10			Date Teste	d: 04.13.10	
Initia	I Moisture	Content		Sieve A	nalysis			Hydrom	eter Sieve	Analysis	
1						% Finer					
						Than			Total Wt.		% Finer
				Weight	Total Wt.	Orig.		Weight	Finer	% Finer	Than Orig
			Sieve No.	Retained	Passing	Samp.	Sieve No.	Retained	Than	Than	Samp.
Tare No.			38.1				10		50.0	100.0	75.0
Wet Wt. & T		1112.5	25.4				20		46.7	93.4	
Dry Wt. & T	Tare	1035.8	19.0				40		42.4	84.8	
Water Wt.		76.7	12.5				60	-	37.9	75.8	
Tare Wt.		181.1	9.5				100		33.5	67.0	
Wt. Of Dry		854.7	4.75				200		27.9	55.8	41.9
Moisture C		9.0	10		HED SIEVE	No. 16	Pan	27.9			
Dry Wt. Of Sample from Initial Moisture			PLAT	E No. C7		Total	50.0				
	00xWet Soil Wt.)/(100 + Initial Moisture) =						Unwashed	Wt.=			
-(100,100,000,000	JII VVI. <i>JI</i> (100 +		Total	854.7 Ta		Tare Wt. Passing #200 =					
						Corr.					
			Reading	Temp		Reading		SQRT(Zr)/T			
Starting		Elapsed	Reauling	remp							
-	% - #10	Elapsed Time (min)	R	(0C)	к	R`	Zr (cm)	(min)	D (mm)	N (%)	N*(%-#10)
-	0.750		R	(0C)	<b>K</b> 0.01399	R`	. ,	(min)	<b>D (mm)</b> 0.070	. ,	34.5
Wt. (g) 50.0 50.0	0.750 0.750	Time (min)	R 31.0 27.0	(0C)	0.01399 0.01399	<b>R</b> ` 23.0 19.0	12.5 13.2	(min) 5.000 3.628	0.070	46.0 38.0	34.5
Wt. (g) 50.0 50.0 50.0	0.750 0.750 0.750	Time (min) 0.5	R 31.0 27.0 25.0	(0C) 18.0 18.0 18.0	0.01399 0.01399 0.01399	<b>R</b> ` 23.0 19.0 17.0	12.5 13.2 13.5	(min) 5.000 3.628 2.597	0.070 0.051 0.036	46.0 38.0 34.0	34.5 28.5 25.5
Wt. (g) 50.0 50.0 50.0 50.0	0.750 0.750 0.750 0.750	Time (min) 0.5 1 2 4	R 31.0 27.0 25.0 24.0	(0C) 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399	<b>R</b> ` 23.0 19.0 17.0 16.0	12.5 13.2 13.5 13.7	(min) 5.000 3.628 2.597 1.848	0.070 0.051 0.036 0.026	46.0 38.0 34.0 32.0	34.5 28.5 25.5 24.0
Wt. (g) 50.0 50.0 50.0 50.0 50.0	0.750 0.750 0.750 0.750 0.750	Time (min) 0.5 1 2 4 8	R 31.0 27.0 25.0 24.0 21.0	(0C) 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399	<b>R</b> ` 23.0 19.0 17.0 16.0 13.0	12.5 13.2 13.5 13.7 14.2	(min) 5.000 3.628 2.597 1.848 1.330	0.070 0.051 0.036 0.026 0.019	46.0 38.0 34.0 32.0 26.0	34.! 28.! 25.! 24.( 19.!
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0	0.750 0.750 0.750 0.750 0.750 0.750 0.750	Time (min) 0.5 1 2 4 8 15	R 31.0 27.0 25.0 24.0 21.0 19.5	(0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399	<b>R</b> ` 23.0 19.0 17.0 16.0 13.0 11.5	12.5 13.2 13.5 13.7 14.2 14.4	(min) 5.000 3.628 2.597 1.848 1.330 0.980	0.070 0.051 0.036 0.026 0.019 0.014	46.0 38.0 34.0 32.0 26.0 23.0	34.5 28.5 25.5 24.0 19.5 17.3
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.750 0.750 0.750 0.750 0.750 0.750 0.750	Time (min) 0.5 1 2 4 4 8 15 30	R 31.0 27.0 25.0 24.0 21.0 19.5 17.0	(0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399	<b>R</b> ` 23.0 19.0 17.0 16.0 13.0 11.5 9.0	12.5 13.2 13.5 13.7 13.7 14.2 14.4 14.8	(min) 5.000 3.628 2.597 1.848 1.330 0.980 0.703	0.070 0.051 0.036 0.026 0.019 0.014 0.010	46.0 38.0 34.0 32.0 26.0 23.0 18.0	34.5 28.5 25.5 24.0 19.5 17.3 13.5
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.	0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750	Time (min) 0.5 1 2 4 4 8 15 30 60	R 31.0 27.0 25.0 24.0 21.0 19.5 17.0 14.5	(0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0 19.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382	<b>R</b> ` 23.0 19.0 17.0 16.0 13.0 11.5 9.0 6.5	12.5 13.2 13.5 13.7 14.2 14.4 14.8 15.2	(min) 5.000 3.628 2.597 1.848 1.330 0.980 0.703 0.504	0.070 0.051 0.036 0.026 0.019 0.014 0.010 0.007	46.0 38.0 34.0 32.0 26.0 23.0 18.0 13.0	34.5 28.5 25.5 24.0 19.5 17.3 13.5 9.6
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750	Time (min) 0.5 1 2 4 8 15 30 60 120	R 31.0 27.0 25.0 24.0 21.0 19.5 17.0 14.5 12.0	(0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0 19.0 19.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382 0.01382	<b>R</b> ` 23.0 19.0 17.0 16.0 13.0 11.5 9.0 6.5 4.0	12.5 13.2 13.5 13.7 14.2 14.4 14.8 15.2 15.6	(min) 5.000 3.628 2.597 1.848 1.330 0.980 0.703 0.504 0.361	0.070 0.051 0.036 0.026 0.019 0.014 0.010 0.007 0.005	46.0 38.0 34.0 32.0 26.0 23.0 18.0 13.0 8.0	34.5 28.5 25.5 24.0 19.5 17.3 13.5 9.6 6.0
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750	Time (min) 0.5 1 2 4 8 15 30 60 120 240	R 31.0 27.0 25.0 24.0 21.0 19.5 17.0 14.5 12.0 11.0	(0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0 19.0 19.0 19.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382 0.01382 0.01382	<b>R</b> ` 23.0 19.0 17.0 16.0 13.0 11.5 9.0 6.5 4.0 3.0	12.5 13.2 13.5 13.7 14.2 14.4 14.4 14.8 15.2 15.6 15.8	(min) 5.000 3.628 2.597 1.848 1.330 0.980 0.703 0.504 0.361 0.257	0.070 0.051 0.036 0.026 0.019 0.014 0.010 0.007 0.005 0.004	46.0 38.0 34.0 32.0 26.0 23.0 18.0 13.0 8.0 6.0	34.5 28.5 25.5 24.0 19.5 17.3 13.5 9.8 6.0 4.5
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480	R 31.0 27.0 25.0 24.0 21.0 19.5 17.0 14.5 12.0 11.0 10.0	(0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0 19.0 19.0 19.0 20.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382 0.01382 0.01382 0.01382	<b>R</b> ` 23.0 19.0 17.0 16.0 13.0 11.5 9.0 6.5 4.0 3.0 2.0	12.5 13.2 13.5 13.7 14.2 14.4 14.4 14.8 15.2 15.6 15.8 16.0	(min) 5.000 3.628 2.597 1.848 1.330 0.980 0.703 0.504 0.361 0.257 0.182	0.070 0.051 0.036 0.026 0.019 0.014 0.010 0.007 0.005 0.004 0.002	46.0 38.0 34.0 32.0 26.0 23.0 18.0 13.0 8.0 6.0 4.0	34.5 28.5 25.5 24.0 19.5 17.5 13.5 9.6 6.0 4.5 3.0
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480 1440	R 31.0 27.0 25.0 24.0 21.0 19.5 17.0 14.5 12.0 11.0 10.0 8.0	(0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 19.0 19.0 19.0 20.0 20.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382 0.01382 0.01382 0.01382	<b>R</b> ` 23.0 19.0 17.0 16.0 13.0 11.5 9.0 6.5 4.0 3.0 2.0 0.0	12.5 13.2 13.5 13.7 14.2 14.4 14.4 14.8 15.2 15.6 15.8 16.0 16.3	(min) 5.000 3.628 2.597 1.848 1.330 0.980 0.703 0.504 0.361 0.257 0.182 0.106	0.070 0.051 0.036 0.026 0.019 0.014 0.010 0.007 0.005 0.004 0.002	46.0 38.0 34.0 32.0 26.0 23.0 18.0 13.0 8.0 6.0 4.0 0.0	34.8 28.8 25.8 25.8 19.8 17.3 13.8 9.8 6.0 6.0 4.8 3.0 0.0
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480 1440	R 31.0 27.0 25.0 24.0 21.0 19.5 17.0 14.5 12.0 11.0 10.0	(0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 19.0 19.0 19.0 20.0 20.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382 0.01382 0.01382 0.01382	<b>R</b> ` 23.0 19.0 17.0 16.0 13.0 11.5 9.0 6.5 4.0 3.0 2.0 0.0	12.5 13.2 13.5 13.7 14.2 14.4 14.4 14.8 15.2 15.6 15.8 16.0	(min) 5.000 3.628 2.597 1.848 1.330 0.980 0.703 0.504 0.361 0.257 0.182 0.106	0.070 0.051 0.036 0.026 0.019 0.014 0.010 0.007 0.005 0.004 0.002	46.0 38.0 34.0 32.0 26.0 23.0 18.0 13.0 8.0 6.0 4.0	34. 28. 25. 24. 19. 17. 13. 9. 6. 4. 3. 0.
Wt. (g) 50.0 50.	0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750 0.750	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480 1440 4	R 31.0 27.0 25.0 24.0 21.0 19.5 17.0 14.5 12.0 11.0 10.0 8.0	(0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 19.0 19.0 19.0 20.0 20.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382 0.01382 0.01382 0.01382	<b>R</b> ` 23.0 19.0 17.0 16.0 13.0 11.5 9.0 6.5 4.0 3.0 2.0 0.0	12.5 13.2 13.5 13.7 14.2 14.4 14.4 14.8 15.2 15.6 15.8 16.0 16.3	(min) 5.000 3.628 2.597 1.848 1.330 0.980 0.703 0.504 0.361 0.257 0.182 0.106	0.070 0.051 0.036 0.026 0.019 0.014 0.010 0.007 0.005 0.004 0.002	46.0 38.0 34.0 32.0 26.0 23.0 18.0 13.0 8.0 6.0 4.0 0.0	34.5 28.5 25.5 24.0 19.5 17.3 13.5 9.6 6.0 4.5 3.0 0.0



#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то C.C. Knight Piesold Ltd. Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Apr. 28 DATE TESTED 2010. May. 03 DATE SAMPLED 2010. Apr. 27 SIEVE TEST NO. 29 Client SUPPLIER SAMPLED BY R-S6B-ZS-04-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE TILL 15/7 1 3/4 % 3/8 =4 #10 #20 #40 #60 #100 #200 2-100 0 = 90 - 10 1111 80 20 PERCENT PASSING -----PERCENT RETAINED 70 30 1 60 40 50 50 40 60 = 30 70 1111 20 80 11111111 10 - 90 0 - 100 10 50 9,5 mm 4.75 0.85 37.5 mr 26 425 250 3 12.5 150 µm TIT mm mm H mm F hun Ξ Ξ Ξ PERCENT GRADATION **GRAVEL SIZES** SAND SIZES AND FINES PERCENT GRADATION PASSING LIMITS

	ONAVEL	012L0		PASSING	LIMITS
2 1 3 1	" " 1/2" " /4" /2" /8"	75 50 37.5 25 19 12.5 9.5	mm mm mm	100.0 97.3 94.9 91.3 89.0	

	No.	4	4.75	mm	83.5	
					79.2	
	No.	20	850	μm	75.1	
	No.	40	425	μm	70.6	
	No.	60	250	μm	65.4	
	No.	100	150	μm	59.7	
	No.	200	75	μm	50.4	

COMMENTS Re: Proctor Report No.8

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PER. \_

3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

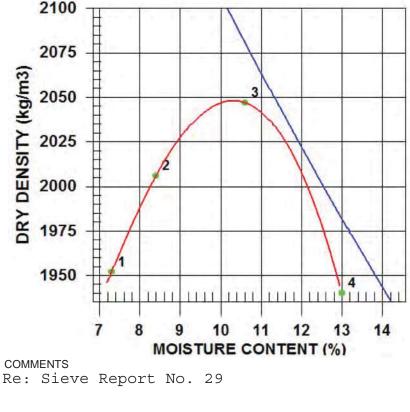
то Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR

Mount Polley Mine Likely

PROCTOR NO. 8 DATE TESTED 2010. May. 03 DATE RECEIVED 2010. Apr. 28 DATE SAMPLED 2010. Apr. 27

INSITU MOISTURE	N/A % Client	COMPACTION STANDARD	Standard Proctor,
SAMPLED BY TESTED BY	DJ/JMcD		ASTM D698 A: 101.6mm Mold,
SUPPLIER		COMPACTION PROCEDURE	Passing 4.75mm
SOURCE	R-S6B-ZS-04-2010	RAMMER TYPE	Automatic
MATERIAL IDENTIF	TICATION	PREPARATION	Moist
MAJOR COMPON	ENT Till	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	38mm	RETAINED 4.75mm SCREEN	16.0%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.67
ROCK TYPE		TOTAL NUMBER OF TRIALS	4
1.2012.00			



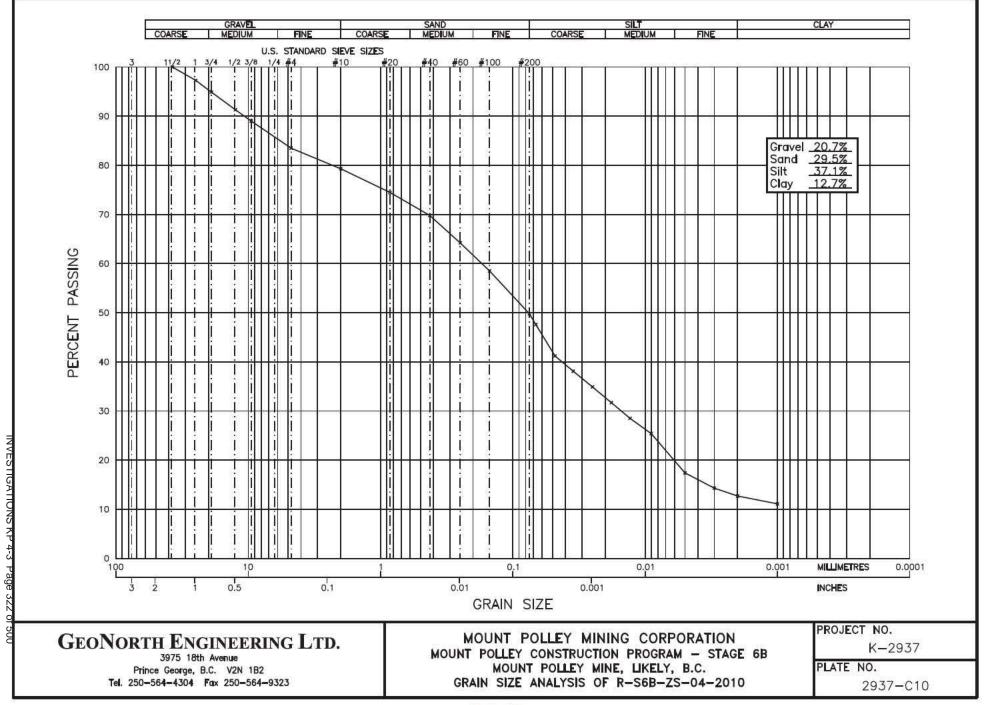
TRIAL NUMBER	WET DENSITY (kg/m3)	DRY DENSITY (kg/m3)	MOISTURE CONTENT (%)
1	2094	1952	7.3
2	2175	2006	8.4
3	2264	2047	10.6
4	2192	1940	13.0

ZERO AIR VOIDS CURVE	MAXIMUM	OPTIMUM
FOR ESTIMATED	DRY	MOISTURE
SPECIFIC GRAVITY	DENSITY	CONTENT
OF 2.67	(kg/m3)	(%)
CALCULATED	2050	10.5
OVERSIZE CORRECTED	2130	9.0

2010.May.03 Page 1 of 1 GeoNorth Engineering Ltd.

PER.

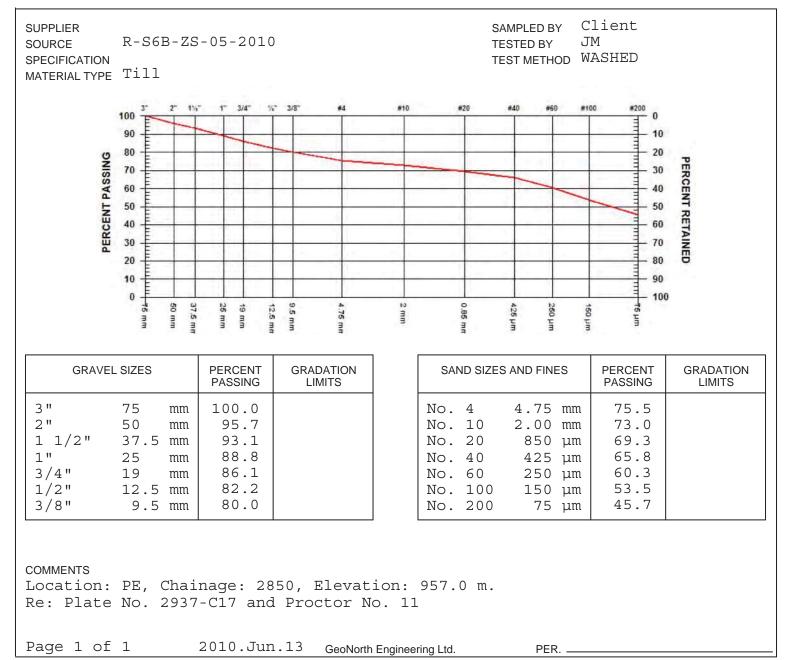
	unt Polley	Mining Corpor	ation						Date: May	4, 2010	
Project Name: MPCP- Stage 6B Project #: K- 2937											
Source/Location: R-S6B-ZS-04-2010											
Sample #: Test #: Hole #: Depth:									Time:		
Sampled By	y: Client		1	Tested By:	DJ		-		Checked B	y: NK	
Date Samp	led: 04/27/2	2010		Date Rece	ived: 04/28/	2010			Date Teste	d: 05/03/20	10
Initia	I Moisture	Content		Sieve A	nalysis			Hydrom	eter Sieve	Analysis	
						% Finer					
						Than			Total Wt.		% Finer
				Weight	Total Wt.	Orig.		Weight	Finer	% Finer	Than Orig
			Sieve No.	Retained	Passing	Samp.	Sieve No.	Retained	Than	Than	Samp.
Tare No.			38.1				10		50.0		
Wet Wt. & 7		732.2	25.4				20		47.0	94.0	
Dry Wt. & T	are	679.4	19.0				40		44.0	88.0	
Water Wt.		52.8	12.5				60		40.5	81.0	
Tare Wt.	_	180.5	9.5				100		36.9	73.8	
Wt. Of Dry S		498.9	4.75		eve Test N		200		31.4	62.8	49.8
Moisture C		10.6	10	PI	ate No. C10	)	Pan	31.4			
Dry Wt. Of S	ample from	nitial Moisture					Total	50.0	50.0		
(100x)Mot Sc	xil \//t \//100 ⊥	Initial Moisture) =					Unwashed	Wt.=	=		
-(100,000,000,000	JII VVI.)/(100 +		Total	498.9			Tare Wt. Passing #200 =				
1										-	
						Corr.					
Starting		Elapsed	Reading	Temp		Reading	<u></u>	SQRT(Zr)/T		-	
	% - #10	Elapsed Time (min)	Reading R		к		Zr (cm)	SQRT(Zr)/T (min)	D (mm)	N (%)	N*(%-#10)
<b>Wt. (g)</b> 50.0	0.793		<b>R</b> 38.0	<b>Temp</b> (0C) 18.0	0.01399	Reading R` 30.0	11.3	(min) 4.763	<b>D (mm)</b> 0.067	60.0	47.6
Wt. (g) 50.0 50.0	0.793 0.793	Time (min)	R 38.0 34.0	Temp (0C) 18.0 18.0	0.01399 0.01399	Reading R` 30.0 26.0	11.3 12.0	(min) 4.763 3.465	0.067	60.0 52.0	47.0
Wt. (g) 50.0 50.0 50.0	0.793 0.793 0.793	Time (min) 0.5 1 2	R 38.0 34.0 32.0	Temp (0C) 18.0 18.0 18.0	0.01399 0.01399 0.01399	Reading R` 30.0 26.0 24.0	11.3 12.0 12.3	(min) 4.763 3.465 2.483	0.067 0.048 0.035	60.0 52.0 48.0	47.6 41.2 38.1
Wt. (g) 50.0 50.0 50.0 50.0	0.793 0.793 0.793 0.793	Time (min) 0.5 1 2 4	R 38.0 34.0 32.0 30.0	Temp (0C) 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399	Reading R` 30.0 26.0 24.0 22.0	11.3 12.0 12.3 12.7	(min) 4.763 3.465 2.483 1.779	0.067 0.048 0.035 0.025	60.0 52.0 48.0 44.0	47.6 41.2 38.1 34.9
Wt. (g) 50.0 50.0 50.0 50.0 50.0	0.793 0.793 0.793 0.793 0.793 0.793	Time (min) 0.5 1 2 4 8	R 38.0 34.0 32.0 30.0 28.0	Temp (0C) 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399	Reading R` 30.0 26.0 24.0 22.0 20.0	11.3 12.0 12.3 12.7 13.0	(min) 4.763 3.465 2.483 1.779 1.275	0.067 0.048 0.035 0.025 0.018	60.0 52.0 48.0 44.0 40.0	47.6 41.2 38.1 34.9 31.7
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.793 0.793 0.793 0.793 0.793 0.793 0.793	Time (min) 0.5 1 2 4 8 15	R 38.0 34.0 32.0 30.0 28.0 26.0	Temp (0C) 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399	Reading R` 30.0 26.0 24.0 22.0 20.0 18.0	11.3 12.0 12.3 12.7 13.0 13.3	(min) 4.763 3.465 2.483 1.779 1.275 0.943	0.067 0.048 0.035 0.025 0.018 0.013	60.0 52.0 48.0 44.0 40.0 36.0	47.6 41.2 38.1 34.9 31.7 28.5
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793	Time (min) 0.5 1 2 4 4 8 15 30	R 38.0 34.0 32.0 30.0 28.0 26.0 24.0	Temp (0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399	Reading R` 30.0 26.0 24.0 22.0 20.0 18.0 16.0	11.3 12.0 12.3 12.7 13.0 13.3 13.7	(min) 4.763 3.465 2.483 1.779 1.275 0.943 0.675	0.067 0.048 0.035 0.025 0.018 0.013 0.009	60.0 52.0 48.0 44.0 40.0 36.0 32.0	47.6 41.2 38.7 34.9 31.7 28.9 25.4
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.	0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793	Time (min) 0.5 1 2 4 8 15 30 60	R 38.0 34.0 32.0 30.0 28.0 26.0 24.0 20.0	Temp (0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399	Reading R` 30.0 26.0 24.0 22.0 20.0 18.0 16.0 12.0	11.3 12.0 12.3 12.7 13.0 13.3 13.7 14.3	(min) 4.763 3.465 2.483 1.779 1.275 0.943 0.675 0.488	0.067 0.048 0.035 0.025 0.018 0.013 0.009 0.007	60.0 52.0 48.0 44.0 40.0 36.0 32.0 24.0	47.0 41.2 38.7 34.9 31.7 28.9 25.4 19.0
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793	Time (min) 0.5 1 2 4 8 15 30 60 120	R 38.0 34.0 32.0 30.0 28.0 26.0 24.0 20.0 19.0	Temp (0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382	Reading R` 30.0 26.0 24.0 22.0 20.0 18.0 16.0 12.0 11.0	11.3 12.0 12.3 12.7 13.0 13.3 13.7 14.3 14.5	(min) 4.763 3.465 2.483 1.779 1.275 0.943 0.675 0.488 0.347	0.067 0.048 0.035 0.025 0.018 0.013 0.009 0.007 0.005	60.0 52.0 48.0 44.0 40.0 36.0 32.0 24.0 22.0	47.0 41.2 38.4 34.5 31.7 28.5 25.4 19.0 17.4
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793	Time (min) 0.5 1 2 4 8 15 30 60 120 240	R 38.0 34.0 32.0 28.0 28.0 26.0 24.0 20.0 19.0 17.0	Temp (0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382 0.01382	Reading R` 30.0 26.0 24.0 22.0 20.0 18.0 16.0 12.0 11.0 9.0	11.3 12.0 12.3 12.7 13.0 13.3 13.7 14.3 14.5 14.8	(min) 4.763 3.465 2.483 1.779 1.275 0.943 0.675 0.488 0.347 0.248	0.067 0.048 0.035 0.025 0.018 0.013 0.009 0.007 0.005 0.003	60.0 52.0 48.0 44.0 36.0 32.0 24.0 22.0 18.0	47.6 41.2 38.1 34.9 31.7 28.9 25.4 19.0 17.4 14.3
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480	R 38.0 34.0 32.0 28.0 26.0 24.0 20.0 19.0 17.0 16.0	Temp (0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382 0.01382 0.01382	Reading R 30.0 26.0 24.0 22.0 20.0 18.0 16.0 12.0 11.0 9.0 8.0	11.3 12.0 12.3 12.7 13.0 13.3 13.7 14.3 14.5 14.8 15.0	(min) 4.763 3.465 2.483 1.779 1.275 0.943 0.675 0.488 0.347 0.248 0.177	0.067 0.048 0.035 0.025 0.018 0.013 0.009 0.007 0.005 0.003 0.002	60.0 52.0 48.0 44.0 36.0 32.0 24.0 22.0 18.0 16.0	47.6 41.2 38.7 34.9 31.7 28.9 25.4 19.0 17.4 14.3 12.7
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480 1440	R 38.0 34.0 32.0 30.0 28.0 26.0 24.0 20.0 19.0 17.0 16.0 15.0	Temp (0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382 0.01382 0.01382	Reading R` 30.0 26.0 24.0 22.0 20.0 18.0 16.0 12.0 11.0 9.0 8.0 7.0	11.3 12.0 12.3 12.7 13.0 13.3 13.7 14.3 14.5 14.8 15.0 15.1	(min) 4.763 3.465 2.483 1.779 1.275 0.943 0.675 0.488 0.347 0.248 0.177 0.103	0.067 0.048 0.035 0.025 0.018 0.013 0.009 0.007 0.005 0.003 0.002	60.0 52.0 48.0 44.0 36.0 32.0 24.0 22.0 18.0 16.0 14.0	47.6 41.2 38.7 34.9 31.7 28.9 25.4 19.0 17.4 14.3 12.7 11.7
Wt. (g) 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 9.793	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480 1440	R 38.0 34.0 32.0 28.0 26.0 24.0 20.0 19.0 17.0 16.0	Temp (0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382 0.01382 0.01382	Reading R` 30.0 26.0 24.0 22.0 20.0 18.0 16.0 12.0 11.0 9.0 8.0 7.0	11.3 12.0 12.3 12.7 13.0 13.3 13.7 14.3 14.5 14.8 15.0	(min) 4.763 3.465 2.483 1.779 1.275 0.943 0.675 0.488 0.347 0.248 0.177 0.103	0.067 0.048 0.035 0.025 0.018 0.013 0.009 0.007 0.005 0.003 0.002	60.0 52.0 48.0 44.0 36.0 32.0 24.0 22.0 18.0 16.0	47.6 41.2 38.1 34.9 31.7 28.9 25.4 19.0 17.4 14.3 12.7 11.1
Wt. (g) 50.0 50.	0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 0.793 9.793	Time (min) 0.5 1 1 2 4 8 15 30 60 120 240 480 1440 4	R 38.0 34.0 32.0 30.0 28.0 26.0 24.0 20.0 19.0 17.0 16.0 15.0	Temp (0C) 18.0 18.0 18.0 18.0 18.0 18.0 18.0 18.0	0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01399 0.01382 0.01382 0.01382	Reading R` 30.0 26.0 24.0 22.0 20.0 18.0 16.0 12.0 11.0 9.0 8.0 7.0	11.3 12.0 12.3 12.7 13.0 13.3 13.7 14.3 14.5 14.8 15.0 15.1	(min) 4.763 3.465 2.483 1.779 1.275 0.943 0.675 0.488 0.347 0.248 0.177 0.103	0.067 0.048 0.035 0.025 0.018 0.013 0.009 0.007 0.005 0.003 0.002	60.0 52.0 48.0 44.0 36.0 32.0 24.0 22.0 18.0 16.0 14.0	47.6 41.2 38.1 34.9 31.7 28.9 25.4 19.0 17.4 14.3 12.7 11.1



# GeoNorth Engineering Ltd.<br/>3975 18th Avenue Prince George, BC V2N 1B2<br/>Phone (250)564-4304; Fax (250)564-9323SiEVE ANALYSIS REPORT<br/>10 20 40 60 SERIESTOMount Polley Mining Corp.<br/>P.O Box 12<br/>Likely, BC<br/>VOL -1N0PROJECT NO. K 2937<br/>CLIENT Mount Polley Mining Corp.<br/>c.C. Knight Piesold Ltd.ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

SIEVE TEST NO. 36 DATE RECEIVED 2010.Jun.03 DATE TESTED 2010.Jun.04 DATE SAMPLED 2010.May.31



3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

#### **MOISTURE - DENSITY** RELATIONSHIP REPORT

PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

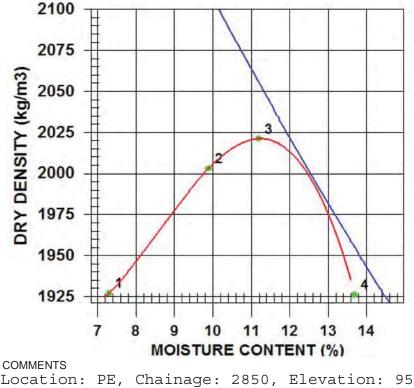
то Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR

Mount Polley Mine Likely

DATE TESTED 2010. Jun. 04 DATE RECEIVED 2010. Jun. 03 DATE SAMPLED 2010. May. 31 PROCTOR NO. 11

INSITU MOISTURE	N/A % CLIENT	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	JM	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	R-S6B-ZS-05-2010	RAMMER TYPE	Automatic
MATERIAL IDENTIF	ICATION	PREPARATION	Moist
MAJOR COMPONE	ENT Till	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	50mm	RETAINED 4.75mm SCREEN	23.0%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.67
ROCK TYPE		TOTAL NUMBER OF TRIALS	4



TRIAL NUMBER	WET DENSITY (kg/m3)	DRY DENSITY (kg/m3)	MOISTURE CONTENT (%)
1	2068	1927	7.3
2	2201	2003	9.9
3	2247	2021	11.2
4	2190	1926	13.7

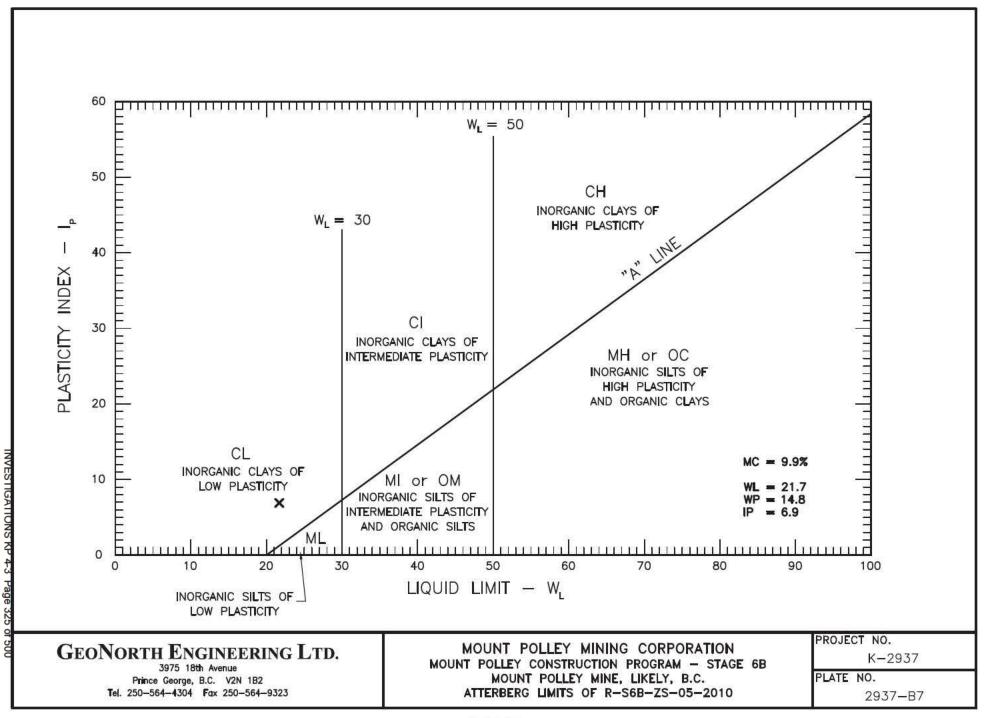
ZERO AIR VOIDS CURVE	MAXIMUM	OPTIMUM
FOR ESTIMATED	DRY	MOISTURE
SPECIFIC GRAVITY	DENSITY	CONTENT
OF 2.67	(kg/m3)	(%)
CALCULATED	2020	11.0
OVERSIZE CORRECTED	2140	8.5

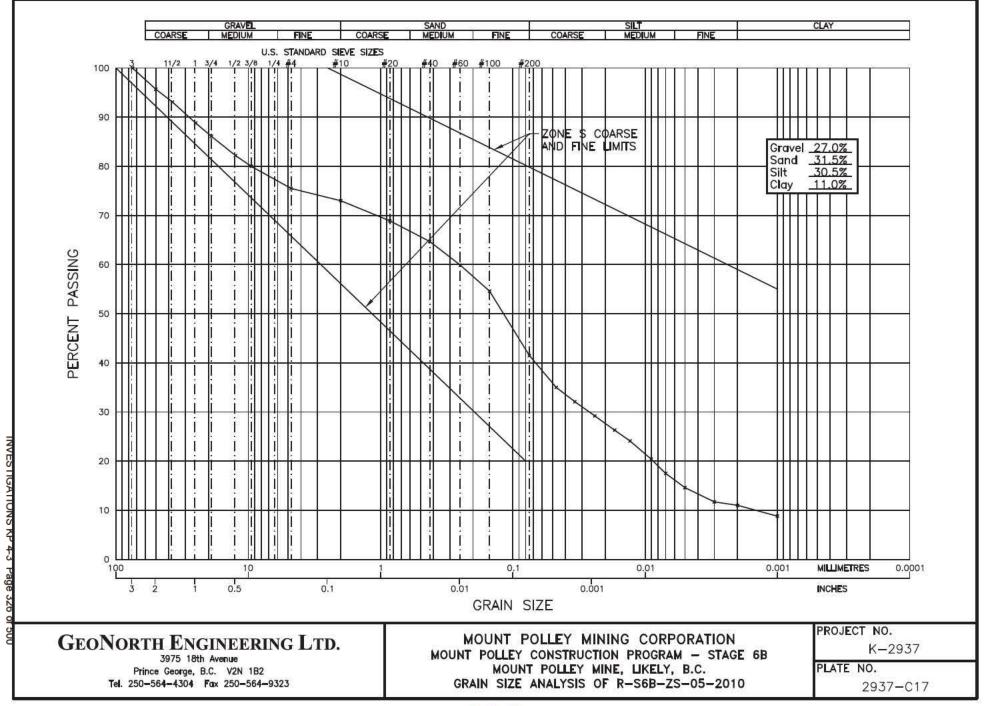
Location: PE, Chainage: 2850, Elevation: 957.0 m.

Re: Plate No. 2937-C17 and Sieve No. 36

Page 1 of 1 2010.Jun.13 GeoNorth Engineering Ltd.

PER.



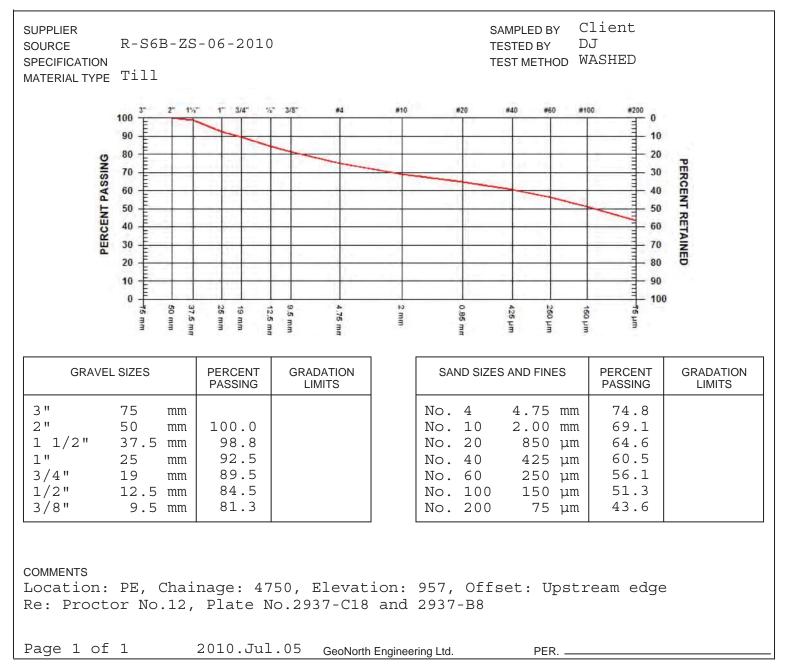


#### Hydrometer Analysis

9	nation: ASI										
	Client: Mount Polley Mining Corporation Date: June 10, 2010										
Project Name: MPCP Stage 6B Project #: K-2937											
Source/Location: PE, Chainage: 2850, Elevation: 957.0 m Type: Till											
	R-S6B-ZS-	05-2010	Test #:	-	Hole #:		Depth:		Time:		
Sampled B				Tested By:					Checked B		
Date Samp	led: May 31	l, 2010		Date Rece	ived: June 3	3, 2010			Date Teste	d: June 7, 2	2010
Initia	I Moisture	Content		Sieve A	nalysis			Hydrom	eter Sieve	Analysis	
						% Finer					
						Than			Total Wt.		% Finer
				Weight	Total Wt.	Orig.		Weight	Finer	% Finer	Than Orig
			Sieve No.	Retained	Passing	Samp.	Sieve No.	Retained	Than	Than	Samp.
Tare No.			38.1				10		50.0	100.0	73.0
Wet Wt. &		1005.9	25.4				20		47.2	94.4	
Dry Wt. & T	Fare	931.4	19.0				40	2.9	44.3	88.6	
Water Wt.		74.5	12.5				60		41.0	82.0	
Tare Wt.		180.2	9.5		ate No. 293		100	3.6	37.4	74.8	
Wt. Of Dry		751.2	4.75	Re: Sie	eve Test No		200	9.0	28.4	56.8	41.5
Moisture C	Content %	9.9	10			73.0	Pan	28.4			
Dry Wt. Of S	Sample from	Initial Moisture					Total 50.0				
(400 ) 14 + 0	111111111111100						Unwashed	Wt.=			
(100xwet So	511 VVt.)/(100 4	<ul> <li>Initial Moisture)</li> </ul>	Total	751.2			Tare		Wt. Passin	g #200 =	
						Corr.					
Starting		Elapsed	Reading	Temp		Reading		SQRT(Zr)/T			
Wt. (g)	% - #10	Time (min)	R	(0C)	к	R`	Zr (cm)	(min)	D (mm)	N (%)	N*(%-#10)
50.0	0.730	0.5		. ,		27.0	, ,	· ,	0.066	54.0	. ,
50.0	0.730	1	32.0	21.0		24.0	12.3	3.512	0.000	48.0	
50.0	0.730	2	30.0			22.0	12.7	2.516	0.034	44.0	
50.0	0.730	4	28.0			20.0	13.0		0.024	40.0	
50.0	0.730	8				18.0	13.3	1.291	0.021	36.0	
50.0	0.730	15				16.5	13.6		0.013	33.0	
50.0	0.730	30				14.0	14.0		0.009	28.0	
50.0	0.730	60				12.0	14.3		0.007	24.0	
50.0	0.730	120				10.0	14.6		0.005	20.0	
50.0	0.730	240				8.0	15.0		0.003	16.0	
50.0	0.730					7.5	15.1	0.177	0.002	15.0	
50.0						6.0			0.001	12.0	
	er #: 79041		Graduate #				Agent: Soc			Amount: 12	
Density of							<u> </u>				
	of Sample	:									
	· · · · ·										Noelco
											100000

#### **GeoNorth Engineering Ltd.** SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. TO Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR

SIEVE TEST NO. 39 DATE RECEIVED 2010. Jun. 23 DATE TESTED 2010. Jun. 25 DATE SAMPLED 2010. Jun. 16



3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

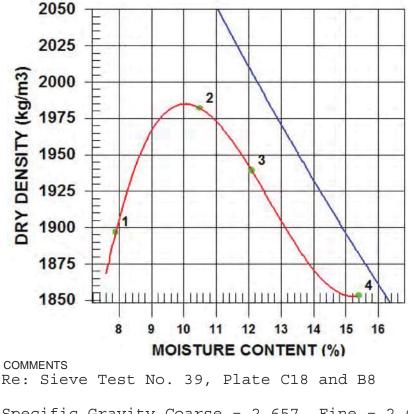
PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

PROCTOR NO. 12 DATE TESTED 2010.Jun.25 DATE RECEIVED 2010.Jun.23 DATE SAMPLED 2010.Jun.16

INSITU MOISTURE	N/A %	COMPACTION STANDARD	Standard Proctor,
SAMPLED BY	Client JM		ASTM D698
TESTED BY	ΟM	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	R-S6B-ZS-06-2010	RAMMER TYPE	
MATERIAL IDENTIF	ICATION	PREPARATION	Moist
MAJOR COMPONE	ENT Till	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	50 mm	RETAINED 4.75mm SCREEN	25.0%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.65
ROCK TYPE		TOTAL NUMBER OF TRIALS	4
SOURCE MATERIAL IDENTIF MAJOR COMPONE SIZE DESCRIPTION	ENT Till	OVERSIZE CORRECTION METHOD RETAINED 4.75mm SCREEN OVERSIZE SPECIFIC GRAVITY	Automatic Moist ASTM 4718 25.0% 2.65

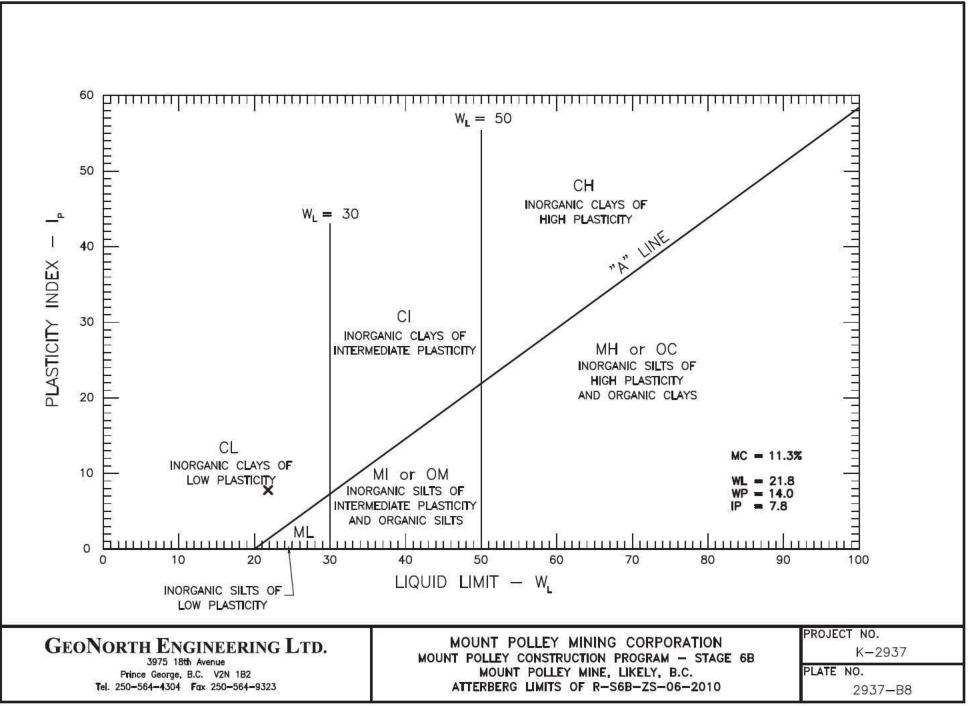


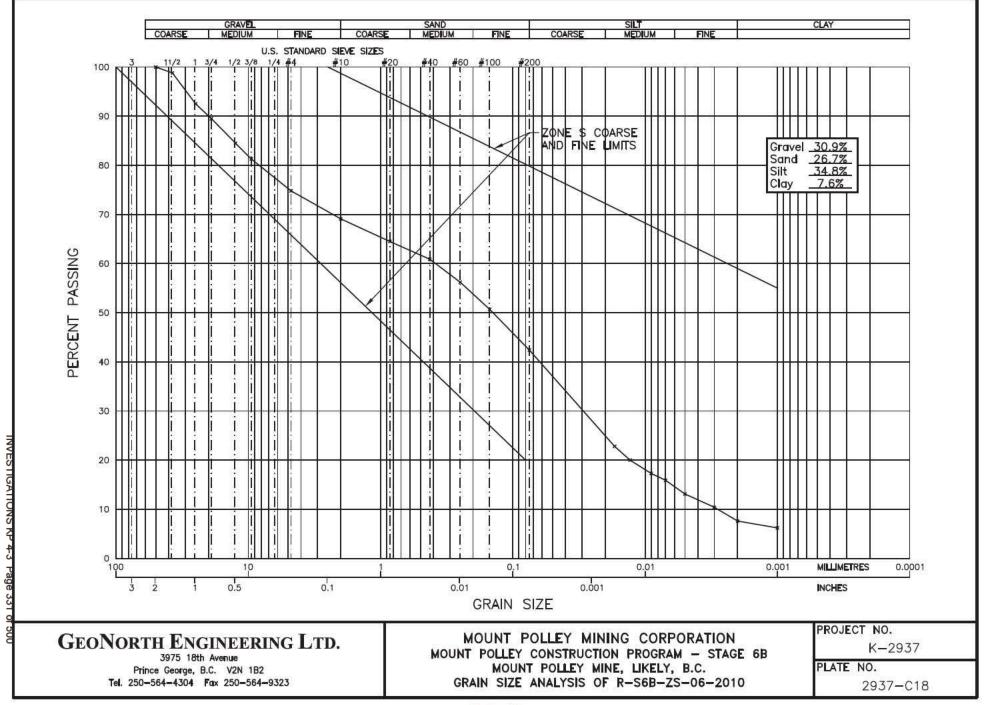
TRIAL NUMBER	WET DENSITY (kg/m3)	DRY DENSITY (kg/m3)	MOISTURE CONTENT (%)
1	2047	1897	7.9
2	2190	1982	10.5
3	2174	1939	12.1
4	2138	1853	15.4

ZERO AIR VOIDS CURVE	MAXIMUM	OPTIMUM
FOR ESTIMATED	DRY	MOISTURE
SPECIFIC GRAVITY	DENSITY	CONTENT
OF 2.65	(kg/m3)	(%)
CALCULATED	1990	10.0
OVERSIZE CORRECTED	2120	8.0

Specific Gravity Coarse = 2.657, Fine = 2.667

Page 1 of 1 2010.Jul.05 GeoNorth Engineering Ltd.





#### Hydrometer Analysis

Chient: Mo	unt Polley	Mining Corpo	ration						Date: June	28, 2010	
									Project #:		
Source/Location: R-S6B-ZS-06-2010 Type: Till											
Sample #: Test #: Hole #: Depth:									Time:		
Sampled B	y: Client		2	Tested By:	DJ				Checked B	y: NK	
Date Samp	oled: 06/16/2	2010		Date Rece	ived: 06/23/	2010			Date Teste	d: 06/25/20	10
Initia	al Moisture	Content		Sieve A	nalysis			Hydrom	eter Sieve	Analysis	
						% Finer					
						Than			Total Wt.		% Finer
				Weight	Total Wt.	Orig.		Weight	Finer	% Finer	Than Orig
			Sieve No.	Retained	Passing	Samp.	Sieve No.	Retained	Than	Than	Samp.
Tare No.			38.1				10		50.0	100.0	69
Wet Wt. &	Tare	1180.3	25.4				20	3.3	46.7	93.4	64
Dry Wt. & <sup>-</sup>	Tare	1078.5					40	2.6	44.1	88.2	
Water Wt.		101.8	12.5				60		40.7	81.4	
Tare Wt.		179.4	9.5		Plate No. 29		100		36.7	73.4	50
Wt. Of Dry		899.1	4.75	See: S	Sieve Test I		200		30.7	61.4	42
Moisture (	Content %	11.3	10			69.1	Pan	30.7			
Dry Wt. Of S	Sample from	Initial Moisture			Total 50.0						
(100x)Mot S	oil \\/t \//100	<ul> <li>Initial Moisture)</li> </ul>					Unwashed	Wt.=			
(TOUXWELS	011 VVI.)/(100 4	Fillia Moisture)	Total	899.1			Tare		Wt. Passin	g #200 =	
						Corr.					
Starting		Elapsed	Reading	Temp		Reading		SQRT(Zr)/T			
Wt. (g)	% - #10		R	(0C)	17	R`	7	(min)	D (mama)	NI /0/ \	N*(%-#10)
	/0 // 0	Time (min)	n –		K	ĸ	Zr (cm)	(((((((((((((((((((((((((((((((((((((((	D (mm)	N (%)	
50.0	0.000	Time (min) 0.5		22.0	<b>K</b> 0.01332	<b>к</b> 24.5	2r (cm) 12.3	· ,	D (mm) 0.066	<b>N (%)</b> 49.0	
		. ,		. ,	0.01332			. ,	. ,		33
50.0	0.000	. ,	32.0	22.0 22.0	0.01332 0.01332	24.5	12.3 12.9	4.950	0.066	49.0	33 28
50.0 50.0	0.000	0.5	32.0 28.0	22.0 22.0 22.0	0.01332 0.01332 0.01332	24.5 20.5	12.3 12.9	4.950 3.593	0.066	49.0 41.0	33 28 26
50.0 50.0 50.0	0.000 0.000 0.000	0.5 1 2	32.0 28.0 26.5	22.0 22.0 22.0	0.01332 0.01332 0.01332 0.01332 0.01332	24.5 20.5 19.0	12.3 12.9 13.2	4.950 3.593 2.565 1.831 1.303	0.066 0.048 0.034	49.0 41.0 38.0	33 28 26 24
50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.000 0.000 0.000 0.000 0.000 0.000	0.5 1 2 4 8 15	32.0 28.0 26.5 25.0 24.0 22.0	22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	0.01332 0.01332 0.01332 0.01332 0.01332 0.01332	24.5 20.5 19.0 17.5 16.5 14.5	12.3 12.9 13.2 13.4 13.6 13.9	4.950 3.593 2.565 1.831	0.066 0.048 0.034 0.024 0.017 0.013	49.0 41.0 38.0 35.0 33.0 29.0	33 28 26 24 22 20
50.0 50.0 50.0 50.0 50.0	0.000 0.000 0.000 0.000 0.000	0.5 1 2 4 8 15 30	32.0 28.0 26.5 25.0 24.0 22.0 20.0	22.0 22.0 22.0 22.0 22.0 22.0	0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332	24.5 20.5 19.0 17.5 16.5	12.3 12.9 13.2 13.4 13.6	4.950 3.593 2.565 1.831 1.303	0.066 0.048 0.034 0.024 0.017 0.013 0.009	49.0 41.0 38.0 35.0 33.0 29.0 25.0	33 28 26 24 22 20 17
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.5 1 2 4 8 15 30 60	32.0 28.0 26.5 25.0 24.0 22.0 20.0 19.0	22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332	24.5 20.5 19.0 17.5 16.5 14.5 12.5 11.5	12.3 12.9 13.2 13.4 13.6 13.9 14.2 14.4	4.950 3.593 2.565 1.831 1.303 0.963 0.689 0.490	0.066 0.048 0.034 0.024 0.017 0.013 0.009 0.007	49.0 41.0 38.0 35.0 33.0 29.0 25.0 23.0	33 28 26 24 22 20 17 15
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.5 1 2 4 8 15 30 60 120	32.0 28.0 26.5 25.0 24.0 22.0 20.0 19.0 17.0	22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332	24.5 20.5 19.0 17.5 16.5 14.5 12.5 11.5 9.5	12.3 12.9 13.2 13.4 13.6 13.9 14.2 14.4 14.7	4.950 3.593 2.565 1.831 1.303 0.963 0.689 0.490 0.350	0.066 0.048 0.034 0.024 0.017 0.013 0.009 0.007 0.005	49.0 41.0 38.0 35.0 33.0 29.0 25.0 23.0 19.0	33 28 26 24 22 20 17 15 13
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.5 1 2 4 8 15 30 60 120 240	32.0 28.0 26.5 25.0 24.0 22.0 20.0 19.0 17.0 15.0	22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332	24.5 20.5 19.0 17.5 16.5 14.5 12.5 11.5 9.5 7.5	12.3 12.9 13.2 13.4 13.6 13.9 14.2 14.4 14.7 15.1	4.950 3.593 2.565 1.831 1.303 0.963 0.689 0.490 0.350 0.250	0.066 0.048 0.034 0.024 0.017 0.013 0.009 0.007 0.005 0.003	49.0 41.0 38.0 35.0 33.0 29.0 25.0 23.0 19.0 15.0	33 28 26 24 22 20 17 15 13 13
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.5 0.5 1 2 4 8 15 30 60 120 240 480	32.0 28.0 26.5 25.0 24.0 22.0 20.0 19.0 17.0 15.0 13.0	22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332	24.5 20.5 19.0 17.5 16.5 14.5 12.5 11.5 9.5 7.5 5.5	12.3 12.9 13.2 13.4 13.6 13.9 14.2 14.4 14.7 15.1 15.4	4.950 3.593 2.565 1.831 1.303 0.963 0.689 0.490 0.350 0.250 0.179	0.066 0.048 0.034 0.024 0.017 0.013 0.009 0.007 0.005 0.003 0.002	49.0 41.0 38.0 35.0 29.0 25.0 23.0 19.0 15.0 11.0	33 28 26 24 22 20 17 15 13 13 10 7
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.5 1 2 4 8 15 30 60 120 240 480 1440	32.0 28.0 26.5 25.0 24.0 22.0 20.0 19.0 17.0 15.0 13.0 12.0	22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332	24.5 20.5 19.0 17.5 16.5 14.5 12.5 11.5 9.5 7.5 5.5 4.5	12.3 12.9 13.2 13.4 13.6 13.9 14.2 14.4 14.7 15.1 15.4 15.6	4.950 3.593 2.565 1.831 1.303 0.963 0.689 0.490 0.350 0.250 0.179 0.104	0.066 0.048 0.034 0.024 0.017 0.013 0.009 0.007 0.005 0.003	49.0 41.0 38.0 35.0 29.0 25.0 23.0 19.0 15.0 11.0 9.0	33 28 26 24 22 20 17 15 13 10 7 6
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 er #: 79041	0.5 1 2 4 8 15 30 60 120 240 480 1440	32.0 28.0 26.5 25.0 24.0 22.0 20.0 19.0 17.0 15.0 13.0	22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332	24.5 20.5 19.0 17.5 16.5 14.5 12.5 11.5 9.5 7.5 5.5 4.5	12.3 12.9 13.2 13.4 13.6 13.9 14.2 14.4 14.7 15.1 15.4	4.950 3.593 2.565 1.831 1.303 0.963 0.689 0.490 0.350 0.250 0.179 0.104	0.066 0.048 0.034 0.024 0.017 0.013 0.009 0.007 0.005 0.003 0.002	49.0 41.0 38.0 35.0 29.0 25.0 23.0 19.0 15.0 11.0	33 28 26 24 22 20 17 15 13 10 7 6
50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.0	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 er #: 79041	0.5 1 2 4 8 15 30 60 120 240 480 1440 4	32.0 28.0 26.5 25.0 24.0 22.0 20.0 19.0 17.0 15.0 13.0 12.0	22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332 0.01332	24.5 20.5 19.0 17.5 16.5 14.5 12.5 11.5 9.5 7.5 5.5 4.5	12.3 12.9 13.2 13.4 13.6 13.9 14.2 14.4 14.7 15.1 15.4 15.6	4.950 3.593 2.565 1.831 1.303 0.963 0.689 0.490 0.350 0.250 0.179 0.104	0.066 0.048 0.034 0.024 0.017 0.013 0.009 0.007 0.005 0.003 0.002	49.0 41.0 38.0 35.0 29.0 25.0 23.0 19.0 15.0 11.0 9.0	33 28 26 24 22 20 17 15 13 10 7 6

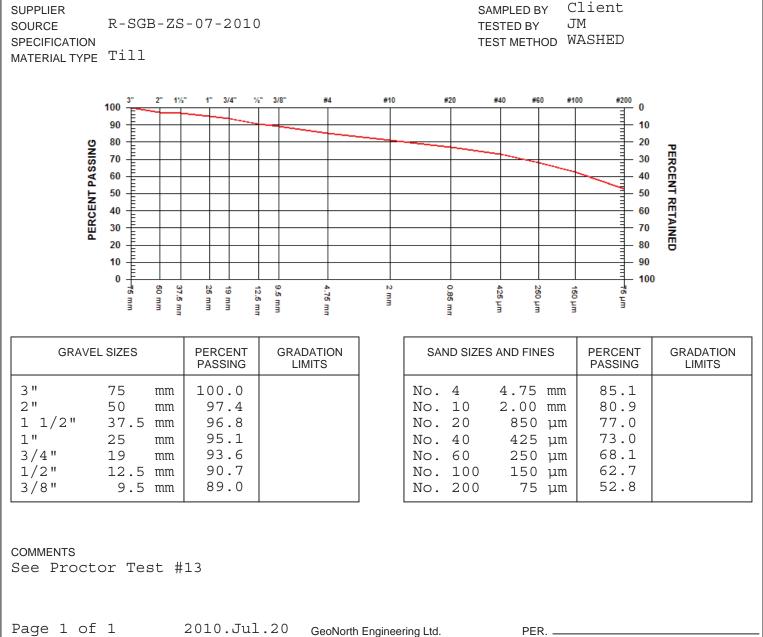
#### GeoNorth Engineering Ltd. 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0

ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR

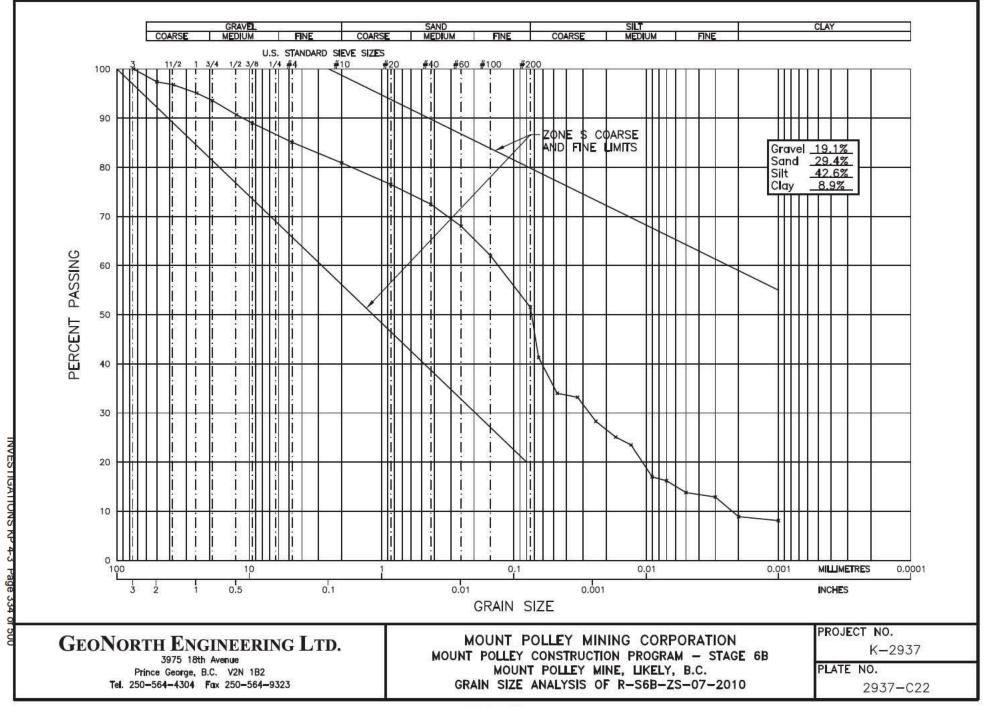
Mount Polley Mine Likely

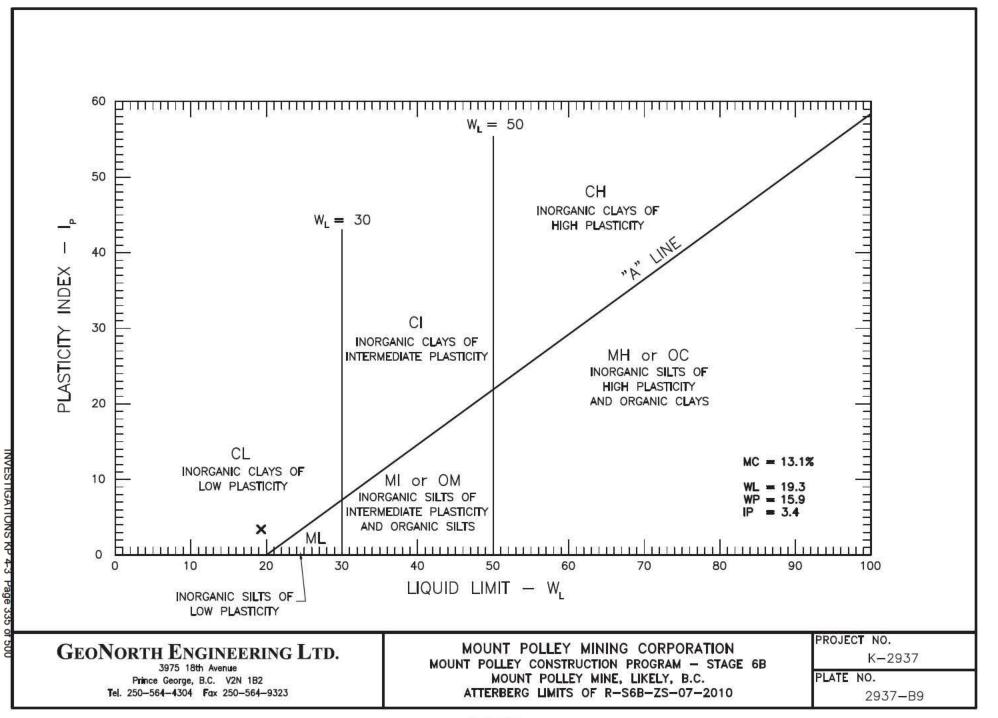
DATE RECEIVED 2010.Jul.14 DATE TESTED 2010.Jul.16 DATE SAMPLED 2010.Jul.07 SIEVE TEST NO. 42



PFR.

# SIEVE ANALYSIS REPORT





3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

MOISTURE

CONTENT

(%)

6.9

8.6

11.8

14.5

DRY DENSITY

(kg/m3)

1910

1950

1996

1895

PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

то Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR

Mount Polley Mine Likely

WFT

DENSITY

(kg/m3)

2042

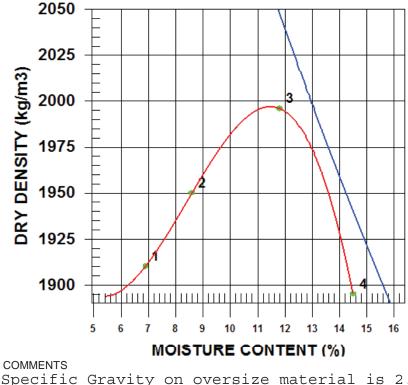
2118

2231

2170

DATE TESTED 2010.Jul.19 DATE RECEIVED 2010.Jul.14 DATE SAMPLED 2010.Jul.07 PROCTOR NO. 13

INSITU MOISTURE		COMPACTION STANDARD	Standard Proctor,
SAMPLED BY	Client		ASTM D698
TESTED BY	JM	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	R-S6B-ZS-07-2010	RAMMER TYPE	Automatic
MATERIAL IDENTIF		PREPARATION	Moist
MAJOR COMPON	ENT Till	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	50mm	RETAINED 4.75mm SCREEN	14.4%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.70
ROCK TYPE		TOTAL NUMBER OF TRIALS	4



TRIAI

NUMBER

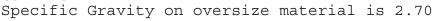
1

2

3

4

ZERO AIR VOIDS CURVE FOR ESTIMATED SPECIFIC GRAVITY OF 2.70	MAXIMUM DRY DENSITY (kg/m3)	OPTIMUM MOISTURE CONTENT (%)	
CALCULATED OVERSIZE CORRECTED	2000 2080	11.5 10.0	



See sieve test #42

2010.Jul.22 Page 1 of 1 GeoNorth Engineering Ltd.

#### Hydrometer Analysis

	nation: ASI								Data: July	00.0040	
Client: Mount Polley Mining Corporation					Date: July 20,2010						
Project Name: MPCP Stage 6B						Project #: K-2937					
Source/Location: R-S6B-ZS-07-2010							Type: Till				
Sample #:     Test #:     Hole #:     Depth:       Sampled By: Client     Tested By: DJ							Time:				
		204.0		,		0040			Checked B		10
Date Sampled: 07/07/2010					ived: 07/14/	2010	1		Date Tested: 07/19/2010		
Initial Moisture Content				Sieve A				eter Sieve Analysis			
						% Finer			-		o/ <b>F</b>
						Than			Total Wt.		% Finer
				Weight	Total Wt.	Orig.		Weight	Finer	% Finer	Than Orig
			Sieve No.	Retained	Passing	Samp.	Sieve No.		Than	Than	Samp.
Tare No.			38.1				10		50.0		
Wet Wt. &		990.2	25.4				20		47.3		
Dry Wt. & T	are	898.4	19.0				40		44.8		
Water Wt.		91.8	12.5				60		42.0		
Tare Wt.		196.8	9.5	See S	Sieve test N	lo 42	100		38.3		
Wt. Of Dry		701.6	4.75				200		31.8	63.6	51.5
Moisture C	Content %	13.1	10			80.9	Pan	31.8			
Dry Wt. Of S	Sample from	Initial Moisture					Total	50.0			
(100xWet Soil Wt.)/(100 + Initial Moisture)						Unwashed	Wt.=		1		
(100xwel Sc	)   VVI.)/(100 H	Finitial Moisture)	Total	701.6 Tare			Wt. Passing #200 =				
						Corr.					
Starting		Elapsed	Reading	Temp		Reading		SQRT(Zr)/T			
Wt. (g)	% - #10	Time (min)	R	(0C)	к	R`	Zr (cm)	(min)	D (mm)	N (%)	N*(%-#10)
50.0	0.809	0.5		. ,		25.5	. ,	4.917	0.065		. ,
50.0	0.809	0.3	28.5			23.3			0.003	42.0	
50.0	0.809	2	28.0			21.0			0.033		
50.0	0.809	4	26.0	23.0		20.5			0.033	35.0	
50.0	0.809	8	23.0	23.0		17.5			0.024	31.0	
50.0	0.809	15	23.0	23.0		13.5			0.017		
50.0	0.809	30	18.0	23.0		14.5			0.013	29.0	
50.0	0.809	60	17.5	23.0		10.5			0.009	21.0	
50.0	0.809	120	17.5			8.5			0.007		
50.0	0.809	240	15.5	23.0		6.5 8.0			0.005		
50.0	0.809	480	15.5	23.0		<u>8.0</u> 5.5			0.003	11.0	
50.0	0.809		12.5			5.0				11.0	
Hydromete					0.01301				0.001		
Density of S		4	Graduate #	r.		Dispersing	Agent: Soc			Amount: 12	20111
Description of Sample:											

Noelco

#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010.Jul.20 DATE TESTED 2010.Jul.26 DATE SAMPLED 2010.Jul.17 SIEVE TEST NO. 43 Client. SUPPLIER SAMPLED BY R-S6B-ZS-08-2010 BG SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Till 17 #10 #20 #40 #100 2 1% 3/4" %\* 3/8" #4 #60 #200 100 0 Ξ 90 - 10 80 - 20 PERCENT PASSING PERCENT RETAINED 70 30 40 60 50 - 50 40 60 30 70 20 80 10 - 90 - 100 0 2 9.5 mm 4.75 N 0.85 8 37.5 mn 425 250 12 6 10 8 Ę E F Ŧ F ₹ E ₹ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING 4.75 mm 3" 75 mm No. 4 82.5 2" mm 100.0 No. 10 2.00 mm 76.6 50 1 1/2" 37.5 mm 99.5 No. 20 71.9 850 µm 95.8 No. 40 67.3 1" 25 mm 425 um 3/4" 19 mm 92.9 No. 60 250 µm 62.0 1/2" 12.5 mm 89.5 No. 100 56.4 150 µm 3/8" 87.5 46.5 9.5 mm No. 200 75 µm MOISTURE CONTENT 6.5% COMMENTS Location:SE, Chainage:1400, Elevation:957.3

Page 1 of 1 2010.Jul.28 GeoNorth Engineering Ltd.

#### Hydrometer Analysis

<u></u>	nation: ASI										
Client: Mount Polley Mining Corporation Date: July 27,2010											
Project Name: MPCP Stage 6B					Project #: K-2937						
Source/Location: R-S6B-ZS-08-2010						Type: Till					
Sample #: Test #: Hole #: Depth:							Time:				
Sampled B	y: Client			Tested By:	DJ				Checked By:		
Date Samp	led: July 17	7,2010		Date Rece	ived: July 2	0,2010			Date Tested: July 26,2010		
Initia	I Moisture	Content		Sieve A	nalysis			Hydrom	eter Sieve Analysis		
						% Finer					
					Than			Total Wt.		% Finer	
				Weight	Neight Total Wt. C	Orig.		Weight	Finer	% Finer	Than Orig
			Sieve No.	Retained	Passing	Samp.	Sieve No.	Retained	Than	Than	Samp.
Tare No.			38.1				10		50.0	100.0	76.6
Wet Wt. &	Tare	845.7	25.4				20	0.1	49.9	99.8	76.4
Dry Wt. & T	are	787.8	19.0				40	0.1	49.8	99.6	76.3
Water Wt.		57.9	12.5				60	3.6	46.2	92.4	70.8
Tare Wt.		180.6	9.5	See	Sieve Test	#43	100		41.0	82.0	62.8
Wt. Of Dry	Soil	607.2	4.75				200	7.3	33.7	67.4	51.6
Moisture C	content %	9.5	10			76.6	Pan	33.7			
Dry Wt. Of S	Sample from	Initial Moisture					Total	50.0			
							Unwashed	Wt.=			1
(100xWet So	(100xWet Soil Wt.)/(100 + Initial Moisture)		Total	607.2			Tare		Wt. Passin	a #200 =	<u></u>
					Ì	Corr.				<u> </u>	
Starting		Elapsed	Reading	Temp		Reading		SQRT(Zr)/T			
Wt. (g)	% - #10	Time (min)	R	(0C)	к	R`	Zr (cm)	(min)	D (mm)	N (%)	N*(%-#10)
50.0	0.766	0.5		. ,	0.01301	30.0	. ,	. ,	0.062	60.0	. ,
50.0	0.766	0.0	37.0	24.0		25.5	12.1	3.477	0.002	51.0	39.1
50.0	0.766	2	32.0	24.0		25.0			0.043	50.0	39.1
50.0	0.766	4	29.5	24.0	0.01301	23.0	12.2		0.032	45.0	34.5
50.0	0.766	8	29.5	24.0		22.5			0.023	40.0	34.5
50.0	0.766	15	27.0	24.0		18.0			0.017	36.0	27.6
50.0	0.766	30	23.0	24.0	0.01301	16.5			0.012	33.0	27.0
50.0	0.766	60	23.5	24.0		14.5			0.009	29.0	23.3
50.0	0.766	120	21.3	24.0		14.5			0.000	29.0	19.9
50.0	0.766	240	18.0	24.0		11.0			0.004	20.0	16.9
50.0	0.766	480	15.5	24.0		9.0			0.003	18.0	13.8
50.0	0.766		14.0			<u>9.0</u> 7.5		0.170	0.002	15.0	11.5
Hydromete			Graduate #		0.01212				0.001	Amount: 12	
Hydrometer #: 790414       Graduate #:       Dispersing Agent: Sodium Hex       Amount: 125ml         Density of Solids: Specific gravity = 2.672       Sodium Hex       Amount: 125ml											
Description of Sample:											
20001101	o. oumpio	•									Noelco

3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

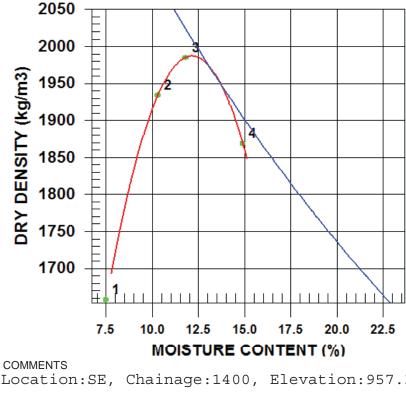
то Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR

Mount Polley Mine Likely

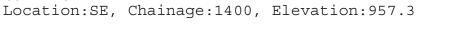
DATE TESTED 2010.Jul.26 DATE RECEIVED 2010.Jul.20 DATE SAMPLED 2010.Jul.17 PROCTOR NO. 14

INSITU MOISTURE SAMPLED BY	N/A % Client	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	DJ	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	R-S6B-ZS-08-2010	RAMMER TYPE	Automatic
MATERIAL IDENTIF	ICATION	PREPARATION	Moist
MAJOR COMPONI	ENT Till	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	37.5mm	RETAINED 4.75mm SCREEN	16.6%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.66
ROCK TYPE		TOTAL NUMBER OF TRIALS	4



TRIAL NUMBER	WET DENSITY (kg/m3)	DRY DENSITY (kg/m3)	MOISTURE CONTENT (%)
1	1782	1658	7.5
2	2133	1934	10.3
3	2219	1985	11.8
4	2148	1869	14.9

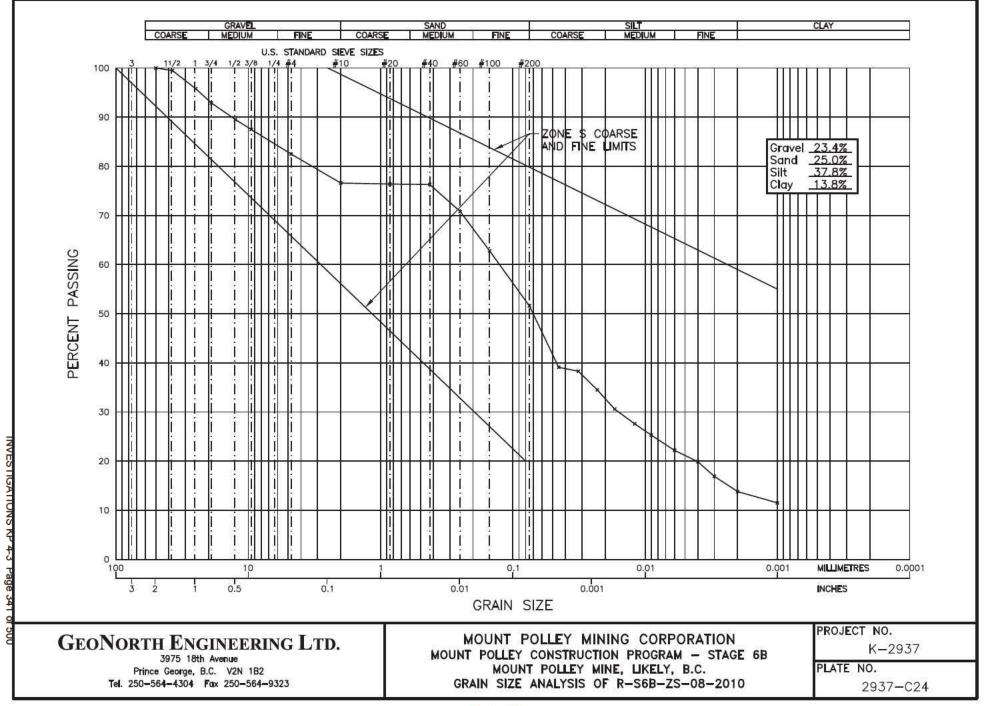
ZERO AIR VOIDS CURVE	MAXIMUM	OPTIMUM
FOR ESTIMATED	DRY	MOISTURE
SPECIFIC GRAVITY	DENSITY	CONTENT
OF 2.66	(kg/m3)	(%)
CALCULATED	1990	12.0
OVERSIZE CORRECTED	2080	10.0

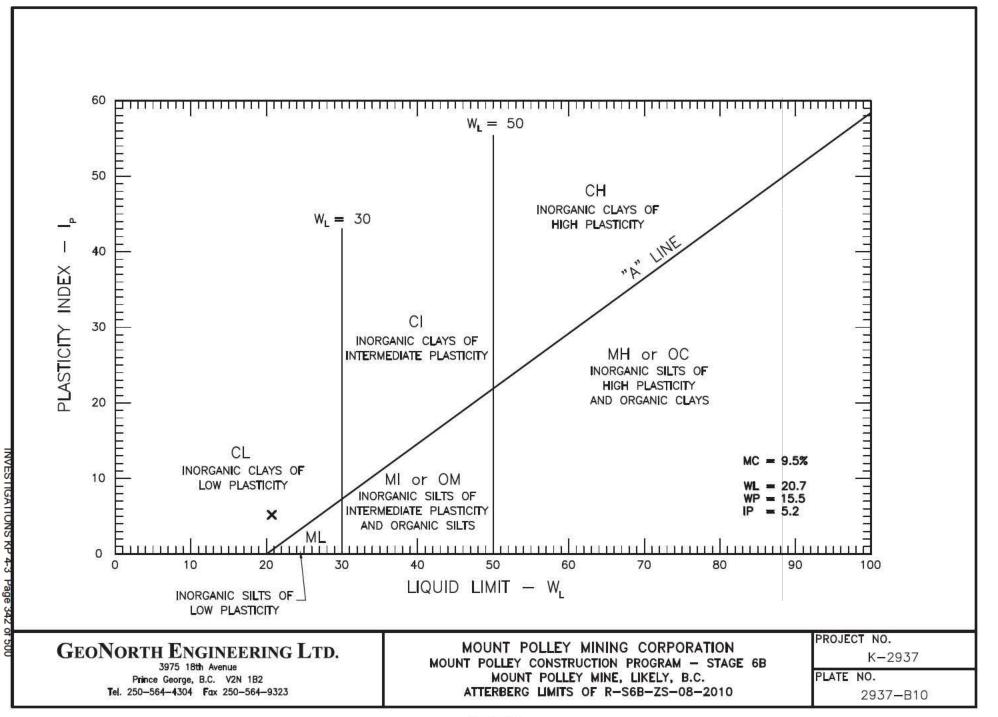


See sieve test report #43

2010.Jul.30 Page 1 of 1 GeoNorth Engineering Ltd.

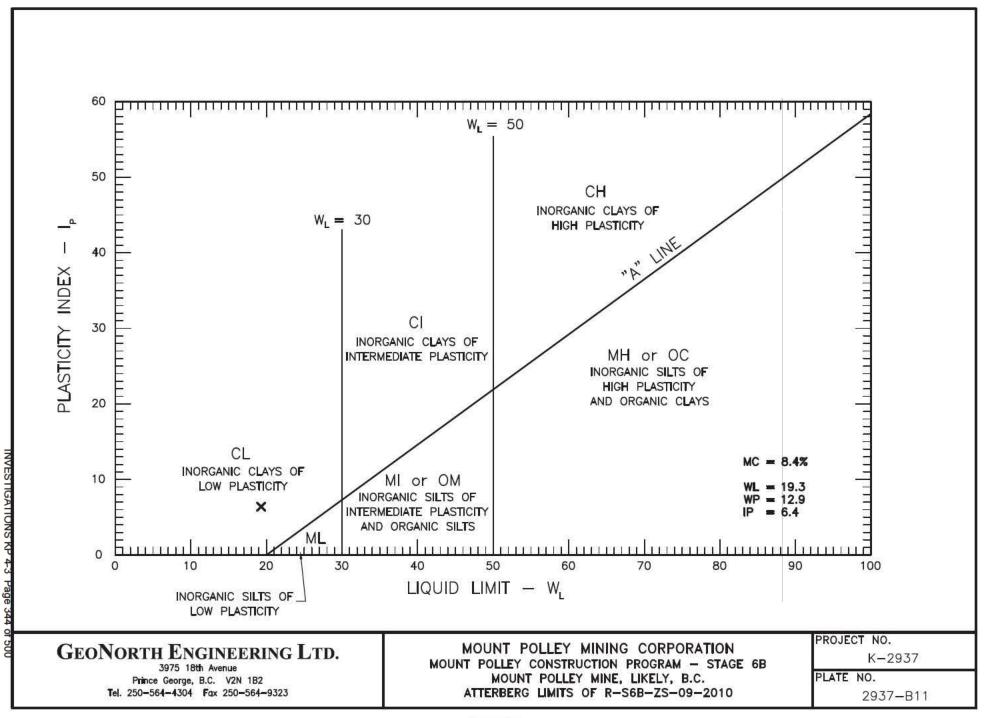
PER.

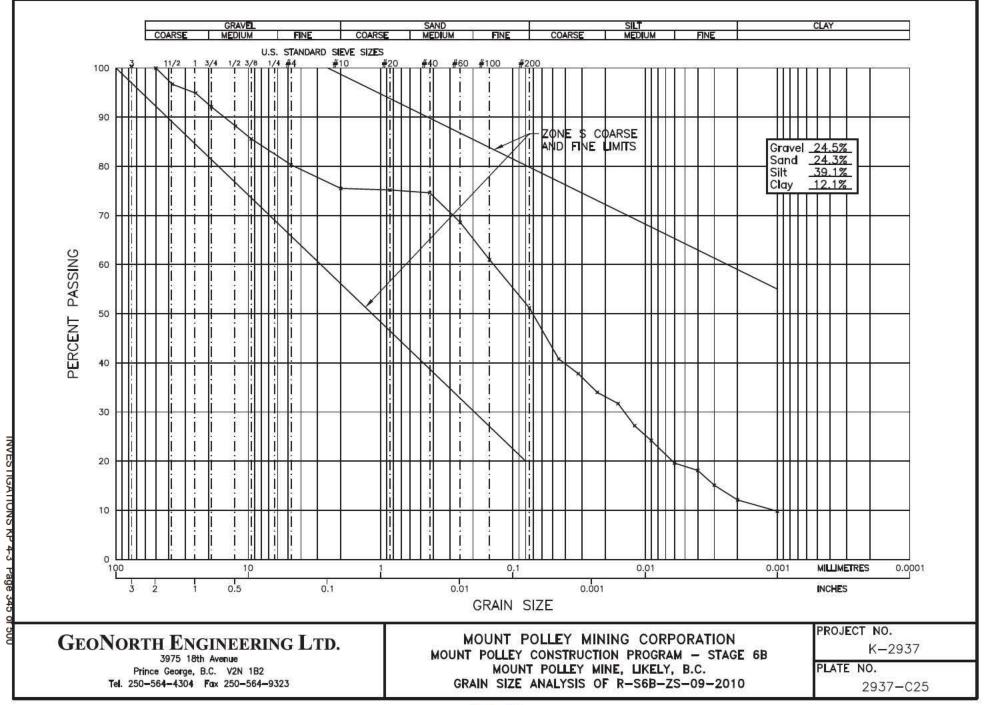




#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то C.C. Knight Piesold Ltd. Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010.Jul.20 DATE TESTED 2010.Jul.26 DATE SAMPLED 2010.Jul.14 SIEVE TEST NO. 44 Client. SUPPLIER SAMPLED BY R-S6B-ZS-09-2010 BG SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Till 94° #10 #20 #40 #100 2 1% 47 3/4" 3/8" #4 #60 #200 100 0 Ξ 90 - 10 80 - 20 PERCENT PASSING PERCENT RETAINED 70 30 40 60 50 - 50 40 - 60 30 - 70 20 80 10 - 90 - 100 0 2 4.75 N 0.85 8 37.5 mn ю Сп 425 250 12 6 10 ğ Ę E I F Ŧ F ₹ E ₹ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING 4.75 mm 3" 75 mm No. 4 80.3 2" 50 mm 100.0 No. 10 2.00 mm 75.5 1 1/2" 37.5 mm 96.7 No. 20 71.0 850 µm No. 40 94.9 66.3 1" 25 mm 425 um 92.1 60.8 3/4" 19 mm No. 60 250 µm 1/2" 12.5 mm 88.2 No. 100 55.2 150 µm 3/8" 85.6 46.7 9.5 mm No. 200 75 µm MOISTURE CONTENT 4.1% COMMENTS Location:ME, Chainage:1700, Elevation:957.3

Page 1 of 1 2010.Jul.30 GeoNorth Engineering Ltd.





# **GeoNorth Engineering** Test Designation: ASTM D-422

## Hydrometer Analysis

<u> </u>	nation: AST										
	Client: Mount Polley Mining Corporation Date: July 27,2010										
Project Name: MPCP Stage 6B									Project #: K-2937		
Source/Location: R-S6B-ZS-09-2010									Type: Till		
Sample #:			Test #:		Hole #:		Depth:		Time:		
Sampled B				Tested By:					Checked B		
Date Samp	led: July 14	,2010		Date Rece	ived: July 2	0,2010			Date Teste	ed: July 26,2	010
Initia	I Moisture	Content		Sieve A	nalysis			Hydrom	eter Sieve	Analysis	
						% Finer					
						Than			Total Wt.		% Finer
				Weight	Total Wt.	Orig.		Weight	Finer	% Finer	Than Orig
			Sieve No.	Retained	Passing	Samp.	Sieve No.	Retained	Than	Than	Samp.
Tare No.			38.1				10		50.0	100.0	75.5
Wet Wt. &	Tare	737.1	25.4				20	0.2	49.8	99.6	75.2
Dry Wt. & T	Fare	694.1	19.0				40		49.4	98.8	74.6
Water Wt.		43.0	12.5				60	4.0	45.4	90.8	68.6
Tare Wt.		179.4	9.5	See S	Sieve Test #	¥44	100	5.0	40.4	80.8	61.0
Wt. Of Dry	Soil	514.7	4.75				200	6.5	33.9	67.8	51.2
Moisture C	Content %	8.4	10			75.5	Pan	33.9			
Dry Wt. Of S	Sample from	Initial Moisture					Total	50.0			
	111111111111111						Unwashed	Wt.=			
(100xvvet So	bil VVt.)/(100 4	- Initial Moisture)	Total	514.7			Tare		Wt. Passin	g #200 =	
						Corr.					
Starting		Elapsed	Reading	Temp		Reading		SQRT(Zr)/T			
Wt. (g)	% - #10	Time (min)	R	(0C)	к	R`	Zr (cm)	(min)	D (mm)	N (%)	N*(%-#10)
50.0	0.755	0.5	38.0	24.0	0.01301	31.0	. ,	. ,	0.062	62.0	46.8
50.0	0.755	0.0	34.0	24.0		27.0			0.045	54.0	40.8
50.0	0.755	2	32.0	24.0		25.0			0.032	50.0	37.8
50.0	0.755	4	29.5	24.0		23.0			0.023	45.0	34.0
50.0	0.755	8	29.0	24.0		22.3			0.023	43.0	31.7
50.0	0.755	15	25.0	24.0		18.0			0.010	36.0	27.2
50.0	0.755	30	23.0	24.0		16.0			0.009	32.0	24.2
50.0	0.755	60	20.0	24.0		13.0			0.005	26.0	19.6
50.0	0.755	120	19.0	24.0		12.0			0.000	20.0	18.1
50.0	0.755	240	17.0	24.0		12.0			0.004	24.0	15.1
50.0	0.755	480	14.5	24.0		8.0			0.002	16.0	12.1
50.0	0.755	1440	13.0	26.0		6.5			0.002	13.0	9.8
Hydromete			Graduate #		0.0.272		Agent: Soc		0.001	Amount: 12	
		cific Gravity =2.									
Description											
											Noelco

Noelco

# **GeoNorth Engineering Ltd.**

3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

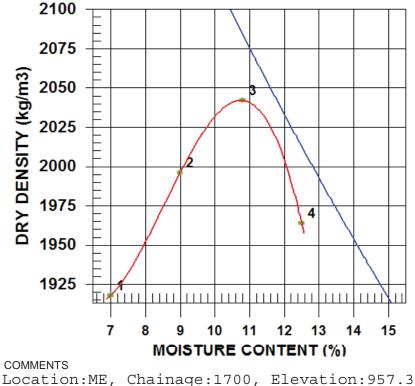
PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

PROCTOR NO. 15 DATE TESTED 2010.Jul.26 DATE RECEIVED 2010.Jul.20 DATE SAMPLED 2010.Jul.14

INSITU MOISTURE		COMPACTION STANDARD	Standard Proctor,
SAMPLED BY	Client		ASTM D698
	DU	COMPACTION PROCEDURE	-
SUPPLIER			
SOURCE	R-S6B-ZS-09-2010	RAMMER TYPE	Automatic
MATERIAL IDENTI	FICATION	PREPARATION	Moist
MAJOR COMPON	IENT TILL	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	37.5mm	RETAINED 4.75mm SCREEN	19.1%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.69
ROCK TYPE		TOTAL NUMBER OF TRIALS	4
MATERIAL IDENTII MAJOR COMPON SIZE DESCRIPTION	IENT Till	PREPARATION OVERSIZE CORRECTION METHOD RETAINED 4.75mm SCREEN OVERSIZE SPECIFIC GRAVITY	ASTM 4718 19.1% 2.69



TRIAL NUMBER	WET DENSITY (kg/m3)	DRY DENSITY (kg/m3)	MOISTURE CONTENT (%)
1	2052	1918	7.0
2	2176	1996	9.0
3	2263	2042	10.8
4	2209	1964	12.5

ZERO AIR VOIDS CURVE	MAXIMUM	OPTIMUM
FOR ESTIMATED	DRY	MOISTURE
SPECIFIC GRAVITY	DENSITY	CONTENT
OF 2.69	(kg/m3)	(%)
CALCULATED	2040	11.0
OVERSIZE CORRECTED	2140	9.0

locacion.ml, chainage.i/ou, licvacion.99/.9

See sieve test report #44. Previously labeled R-S6B-ZS-07-2010

Page 1 of 1 2010.Jul.30 GeoNorth Engineering Ltd.

#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010.Jul.27 DATE TESTED 2010.Aug.03 DATE SAMPLED 2010.Jul.23 SIEVE TEST NO. 45 Client SUPPLIER SAMPLED BY R-S6B-ZS-10-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Till Core Material 94° #10 #40 #100 2 1% 47 3/4" 3/8" #4 #20 #60 #200 100 0 Ξ 90 - 10 -80 - 20 PERCENT PASSING PERCENT RETAINED 70 30 40 60 50 - 50 40 - 60 30 - 70

	10							
	-75 mm	37.5 mm 50 mm	19 mm 25 mm	4.75 mm 9.5 mm	2 mm	0.85 mm	250 μm 425 μm	
	GRAVEL SIZES		PERCENT PASSING	GRADATION LIMITS		SAND SIZE	ES AND FIN	IES
3 " 2 "	75 50	mm mm	100.0 96.8			No. 4 No. 10	4.75 2.00	mr mr

	PASSING	LIMITS		PASSING	LIMITS	
75     mm       50     mm       37.5     mm       25     mm       19     mm       12.5     mm       9.5     mm	100.0 96.8 94.5 92.9 90.8 87.3 84.6		No.       4       .75       mm         No.       10       2.00       mm         No.       20       850       µm         No.       40       425       µm         No.       60       250       µm         No.       100       150       µm         No.       200       75       µm	75.0 70.0 65.4 60.4 55.2		

COMMENTS

1 1/2"

1"

3/4"

1/2"

3/8"

20

Note\* This Sample ID# changed from 09 to 10 Location: PE, Chainage: 3100, Elevation: 958.00

Page 1 of 1 2010.Aug.06 GeoNorth Engineering Ltd.

PFR.

150 µm

80

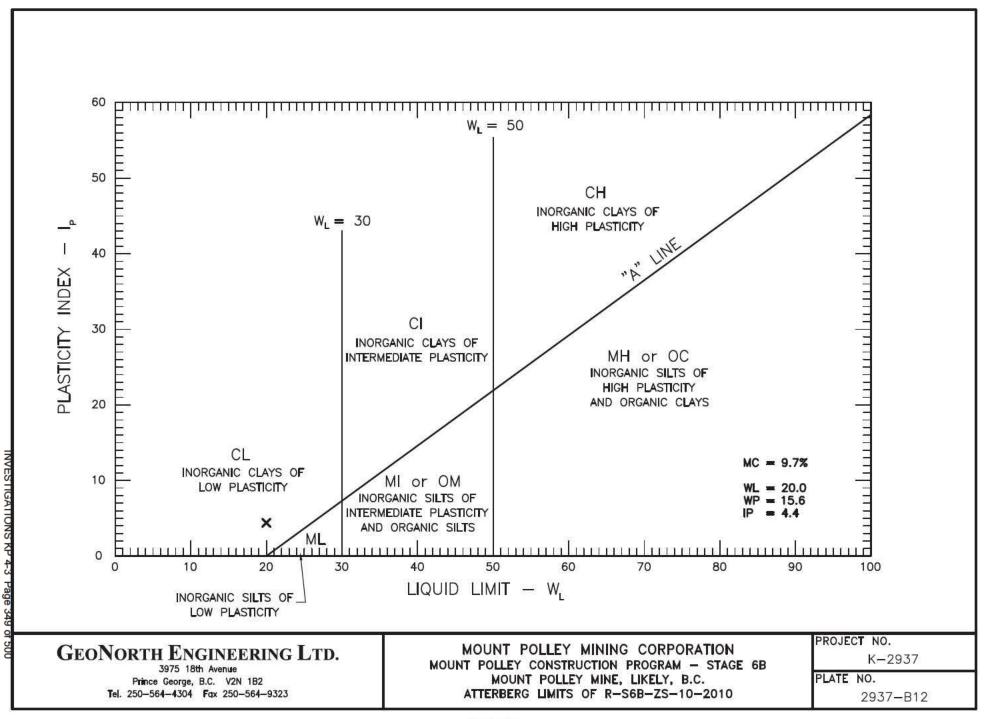
- 90 - 100

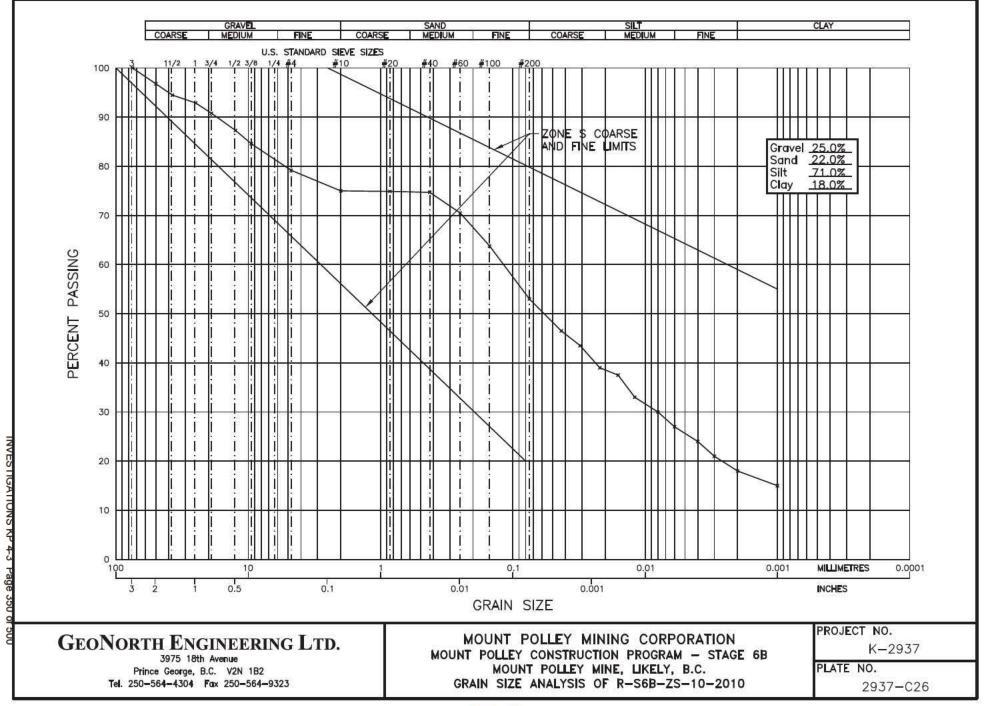
GRADATION

卤

E

PERCENT





# **GeoNorth Engineering** Test Designation: ASTM D-422

## Hydrometer Analysis

Test Design			ration						Doto: Aug	at E 2010	1
Client: Mount Polley Mining Corporation Project Name: MPCP Stage 6B									Date: August 5,2010 Project #: K-2937		
Source/Location: R-S6B-ZS-10-2010											
Source/Location: R-SoB-23-10-2010           Sample #:         Test #:         Hole #:         Depth:									Type: Till Core Material Time:		
Sampled B	v: Client		1651 #.	Tested By:			Deptil.		Checked B		
Date Samp		2010		,	ived: July 2	7 2010				ed: August 4	2010
· · · · · · · · · · · · · · · · · · ·	I Moisture				· · · · · ·	7,2010	I	L la colucione	eter Sieve		,2010
Initia	i moisture	Content		Sieve A	naiysis	% Finer		Hydrom	eter Sieve	Analysis	
						Than			Total Wt.		% Finer
				Weight	Total Wt.	Orig.		Weight	Finer	% Finer	Than Orig
			Sieve No.		Passing	Samp.	Sieve No.		Than	Than	Samp.
Tare No.			38.1	Retained	rassing	Samp.	10		50.0	100.0	
Wet Wt. &	Taro	781.9	25.4				20		49.9	99.8	73.0
Dry Wt. & T		728.9	19.0				40		49.8	99.6	
Water Wt.	ale	53.0					60		49.0	99.0	
Tare Wt.		180.3	9.5	See	I Sieve Test I	No 45	100		42.5	85.0	
Wt. Of Dry	Soil	548.6	4.75	000 (		10 - 5	200		35.3	70.6	53.0
Moisture C		9.7	10			75.0	Pan	35.3	00.0	70.0	
		Initial Moisture	10			70.0	Total	50.0			
	ample nom						Unwashed				
(100xWet Sc	oil Wt.)/(100 +	<ul> <li>Initial Moisture)</li> </ul>	Total	548.6			Tare	vvi.=	Wt. Passin	a #200	
			TOLAI	340.0	1		Tale	<del></del>	VVI. Fassii	<u>y #200 =</u>	
				_		Corr.					
Starting		Elapsed	Reading	Temp		Reading	、	SQRT(Zr)/T			
Wt. (g)	% - #10	Time (min)	R	(0C)	K	R`	Zr (cm)	(min)	D (mm)	N (%)	N*(%-#10)
50.0	0.750	0.5		25.0	0.01286				0.059	68.0	
50.0	0.750	1	35.0	25.0					0.043	62.0	46.5
50.0	0.750	2	33.0	25.0					0.031	58.0	
50.0	0.750	4	30.0	25.0					0.022	52.0	39.0
50.0	0.750	8	29.0	25.0					0.016	50.0	37.5
50.0	0.750	15	26.0	25.0					0.012	44.0	33.0
50.0	0.750	30	24.0	25.0					0.008	40.0	30.0
50.0	0.750	60	22.0	25.0					0.006	36.0	
50.0	0.750	120	20.0	25.0					0.004	32.0	24.0
50.0	0.750	240	18.0	25.0					0.003	28.0	21.0
50.0	0.750	480	16.0	25.0					0.002	24.0	18.0
50.0	0.750		14.0	25.0	0.01286				0.001	20.0	
Hydromete		4	Graduate #	F:		Dispersing	Agent: Soc	num Hex		Amount: 12	25001
Density of S											
IDESCRIPTION	of Sample										

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# **GeoNorth Engineering Ltd.**

3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

## **MOISTURE - DENSITY** RELATIONSHIP REPORT

PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

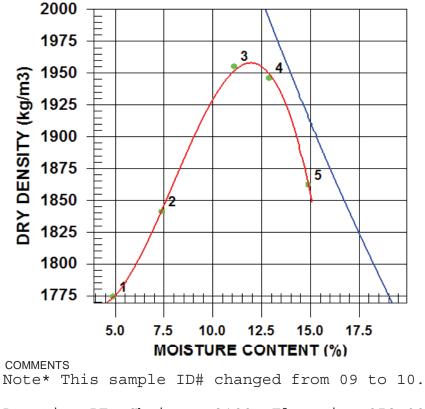
то Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR

Mount Polley Mine Likely

DATE TESTED 2010.Jul.30 DATE RECEIVED 2010.Jul.27 DATE SAMPLED 2010.Jul.23 PROCTOR NO. 16

INSITU MOISTURE SAMPLED BY	N/A % Client	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	SR	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	R-S6B-ZS-10-2010	RAMMER TYPE	Automatic
MATERIAL IDENTIF	ICATION	PREPARATION	Moist
MAJOR COMPON	ENT Till	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	50mm	RETAINED 4.75mm SCREEN	20.0%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.68
ROCK TYPE		TOTAL NUMBER OF TRIALS	5
ROCKTIFE		TOTAL NOMBER OF TRIALS	5



TRIAL NUMBER	WET DENSITY	DRY DENSITY	
	(kg/m3)	(kg/m3)	(%)
1	1861	1774	4.9
2	1977	1841	7.4
3	2172	1955	11.1
4	2197	1946	12.9
5	2140	1862	14.9

ZERO AIR VOIDS CURVE FOR ESTIMATED SPECIFIC GRAVITY OF 2.68	MAXIMUM DRY DENSITY (kg/m3)	OPTIMUM MOISTURE CONTENT (%)	
CALCULATED OVERSIZE CORRECTED	1960 2070	12.0 10.0	

Location: PE, Chainage: 3100, Elevation: 958.00

Page 1 of 1 2010.Aug.06 GeoNorth Engineering Ltd.

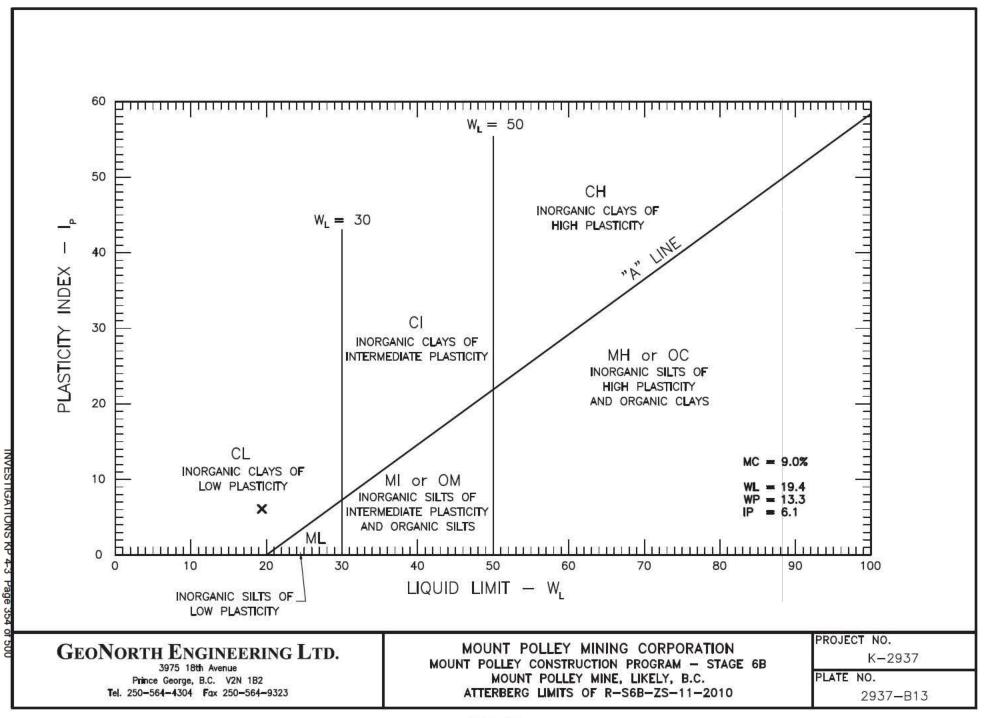
#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. ТО Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010.Jul.29 DATE TESTED 2010.Aug.03 DATE SAMPLED 2010.Jul.27 SIEVE TEST NO. 46 Client SUPPLIER SAMPLED BY R-S6B-ZS-11-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Till core material, PE Borrow 1%\* 17 94° 3/8" #10 #20 2" 3/4" #4 #40 #60 #100 #200 100 0 Ξ 90 - 10 80 - 20 PERCENT PASSING PERCENT RETAINED 70 30 40 60 50 - 50 40 60 30 70 20 80 - 90 10 - 100 0 2 37.5 mn 4.75 N 0.85 8 ю Сп 425 250 12 6 12 ğ Ę E Ш I F Ŧ F ₹ E ₹ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING 3" 75 mm 100.0 No. 4 4.75 mm 84.3 2" 99.2 No. 10 79.5 50 mm 2.00 mm 1 1/2" 98.4 No. 20 37.5 mm 850 µm 74.3 95.2 No. 40 1" 69.3 25 mm 425 um 3/4" 19 mm 93.2 No. 60 250 µm 63.5 1/2" 90.4 No. 100 57.0 12.5 mm 150 µm 88.5 No. 200 46.6 3/8" 9.5 mm 75 µm COMMENTS

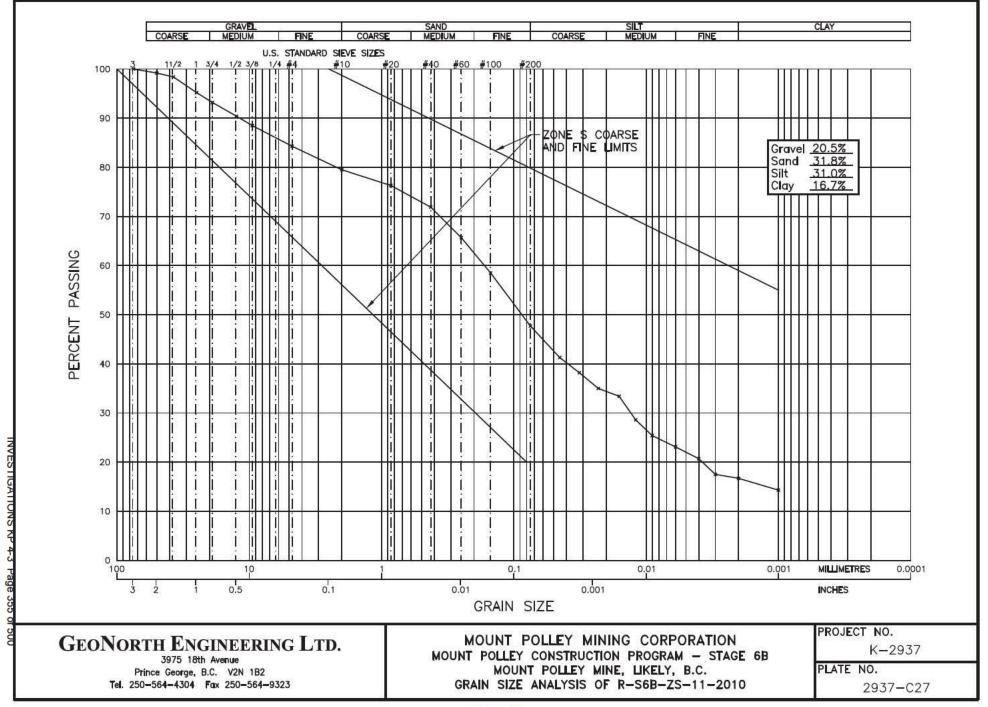
Location:ME, Chainage:1900, Elevation:958.0

Page 1 of 1

2010.Aug.06 GeoNorth Engineering Ltd.

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# **GeoNorth Engineering** Test Designation: ASTM D-422

## Hydrometer Analysis

Client: Mount Polley Mining Corporation       Date Tested: August 5,2         Project Name: MPCP Stage 6B       Project #: K-2937         Source/Location: R-S6B-ZS-11-2010       Type: Till Core / PE Born         Sample #:       Test #:       Hole #:       Depth:       Time:         Sampled By: Client       Tested By: DJ       Checked By:       Date Tested: August 4,2         Date Sampled: July 27,2010       Date Received: July 29,2010       Date Tested: August 4,2         Initial Moisture Content       Sieve Analysis       Hydrometer Sieve Analysis	row	
Source/Location: R-S6B-ZS-11-2010       Type: Till Core / PE Born         Sample #:       Test #:       Hole #:       Depth:       Time:         Sampled By: Client       Tested By: DJ       Checked By:         Date Sampled: July 27,2010       Date Received: July 29,2010       Date Tested: August 4,2         Initial Moisture Content       Sieve Analysis       Hydrometer Sieve Analysis		
Sample #:     Test #:     Hole #:     Depth:     Time:       Sampled By: Client     Tested By: DJ     Checked By:       Date Sampled: July 27,2010     Date Received: July 29,2010     Date Tested: August 4,2       Initial Moisture Content     Sieve Analysis     Hydrometer Sieve Analysis		
Sampled By: Client       Tested By: DJ       Checked By:         Date Sampled: July 27,2010       Date Received: July 29,2010       Date Tested: August 4,2         Initial Moisture Content       Sieve Analysis       Hydrometer Sieve Analysis	2010	
Date Sampled: July 27,2010         Date Received: July 29,2010         Date Tested: August 4,2           Initial Moisture Content         Sieve Analysis         Hydrometer Sieve Analysis	2010	
Initial Moisture Content Sieve Analysis Hydrometer Sieve Analysis	010	
	% Finer	
	han Orig	
	Samp.	
Tare No.         38.1         10         50.0         100.0	79.5	
Net Wt. & Tare         944.0         25.4         20         2.0         48.0         96.0	79.3	
Wet Wt. & Tare         944.0         25.4         20         2.0         46.0         96.0           Dry Wt. & Tare         880.9         19.0         40         2.8         45.2         90.4	70.3	
Dry Wt. & Tate         600.9         19.0         40         2.8         45.2         90.4           Water Wt.         63.1         12.5         60         3.9         41.3         82.6	65.7	
Tare Wt.         180.4         9.5         See Sieve Test No 46         100         4.5         36.8         73.6	58.5	
Wt. Of Dry Soil         700.5         4.75         200         6.8         30.0         60.0	47.7	
Moisture Content %         9.0         10         79.5         Pan         30.0	47.1	
Dry Wt. Of Sample from Initial Moisture		
(as we constantly we constantly we constantly a second sec		
	t. Passing #200 =	
Starting Elapsed Reading Temp Reading SQRT(Zr)/T		
	l*(%-#10)	
50.0         0.795         0.5         33.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0	46.1	
50.0         0.795         0.5         33.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         26.0         12.0         3.465         0.045         52.0	46.1 41.3	
50.0         0.795         0.5         33.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         26.0         12.0         3.465         0.045         52.0           50.0         0.795         2         28.0         25.0         0.01286         24.0         12.3         2.483         0.032         48.0	46.1 41.3 38.2	
50.0         0.795         0.5         33.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         26.0         12.0         3.465         0.045         52.0           50.0         0.795         2         28.0         25.0         0.01286         24.0         12.3         2.483         0.032         48.0           50.0         0.795         4         26.0         25.0         0.01286         22.0         12.7         1.779         0.023         44.0	46.1 41.3 38.2 35.0	
50.0         0.795         0.5         33.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         26.0         12.0         3.465         0.045         52.0           50.0         0.795         2         28.0         25.0         0.01286         24.0         12.3         2.483         0.032         48.0           50.0         0.795         4         26.0         25.0         0.01286         22.0         12.7         1.779         0.023         44.0           50.0         0.795         8         25.0         25.0         0.01286         21.0         12.8         1.266         0.016         42.0	46.1 41.3 38.2 35.0 33.4	
50.0         0.795         0.5         33.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         26.0         12.0         3.465         0.045         52.0           50.0         0.795         2         28.0         25.0         0.01286         24.0         12.3         2.483         0.032         48.0           50.0         0.795         4         26.0         25.0         0.01286         22.0         12.7         1.779         0.023         44.0           50.0         0.795         8         25.0         25.0         0.01286         21.0         12.8         1.266         0.016         42.0           50.0         0.795         8         25.0         25.0         0.01286         21.0         12.8         1.266         0.016         42.0           50.0         0.795         15         22.0         25.0         0.01286         18.0         13.3         0.943         0.012         36.0	46.1 41.3 38.2 35.0 33.4 28.6	
50.0         0.795         0.5         33.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         26.0         12.0         3.465         0.045         52.0           50.0         0.795         2         28.0         25.0         0.01286         24.0         12.3         2.483         0.032         48.0           50.0         0.795         2         28.0         25.0         0.01286         24.0         12.3         2.483         0.032         48.0           50.0         0.795         4         26.0         25.0         0.01286         22.0         12.7         1.779         0.023         44.0           50.0         0.795         8         25.0         25.0         0.01286         21.0         12.8         1.266         0.016         42.0           50.0         0.795         15         22.0         25.0         0.01286         18.0         13.3         0.943         0.012         36.0           50.0         0.795         30         20.0         25.0         0.01286         16.0         13.7	46.1 41.3 38.2 35.0 33.4 28.6 25.4	
50.0         0.795         0.5         33.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         26.0         12.0         3.465         0.045         52.0           50.0         0.795         2         28.0         25.0         0.01286         24.0         12.3         2.483         0.032         48.0           50.0         0.795         4         26.0         25.0         0.01286         22.0         12.7         1.779         0.023         44.0           50.0         0.795         8         25.0         25.0         0.01286         21.0         12.8         1.266         0.016         42.0           50.0         0.795         15         22.0         25.0         0.01286         18.0         13.3         0.943         0.012         36.0           50.0         0.795         30         20.0         25.0         0.01286         16.0         13.7	46.1 41.3 38.2 35.0 33.4 28.6 25.4 23.1	
50.0         0.795         0.5         33.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         26.0         12.0         3.465         0.045         52.0           50.0         0.795         2         28.0         25.0         0.01286         24.0         12.3         2.483         0.032         48.0           50.0         0.795         2         28.0         25.0         0.01286         22.0         12.7         1.779         0.023         44.0           50.0         0.795         4         26.0         25.0         0.01286         21.0         12.8         1.266         0.016         42.0           50.0         0.795         8         25.0         25.0         0.01286         21.0         12.8         1.266         0.012         36.0           50.0         0.795         15         22.0         25.0         0.01286         18.0         13.3         0.943         0.012         36.0           50.0         0.795         30         20.0         25.0         0.01286         16.0         13.7	46.1 41.3 38.2 35.0 33.4 28.6 25.4 23.1 20.7	
SD         C <thc< th="">         C         C         C</thc<>	46.1 41.3 38.2 35.0 33.4 28.6 25.4 23.1 20.7 17.5	
50.0         0.795         0.5         33.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         26.0         12.0         3.465         0.045         52.0           50.0         0.795         1         30.0         25.0         0.01286         26.0         12.0         3.465         0.045         52.0           50.0         0.795         2         28.0         25.0         0.01286         24.0         12.3         2.483         0.032         48.0           50.0         0.795         4         26.0         25.0         0.01286         22.0         12.7         1.779         0.023         44.0           50.0         0.795         8         25.0         25.0         0.01286         21.0         12.8         1.266         0.016         42.0           50.0         0.795         15         22.0         25.0         0.01286         18.0         13.3         0.943         0.012         36.0           50.0         0.795         30         20.0         25.0         0.01286         16.0         13.7	46.1 41.3 38.2 35.0 33.4 28.6 25.4 23.1 20.7 17.5 16.7	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	46.1 41.3 38.2 35.0 33.4 28.6 25.4 23.1 20.7 17.5 16.7 14.3	
50.0         0.795         0.5         33.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         26.0         12.0         3.465         0.045         52.0           50.0         0.795         2         28.0         25.0         0.01286         24.0         12.3         2.483         0.032         48.0           50.0         0.795         2         28.0         25.0         0.01286         22.0         12.7         1.779         0.023         44.0           50.0         0.795         8         25.0         25.0         0.01286         21.0         12.8         1.266         0.016         42.0           50.0         0.795         15         22.0         25.0         0.01286         18.0         13.3         0.943         0.012         36.0           50.0         0.795         30         20.0         25.0         0.01286         18.0         13.7         0.675         0.009         32.0           50.0         0.795         30         20.0         25.0         0.01286         14.5         13.9	46.1 41.3 38.2 35.0 33.4 28.6 25.4 23.1 20.7 17.5 16.7 14.3	
50.0         0.795         0.5         33.0         25.0         0.01286         29.0         11.5         4.798         0.062         58.0           50.0         0.795         1         30.0         25.0         0.01286         26.0         12.0         3.465         0.045         52.0           50.0         0.795         2         28.0         25.0         0.01286         24.0         12.3         2.483         0.032         48.0           50.0         0.795         2         28.0         25.0         0.01286         22.0         12.7         1.779         0.023         44.0           50.0         0.795         8         25.0         25.0         0.01286         21.0         12.8         1.266         0.016         42.0           50.0         0.795         15         22.0         25.0         0.01286         18.0         13.3         0.943         0.012         36.0           50.0         0.795         15         22.0         25.0         0.01286         18.0         13.3         0.943         0.012         36.0           50.0         0.795         30         20.0         25.0         0.01286         14.5         13.9	46.1 41.3 38.2 35.0 33.4 28.6 25.4 23.1 20.7 17.5 16.7 14.3	

Noelco

# **GeoNorth Engineering Ltd.**

3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

## **MOISTURE - DENSITY** RELATIONSHIP REPORT

PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

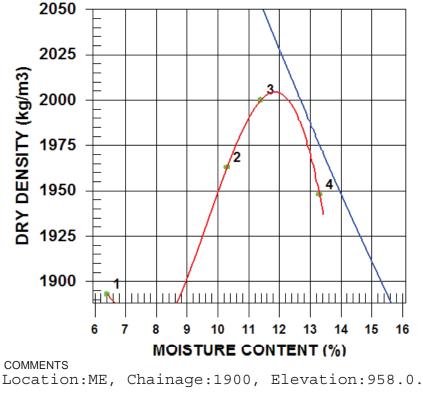
то Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR

Mount Polley Mine Likely

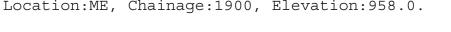
DATE TESTED 2010.Aug.04 DATE RECEIVED 2010.Jul.29 DATE SAMPLED 2010.Jul.27 PROCTOR NO. 17

INSITU MOISTURE SAMPLED BY	N/A % Client	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	JM	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	R-S6B-ZS-11-2010	RAMMER TYPE	Automatic
MATERIAL IDENTI	FICATION	PREPARATION	Moist
MAJOR COMPON	IENT Till	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	50mm	RETAINED 4.75mm SCREEN	20.0%
DESCRIPTION		OVERSIZE SPECIFIC GRAVITY	2.68
ROCK TYPE		TOTAL NUMBER OF TRIALS	4



TRIAL NUMBER	WET DENSITY (kg/m3)	DENSITY DENSITY	
1	2014	1893	6.4
2	2165	1963	10.3
3	2228	2000	11.4
4	2207	1948	13.3

ZERO AIR VOIDS CURVE	MAXIMUM	OPTIMUM
FOR ESTIMATED	DRY	MOISTURE
SPECIFIC GRAVITY	DENSITY	CONTENT
OF 2.68	(kg/m3)	(%)
CALCULATED	2000	12.0
OVERSIZE CORRECTED	2110	10.0

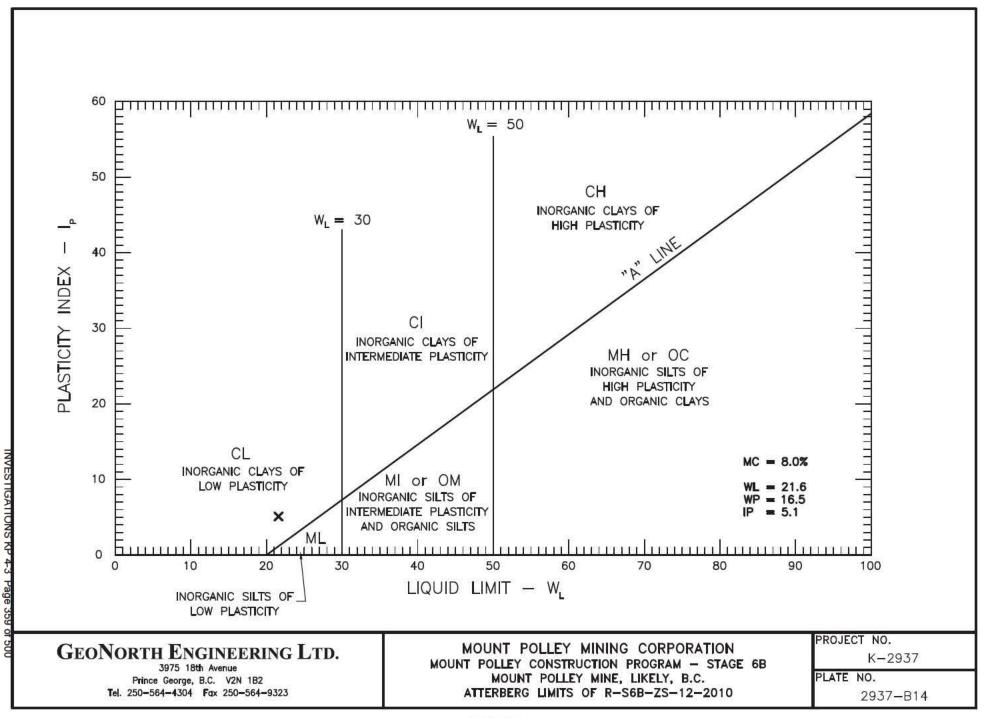


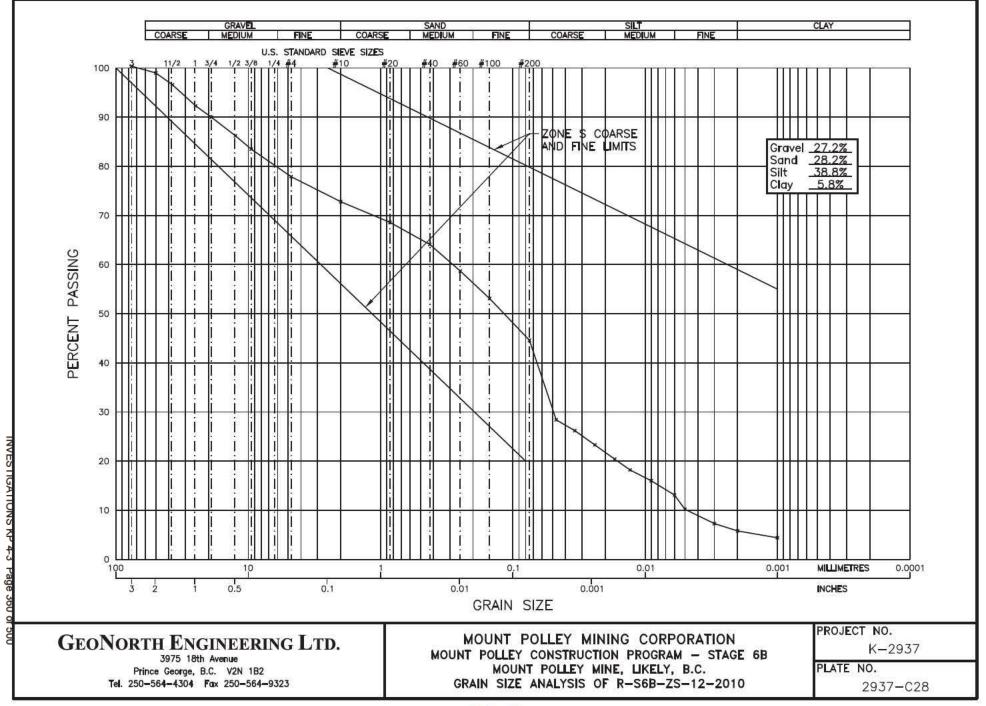
Page 1 of 1 2010.Aug.06

GeoNorth Engineering Ltd.

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C.C. Knight Piesold Ltd. Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Aug. 05 DATE TESTED 2010. Aug. 09 DATE SAMPLED 2010. Jul. 29 SIEVE TEST NO. 47 Client. SUPPLIER SAMPLED BY R-S6B-ZS-12-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Till #10 #20 #40 #100 1% 47 3/4" %\* 3/8" #4 #60 #200 100 0 Ξ 90 - 10 80 - 20 PERCENT PASSING PERCENT RETAINED 70 30 40 60 50 - 50 40 60 70 30 20 80 10 - 90 - 100 0 2 4.75 N 0.85 8 37.5 mn 12 ю Сп 425 250 6 10 8 Ę E I F Ŧ F ₹ E ₹ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING 4.75 mm 3" 75 mm 100.0 No. 4 77.9 2" 99.0 No. 10 2.00 mm 72.8 50 mm 1 1/2" 37.5 mm 96.6 No. 20 68.3 850 µm No. 40 92.3 63.9 1" 25 mm 425 um 90.0 3/4" 19 mm No. 60 250 µm 58.9 1/2" 12.5 mm 86.2 No. 100 53.5 150 µm 3/8" 83.5 No. 200 44.8 9.5 mm 75 µm COMMENTS Location:SE, Chainage:1100, Elevation:958.0 Till Core Material, PE Borrow Page 1 of 1 2010.Aug.09 GeoNorth Engineering Ltd. PFR.





# **GeoNorth Engineering** Test Designation: ASTM D-422

## Hydrometer Analysis

unt Pollev	Mining Corpo	ration						Date: Aug	ist 10,2010		
Client: Mount Polley Mining Corporation       Date: August 10,2010         Project Name: MPCP Stage 6B       Project #: K-2937											
v: Client			Tested Bv:						V:		
	,2010				st 5,2010					,2010	
,	,			Ŭ	,					,	
					% Finer						
					Than			Total Wt.		% Finer	
			Weight	Total Wt.	Oriq.		Weight	Finer	% Finer	Than Orig	
		Sieve No.		Passing		Sieve No.		Than	Than	Samp.	
		38.1		Ŭ		10		50.0	100.0		
Tare	874.8	25.4				20	2.9	47.1		68.6	
Tare	824.4	19.0				40		44.0	88.0	64.1	
	50.4	12.5				60	3.7	40.3	80.6	58.7	
	194.6	9.5	See S	Sieve Test N	lo 47	100	3.8	36.5	73.0	53.	
Soil	629.8	4.75				200	5.9	30.6	61.2	44.0	
Content %	8.0	10			72.8	Pan	30.6				
Sample from	Initial Moisture					Total	50.0				
-:!.\\\/.						Unwashed	Wt.=				
DII VVT.)/(100 4	- Initial Moisture)	Total	629.8			Tare		Wt. Passin	g #200 =		
					Corr.						
		Reading	Temp		Reading		SQRT(Zr)/T				
	Elapsed										
% - #10	Elapsed Time (min)	R	(0C)	к	R`	Zr (cm)	(min)	D (mm)	N (%)	N*(%-#10)	
<b>% - #10</b> 0.728		R	(0C)		<b>R</b> ` 23.0	Zr (cm) 12.5	· /	<b>D (mm)</b> 0.065	<b>N (%)</b> 46.0	· ,	
	Time (min)	R		0.01301			· /	. ,		33.5	
0.728	Time (min)	<b>R</b> 30.0	( <b>0C</b> )	0.01301	23.0	12.5 13.1	5.000 3.616	0.065	46.0	33.5	
0.728 0.728	<b>Time (min)</b> 0.5	R 30.0 26.5	(0C) 24.0 24.0	0.01301 0.01301 0.01301	23.0 19.5	12.5 13.1 13.3	5.000 3.616 2.581	0.065	46.0 39.0	N*(%-#10) 33.5 28.4 26.2 23.3	
0.728 0.728 0.728 0.728 0.728 0.728	Time (min) 0.5 1 2 4 8	R 30.0 26.5 25.0	(0C) 24.0 24.0 24.0	0.01301 0.01301 0.01301 0.01301	23.0 19.5 18.0 16.0 14.0	12.5 13.1 13.3 13.7	5.000 3.616 2.581 1.848	0.065 0.047 0.034	46.0 39.0 36.0	33.5 28.4 26.2 23.3	
0.728 0.728 0.728 0.728 0.728 0.728 0.728	Time (min) 0.5 1 2 4 4 8 15	R 30.0 26.5 25.0 23.0	(0C) 24.0 24.0 24.0 24.0	0.01301 0.01301 0.01301 0.01301 0.01301	23.0 19.5 18.0 16.0	12.5 13.1 13.3 13.7	5.000 3.616 2.581 1.848 1.322	0.065 0.047 0.034 0.024	46.0 39.0 36.0 32.0 28.0 25.0	33.5 28.4 26.2 23.3 20.4	
0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728	Time (min) 0.5 1 2 4 8 15 30	R 30.0 26.5 25.0 23.0 21.0	(0C) 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0	0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301	23.0 19.5 18.0 16.0 14.0 12.5 11.0	12.5 13.1 13.3 13.7 14.0 14.2 14.5	5.000 3.616 2.581 1.848 1.322 0.974 0.695	0.065 0.047 0.034 0.024 0.017 0.013 0.009	46.0 39.0 36.0 32.0 28.0	33.5 28.4 26.2 23.3 20.4 18.2 16.0	
0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728	Time (min) 0.5 1 2 4 8 15 30 60	R 30.0 26.5 25.0 23.0 21.0 19.5 18.0 16.0	(0C) 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0	0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301	23.0 19.5 18.0 16.0 14.0 12.5 11.0 9.0	12.5 13.1 13.3 13.7 14.0 14.2 14.5 14.8	5.000 3.616 2.581 1.848 1.322 0.974 0.695 0.497	0.065 0.047 0.034 0.024 0.017 0.013 0.009 0.006	46.0 39.0 36.0 22.0 28.0 25.0 22.0 18.0	33.5 28.4 26.2 23.3 20.4 18.2 16.0 13.1	
0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728	Time (min) 0.5 1 2 4 4 8 15 30 60 120	R 30.0 26.5 25.0 23.0 21.0 19.5 18.0 16.0 14.0	(0C) 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0	0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301	23.0 19.5 18.0 16.0 14.0 12.5 11.0 9.0 7.0	12.5 13.1 13.3 13.7 14.0 14.2 14.5 14.5 14.8 15.1	5.000 3.616 2.581 1.848 1.322 0.974 0.695 0.497 0.355	0.065 0.047 0.034 0.024 0.017 0.013 0.009 0.006 0.005	46.0 39.0 36.0 22.0 28.0 25.0 22.0 18.0 14.0	33.5 28.4 26.2 23.3 20.4 18.2 16.0 13.1	
0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728	Time (min) 0.5 1 2 4 8 15 30 60 120 240	R 30.0 26.5 25.0 23.0 21.0 19.5 18.0 16.0 14.0 12.0	(0C) 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0	0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301	23.0 19.5 18.0 16.0 14.0 12.5 11.0 9.0 7.0 5.0	12.5 13.1 13.3 13.7 14.0 14.2 14.5 14.8 15.1 15.5	5.000 3.616 2.581 1.848 1.322 0.974 0.695 0.497 0.355 0.254	0.065 0.047 0.034 0.024 0.017 0.013 0.009 0.006 0.005 0.003	46.0 39.0 36.0 22.0 28.0 25.0 22.0 18.0 14.0 10.0	33.5 28.4 26.2 23.3 20.4 18.2 16.0 13.1 10.2 7.3	
0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480	R 30.0 26.5 25.0 23.0 21.0 19.5 18.0 16.0 14.0 12.0 11.0	(0C) 24.0	0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301	23.0 19.5 18.0 16.0 14.0 12.5 11.0 9.0 7.0 5.0 4.0	12.5 13.1 13.3 13.7 14.0 14.2 14.5 14.5 14.8 15.1 15.5 15.6	5.000 3.616 2.581 1.848 1.322 0.974 0.695 0.497 0.355 0.254 0.180	0.065 0.047 0.034 0.024 0.017 0.013 0.009 0.006 0.005 0.003 0.002	46.0 39.0 36.0 22.0 28.0 25.0 22.0 18.0 14.0 10.0 8.0	33.5 28.4 26.2 23.3 20.4 18.2 16.0 13.1 10.2 7.3 5.5	
0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480 1440	R 30.0 26.5 25.0 23.0 21.0 19.5 18.0 16.0 14.0 12.0 11.0 10.0	(0C) 24.0	0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301	23.0 19.5 18.0 16.0 14.0 12.5 11.0 9.0 7.0 5.0 4.0 3.0	12.5 13.1 13.3 13.7 14.0 14.2 14.5 14.8 15.1 15.5 15.6 15.8	5.000 3.616 2.581 1.848 1.322 0.974 0.695 0.497 0.355 0.254 0.254 0.180 0.105	0.065 0.047 0.034 0.024 0.017 0.013 0.009 0.006 0.005 0.003	46.0 39.0 36.0 32.0 28.0 25.0 22.0 18.0 14.0 10.0 8.0 6.0	33.5 28.4 26.2 23.3 20.4 18.2 16.0 13.1 10.2 7.3 5.8 4.4	
0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480 1440 4	R 30.0 26.5 25.0 23.0 21.0 19.5 18.0 16.0 14.0 12.0 11.0 0 Graduate #	(0C) 24.0	0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301	23.0 19.5 18.0 16.0 14.0 12.5 11.0 9.0 7.0 5.0 4.0 3.0	12.5 13.1 13.3 13.7 14.0 14.2 14.5 14.5 14.8 15.1 15.5 15.6	5.000 3.616 2.581 1.848 1.322 0.974 0.695 0.497 0.355 0.254 0.254 0.180 0.105	0.065 0.047 0.034 0.024 0.017 0.013 0.009 0.006 0.005 0.003 0.002	46.0 39.0 36.0 22.0 28.0 25.0 22.0 18.0 14.0 10.0 8.0	33.5 28.4 26.2 23.3 20.4 18.2 16.0 13.1 10.2 7.3 5.8 4.4	
0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728 0.728	Time (min) 0.5 1 2 4 8 15 30 60 120 240 480 1440 4 cific Gravity = 2	R 30.0 26.5 25.0 23.0 21.0 19.5 18.0 16.0 14.0 12.0 11.0 0 Graduate #	(0C) 24.0	0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301 0.01301	23.0 19.5 18.0 16.0 14.0 12.5 11.0 9.0 7.0 5.0 4.0 3.0	12.5 13.1 13.3 13.7 14.0 14.2 14.5 14.8 15.1 15.5 15.6 15.8	5.000 3.616 2.581 1.848 1.322 0.974 0.695 0.497 0.355 0.254 0.254 0.180 0.105	0.065 0.047 0.034 0.024 0.017 0.013 0.009 0.006 0.005 0.003 0.002	46.0 39.0 36.0 32.0 28.0 25.0 22.0 18.0 14.0 10.0 8.0 6.0	33.5 28.4 26.2 23.3 20.4 18.2 16.0 13.1 10.2 7.3 5.8 4.4	
	Cation: R-S Sy: Client Died: July 29 Al Moisture Tare Tare Tare Soil Content % Sample from	cation: R-S6B-ZS-12-201 by: Client bled: July 29,2010 al Moisture Content Tare Content Tare 874.8 Tare 824.4 50.4 194.6 Soil 629.8 Content % 8.0 Sample from Initial Moisture bil Wt.)/(100 + Initial Moisture)	Sieve No.           Sieve No.           38.1           Tare         874.8           7are         874.8           50.4         12.5           194.6         9.5           Soil         629.8           4.75         194.6           Soil         629.8           4.75         25.4           Tortent %         8.0           10         10           Sample from Initial Moisture         10           Sample from Initial Moisture         Total	cation: R-S6B-ZS-12-2010         Test #:         Test #:         Test #:         Test #:         Tested By:         Date Rece         Al Moisture Content       Weight         Sieve No.       Retained         Al Moisture Content       Weight         Tare       Sieve No.       Retained         Tare       874.8       25.4       Tare         Tare       824.4       19.0       See S       Soil       See S         Soil       629.8       4.75       See S       Soil       629.8       4.75       Content %       8.0       10       Total       629.8	Cation: R-S6B-ZS-12-2010         Test #:       Hole #:         big: Client       Tested By: DJ         Date Received: Augus       Date Received: Augus         I Moisture Content       Sieve Analysis         Sieve No.       Retained       Passing         38.1       38.1       Total Wt.         Tare       874.8       25.4       Passing         Soil       50.4       12.5       See Sieve Test N         Soil       629.8       4.75       Content %       8.0       10         Sample from Initial Moisture       10       Sample from Initial Moisture       Sample from Initial Moisture       Sample from Initial Moisture       Sample from Initial Moisture       Sample from Initial Moisture	Cation: R-S6B-ZS-12-2010         Test #:       Hole #:         Tested By: DJ         Date Received: August 5,2010         All Moisture Content       Sieve Analysis         Meight       Total Wt.       Orig.         Sieve No.       Retained       Passing       Samp.         Tare       874.8       25.4           Tare       824.4       19.0           Tare       824.4       19.0           Soil       629.8       4.75           Soil       629.8       4.75           Soil       629.8       4.75           Sample from Initial Moisture             Dil Wt.)/(100 + Initial Moisture)       Total       629.8	Test #:       Hole #:       Depth:         Test #:       Tested By: DJ         Det Received: August 5,2010         Note Received: August 5,2010         Note Received: August 5,2010         Moisture Content       Sieve Analysis         Meight       Total Wt.       Orig.         Sieve No.       Retained       Passing       Samp.       Sieve No.         Tare       824.4       19.0       Orig.         Tare       824.4       19.0       Orig.       Sieve No.         Sieve No.       Retained       Passing       Samp.       Sieve No.         Tare       874.8       25.4       Orig.       Sieve No.         Tare       824.4       19.0       Orig.       Sieve No.         Soil       629.8       4.75       Orig.         Soil       629.8       4.75       Orig.         Soil       629.8       4.75       Orig. </td <td>Test #:         Hole #:         Depth:           Test #:         Tested By: DJ           Date Received: August 5,2010           Al Moisture Content         Sieve Analysis         Hydrom           Meight         Sieve Analysis         Hydrom           Meight         Total Wt.         Orig.         Weight           Sieve No.         Retained         Passing         Sieve No.         Retained           Tare         874.8         25.4         10           Tare         874.4         19.0         3.0         0.0         0.2.9           Tare         874.4         19.0         4.0         0.2.9           Tare         824.4         19.0         0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0           <th c<="" td=""><td>Tate:         Type: Till           Test #:         Hole #:         Depth:         Time:           bled: July 29,2010         Date Received: August 5,2010         Date Tested By:           al Moisture Content         Sieve Analysis         Hydrometer Sieve           al Moisture Content         Weight         Total Wt.         Orig.         Sieve No.         Retained         Passing         Sieve No.         Hydrometer Sieve           Tare         874.8         25.4         Cold         20         2.9         47.1           Tare         824.4         19.0         40         3.1         44.0           50.4         12.5         60         3.7         40.3           Soil         629.8         4.75         200         5.9         30.6           Soil         629.8         4.75         200         5.9         30.6           Sample from Initial Moisture         010         72.8         Pan         30.6           Sample from Initial Moisture         704         700         5.0         704           Total         629.8         75.8         70.0         71.00         71.00           Sample from Initial Moisture         704         70.0         <t< td=""><td>Test #:         Hole #:         Depth:         Time:           Test #:         Depth:         Time:           V: Client         Tested By: DJ         Checked By:           Date Received: August 5,2010         Date Tested: August 9           Al Moisture Content         Sieve Analysis         Hydrometer Sieve Analysis           Al Meight         Total Wt.         Total Wt.         Total Wt.         Finer           Meight         Total Wt.         Orig.         Sieve No.         Retained         Sieve No.         Retained         Total Wt.         Finer         Than           Tare         874.8         25.4         200         2.9         47.1         94.2           Tare         824.4         19.0         40         3.0         60         3.7         40.0         3.8         3.6         7.8           Content %         8.</td></t<></td></th></td>	Test #:         Hole #:         Depth:           Test #:         Tested By: DJ           Date Received: August 5,2010           Al Moisture Content         Sieve Analysis         Hydrom           Meight         Sieve Analysis         Hydrom           Meight         Total Wt.         Orig.         Weight           Sieve No.         Retained         Passing         Sieve No.         Retained           Tare         874.8         25.4         10           Tare         874.4         19.0         3.0         0.0         0.2.9           Tare         874.4         19.0         4.0         0.2.9           Tare         824.4         19.0         0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0 <th c<="" td=""><td>Tate:         Type: Till           Test #:         Hole #:         Depth:         Time:           bled: July 29,2010         Date Received: August 5,2010         Date Tested By:           al Moisture Content         Sieve Analysis         Hydrometer Sieve           al Moisture Content         Weight         Total Wt.         Orig.         Sieve No.         Retained         Passing         Sieve No.         Hydrometer Sieve           Tare         874.8         25.4         Cold         20         2.9         47.1           Tare         824.4         19.0         40         3.1         44.0           50.4         12.5         60         3.7         40.3           Soil         629.8         4.75         200         5.9         30.6           Soil         629.8         4.75         200         5.9         30.6           Sample from Initial Moisture         010         72.8         Pan         30.6           Sample from Initial Moisture         704         700         5.0         704           Total         629.8         75.8         70.0         71.00         71.00           Sample from Initial Moisture         704         70.0         <t< td=""><td>Test #:         Hole #:         Depth:         Time:           Test #:         Depth:         Time:           V: Client         Tested By: DJ         Checked By:           Date Received: August 5,2010         Date Tested: August 9           Al Moisture Content         Sieve Analysis         Hydrometer Sieve Analysis           Al Meight         Total Wt.         Total Wt.         Total Wt.         Finer           Meight         Total Wt.         Orig.         Sieve No.         Retained         Sieve No.         Retained         Total Wt.         Finer         Than           Tare         874.8         25.4         200         2.9         47.1         94.2           Tare         824.4         19.0         40         3.0         60         3.7         40.0         3.8         3.6         7.8           Content %         8.</td></t<></td></th>	<td>Tate:         Type: Till           Test #:         Hole #:         Depth:         Time:           bled: July 29,2010         Date Received: August 5,2010         Date Tested By:           al Moisture Content         Sieve Analysis         Hydrometer Sieve           al Moisture Content         Weight         Total Wt.         Orig.         Sieve No.         Retained         Passing         Sieve No.         Hydrometer Sieve           Tare         874.8         25.4         Cold         20         2.9         47.1           Tare         824.4         19.0         40         3.1         44.0           50.4         12.5         60         3.7         40.3           Soil         629.8         4.75         200         5.9         30.6           Soil         629.8         4.75         200         5.9         30.6           Sample from Initial Moisture         010         72.8         Pan         30.6           Sample from Initial Moisture         704         700         5.0         704           Total         629.8         75.8         70.0         71.00         71.00           Sample from Initial Moisture         704         70.0         <t< td=""><td>Test #:         Hole #:         Depth:         Time:           Test #:         Depth:         Time:           V: Client         Tested By: DJ         Checked By:           Date Received: August 5,2010         Date Tested: August 9           Al Moisture Content         Sieve Analysis         Hydrometer Sieve Analysis           Al Meight         Total Wt.         Total Wt.         Total Wt.         Finer           Meight         Total Wt.         Orig.         Sieve No.         Retained         Sieve No.         Retained         Total Wt.         Finer         Than           Tare         874.8         25.4         200         2.9         47.1         94.2           Tare         824.4         19.0         40         3.0         60         3.7         40.0         3.8         3.6         7.8           Content %         8.</td></t<></td>	Tate:         Type: Till           Test #:         Hole #:         Depth:         Time:           bled: July 29,2010         Date Received: August 5,2010         Date Tested By:           al Moisture Content         Sieve Analysis         Hydrometer Sieve           al Moisture Content         Weight         Total Wt.         Orig.         Sieve No.         Retained         Passing         Sieve No.         Hydrometer Sieve           Tare         874.8         25.4         Cold         20         2.9         47.1           Tare         824.4         19.0         40         3.1         44.0           50.4         12.5         60         3.7         40.3           Soil         629.8         4.75         200         5.9         30.6           Soil         629.8         4.75         200         5.9         30.6           Sample from Initial Moisture         010         72.8         Pan         30.6           Sample from Initial Moisture         704         700         5.0         704           Total         629.8         75.8         70.0         71.00         71.00           Sample from Initial Moisture         704         70.0 <t< td=""><td>Test #:         Hole #:         Depth:         Time:           Test #:         Depth:         Time:           V: Client         Tested By: DJ         Checked By:           Date Received: August 5,2010         Date Tested: August 9           Al Moisture Content         Sieve Analysis         Hydrometer Sieve Analysis           Al Meight         Total Wt.         Total Wt.         Total Wt.         Finer           Meight         Total Wt.         Orig.         Sieve No.         Retained         Sieve No.         Retained         Total Wt.         Finer         Than           Tare         874.8         25.4         200         2.9         47.1         94.2           Tare         824.4         19.0         40         3.0         60         3.7         40.0         3.8         3.6         7.8           Content %         8.</td></t<>	Test #:         Hole #:         Depth:         Time:           Test #:         Depth:         Time:           V: Client         Tested By: DJ         Checked By:           Date Received: August 5,2010         Date Tested: August 9           Al Moisture Content         Sieve Analysis         Hydrometer Sieve Analysis           Al Meight         Total Wt.         Total Wt.         Total Wt.         Finer           Meight         Total Wt.         Orig.         Sieve No.         Retained         Sieve No.         Retained         Total Wt.         Finer         Than           Tare         874.8         25.4         200         2.9         47.1         94.2           Tare         824.4         19.0         40         3.0         60         3.7         40.0         3.8         3.6         7.8           Content %         8.

# **GeoNorth Engineering Ltd.**

3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323

MOISTURE

CONTENT

(%) 3.3

7.2

10.8

15.0

OPTIMUM MOISTURE

CONTENT

(%) 11.0

9.0

DRY DENSITY

(kg/m3)

1864

1951

2027

1865

MAXIMUM

DRY

DENSITY

(kg/m3)

2030

2140

PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

WFT

DENSITY

(kg/m3)

1926

2091

2246

2145

TRIAI

NUMBER

1

2

3

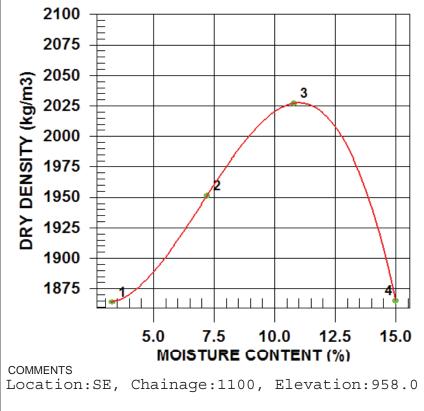
4

CALCULATED

OVERSIZE CORRECTED

PROCTOR NO. 18 DATE TESTED 2010.Aug.09 DATE RECEIVED 2010.Aug.05 DATE SAMPLED 2010.Jul.29

INSITU MOISTURE	N/A % Client	COMPACTION STANDARD	Standard Proctor,
SAMPLED BY			ASTM D698
TESTED BY	DJ	COMPACTION PROCEDURE	A: 101.6mm Mold,
SUPPLIER			Passing 4.75mm
SOURCE	R-S6B-ZS-12-2010	RAMMER TYPE	Automatic
MATERIAL IDENTIF	ICATION	PREPARATION	Moist
MAJOR COMPON	ENT Till	OVERSIZE CORRECTION METHOD	ASTM 4718
SIZE	50mm	RETAINED 4.75mm SCREEN	21.6%
DESCRIPTION	Sandy/Silty	OVERSIZE SPECIFIC GRAVITY	2.68
ROCK TYPE		TOTAL NUMBER OF TRIALS	4



Specific Gravity = 2.68

Page 1 of 1 2010.Aug.11 GeoNorth Engineering Ltd.

PER. \_



### **APPENDIX A3**

ZONE F RECORD

(Pages A3-1 to A3-28)

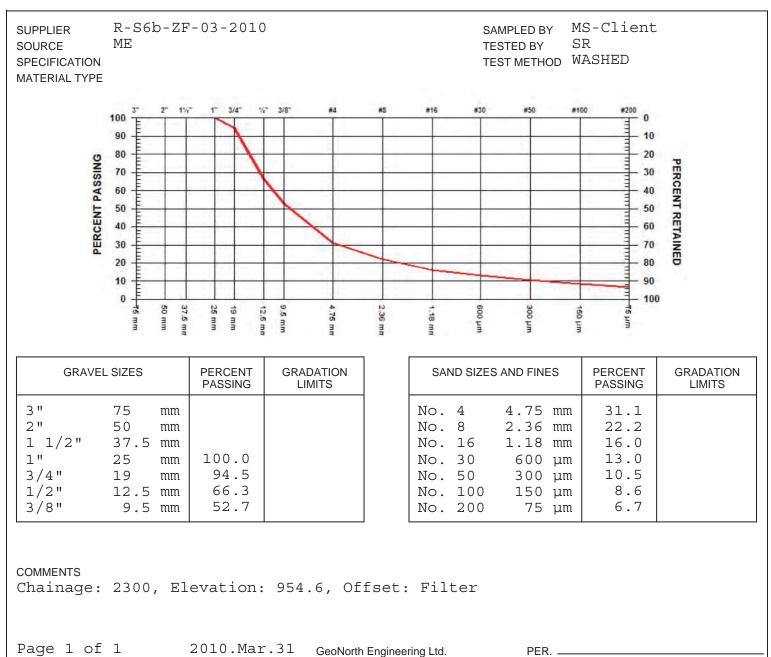
VA101-1/29-1 Rev 0 December 15, 2010 INVESTIGATIONS KP 4-3 Page 363 of 500

## GeoNorth Engineering Ltd. 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp.

TO Mount Polley Mi P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Marte			unt Polley ight Pieso		Corp.	
PROJECT MOUNT POlley Stage 6B CONTRACTOR SIEVE TEST NO. 10 DATE	Constructio		Li	unt Polley kely ).Mar.30 <sub>D</sub> ,		2010.Mar.2
SUPPLIER R-S6b-ZF SOURCE ME SPECIFICATION MATERIAL TYPE	-02-2010		Г	ESTED BY S	S-Client R ASHED	
<b>DERCENT PASSING</b>	1" 3/4" "/*" 3/8" 1 3/4" 12.5 mm 19 mm 25 mm	#4 #3 2.36 mm	#16 #30	#50 #10	0 10 20 30 40 50 60 70 80 90 100	PERCENT RETAINED
GRAVEL SIZES		ADATION IMITS	SAND SIZE	S AND FINES	PERCENT PASSING	GRADATION LIMITS
3"       75       mm         2"       50       mm         1       1/2"       37.5       mm         1"       25       mm         3/4"       19       mm         1/2"       12.5       mm         3/8"       9.5       mm	100.0 94.2 70.5 55.1		No. 4 No. 8 No. 16 No. 30 No. 50 No. 100 No. 200	4.75 mm 2.36 mm 1.18 mm 600 μm 300 μm 150 μm 75 μm	30.9 20.5 15.1 12.2 10.0 8.3 6.6	
COMMENTS Chainage: 2600, El Page 1 of 1	evation: 954 2010.Mar.31	GeoNorth Engin		PER		

### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 8 16 30 50 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. TO Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR

SIEVE TEST NO. 11 DATE RECEIVED 2010.Mar.30 DATE TESTED 2010.Mar.30 DATE SAMPLED 2010.Mar.25



## GeoNorth Engineering Ltd. 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 PROJECT NO. K 2937

CLIENT Mount Polley Mining Corp. TO Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010.Mar.30 DATE TESTED 2010.Mar.30 DATE SAMPLED 2010.Mar.24 SIEVE TEST NO. 12 R-S6b-ZF-04-2010 MS-Client SUPPLIER SAMPLED BY ME SR SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE 1%7 1-3/4-% 3/8 =4 #2 #16 #30 #50 #100 #200 100 0 = 90 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 1 60 40 1111 50 50 40 60 30 - 70 1111 20 80 111 10 - 90 Ξ - 100 0 9,5 mm 2,36 4.75 50 37.5 mn 26 1 18 urf 009 300 1 19 12.5 150 mm mm L mm m F F Ξ Ξ E E **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION PASSING LIMITS PASSING LIMITS 3" 75 mm No. 4 4.75 mm 41.0 2" No. 8 29.2 50 mm 2.36 mm No. 16  $1 \ 1/2"$ 21.1 37.5 mm 1.18 mm 100.0 No. 30 16.9 1" 600 µm 25 mm 3/4" 19 mm 95.5 No. 50 300 µm 13.6 1/2" 12.5 mm 75.2 No. 100 11.1 150 µm 61.4 No. 200 8.7 3/8" 9.5 mm 75 µm COMMENTS Chainage: 2100, Elevation: 954.6, Offset: Filter 2010.Mar.31 Page 1 of 1 GeoNorth Engineering Ltd. PER.

# GeoNorth Engineering Ltd. 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937

CLIENT Mount Polley Mining Corp. TO Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010.Mar.30 DATE TESTED 2010.Mar.30 DATE SAMPLED 2010.Mar.25 SIEVE TEST NO. 13 R-S6b-ZF-05-2010 MS-Client SUPPLIER SAMPLED BY ME SR SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE 1%-17 3/4-% 3/8 =4 #2 #16 #30 #50 #100 #200 100 0 = 90 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 1 60 40 1111 50 50 40 60 30 - 70 IIII 20 80 1111 10 90 - 100 0 9,5 mm 4.75 2,36 50 37.5 mn 22 1,18 urf 009 300 19 12.5 150 mm mm H mm m F TH Ξ Ξ I Ξ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION PASSING LIMITS LIMITS PASSING 3 " 75 mm No. 4 4.75 mm 37.5 2" No. 8 26.9 50 mm 2.36 mm No. 16  $1 \ 1/2"$ 19.7 37.5 mm 1.18 mm 100.0 No. 30 1" 15.8 25 mm 600 um 3/4" 19 mm 95.4 No. 50 300 µm 12.7 1/2" 12.5 mm 71.8 No. 100 10.3 150 µm 59.4 No. 200 8.0 3/8" 9.5 mm 75 µm COMMENTS Chainage: 1900, Elevation: 954.6, Offset: Filter

PER.

GeoNorth Engineering Ltd.

2010.Mar.31

Page 1 of 1

#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то C.C. Knight Piesold Ltd. Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Apr. 16 DATE TESTED 2010. Apr. 16 DATE SAMPLED 2010. Apr. 14 SIEVE TEST NO. 19 Client SUPPLIER SAMPLED BY R-S6B-07-2010 DJ TESTED BY SOURCE TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Filter - PE-S6B-ZF 1%7 1- 3/4-% 3/8 =4 #10 #20 #40 #60 #100 #200 2-100 0 = 90 - 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 1 60 40 1111 - 50 50 40 - 60 - 70 30 IUI 20 - 80 1111 10 - 90 - 100 0 10 50 9,5 mm 4.75 0.85 425 µm -37.5 mn 22 12.5 250 µm 150 µm ø TIT mm mm L m Ξ Ξ Ξ CRAVEL SIZES

GRAVEL SIZES			PERCENT PASSING	LIMITS
3" 2" 1 1/2" 1" 3/4" 1/2" 3/8"	75 50 37.5 25 19 12.5 9.5	mm mm mm	100.0 98.0 79.3 68.3	

SAN	ND SIZES	S AND FINE	ES	PERCENT PASSING	GRADATION LIMITS
No. No. No. No. No. No.	10 20 40 60	4.75 2.00 850 425 250 150 75	mm µm	49.7 33.0 23.3 18.4 15.3 13.1 10.4	

COMMENTS

Page 1 of 1

2010.Apr.20 GeoNorth

GeoNorth Engineering Ltd.

PER. -

#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Apr. 16 DATE TESTED 2010. Apr. 16 DATE SAMPLED 2010. Apr. 14 SIEVE TEST NO. 20 Client SUPPLIER SAMPLED BY R-S6B-08-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Filter - PE-S6B-ZF 1%7 1- 3/4-% 3/8 =4 #10 #20 #40 #60 #100 #200 2-100 0 = 90 - 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 1 60 40 1111 - 50 50 40 - 60 H 30 - 70 20 - 80 1111

	-75 mm	37.5 mm 50 mm	19 mm 25 mm	4.75 mm 9,5 mm	2 mm	0.85 mm
GRAV	EL SIZES		PERCENT PASSING	GRADATION LIMITS		SAND SIZE
3" 2" 1 1/2" 1" 3/4" 1/2" 3/8"	75 50 37.5 25 19 12.5 9.5	mm mm mm mm mm mm	100.0 98.1 77.5 64.8			No. 4 No. 10 No. 20 No. 40 No. 60 No. 100 No. 200

10

0

3/8"	9.5 mm	64.8		N	ío. :	200	75 μm	7.5	
COMMENTS									
Page 1 of 2	1	2010.Apr	.20 GeoNorth	h Engineering	Ltd.		PER		

425

F

SAND SIZES AND FINES

250

F

4.75 mm

2.00 mm

850 µm

425 um

250 µm

150 µm

150 µm

- 90 - 100

> GRADATION LIMITS

H

PERCENT

PASSING

41.7

25.3

17.4

13.6

11.3

9.6

#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Apr. 16 DATE TESTED 2010. Apr. 19 DATE SAMPLED 2010. Apr. 14 SIEVE TEST NO. 21 Client SUPPLIER SAMPLED BY R-S6B-09-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Filter - PE-S6B-ZF 1%7 1 3/4 % 3/8 =4 #10 #20 #40 #60 #100 #200 2 100 0 = 90 - 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 1 60 40 1111 50 50 40 - 60 30 - 70 20 - 80 111 10 - 90 ------ 100 0 10 9,5 mm 4.75 0.85 425 µm 50 37.5 mn 22 12.5 250 16 ø 150 B TIT mm mm H E FI T I Ξ Ξ E

GRAVEL SIZES			PERCENT PASSING	GRADATION LIMITS
3" 2" 1 1/2" 1" 3/4" 1/2"	75 50 37.5 25 19 12.5	mm mm	100.0 96.7 76.0	
3/8"	9.5	mm	63.3	

COMMENTS	

Page 1 of 1

2010.Apr.20 GeoNorth Engineering Ltd.

PER. -

SAND SIZES AND FINES

4.75 mm

2.00 mm

850 µm

425 um

250 µm

150 µm

75 µm

No. 4

No. 10

No. 20

No. 40

No. 60

No. 100

No. 200

PERCENT

PASSING

43.6

28.1

19.9

15.9

13.4

11.5

9.3

GRADATION

LIMITS

#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Apr. 16 DATE TESTED 2010. Apr. 19 DATE SAMPLED 2010. Apr. 14 SIEVE TEST NO. 22 Client SUPPLIER SAMPLED BY R-S6B-10-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Filter - PE-S6B-ZF 1% 1 3/4 % 3/8 #4 #10 #20 #40 #60 #100 #200 2 100 0 -90 - 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 = 60 40 1111 50 50 40 - 60 30 - 70 IIII 20 - 80 1111 10 90 0 100 37.5 mm 10 9,5 mm 4.75 0.85 425 µm 250 µm 50 26

m

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GRAVE	EL SIZES		PERCENT PASSING	GRADATION LIMITS
3" 2" 1 1/2" 1" 3/4" 1/2" 3/8"	75 50 37.5 25 19 12.5 9.5	mm mm	100.0 96.7 76.6 65.2	

TIT

mm

ø

m mm 12.5 mn

SAND SIZE	S AND FINES	PERCENT PASSING	GRADATION LIMITS
No. 4	4.75 mm	44.3	
No. 10	2.00 mm	26.0	
No. 20	850 μm	16.4	
No. 40	425 μm	12.1	
No. 60	250 μm	9.7	
No. 100	150 μm	7.9	
No. 200	75 μm	5.8	

150 µm

H

COMMENTS

Page 1 of 1

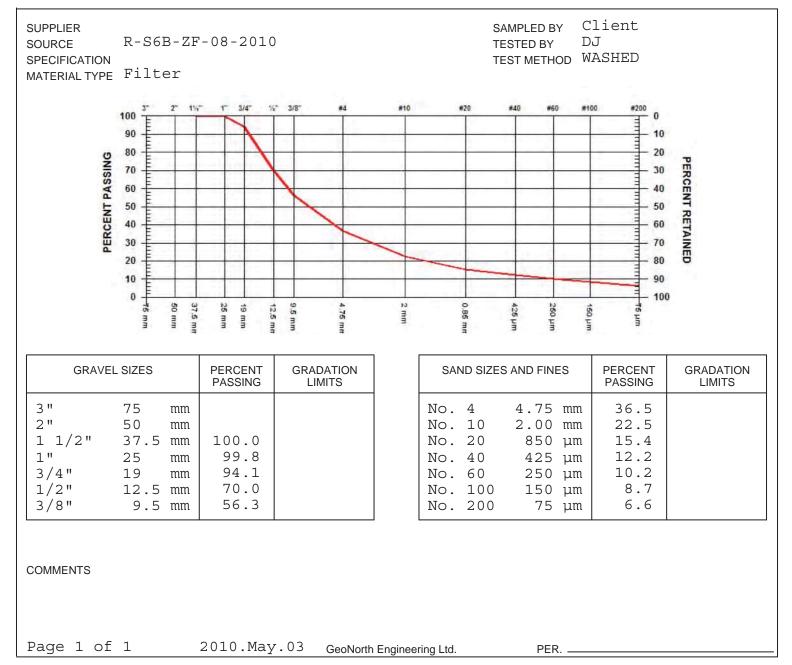
2010.Apr.20 GeoNorth Engineering Ltd.

## GeoNorth Engineering Ltd. 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 Mount Polley Mining Corp.

ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

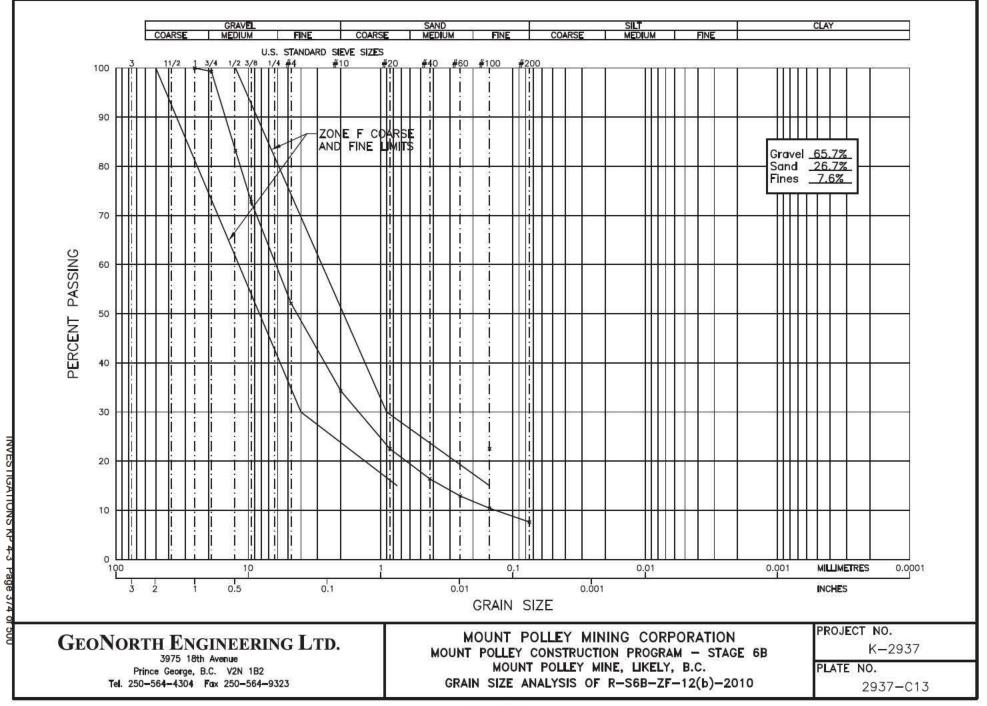
SIEVE TEST NO. 27 DATE RECEIVED 2010. Apr. 28 DATE TESTED 2010. Apr. 30 DATE SAMPLED 2010. Apr. 27



#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010.JUN.01 DATE TESTED 2010.JUN.01 DATE SAMPLED 2010.May.27 SIEVE TEST NO. 32 Client SUPPLIER SAMPLED BY R-S6B-ZF-12b-2010 SR SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Dam Filter 1547 1 3/4 1/-2/8" =4 #10 #20 #40 #60 #100 #200 100 0 = 90 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 1 60 40 1111 50 50 40 - 60 30 - 70 Ξ 20 - 80 1111 10 - 90 - 100 0 9,5 mm 10 50 4.75 0.85 37.5 mn 22 425 250 19 12.6 150 TIT mm mm H m F F L Ξ Ξ E **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION PASSING LIMITS PASSING LIMITS 3 " 75 mm No. 4 4.75 mm 52.1 2" No. 10 34.3 50 mm 2.00 mm $1 \ 1/2"$ 37.5 mm No. 20 22.5 850 µm 100.0 No. 40 16.4 1" 25 mm 425 um 99.3 3/4" 19 mm No. 60 250 µm 12.9 1/2" 12.5 mm 83.2 No. 100 10.4 150 µm 72.8 No. 200 7.6 3/8" 9.5 mm 75 µm COMMENTS Location:ME, Chainage:2250, Elevation:956.1, offset:1st Lift

Page 1 of 1

2010.Jun.02 GeoNorth Engineering Ltd.



### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Apr. 28 DATE TESTED 2010. Apr. 30 DATE SAMPLED 2010. Apr. 27 SIEVE TEST NO. 28 Client SUPPLIER SAMPLED BY R-S6B-ZF-09-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Filter 155 1 3/4 % 3/8 #4 #10 #20 #40 #60 #100 #200 100 0 111 90 10

BERCENT PASSING	19 mm 25 mm 37.5 mm	4.75 mm 9.5 mm	0.85 mr	150 J.m 250 J.m 425 J.m	10 20 30 40 50 60 70 80 90 100	
GRAVEL SIZES	PERCENT PASSING	GRADATION LIMITS	SAND SIZE	S AND FINES	PERCENT PASSING	GRADATI LIMITS
2" 50 r 1 1/2" 37.5 r 1" 25 r	nm nm nm 100.0 nm 97.3 nm 68.1		No. 4 No. 10 No. 20 No. 40 No. 60 No. 100	4.75 mm 2.00 mm 850 μm 425 μm 250 μm 150 μm	27.6 13.7 8.7 6.6 5.4 4.5 3.4	

Page 1 of 1

2010.May.03 GeoNorth Engineering Ltd.

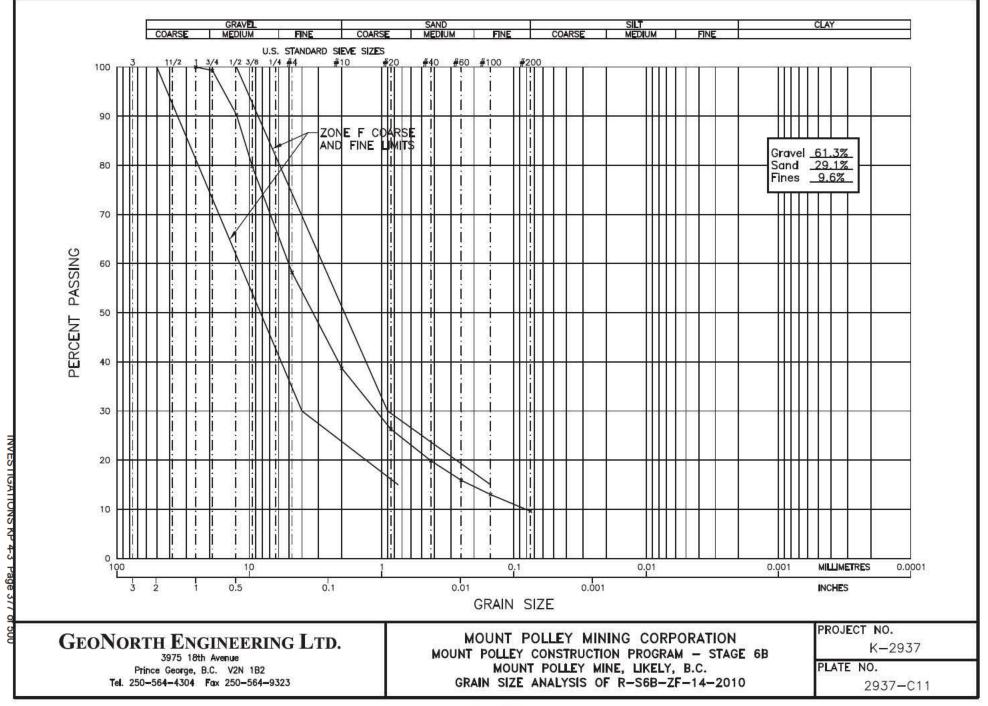
PER. -

#### **GeoNorth Engineering Ltd.** SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. May. 28 DATE TESTED 2010. May. 28 DATE SAMPLED 2010. May. 14 SIEVE TEST NO. 30 Client SUPPLIER SAMPLED BY R-S6B-ZF-14-2010 SR SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE In Dam Filter 1% 1 3/4 % 3/8 #4 #10 #20 #40 #60 #100 #200 100 0 = 90 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 1 60 40 111 50 50 40 - 60 30 - 70 1111 20 - 80 111111111 10 - 90 - 100 0 9,5 mm 10 50 4.75 0.85 37.5 mn 22 425 250 19 12.6 150 TIT mm mm H m T LI T Ξ Ξ Ξ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION PASSING LIMITS PASSING LIMITS 3" 75 mm No. 4 4.75 mm 58.2 2" No. 10 38.7 50 mm 2.00 mm $1 \ 1/2"$ 37.5 mm No. 20 26.3 850 µm No. 40 100.0 19.9 1" 25 mm 425 um 3/4" 19 mm 99.3 No. 60 250 µm 15.9 1/2" 12.5 mm 90.3 No. 100 13.0 150 µm 79.8 No. 200 9.6 3/8" 9.5 mm 75 µm COMMENTS See Plate No. 2937-C11

Location: SE, Chainage: 1300, Elevation: 956.1, Offset: 2nd Lift

Page 1 of 12010.Jun.01GeoNorth Engineering Ltd.

PER. -



#### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. May. 28 DATE TESTED 2010. May. 28 DATE SAMPLED 2010. May. 20 SIEVE TEST NO. 31 Client SUPPLIER SAMPLED BY R-S6B-ZF-18-2010 SR SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Dam Filter 1%-1 3/4 % 3/8 #4 #10 #20 #40 #60 #100 #200 100 0 = 90 10 1111 80 20 PERCENT PASSING Ξ PERCENT RETAINED 70 30 1 60 40 1111 50 50 40 - 60 1111 30 - 70 1111 20 - 80 10 90 - 100 0 10 9,5 mm 4.75 0.85 425 µm 250 µm 50 37.5 mn 150 µm 22 ø 12.5 TIT mm mm H E Ξ Ξ E Т

GRAVEL SIZES		PERCENT PASSING	GRADATION LIMITS	SAND SIZES AND FINES		PERCENT PASSING	GRADATION LIMITS	
3 "	75 mm			No.	4	4.75 mm	57.8	
2"	50 mm			No.	10	2.00 mm	39.1	
1 1/2"	37.5 mm			No.	20	850 µm	28.1	
1"	25 mm	100.0		No.	40	425 µm	22.2	
3/4"	19 mm	99.5		No.	60	250 µm	18.6	
1/2"	12.5 mm	90.7		No.	100	150 µm	15.8	
3/8"	9.5 mm	81.5		No.	200	75 µm	12.4	

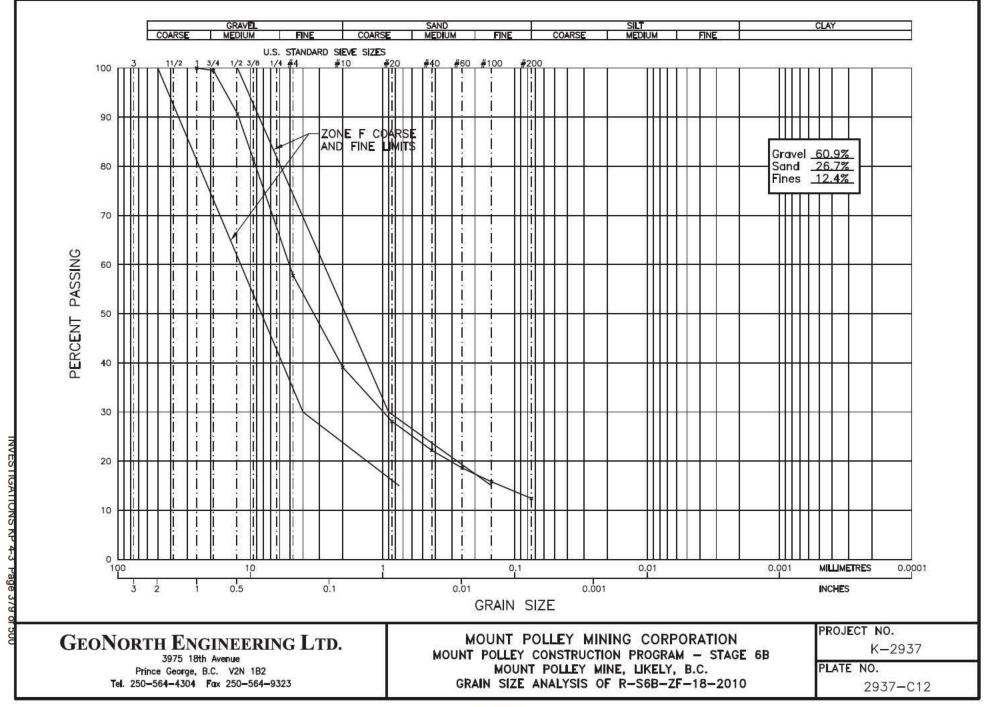
COMMENTS See Plate No.2937-C12

Location: PE, Chainage: 4100, Elevation: 957.4, Offset: 1st Lift

Page 1 of 1

2010.Jun.01 GeoNorth Engineering Ltd.

PER. \_



### GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. TO Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Jun. 01 DATE TESTED 2010. Jun. 01 DATE SAMPLED 2010. May. 28 SIEVE TEST NO. 33 Client SUPPLIER SAMPLED BY R-S6B-ZF-22-2010 SR SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Dam Filter 1% 1 3/4 % 3/8 =4 #10 #20 #40 #60 #100 #200 100 0 = 90 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 1 60 40 1111 50 50 40 - 60 H 30 - 70 1111 20 - 80 THE 10 90 - 100 0 9,5 mm 10 50 4.75 0.85 37.5 mn 22 425 250 19 12.6 150 µm mm mm H mm m F H E E Ξ **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING 3 " 75 mm No. 4 4.75 mm 38.3 2" No. 10 23.2 50 mm 2.00 mm $1 \ 1/2"$ No. 20 15.6 37.5 mm 850 µm 100.0 No. 40 12.0 1" 25 mm 425 um 3/4" 19 mm 96.6 No. 60 250 µm 9.9 1/2" 12.5 mm 76.8 No. 100 8.3 150 µm 61.8 No. 200 6.5 3/8" 9.5 mm 75 µm

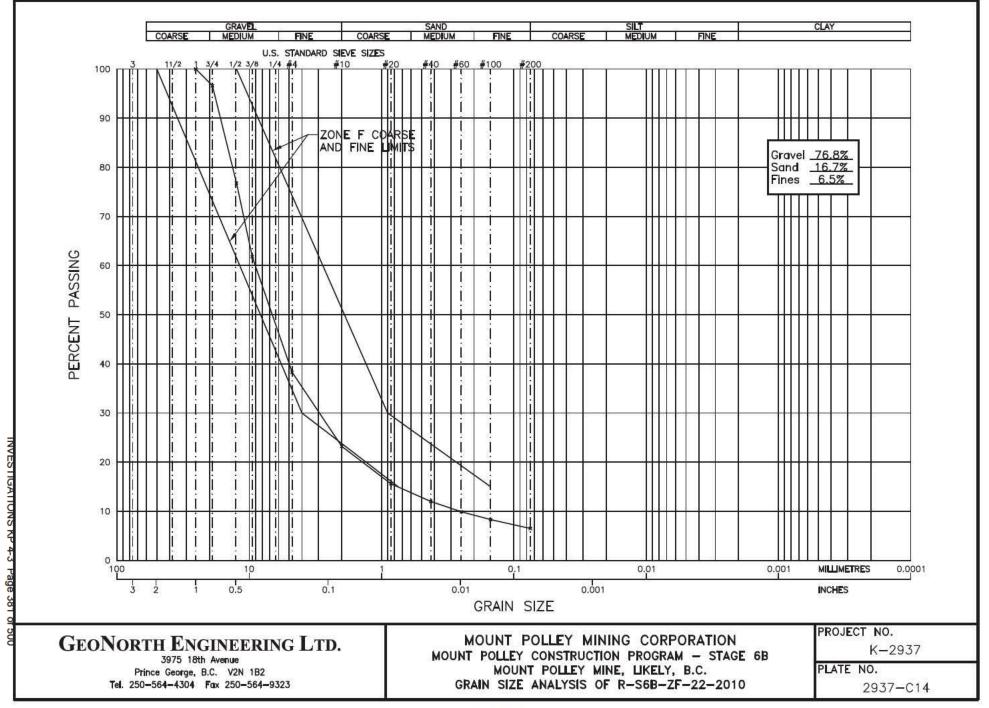
COMMENTS

Location:PE, Chainage:2850, Elevation:957.5, Offset:2nd Lift

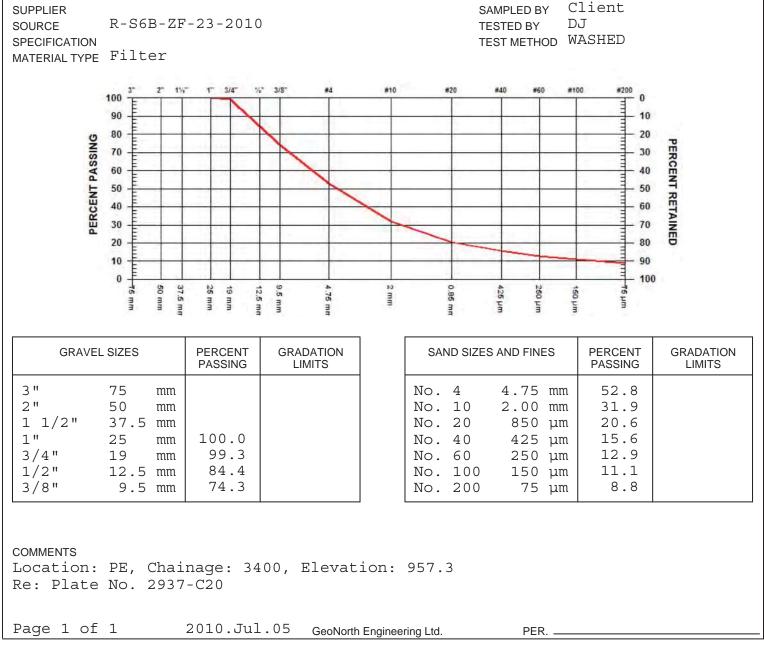
Page 1 of 1

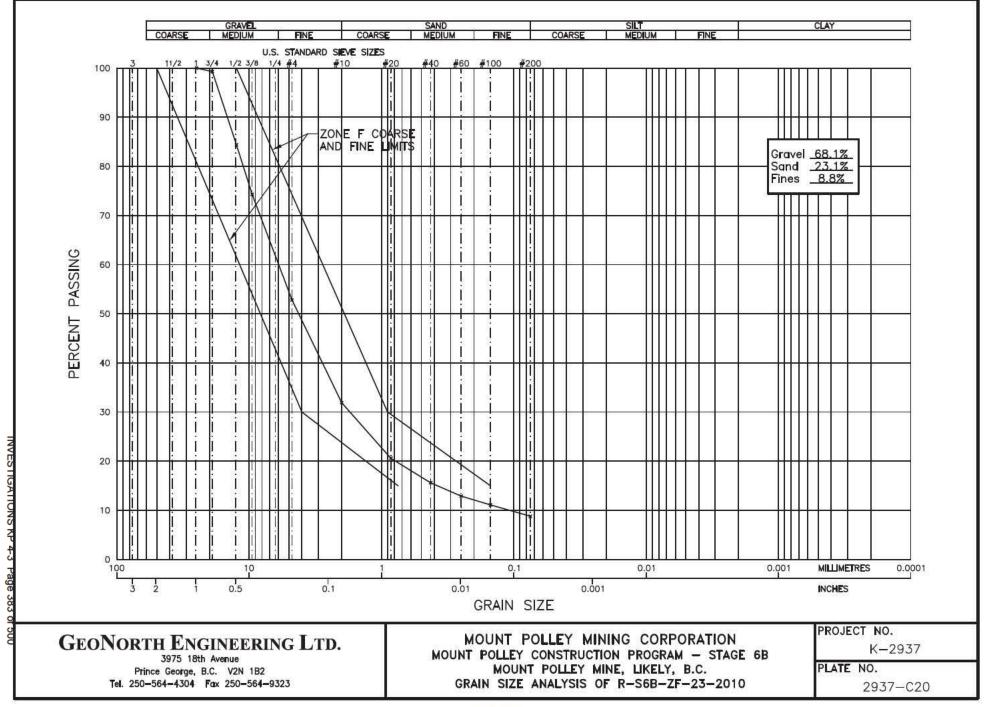
2010.Jun.02 GeoNorth Engineering Ltd.

PER. \_



# GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010.Jun.23 DATE TESTED 2010.Jun.24 DATE SAMPLED 2010.May.28 SIEVE TEST NO. 37





## GeoNorth Engineering Ltd. SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR SIEVE TEST NO. 38 DATE RECEIVED 2010.Jun.23 DATE TESTED 2010.Jun.24 DATE SAMPLED 2010.Jun.20 Client SUPPLIER SAMPLED BY R-S6B-ZF-26-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Filter 1%7 1 3/4 % 3/8 #4 #10 #20 #40 #60 #100 #200 2-100 0 = 90 - 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 1 60 40 1111 - 50 50 40 - 60 H - 70 30 20 - 80 1111 10 - 90 - 100 0 13 50 9,5 mm 4.75 0.85 37.5 mn 26 425 250 19 12.6 150 µm B INT mm mm H mm F LI Ξ Ξ E PERCENT GRADATION **GRAVEL SIZES** SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING No. 4 4.75 mm 42.7

			PASSING	LIMITS
3" 2" 1 1/2"	75 50 37.5	mm mm mm		
1" 3/4" 1/2" 3/8"	25 19 12.5 9.5		100.0 98.3 82.3 66.3	

1"       25 mm         3/4"       19 mm         1/2"       12.5 mm         3/8"       9.5 mm	100.0 98.3 82.3 66.3	No. 40425 μm13.8No. 60250 μm11.5No. 100150 μm9.8No. 20075 μm7.8
COMMENTS Location: ME, Chain Re: Plate No. 2937	2	on: 957.3, Offset: 2nd Lift

No. 10

No. 20

Page 1 of 1 2010.Jul.05 GeoNorth Engineering Ltd.

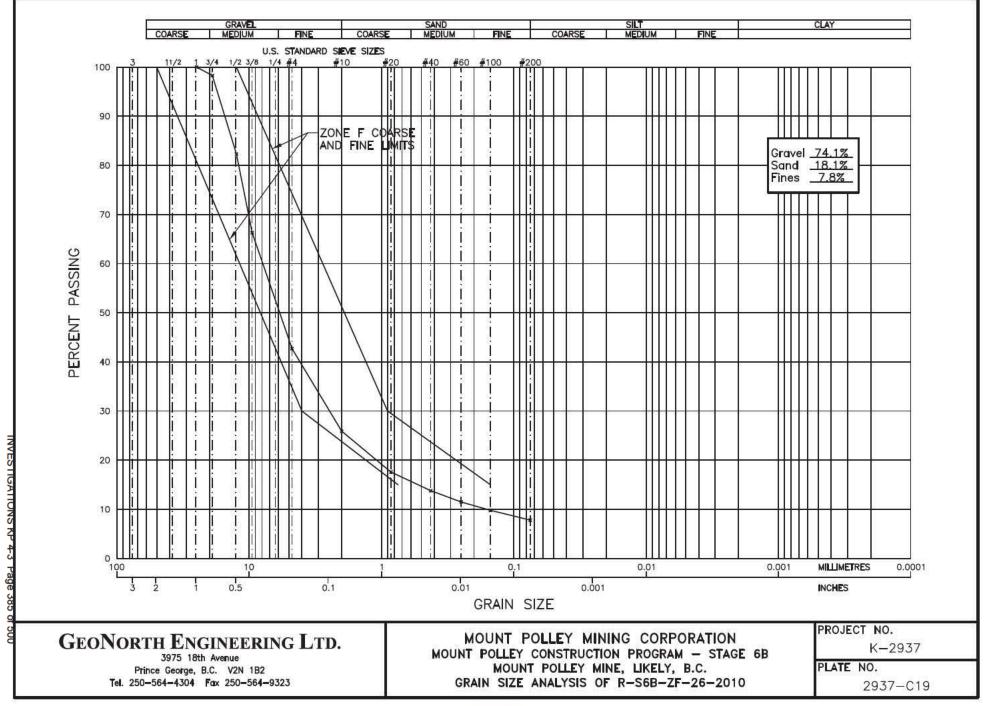
PER. -

2.00 mm

850 μm

25.9

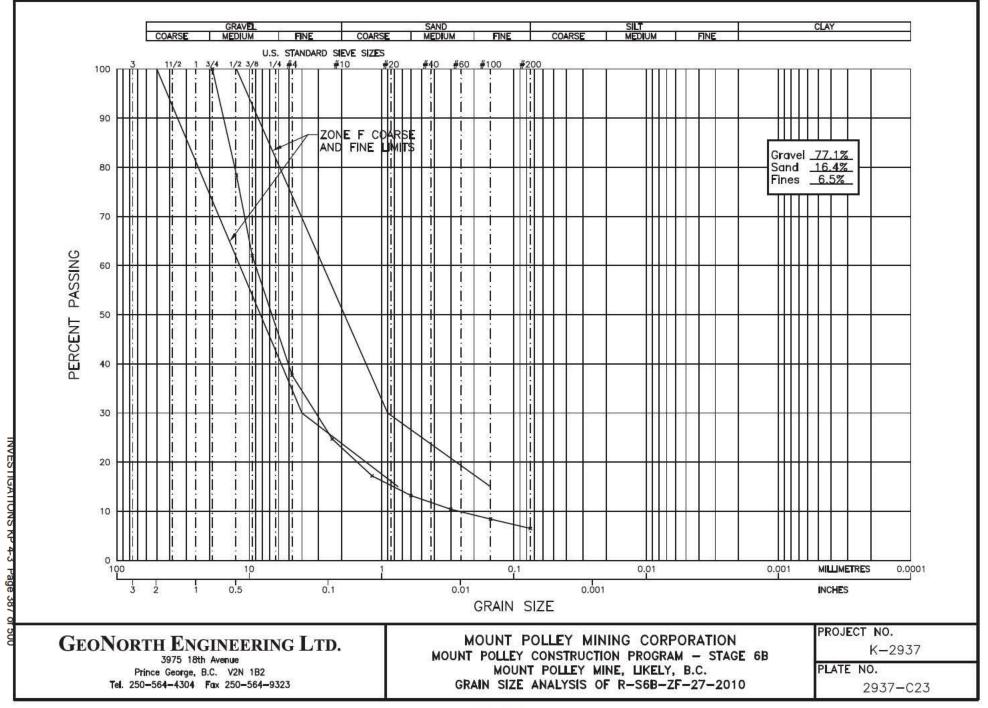
17.6



## **GeoNorth Engineering Ltd.** SIEVE ANALYSIS REPORT 8 16 30 50 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010.Jul.14 DATE TESTED 2010.Jul.14 DATE SAMPLED 2010.Jun.20 SIEVE TEST NO. 41 Client SUPPLIER SAMPLED BY R-S6B-ZF-27-2010 Bq SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Dam Filter 17 94° #16 #30 #50 #100 2" 1% 3/4" 3/8" #4 #8 #200 100 0 Ŧ 90 - 10 80 - 20 PERCENT PASSING PERCENT RETAINED 70 30 40 60 50 - 50 40 - 60 30 - 70 20 80 10 - 90 - 100 0 2 9.5 mm 4.75 2.36 ш<sup>п</sup> 009 8 37.5 mn 12 1.18 8 6 10 8 Ę E F F ₹ ₹ Ę Ę **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING 4.75 mm 3" 75 mm No. 4 37.7 2" 50 mm No. 8 2.36 mm 24.7 No. 16 1 1/2" 37.5 mm 17.2 1.18 mm No. 30 13.2 1" 25 mm 600 um 100.0 10.4 3/4" 19 mm No. 50 300 µm 1/2" 12.5 mm 78.4 No. 100 8.4 150 µm 3/8" 62.0 No. 200 6.5 9.5 mm 75 µm COMMENTS Location:ME, Chainage:2050, Elevation:957.3

Page 1 of 1 2010.Jul.14 GeoNorth Engineering Ltd.

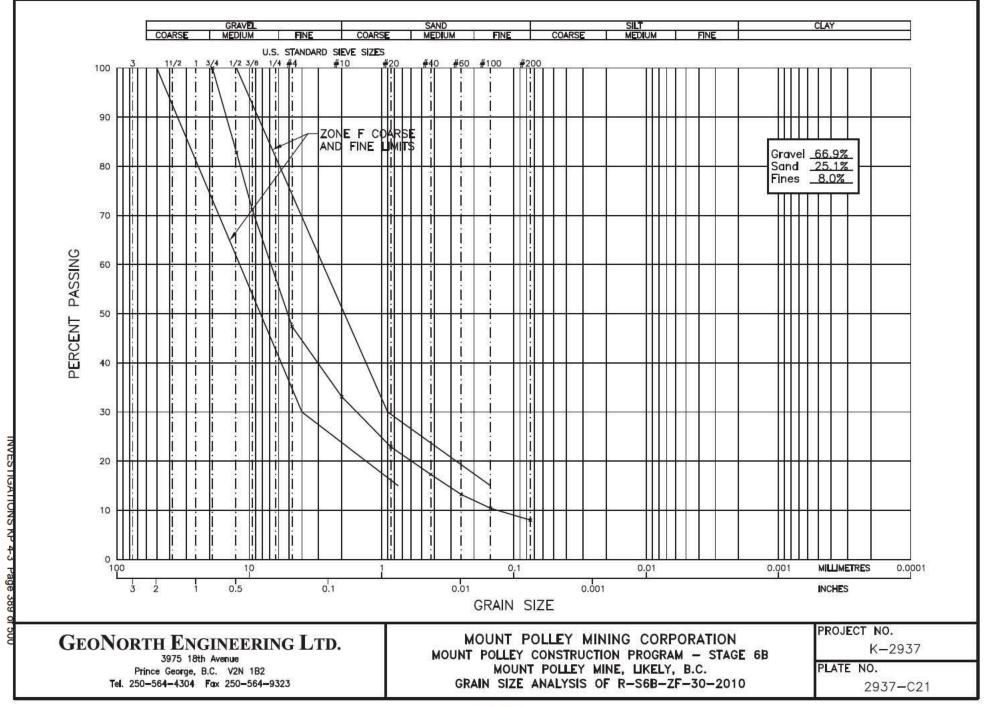
PER. -



## **GeoNorth Engineering Ltd.** SIEVE ANALYSIS REPORT 10 20 40 60 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то Mount Polley Mining Corp. C.C. Knight Piesold Ltd. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010.Jul.05 DATE TESTED 2010.Jul.05 DATE SAMPLED 2010.Jun.28 SIEVE TEST NO. 40 Client SUPPLIER SAMPLED BY R-S6B-ZF-30-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Filter Material 1% 1 3/4 % 3/8 #4 #10 #20 #40 #60 #100 #200 100 0 = 90 10 1111 80 20 PERCENT PASSING PERCENT RETAINED 70 30 1 60 40 1111 50 50 40 - 60 H 30 - 70 IIII 20 - 80 1111 10 90 0 - 100 9,5 mm 10 50 4.75 0.85 37.5 mn 22 425 250 19 12.6 150 TIL mm mm H m F F LI Ξ E E **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION PASSING LIMITS PASSING LIMITS 3" 75 mm No. 4 4.75 mm 47.4 2" mm No. 10 33.1 50 2.00 mm $1 \ 1/2"$ 37.5 mm No. 20 22.9 850 µm No. 40 17.3 1" 25 mm 425 um 100.0 3/4" 19 mm No. 60 250 µm 13.2 1/2" 12.5 mm 82.8 No. 100 10.4 150 µm 3/8" 71.2 No. 200 8.0 9.5 mm 75 µm COMMENTS Location: SE, Chainage: 1100, Elevation: 957.3, Offset: Second lift RE: PLATE No. 2937-C21

Page 1 of 1 2010.Jul.05 GeoNorth Engineering Ltd.

PER. -



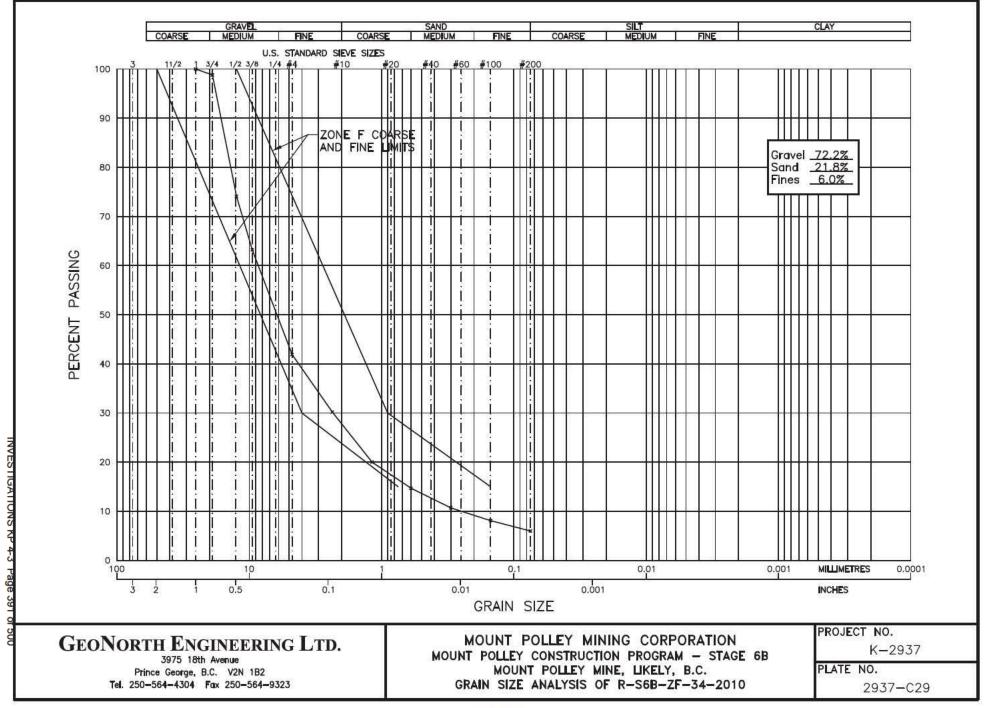
### **GeoNorth Engineering Ltd.** SIEVE ANALYSIS REPORT 8 16 30 50 SERIES 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. то C.C. Knight Piesold Ltd. Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail PROJECT Mount Polley Construction Program Mount Polley Mine Stage 6B Likely CONTRACTOR DATE RECEIVED 2010. Aug. 12 DATE TESTED 2010. Aug. 12 DATE SAMPLED 2010. Aug. 10 SIEVE TEST NO. 48 Client. SUPPLIER SAMPLED BY R-S6B-ZF-34-2010 DJ SOURCE TESTED BY TEST METHOD WASHED SPECIFICATION MATERIAL TYPE Filter 17 94° #16 #30 #50 #100 2 1% 3/4" 3/8" #4 #8 #200 100 0 Ξ 90 - 10 80 - 20 PERCENT PASSING PERCENT RETAINED 70 30 40 60 50 - 50 40 - 60 30 - 70 20 80 10 - 90 - 100 0 2 37.5 mn 9.5 mm 4.75 2.36 ш<sup>п</sup> 009 8 12 8 6 10 150 µm 100 Ę E F ₹ ₹ Ę Ę **GRAVEL SIZES** PERCENT GRADATION SAND SIZES AND FINES PERCENT GRADATION LIMITS PASSING LIMITS PASSING 4.75 mm 3" 75 mm No. 4 41.9 2" 50 mm No. 8 2.36 mm 30.2 No. 16 1 1/2" 37.5 mm 20.0 1.18 mm No. 30 14.7 1" 100.0 25 mm 600 um 10.7 3/4" 19 mm 98.8 No. 50 300 µm 1/2" 12.5 mm 74.1 No. 100 8.1 150 µm 3/8" 63.2 No. 200 6.0 9.5 mm 75 µm COMMENTS

Location:SE, Chainage:1500, Elevation:958.0, Offset:First Lift

Page 1 of 1

2010.Aug.12 GeoNorth Engineering Ltd.

PER. -



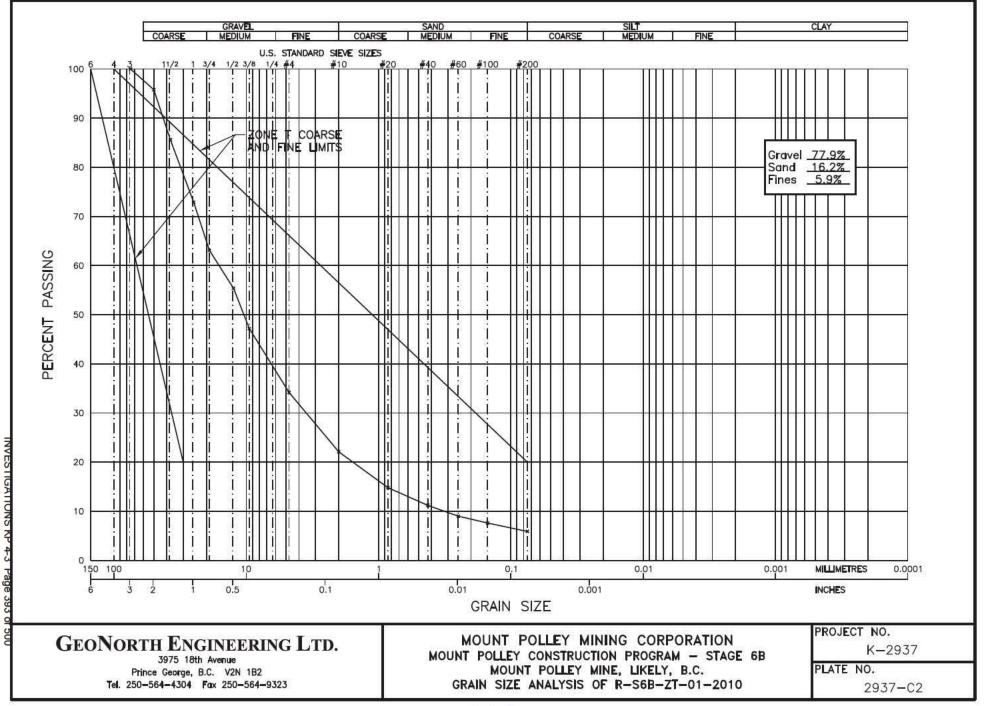


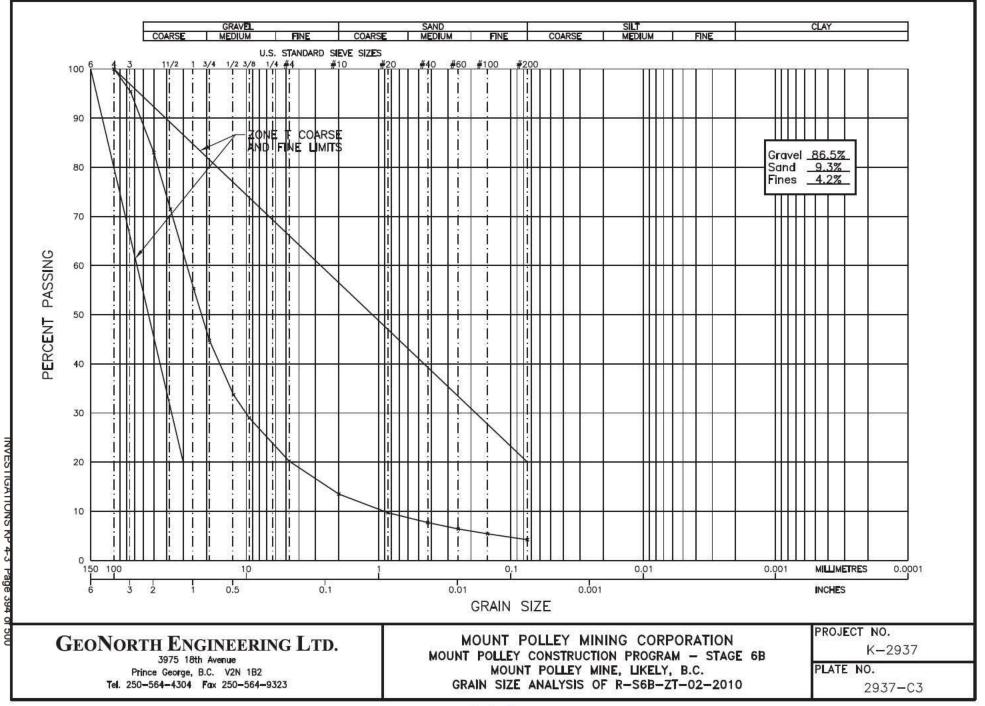
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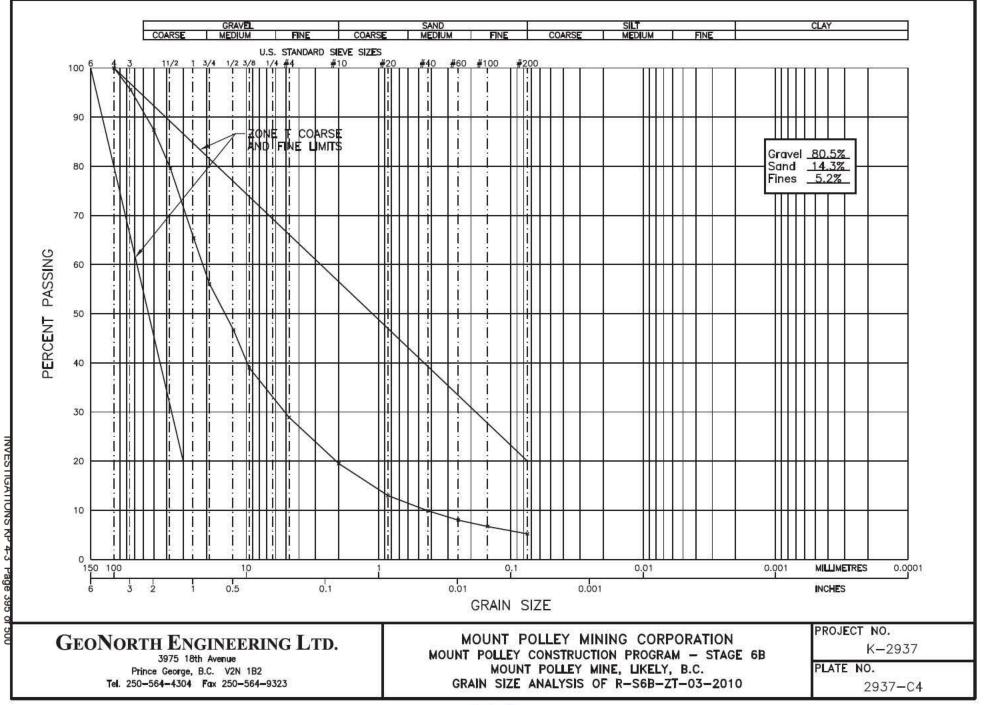
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(Pages A4-1 to A4-7)

VA101-1/29-1 Rev 0 December 15, 2010 INVESTIGATIONS KP 4-3 Page 392 of 500







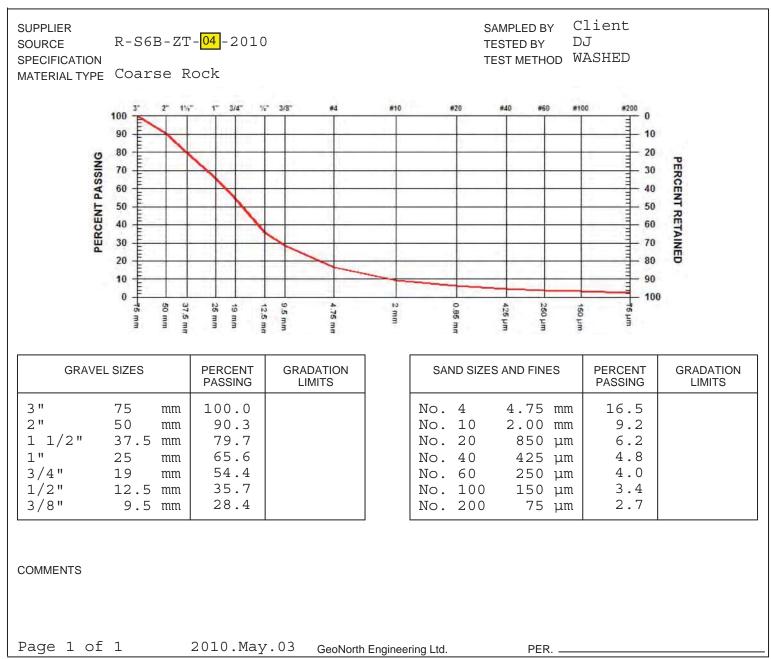
# GeoNorth Engineering Ltd.SIEVE ANALYSIS REPORT<br/>10 20 40 60 SERIES3975 18th Avenue Prince George, BC V2N 1B2<br/>Phone (250)564-4304; Fax (250)564-932310 20 40 60 SERIESTOMount Polley Mining Corp.PROJECT NO. K 2937<br/>CLIENT Mount Polley Mining Corp.<br/>c.C. Knight Piesold Ltd.

ATTN: Ron Martel @ E-mail

Likely, BC VOL -1N0

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

SIEVE TEST NO. 23 DATE RECEIVED 2010. Apr. 28 DATE TESTED 2010. Apr. 29 DATE SAMPLED 2010. Apr. 27

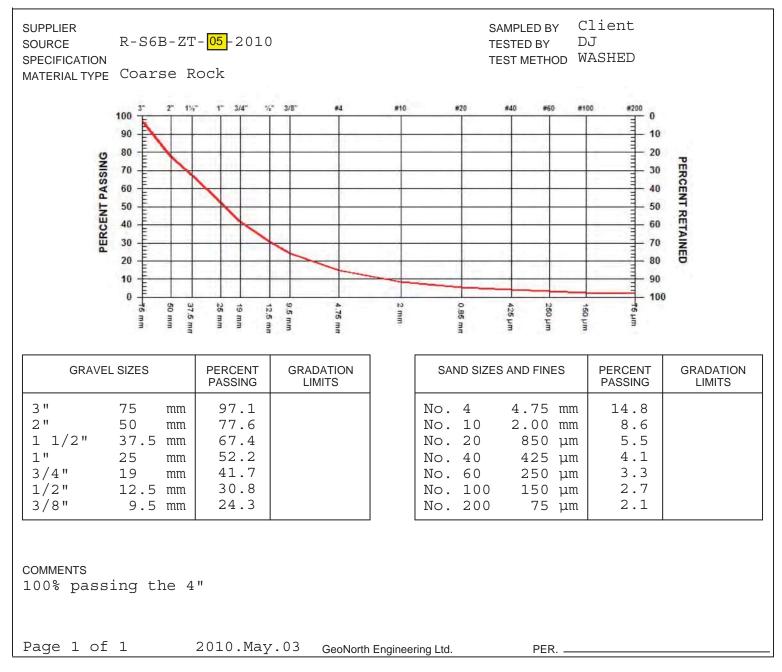


## GeoNorth Engineering Ltd. 3975 18th Avenue Prince George, BC V2N 1B2 Phone (250)564-4304; Fax (250)564-9323 TO Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 SIEVE ANALYSIS REPORT 10 20 40 60 SERIES PROJECT NO. K 2937 CLIENT Mount Polley Mining Corp. C.C. Knight Piesold Ltd.

ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

SIEVE TEST NO. 24 DATE RECEIVED 2010. Apr. 28 DATE TESTED 2010. Apr. 29 DATE SAMPLED 2010. Apr. 27



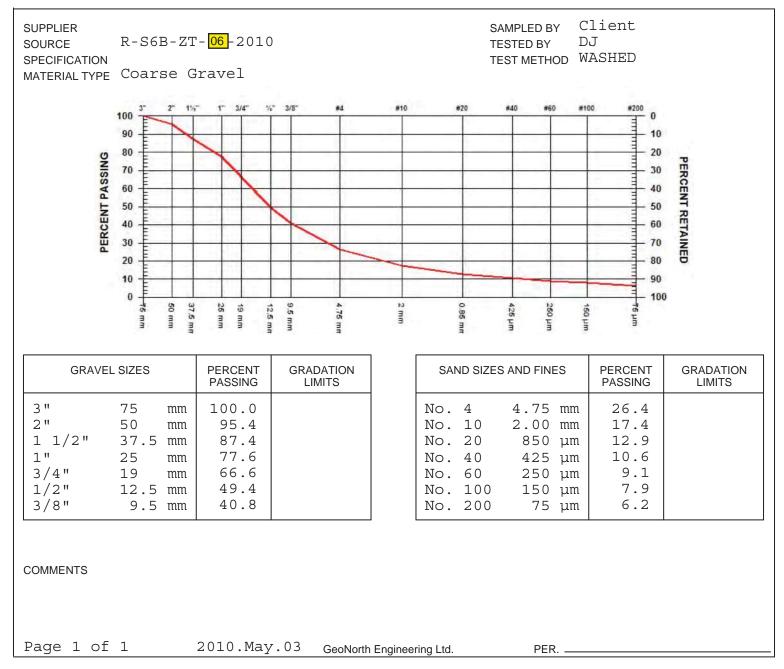
# GeoNorth Engineering Ltd.<br/>3975 18th Avenue Prince George, BC V2N 1B2<br/>Phone (250)564-4304; Fax (250)564-9323SIEVE ANALYSIS REPORT<br/>10 20 40 60 SERIESTOMount Polley Mining Corp.PROJECT NO. K 2937<br/>CLIENT Mount Polley Mining Corp.<br/>c.C. Knight Piesold Ltd.

Mount Polley Mining Corp. P.O Box 12 Likely, BC VOL -1N0 ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR

Mount Polley Mine Likely

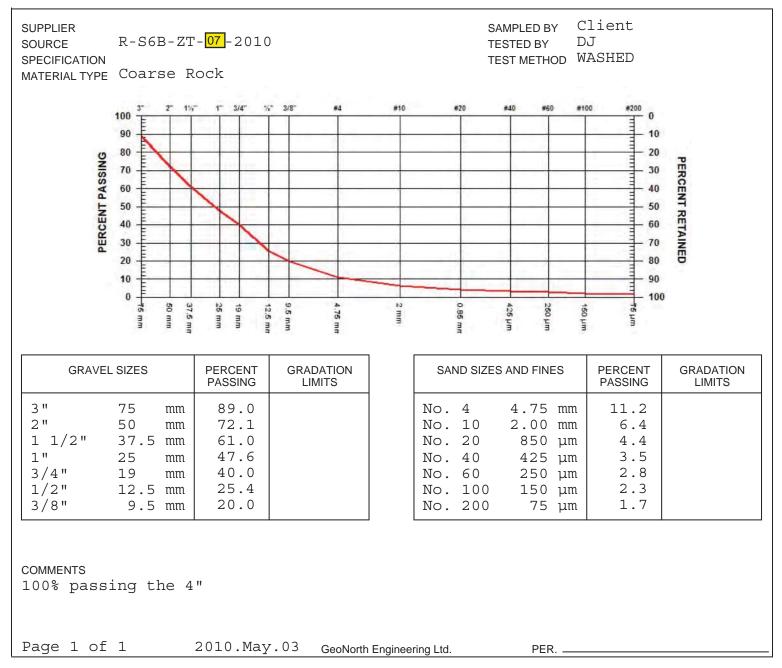
SIEVE TEST NO. 25 DATE RECEIVED 2010. Apr. 28 DATE TESTED 2010. Apr. 30 DATE SAMPLED 2010. Apr. 27



# GeoNorth Engineering Ltd.<br/>3975 18th Avenue Prince George, BC V2N 1B2<br/>Phone (250)564-4304; Fax (250)564-9323SIEVE ANALYSIS REPORT<br/>10 20 40 60 SERIESTOMount Polley Mining Corp.<br/>P.O Box 12<br/>Likely, BC<br/>VOL -1N0PROJECT NO. K 2937<br/>CLIENT Mount Polley Mining Corp.<br/>c.C. Knight Piesold Ltd.ATTN: Ron Martel @ E-mail

PROJECT Mount Polley Construction Program Stage 6B CONTRACTOR Mount Polley Mine Likely

SIEVE TEST NO. 26 DATE RECEIVED 2010. Apr. 28 DATE TESTED 2010. Apr. 30 DATE SAMPLED 2010. Apr. 27





# **APPENDIX B**

NUCLEAR DENSOMETER RESULTS – ZONE S RECORD

(Pages B-1 to B-9)

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Knight Piésold			FIEI	D COMP	ACTION T	ESTS (Me	tric)		PROJECT NO.		101-01/29
Mig	CONSULTING				LEAR GA	No.			DATE February to August		
TEOTNO	1 martine	Florenting	7	Test	May Day	Ontinuer	Det	LABORATOR	Y	Ocean a diam	Dees
TEST NO.	Location	Elevation (m)	Zone	Test Depth	Max. Dry Density	Optimum Moisture	Dry Density	Moisture Content	Compaction	Compaction Specification	Pass
		325,220		(m)	(kg/m <sup>3</sup> )	(%)	(kg/m <sup>3</sup> )	(%)	(%)	(%)	Fail
1	SE 6+50	954.6	S	0.2	2080	90	2093	9.17	100 6	95.0	Pass
2	SE 7+25 SE7+50	954.3 954.3	S	0.2	2080	90	2087	8.97 9.20	100 3	95 0 95 0	Pass
4	SE 8+00	954.3	S	0.2	2080	90	2030	9.20	97.6	950	Pass
5	SE7+75	954.6	S	0.2	2080	90	2125	7.95	102.2	95.0	Pass
6	SE8+25	954.6	S	0.2	2080	90	2073	8.96	99.7	95 0	Pass
7	SE8+75	954.6	S	0.2	2080	90	2044	10.15	98.3	95 0	Pass
8	SE9+25	954.6	S	0.2	2080	90	2031	10.15	97.6	95 0	Pass
9	SE9+75	954.6	S	0.2	2080	90	2063	8.91	99.2	95.0	Pass
10	SE10+75 SE11+50	954.3 954.3	S	0.2	2080	9.0 9.0	2077 2049	9.95 10 31	99.9 98.5	95 0 95 0	Pass
12	SE12+00	954.3	S	0.2	2080	9.0	2029	10.08	97.5	950	Pass
13	SE12+00	954.6	S	0.2	2080	9.0	1985	9.92	95.4	95 0	Pass
14	SE12+50	954.3	S	0.2	2080	9.0	2043	9.66	98.2	95 0	Pass
15	SE13+00	954.3	S	0.2	2080	9.0	2014	9.62	96.8	95 0	Pass
16	SE11+00	954.6	S	0.2	2080	9.0	2033	9.93	97.7	95.0	Pass
17	SE12+50 SE12+00	954.6 954.6	S	0.2	2080	9.0 9.0	1978 2124	11 02 8,17	95.1 102.1	95 0 95 0	Pass
10	SE12+00 SE11+50	954.6	S	0.2	2080	9.0	2024	9.89	97.3	95.0	Pass
20	SE12+75	954.6	S	0.2	2080	9.0	2038	10 85	98.0	95 0	Pass
21	SE13+40	954.6	S	0.2	2080	9.0	2098	8.65	100 9	95 0	Pass
22	SE14+00	954.3	S	0.2	2080	9.0	2062	9.21	99.1	95 0	Pass
23	SE15+00	954.3	S	0.2	2080	9.0	2085	9.50	100.2	95.0	Pass
24 25	SE13+75 SE Abutment	954.9 955.0	S	0.2	2080	9.0 9.0	2009 2075	10 04 9.43	96.6 99.8	95 0 95 0	Pass
25	SE Abutment	955.0	S	0.2	2080	90	2075	9.43	99.8	95.0	Pass
27	SE15+00	954.8	S	0.2	2080	9.0	2049	9.22	98.5	95.0	Pass
28	SE14+50	954.9	S	0.2	2080	9.0	2031	9.04	97.6	95 0	Pass
29	SE14+00	954.9	S	0.2	2080	9.0	2078	9.86	99.9	95 0	Pass
30	SE Abutment	954.8	S	0.2	2080	90	2073	9.46	99.7	95 0	Pass
31	PE44+00	954.3	S	0.2	2080	9.0	2084	9.88	100 2	95 0	Pass
32	PE44+50	954.3	S	0.2	2080	9.0 9.0	2084	9.88	100.2	95.0	Pass
33 34	PE43+00 PE42+25	954.3 954.3	S	0.2	2080	9.0	2028 2040	9.89 8.71	97.5 98.1	95 0 95 0	Pass
35	PE41+75	954.3	S	0.2	2080	9.0	2133	8.61	102.5	95.0	Pass
36	PE42+50	954.6	S	0.2	2080	9.0	2013	9.70	96.8	95 0	Pass
37	PE42+00	954.6	S	0.2	2080	9.0	2097	9.65	100 8	95 0	Pass
38	PE41+00	954.3	S	0.2	2080	9.0	2212	7.85	106 3	95 0	Pass
39	PE40+00	954.3	S	0.2	2080	9.0	2063	9.83	99.2	95 0	Pass
40	PE41+50	954.6	S	0.2	2080	9.0 9.0	2094 2018	8.93	100.7	95 0 95 0	Pass
41	PE41+00 PE40+50	954.6 954.6	S	0.2	2080	9.0	2018	8.24 9.93	97.0 98.5	950	Pass
43	PE39+25	954.3	S	0.2	2080	9.0	2108	9.71	101.3	95.0	Pass
44	PE39+50	954.3	S	0.2	2080	9.0	2035	12 51	97.8	95 0	Pass
45	PE38+50	954.3	S	0.2	2080	9.0	2006	12.14	96.4	95 0	Pass
46	PE38+00	954.3	S	0.2	2080	9.0	2008	12 01	96.5	95 0	Pass
47	PE38+25	954.6	S	0.2	2080	9.0	1971	1201	94.8	95.0	Fail
48 49	PE39+25 PE44+00	954.6 954.3	S	0.2	2080 2080	9.0 9.0	2004 2105	11 83 10 04	96.3 101.2	95 0 95 0	Pass
50	PE44+00 PE44+50	954.3	S	0.2	2080	9.0	2090	9.39	1012	950	Pass
51	PE44+50	954.3	S	0.2	2080	9.0	2060	9.34	99.0	95.0	Pass
52	PE45+55	954.6	S	0.2	2080	9.0	1997	10 20	96.0	95 0	Pass
53	PE44+25	954.6	S	0.2	2080	9.0	2087	8.50	100 3	95 0	Pase
54	PE44+75	954.6	S	0.2	2080	9.0	2039	9.48	98.0	95.0	Pass
55 56	PE44+25 PE44+25	954.6 954.9	S	0.2	2080 2080	9.0 9.0	2138 2101	8.44 9.77	102 8	95 0 95 0	Pase
57	PE44+25 PE45+10	954.9 955.5	S	0.2	2080	9.0	2101	9.77	99.5	95 0 95 0	Pass
58	PE45+10 PE45+45	955.5	S	0.2	2080	9.0	2140	8.19	102.9	95.0	Pas
59	PE46+10	954.3	S	0.2	2080	9.0	2101	9.71	101 0	95 0	Pas
60	PE46+50	954.3	S	0.2	2080	9.0	2136	9.36	102.7	95 0	Pass
61	PE46+00	954.6	S	0.2	2080	9.0	2032	11.41	97.7	95 0	Pass
62	PE46+25	954.6	S	0.2	2080	9.0	2034	9.83	97.8	95.0	Pass
63	PE45+20	955.2	S	0.2	2080	9.0	2086	9.91	100 3	950	Pass
64 65	PE44+75 PE47+10	955.2 954.0	S S	0.2	2080 2080	9.0 9.0	2127 2109	8.67 8.69	102 3 101.4	95 0 95 0	Pass
66	PE47+10 PE46+90	954.0 954.3	S	0.2	2080	9.0	2109	8.09	101.4	95.0	Pass
67	PE47+20	954.3	S	0.2	2080	9.0	2073	8.73	99.7	95.0	Pass
68	PE47+50	955.1	S	0.2	2080	9.0	2169	8.41	104 3	95 0	Pass
69	PE37+75	954.0	S	0.2	2080	9.0	2112	11.19	101 5	95 0	Pass
70	PE38+25	954.0	S	0.2	2080	9.0	2033	11 05	97.7	950	Pass
71	PE39+50	954.0	S	0.2	2080	9.0	2009	11.43	96.6	950	Pass
72 73	PE39+40 PE40+15	954.0 954.0	S S	0.2	2080 2080	9.0 9.0	1929 2160	12.70 8.08	92.7 103 8	95 0 95 0	Fail
74	PE40+10	954.6	S	0.2	2080	9.0	2131	8.66	102.5	95.0	Pase

						-	-				
75	PE35+50	954.0	S	0.2	2080	9.0	2118	8.39	101 8	95 0	Pass
76	PE36+00	954.0	S	0.2	2080	9.0	2084	10.11	100 2	95 0	Pass
77	PE35+00	954.0	S	0.2	2080	9.0	2630	5.68	126.4	95 0	Pass
78	PE36+00	954.0	S	0.2	2080	9.0	2535	7.98	121 9	95 0	Pass
						1					
79	PE36+50	954.3	S	0.2	2080	9.0	2065	8.54	99.3	95 0	Pass
80	PE34+50	954.0	S	0.2	2080	9.0	2083	8.67	100.1	95 0	Pass
81	PE36+25	954.3	S	0.2	2080	9.0	2093	8.78	100 6	95 0	Pass
82	PE35+00	954.3	S	0.2	2080	90	2480	7.33	119 2	95 0	Pass
83	PE34+40	954.3	S	0.2	2080	90	2464	8.19	118 5	95 0	Pass
84	PE34+00	954.0	S	0.2	2080	90	1979	8.72	95.1	95 0	Pass
85	PE33+70	954.0	S	0.2	2080	90	2541	7.64	122 2	95 0	Pass
86	PE33+25	954.0	S	0.2	2080	90	2003	10.71	96.3	95 0	Pass
87	PE32+50	954.0	S	0.2	2080	90	2492	7.75	119 8	95 0	Pass
88						1					
89	PE33+00	954.0	S	0.2	2080	90	2108	9.06	101 3	95 0	Pass
		954.3		0.2	2080	90	2039				
90	PE34+50		S					9.56	98.0	95 0	Pass
91	PE33+25	954.3	S	0.2	2080	90	2033	9.41	97.7	95 0	Pass
92	PE34+00	954.3	S	0.2	2080	90	1996	8.99	96.0	95 0	Pass
93	PE32+75	954.0	S	0.2	2080	90	2027	9.92	97.5	95 0	Pass
94	PE42+75	954.6	S	0.2	2080	90	2055	9.07	98.8	95 0	Pass
95	PE42+00	954.6	S	0.2	2080	90	2141	9.23	102 9	95 0	Pass
96	PE41+50	954.6	S	0.2	2080	90	2287	5.51	110 0	95 0	Pass
97	PE40+25	954.6	S	0.2	2080	90	2073	8.74	99.7	95 0	Pass
98											
99	PE40+75	954.6	S	0.2	2080	90	2242	8.34	107 8	95 0	Pass
100	PE39+50	954.6	S	0.2	2080	90	1825	10 03	87.7	95 0	Fail
100	PE38+75	954.6	s	0.2	2080	90	2207	7.83	106.1	95 0	Pass
-											
102	PE38+25	954.6	S	0.2	2080	90	2077	10 60	99.9	95 0	Pass
103	PE37+75	954.6	S	0.2	2080	90	2058	8.88	98.9	95 0	Pass
104	PE37+00	954.6	S	0.2	2080	90	2137	9.02	102.7	95 0	Pass
105	PE37+25	954.6	S	0.2	2080	90	2671	7.34	128.4	95 0	Pass
105	PE39+25	954.6	s	0.2	2080	90	2433	8.08	117 0	95 0	Pass
107	PE40+00	954.6	S	0.2	2080	90	2426	7.91	116 6	95 0	Pass
108	PE34+50	954.6	S	0.2	2080	90	2270	7.08	109.1	95 0	Pass
109	PE33+75	954.6	S	0.2	2080	90	2439	7.66	117 3	95 0	Pass
110	PE32+75	954.6	S	0.2	2080	90	2020	9.02	97.1	95 0	Pass
111	PE32+25	954.3	S	0.2	2080	90	2160	8.56	103 8	95 0	Pass
112	PE31+50	954.3	s	0.2	2080	90	2125	8.84	102 2	95 0	Pass
113	PE31+00	954.3	S	0.2	2080	90	2176	9.08	104 6	95 0	Pass
114	PE30+75	954.3	S	0.2	2080	90	2123	9.43	102.1	95 0	Pass
115	PE30+00	954.3	S	0.2	2080	90	2138	9.07	102 8	95 0	Pass
116	PE30+50	954.6	S	0.2	2080	90	2130	8.93	102.4	95 0	Pass
117	PE30+00	954.6	S	0.2	2080	9.0	2085	8.90	100 2	95 0	Pass
	PE31+00		S								
118		954.6		0.2	2080	9.0	2093	8.77	100 6	95.0	Pass
119	PE31+50	954.6	S	0.2	2080	9.0	2120	8.92	101 9	95 0	Pass
120	PE29+50	954.6	S	0.2	2080	9.0	2093	8.23	100 6	95 0	Pass
121	PE29+00	954.6	S	0.2	2080	9.0	2133	8.51	102 5	95 0	Pass
122	ME18+50	954.3	S	0.2	2080	9.0	2192	6.73	105.4	95 0	Pass
123	ME19+00	954.3	S	0.2	2080	9.0	2144	8.23	103.1	95 0	Pass
						1					
124	ME17+75	954.3	S	0.2	2080	9.0	2135	9.69	102 6	95 0	Pass
125	ME17+00	954.3	S	0.2	2080	9.0	2113	10 20	101 6	95 0	Pass
126	ME16+50	954.3	S	0.2	2080	9.0	2139	9.26	102 8	95 0	Pass
127	ME19+00	954.6	S	0.2	2080	90	2059	8.16	99.0	95 0	Pass
128	ME18+50	954.6	S	0.2	2080	90	2123	8.67	102.1	95 0	Pass
120	ME18+00	954.6	S	0.2	2080		2123	8.53	102.7	95 0	
						90					Pass
130	ME17+50	954.6	S	0.2	2080	90	2146	9.02	103 2	95 0	Pass
131	ME 1625	954.3	S	0.2	2080	90	2190	8.01	105 3	95 0	Pass
132	ME1550	954.6	S	0.2	2080	90	2160	8.43	103 8	95 0	Pass
133	ME1EOE						2100	0.10			
155	ME1595	954.6	S	0.2	2080	90	2100	8.01	105.7	95 0	Pass
						1	2198	8.01			Pass
134	ME 1950	954.3	S	0.2	2080	90	2198 2174	8.01 7.33	104 5	95 0	Pass Pass
134 135	ME 1950 ME 1995	954.3 954.3	S S	0.2 0.2	2080 2080	90 90	2198 2174 2235	8.01 7.33 8.56	104 5 107 5	95 0 95 0	Pass Pass Pass
134 135 136	ME 1950 ME 1995 ME 1995	954.3 954.3 945.6	S S S	0.2 0.2 0.2	2080 2080 2080	9 0 9 0 9.0	2198 2174 2235 2010	8.01 7.33 8.56 10 01	104 5 107 5 96.6	95 0 95 0 95 0	Pass Pass Pass Pass
134 135 136 137	ME 1950 ME 1995 ME 1995 ME 2100	954.3 954.3 945.6 954.3	S S S S	0.2 0.2 0.2 0.2	2080 2080 2080 2080	90 90 9.0 9.0	2198 2174 2235 2010 2130	8.01 7.33 8.56 10 01 9.01	104 5 107 5 96.6 102.4	95 0 95 0 95 0 95 0	Pass Pass Pass Pass Pass
134 135 136	ME 1950 ME 1995 ME 1995	954.3 954.3 945.6	S S S	0.2 0.2 0.2	2080 2080 2080	9 0 9 0 9.0	2198 2174 2235 2010	8.01 7.33 8.56 10 01	104 5 107 5 96.6	95 0 95 0 95 0	Pass Pass Pass Pass
134 135 136 137	ME 1950 ME 1995 ME 1995 ME 2100	954.3 954.3 945.6 954.3	S S S S	0.2 0.2 0.2 0.2	2080 2080 2080 2080	90 90 9.0 9.0	2198 2174 2235 2010 2130	8.01 7.33 8.56 10 01 9.01	104 5 107 5 96.6 102.4	95 0 95 0 95 0 95 0	Pass Pass Pass Pass Pass
134 135 136 137 138 139	ME 1950 ME 1995 ME 1995 ME 2100 ME 2150 ME 2075	954.3 954.3 945.6 954.3 954.3 954.3	\$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080	90 90 9.0 9.0 9.0 9.0 9.0	2198 2174 2235 2010 2130 2132 2140	8.01 7.33 8.56 10 01 9.01 8.70 9.90	104 5 107 5 96.6 102.4 102 5 102 9	95 0 95 0 95 0 95 0 95 0 95 0 95 0	Pass Pass Pass Pass Pass Pass Pass
134 135 136 137 138 139 140	ME 1950 ME 1995 ME 1995 ME 2100 ME 2150 ME 2075 ME 2150	954.3 954.3 945.6 954.3 954.3 954.3 954.3 954.6	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	90 90 9.0 9.0 9.0 9.0 9.0 9.0	2198 2174 2235 2010 2130 2132 2140 2150	8.01 7.33 8.56 10 01 9.01 8.70 9.90 9.17	104 5 107 5 96.6 102.4 102 5 102 9 103.4	95 0 95 0 95 0 95 0 95 0 95 0 95 0 95.0	Pass Pass Pass Pass Pass Pass Pass Pass
134 135 136 137 138 139 140 141	ME 1950 ME 1995 ME 1995 ME 2100 ME 2150 ME 2075 ME 2150 ME 2400	954.3 954.3 945.6 954.3 954.3 954.3 954.3 954.6 954.3	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	90 90 90 90 90 90 90 90 90 90	2198 2174 2235 2010 2130 2132 2140 2150 2136	8.01 7.33 8.56 10 01 9.01 8.70 9.90 9.17 8.61	104 5 107 5 96.6 102.4 102 5 102 9 103.4 102.7	95 0 95 0 95 0 95 0 95 0 95 0 95 0 95.0 95.0	Pass Pass Pass Pass Pass Pass Pass Pass
134 135 136 137 138 139 140 141 142	ME 1950 ME 1995 ME 1995 ME 2100 ME 2150 ME 2075 ME 2150 ME 2400 ME 2475	954.3 954.3 945.6 954.3 954.3 954.3 954.3 954.6 954.3 954.6	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	90 90 90 90 90 90 90 90 90 90 90	2198 2174 2235 2010 2130 2132 2140 2150 2136 2186	8.01 7.33 8.56 10 01 9.01 8.70 9.90 9.17 8.61 8.61	104 5           107 5           96.6           102.4           102 5           102 9           103.4           102.7           105.1	95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95.0           95.0           95.0	Pass Pass Pass Pass Pass Pass Pass Pass
134 135 136 137 138 139 140 141	ME 1950 ME 1995 ME 1995 ME 2100 ME 2150 ME 2075 ME 2150 ME 2400	954.3 954.3 945.6 954.3 954.3 954.3 954.3 954.6 954.3	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	90 90 90 90 90 90 90 90 90 90	2198 2174 2235 2010 2130 2132 2140 2150 2136	8.01 7.33 8.56 10 01 9.01 8.70 9.90 9.17 8.61	104 5 107 5 96.6 102.4 102 5 102 9 103.4 102.7	95 0 95 0 95 0 95 0 95 0 95 0 95 0 95.0 95.0	Pass Pass Pass Pass Pass Pass Pass Pass
134 135 136 137 138 139 140 141 142	ME 1950 ME 1995 ME 1995 ME 2100 ME 2150 ME 2075 ME 2150 ME 2400 ME 2475	954.3 954.3 945.6 954.3 954.3 954.3 954.3 954.6 954.3 954.6	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	90 90 90 90 90 90 90 90 90 90 90	2198 2174 2235 2010 2130 2132 2140 2150 2136 2186	8.01 7.33 8.56 10 01 9.01 8.70 9.90 9.17 8.61 8.61	104 5           107 5           96.6           102.4           102 5           102 9           103.4           102.7           105.1	95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95.0           95.0           95.0	Pass Pass Pass Pass Pass Pass Pass Pass
134 135 136 137 138 139 140 141 142 143 144	ME 1950 ME 1995 ME 1995 ME 2100 ME 2150 ME 2075 ME 2150 ME 2400 ME 2475 ME 2175 ME 2275	954.3 954.3 945.6 954.3 954.3 954.3 954.6 954.6 954.3 954.6 954.3 954.6	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	90 90 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.	2198 2174 2235 2010 2130 2132 2140 2150 2136 2186 2204 2069	8.01 7.33 8.56 10 01 9.01 8.70 9.90 9.17 8.61 8.61 8.21 8.86	104 5 107 5 96.6 102.4 102 5 102 9 103.4 102.7 105.1 106 0 99.5	95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95.0           95.0           95.0           95.0           95.0           95.0           95.0	Pass Pass Pass Pass Pass Pass Pass Pass
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134           135           136           137           138           139           140           141           142           143           144           145           146           147           148           149           150           151           152	ME 1950 ME 1995 ME 1995 ME 2100 ME 2150 ME 2075 ME 2150 ME 2400 ME 2475 ME 2475 ME 2175 ME 2150 ME 2450 ME 2650 ME 2700 ME 2875 ME 2600 ME 2700	954.3 954.3 954.3 954.3 954.3 954.6 954.6 954.6 954.6 954.6 954.6 954.6 954.6 954.3 954.6 954.3 954.9	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	90 90 90 90 90 90 90 90 90 90 90 90 90 9	2198 2174 2235 2010 2130 2132 2140 2150 2136 2186 2186 2204 2069 2154 2116 2022 2094 2169 2102 2119 2081	8.01 7.33 8.56 10 01 9.01 8.70 9.90 9.17 8.61 8.61 8.61 8.61 8.21 8.86 7.45 9.23 9.05 9.15 9.46 9.70 10 63 9.83	104 5           107 5           96.6           102.4           102 5           102 9           103.4           102.7           105.1           106 0           99.5           103 6           101.7           97.2           100.7           104 3           101.1           101 9           100 0	95 0           95 0	Pass Pass Pass Pass Pass Pass Pass Pass
134           135           136           137           138           139           140           141           142           143           144           145           146           147           148           149           150           151           152           153	ME 1950 ME 1995 ME 1995 ME 2100 ME 2150 ME 2075 ME 2150 ME 2475 ME 2475 ME 2475 ME 2475 ME 2450 ME 2450 ME 2450 ME 2650 ME 2575 ME 2875 ME 2500 ME 2700 ME 1925	954.3 954.3 954.3 954.3 954.3 954.6 954.6 954.6 954.6 954.6 954.6 954.6 954.3 954.6 954.3 954.9 954.9	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	90 90 90 90 90 90 90 90 90 90 90 90 90 9	2198 2174 2235 2010 2130 2132 2140 2150 2136 2136 2204 2069 2154 2116 2022 2094 2169 2102 2119 2081 2081 2056	8.01 7.33 8.56 10 01 9.01 8.70 9.90 9.17 8.61 8.61 8.61 8.21 8.86 7.45 9.23 9.05 9.15 9.46 9.70 10 63 9.83 10 95	104 5           107 5           96.6           102.4           102 5           102 9           103.4           102.7           105.1           106 0           99.5           103 6           101.7           97.2           100.7           104 3           101.1           101 9           100 0           98.8	95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0	Pass Pass Pass Pass Pass Pass Pass Pass
134           135           136           137           138           139           140           141           142           143           144           145           146           147           148           149           150           151           152	ME 1950 ME 1995 ME 1995 ME 2100 ME 2150 ME 2075 ME 2150 ME 2400 ME 2475 ME 2475 ME 2175 ME 2150 ME 2450 ME 2650 ME 2700 ME 2875 ME 2600 ME 2700	954.3 954.3 954.3 954.3 954.3 954.6 954.6 954.6 954.6 954.6 954.6 954.6 954.6 954.3 954.6 954.3 954.9	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	90 90 90 90 90 90 90 90 90 90 90 90 90 9	2198 2174 2235 2010 2130 2132 2140 2150 2136 2186 2186 2204 2069 2154 2116 2022 2094 2169 2102 2119 2081	8.01 7.33 8.56 10 01 9.01 8.70 9.90 9.17 8.61 8.61 8.61 8.61 8.21 8.86 7.45 9.23 9.05 9.15 9.46 9.70 10 63 9.83	104 5           107 5           96.6           102.4           102 5           102 9           103.4           102.7           105.1           106 0           99.5           103 6           101.7           97.2           100.7           104 3           101.1           101 9           100 0	95 0           95 0	Pass Pass Pass Pass Pass Pass Pass Pass
134           135           136           137           138           139           140           141           142           143           144           145           146           147           148           149           150           151           152           153	ME 1950 ME 1995 ME 1995 ME 2100 ME 2150 ME 2075 ME 2150 ME 2475 ME 2475 ME 2475 ME 2475 ME 2450 ME 2450 ME 2450 ME 2650 ME 2575 ME 2875 ME 2500 ME 2700 ME 1925	954.3 954.3 954.3 954.3 954.3 954.6 954.6 954.6 954.6 954.6 954.6 954.6 954.3 954.6 954.3 954.9 954.9	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	90 90 90 90 90 90 90 90 90 90 90 90 90 9	2198 2174 2235 2010 2130 2132 2140 2150 2136 2136 2204 2069 2154 2116 2022 2094 2169 2102 2119 2081 2081 2056	8.01 7.33 8.56 10 01 9.01 8.70 9.90 9.17 8.61 8.61 8.61 8.21 8.86 7.45 9.23 9.05 9.15 9.46 9.70 10 63 9.83 10 95	104 5           107 5           96.6           102.4           102 5           102 9           103.4           102.7           105.1           106 0           99.5           103 6           101.7           97.2           100.7           104 3           101.1           101 9           100 0           98.8	95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0	Pass Pass Pass Pass Pass Pass Pass Pass
134           135           136           137           138           139           140           141           142           143           144           145           146           147           148           149           150           151           152           153           154	ME 1950 ME 1995 ME 1995 ME 2100 ME 2100 ME 2075 ME 2150 ME 2400 ME 2475 ME 2175 ME 2175 ME 2175 ME 2150 ME 2450 ME 2450 ME 2650 ME 2650 ME 2575 ME 2875 ME 2875 ME 2500 ME 2700 ME 1925 ME 1800	954.3 954.3 954.3 954.3 954.6 954.3 954.6 954.6 954.6 954.6 954.6 954.6 954.6 954.6 954.6 954.3 954.9 954.9 954.9 954.9 954.9	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	90           90	2198 2174 2235 2010 2130 2132 2140 2150 2136 2186 2204 2069 2154 2116 2022 2094 2169 2102 2119 2081 2056 2091	8.01           7.33           8.56           10 01           9.01           8.70           9.90           9.17           8.61           8.21           8.86           7.45           9.23           9.05           9.15           9.46           9.70           10 63           9.83           10 95           10 06	104 5           107 5           96.6           102.4           102 5           102 9           103.4           102.7           105.1           106 0           99.5           103 6           101.7           97.2           100.7           104 3           101.1           101 9           100 0           98.8           100 5	95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95 0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0           95.0	Pass Pass Pass Pass Pass Pass Pass Pass

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1161M62301962250.220.200190190119021902190219021902190319	163	ME2475	955.2	S	0.2	2080	9.0	2048	11 22	98.5	95.0	Pass
1161         VE275         0652         5         6.2         2000         5.1         2015         1053         1053         1054         1055         1056         Page           1161         ME2105         0652         5         0.2         2000         1.0         1053         1055         1056         Page           1171         ME200         1062         5         0.2         2000         1.0         2017         1060         1018         1050         Page           1171         ME200         1062         5         0.2         2000         1.0         2017         1060         1018         Page         Page           1171         ME200         1062         5         0.2         2000         1.0         2018         1014         Page         Page           1171         ME00         1065         5         0.2         2000         1.0         2018         1014         Page         Page           1171         ME00         1065         5         0.2         2000         1.0         1014         1014         Page           1171         ME00         1065         5         0.2         2000         1.0	164	ME2525	955.2	S	0.2	2080	9.0	2054	11 51	98.8	95.0	Pass
1161         VE275         0652         5         6.2         2000         5.1         2015         1053         1053         1054         1055         1056         Page           1161         ME2105         0652         5         0.2         2000         1.0         1053         1055         1056         Page           1171         ME200         1062         5         0.2         2000         1.0         2017         1060         1018         1050         Page           1171         ME200         1062         5         0.2         2000         1.0         2017         1060         1018         Page         Page           1171         ME200         1062         5         0.2         2000         1.0         2018         1014         Page         Page           1171         ME00         1065         5         0.2         2000         1.0         2018         1014         Page         Page           1171         ME00         1065         5         0.2         2000         1.0         1014         1014         Page           1171         ME00         1065         5         0.2         2000         1.0	165	ME2450					9.0				95.0	
197         1963         6953         6953         790         390         1901         995         990         Puns           106         1952.00         1052.00         1052.00         1052.00         1052.00         1050.00												
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	167	ME2075	955.2	S	0.2	2080	9.0	2069	10.41	99.5	95.0	Pass
1171MF 2000995.095.097.097.0797.6797.6797.6797.6597.6597.651171MK 1100105.28.00.220101.020701.01.00.00.5.0Past.1172MK 1100105.28.00.220101.020701.01.00.095.0Past.1171MK 1100195.58.00.220800.020800.00.000.00.095.0Past.1171MK 1100195.58.00.220800.00.000.000.000.0095.0Past.1171MK 100195.48.00.220800.00.000.000.000.0095.0Past.1171MK 100195.48.00.220800.020800.000.0010.095.0Past.1181F\$1475195.48.00.220800.020800.00.010.095.0Past.1191F\$4400195.28.00.220800.020800.00.010.095.0Past.1191F\$4400195.28.00.220800.020800.010.010.095.0Past.1191F\$4400195.28.00.220800.0208010.010.010.010.010.010.010.010.010.010.010.0	168	ME 2125	955.2	S	0.2	2080	9.0	2005	11 83	96.4	95.0	Pass
1171MF 2000995.095.097.097.0797.6797.6797.6797.6597.6597.651171MK 1100105.28.00.220101.020701.01.00.00.5.0Past.1172MK 1100105.28.00.220101.020701.01.00.095.0Past.1171MK 1100195.58.00.220800.020800.00.000.00.095.0Past.1171MK 1100195.58.00.220800.00.000.000.000.0095.0Past.1171MK 100195.48.00.220800.00.000.000.000.0095.0Past.1171MK 100195.48.00.220800.020800.000.0010.095.0Past.1181F\$1475195.48.00.220800.020800.00.010.095.0Past.1191F\$4400195.28.00.220800.020800.00.010.095.0Past.1191F\$4400195.28.00.220800.020800.010.010.095.0Past.1191F\$4400195.28.00.220800.0208010.010.010.010.010.010.010.010.010.010.010.0	169	ME 2000	955.2	S	0.2	2080	9.0	2085	10.18	100 2	95.0	Pass
1171MC 1980985298520002000900010001980Pers1175MC 19801852500200000200001000	170											
1172MC 10001952950.20.000.0020778.8019.8019.81 <td></td>												
1172         ME 1190         952         8         0         2         200         500         5008         9131         988         9135         988.         Pase           1175         ME 180         9555         5         0.2         2000         1.0         2000 <td>-</td> <td></td>	-											
174         Mc 1750         965.0         9.0         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         2.000         9.00         9.000												
1176         ME 1600         96.5         8         0         2         200         0.0         2002         9.94         100.4         65.0         Pass           1177         ME 1600         96.6.1         S         0.2         2000         0.0         2002         100.7         100.7.1         100.8<	173	ME 1750	955.2	S	0.2	2080	9.0	2045	10 68	98.3	95.0	Pass
1170         Metico         98.0         98.0         9.00        9.00 <th< td=""><td>174</td><td>ME 1750</td><td>955.2</td><td>S</td><td>0.2</td><td>2080</td><td>9.0</td><td>2131</td><td>9.88</td><td>102 5</td><td>95.0</td><td>Pass</td></th<>	174	ME 1750	955.2	S	0.2	2080	9.0	2131	9.88	102 5	95.0	Pass
1170         Metico         98.0         98.0         9.00        9.00 <th< td=""><td>175</td><td>ME1600</td><td>955.5</td><td>S</td><td>0.2</td><td>2080</td><td>9.0</td><td>2089</td><td>9.94</td><td>100.4</td><td>95.0</td><td>Pass</td></th<>	175	ME1600	955.5	S	0.2	2080	9.0	2089	9.94	100.4	95.0	Pass
177         M6 1700         906.1         906.1         906.1         906.0         Pase           178         PE405         944.4         S         0.2         2000         0.0         2231         95.3         10.2         Boo         Pases           179         PE4075         964.4         S         0.2         2000         0.0         2202         96.0         10.01         65.0         Pases           179         PE4075         964.4         S         0.2         2000         0.0         2208         10.01         10.01         65.0         Pases           170         PE400         964.4         S         0.2         2000         0.0         2713         95.0         10.01         70.0         Pases           1780         PE400         96.2         S         0.2         2000         0.0         2713         95.0         10.0         Pases           1781         PE400         96.2         S         0.2         2000         0.0         274.0         95.0         10.0         Pases           1791         PE400         96.5         S         0.2         2000         0.0         273.1         95.0         10.0 <td></td>												
17%         F#c075         98.4.8         S         0.2         2000         0.0         2021         98.3         10.0         55.0         FPaig           100         FC125         98.4.8         S         0.2         2000         0.0         2262         9.8.0         10.0         10.0.1         65.0         FPaig           101         FC125         98.4.8         S         0.2         2000         0.0         2024         9.8.0         10.0.1         65.0         FPaig           101         FC125         98.4.8         S         0.2         2000         0.0         2083         10.10         65.0         FPaig           104         FFc100         95.2         S         0.2         2000         0.0         217.3         9.8.1         110.1         65.0         FPaig           104         FFc100         95.5         S         0.2         2000         0.0         217.3         9.8.2         10.11         6.0.0         FPaig           109         ME207         95.5         S         0.2         2000         0.0         2200         9.0         10.1         6.0         FPaig           109         ME207         96.	-											
1170         Pred/m         594.8         S         0.2         2000         9.00         2012         6.80         100.0         Pres           160         PC123         654.8         S         0.2         2000         6.0         2009         100.0         100												
1101         PE L175         55.40         8         0.2         2000         9.0         2024         9.00         9.0.2         Pests           1151         PE L375         55.44         8         0.2         2000         9.0         2005         10.56         10.5         0.0.0         Pests           1151         PE L300         65.48         8         0.2         2000         9.0         2015         10.5         0.0.0         Pests           1161         PE L300         65.2         8         0.2         2000         9.0         2133         10.0         9.0         Pests           1190         PE L300         65.2         8         0.2         2000         9.0         2147         8.0         10.0         Pests           1190         ME 275         65.5         8         0.2         2000         9.0         2140         8.0         10.0         Pests           1100         ME 275         65.5         8         0.2         2000         9.0         2131         8.0         10.0         Pests           1101         ME 275         65.6         8         0.2         2000         9.0         2131         8.0 <td>-</td> <td>PE4025</td> <td>954.8</td> <td></td> <td>0.2</td> <td>2080</td> <td>9.0</td> <td>2131</td> <td>9.53</td> <td>102 5</td> <td>95.0</td> <td>Pass</td>	-	PE4025	954.8		0.2	2080	9.0	2131	9.53	102 5	95.0	Pass
1810         Pre4176         684.6         8         0.22         2000         9.00         2008         10.58         10.08         96.0.         Pass           182         PF4300         64.4         8         0.2         2000         9.0         2133         0.66         1016         66.0         Pass           164         PF4300         0.52         8         0.2         2000         0.0         2434         10.18         0.02         66.0         Pass           164         PF4300         0.52         8         0.2         2000         0.0         2434         10.18         0.02         66.0         Pass           169         MF2370         0552         8         0.2         2000         0.0         2434         0.8.1         10.0         0.6.0         Pass           169         MF2375         0555         8         0.2         2000         0.0         2431         0.86         10.0         Pass         Pass           110         MF275         055         8         0.2         2000         0.0         2431         0.86         10.0         0.0         Pass           110         MF275         0555	179	PE4075	954.8	S	0.2	2080	9.0	2092	9.40	100 6	95.0	Pass
152         FP4500         B54.8         S         0.22         2000         0.00         2076         10.50         19.60         Phas           164         FE400         0.52.2         S         0.22         2080         0.0         2110         0.90         101.9         0.6.0         Phas           166         FE410         0.62.2         S         0.2         2080         0.0         2123         0.92         0.0.0         Phas         Phas           168         FE410         0.62.2         S         0.2         2080         0.0         2123         0.92         0.00         Phas         Phas           169         ME2265         0.85         S         0.2         2080         9.0         2120         0.82         10.0         Phas         Phas           190         ME2275         0.85         S         0.2         2080         9.0         2131         0.80         10.0         Phas           191         ME2275         0.85         S         0.2         2080         9.0         2131         0.80         10.0         Phas           192         FP280         0.44         S         0.2         2000	180	PE4125	954.8	S	0.2	2080	9.0	2124	9.88	102.1	95.0	Pass
152         FP4500         B54.8         S         0.22         2000         0.00         2076         10.50         19.60         Phas           164         FE400         0.52.2         S         0.22         2080         0.0         2110         0.90         101.9         0.6.0         Phas           166         FE410         0.62.2         S         0.2         2080         0.0         2123         0.92         0.0.0         Phas         Phas           168         FE410         0.62.2         S         0.2         2080         0.0         2123         0.92         0.00         Phas         Phas           169         ME2265         0.85         S         0.2         2080         9.0         2120         0.82         10.0         Phas         Phas           190         ME2275         0.85         S         0.2         2080         9.0         2131         0.80         10.0         Phas           191         ME2275         0.85         S         0.2         2080         9.0         2131         0.80         10.0         Phas           192         FP280         0.44         S         0.2         2000	181	PF4175	954.8	S	0.2	2080	9.0	2098	10.82	100.9	95.0	Pass
1184         Presco         95:0         2         2000         9.0         2113         9.99         1016         9.63.0         Ppsis           1184         Presco         9552         S         0.2         2000         9.0         2413         9.03         101.0         96.0         Ppsis           1186         Presco         9552         6.0         2         2000         9.0         217         9.52         104.0         Ppsis           1187         Presco         105.2         S         0.2         2000         9.0         217         8.95         103.0         Ppsis           1197         Presco         105.5         S         0.2         2000         9.0         2131         8.96         100.0         Ppsis           1191         ME275         105.5         S         0.2         2000         9.0         2131         8.96         10.0         Ppsis           1191         ME275         105.4         10.4         10.0         10.0         2133         10.4         10.0         Ppsis           1191         PF200         10.4 9         S         0.2         2000         0.0         2131         10.4         10	-											
164         PF400         96.2         S         0.2         2000         9.0         2410         9.01         9.03         1019         9.0.0         Press           166         PF4100         96.2         S         0.2         2000         9.0         2473         9.6.2         104.5         96.0         Press           1187         PF4200         96.2         S         0.2         2000         9.0         2440         9.83         10.2         98.0         Press           1188         ME2750         95.5         S         0.2         2000         9.0         2440         9.83         10.2         98.0         Press           1191         ME275         95.5         S         0.2         2000         9.0         2212         9.65         9.6         Press           1192         PE2800         96.4         S         0.2         2000         9.0         2213         9.66         10.4         9.60         Press           1194         PE2800         96.4         S         0.2         2000         9.0         2116         9.67         10.4         9.6         Press           1194         PE2800         96.4												
1960         PF4100         95.2         S         0.2         2000         9.0         27.3         9.8.2         9.1.5         9.6.5         Pras           187         PF4200         95.2         S         0.2         2000         9.0         2147         8.87         10.32         95.5         Pras           188         ME2750         95.5         S         0.2         2000         9.0         2147         8.87         10.32         95.6         Pras           180         ME2750         95.5         S         0.2         2000         9.0         2140         8.82         10.1         95.0         Pras           110         ME2750         95.5         S         0.2         2000         9.0         2130         9.00         202         9.00         Pras           111         ME2700         95.4         S         0.2         2000         9.0         2131         9.01         10.4         9.0         Pras           119         PE2800         95.4         S         0.2         2000         9.0         2131         9.02         10.4         8.0         Pras           119         PE2800         95.4											-	
1960         PF4100         96.2         S         0.2         2000         9.0         2470         8.87         10.16         95.0         Pms           197         PF2400         96.2         S         0.2         2000         9.0         2410         9.83         10.2         96.0         Pms           198         ME2285         95.5         S         0.2         2000         9.0         2416         9.83         10.2         9.83         Pms           190         ME2275         95.5         S         0.2         2000         9.0         2415         8.86         10.50         9.6.         Pms           191         ME275         95.5         S         0.2         2000         9.0         2115         9.86         10.2         9.83         Pms           191         ME275         95.6         S         0.2         2000         9.0         2116         9.86         10.4         9.60         Pms           1916         PF2800         9.44         S         0.2         2000         9.0         2116         9.917         9.60         Pms         Pms           1919         PF2100         9.44         S	184	PE4050	955.2	S	0.2	2080	9.0	2119	9.93	101 9	95.0	Pass
1960         PF4100         96.2         S         0.2         2000         9.0         2470         8.87         10.16         95.0         Pms           197         PF2400         96.2         S         0.2         2000         9.0         2410         9.83         10.2         96.0         Pms           198         ME2285         95.5         S         0.2         2000         9.0         2416         9.83         10.2         9.83         Pms           190         ME2275         95.5         S         0.2         2000         9.0         2415         8.86         10.50         9.6.         Pms           191         ME275         95.5         S         0.2         2000         9.0         2115         9.86         10.2         9.83         Pms           191         ME275         95.6         S         0.2         2000         9.0         2116         9.86         10.4         9.60         Pms           1916         PF2800         9.44         S         0.2         2000         9.0         2116         9.917         9.60         Pms         Pms           1919         PF2100         9.44         S	185	PE4100	955.2	S	0.2	2080	9.0	2043	10.18	98.2	95.0	Pass
1107         PE4200         95.2         S         0.2         2000         9.0         2147         B.87         10.22         95.0         Pais           118         ME2750         95.5         S         0.2         2000         9.0         2120         9.82         1119         95.0         Pais           1160         ME275         95.5         S         0.2         2000         9.0         2120         8.62         1019         95.0         Pais           1161         ME2750         95.5         S         0.2         2000         9.0         2120         8.62         105.9         96.0         Pais           1161         ME2750         95.4         S         0.2         2000         9.0         2112         9.80         104.4         95.0         Pais           1191         PE200         94.4         S         0.2         2000         9.0         2131         9.47         10.2         96.0         Pais           1192         PE200         94.4         S         0.2         2000         9.0         2131         9.42         10.5         9.60         Pais           1192         PE200         94.4         <												
International         M2270         9952         S         0         2         900         9140         9630         1009         9500         Prass           100         ME2025         9655         S         0.2         2080         9.0         2185         8.88         1050         950         Prass           101         ME2725         9655         S         0.2         2000         9.0         2218         8.88         1059         950.         Prass           101         PE200         9649         S         0.2         2000         9.0         2111         8.86         1022         950.         Prass           1014         PE200         9649         S         0.2         2000         9.0         2118         6.92         10.2         Prass         Prass         9.0         Prass         9.0         9.0         2118         9.0         10.2         Prass         9.0         Prass         9.0         Prass         9.0         10.2         9.0         9.0         10.2         9.0         Prass         9.0         Prass         9.0         Prass         9.0         Prass         9.0         10.0         10.1         10.0         0.0 <td></td>												
H8         ME207         955         S         0.2         2800         9.0         2126         8.60         10.50         Phas           190         ME207         955         S         0.2         2200         9.0         2202         8.55         105         9.50         Phas           191         ME207         955         S         0.2         2000         9.0         2114         8.65         1025         9.50         Phas           191         PE200         964.9         S         0.2         2000         9.0         2114         9.65         104.4         9.50         Phas           194         PE200         964.9         S         0.2         2001         9.0         2114         9.65         104.4         Phas         Phas           194         PE200         964.8         S         0.2         2001         9.0         2111         9.0         104.7         105.0         Phas           194         PE300         964.9         S         0.2         2000         9.0         2102         10.7         10.50         Phas           201         PE359         964.9         S         0.2         2000												
1910         ME275         955 5         S         0.2         2000         9.0         2165         8.80         105 0         55.0         Pass           192         PE280         0.94 9         S         0.2         2000         9.0         2131         10.86         1022         65.0         Pass           198         PE280         0.94 9         S         0.2         2000         9.0         2125         10.40         1022         65.0         Pass           198         PE280         0.84 9         S         0.2         2000         9.0         2128         0.40         102.2         65.0         Pass           196         PE280         0.84 9         S         0.2         2000         9.0         218         0.47         102.5         0.50         Pass           197         PE280         0.84 9         S         0.2         2000         9.0         218         0.90         10.7         49.0         45.0         Pass           206         PE300         0.64 9         S         0.2         2000         0.0         216         10.3         10.1         10.5         Pass           206         PE300	-										-	
1910         ME223         9654         S         0.2         2000         9.0         2202         8.65         10.9         95.0         Ppress           192         PE2800         9649         S         0.2         2000         9.0         2125         10.40         10.22         95.0         Ppress           194         PE2800         9649         S         0.2         2000         9.0         2153         9.46         10.42         95.0         Ppress           198         PE3000         9549         S         0.2         2000         9.0         2151         9.45         10.2         Ppress         P	189	ME2625	955 5	S	0.2	2080	9.0	2120	9.62	101 9	95.0	Pass
1910         ME223         9654         S         0.2         2000         9.0         2202         8.65         10.9         95.0         Ppress           192         PE2800         9649         S         0.2         2000         9.0         2125         10.40         10.22         95.0         Ppress           194         PE2800         9649         S         0.2         2000         9.0         2153         9.46         10.42         95.0         Ppress           198         PE3000         9549         S         0.2         2000         9.0         2151         9.45         10.2         Ppress         P	190	ME2675	955 5	S	0.2	2080	9.0	2185	8.86	105 0	95.0	Pass
192         PE280         94-9         S         0.2         2080         9.0         213         9.86         102.5         9.90         125.5         10.44         9.50         Pass           193         PE280         954.9         S         0.2         2080         9.0         2125         9.28         104.4         95.0         Pass           196         PE2300         954.9         S         0.2         2080         9.0         2135         9.65         104.4         95.0         Pass           197         PE300         954.9         S         0.2         2060         9.0         2131         0.75         65.0         Pass           198         PE3100         954.9         S         0.2         2060         9.0         2080         10.7         8.60         Pass         9.0         2080         10.7         8.60         Pass         9.0         2080         10.67         8.60         Pass         9.0         2080         10.0         11.65.0         Pass         9.0         2081         10.1         8.60         Pass         9.0         2081         10.1         8.60         Pass         9.0         2081         10.1         10.1 </td <td>191</td> <td>ME2725</td> <td>955 5</td> <td>S</td> <td>0.2</td> <td>2080</td> <td>9.0</td> <td>2202</td> <td>8 55</td> <td>105.9</td> <td>95.0</td> <td>Pass</td>	191	ME2725	955 5	S	0.2	2080	9.0	2202	8 55	105.9	95.0	Pass
193         PE380         994 0         S         0.2         2000         9.0         2172         9.20         104.0         160.0         Pass           194         PE380         994 0         S         0.2         2080         9.0         2173         9.47         102.5         85.0         Pass           197         PE380         894 9         S         0.2         2080         9.0         2131         9.47         102.5         85.0         Pass           198         PE3100         694 9         S         0.2         2080         9.0         2131         102.8         102.5         65.0         Pass           199         PE310         694 9         S         0.2         2080         9.0         2131         102.5         65.0         Pass           200         PE3200         654 9         S         0.2         2080         9.0         2166         11.10         104.1         65.0         Pass           201         PE3300         654.9         S         0.2         2080         9.0         2166         11.107         69.1         85.0         Pass           202         PE330         654.9         S												
194         PE2500         99.49         S         0.2         2000         9.0         2173         9.26         104.4         95.00         Pass           196         PE2500         99.49         S         0.2         2000         9.0         2116         9.16         110         7.5         0.50         Pass           197         PE300         99.49         S         0.2         2000         9.0         2116         9.16         10.7         85.0         Pass           198         PE3100         99.49         S         0.2         2000         9.0         2136         10.25         85.0         Pass           200         PE310         99.49         S         0.2         2000         9.0         2102         10.57         85.0         Pass           201         PE320         95.49         S         0.2         2000         9.0         2102         10.51         15.0         Pass           203         PE320         95.49         S         0.2         2000         9.0         2105         11.01         10.11         15.0         Pass           204         PE340         95.49         S         0.2 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>												
196         PE200         964 9         S         0.2         2000         9.0         2131         9.47         102 5         95.0         Pess           197         PE3000         964 9         S         0.2         2090         9.0         2131         9.47         1025         95.0         Pess           198         PE3100         964 9         S         0.2         2090         9.0         2011         10.2         10.2         95.0         Pess           200         PE3200         964 9         S         0.2         2090         9.0         2107         10.11         95.0         Pess           201         PE3200         964 9         S         0.2         2090         9.0         2108         10.1         10.1         10.5         Pess           202         PE3300         964.9         S         0.2         2090         0.0         2086         11.40         90.4         95.0         Pess           204         PE3400         964.9         S         0.2         2090         0.0         2137         9.40         10.3         Po.5         Pess           206         PE340         964.9         S         <	193	PE2850	954 9		0.2	2080	9.0	2125	10.49	102 2	95.0	Pass
196         PE300         9549         S.         0.2         200         9.0         211         9.47         1025         95.0         Pess           197         PE300         9549         S.         0.2         2090         0.0         2116         9.19         1025         95.0         Pess           199         PE3150         9549         S.         0.2         2090         9.0         2060         10.74         99.0         95.0         Pess           201         PE3200         9549         S.         0.2         2090         9.0         2102         10.73         101.1         95.0         Pess           202         PE320         9549         S.         0.2         2080         9.0         2102         10.73         101.1         95.0         Pess           203         PE208         9549         S.         0.2         2080         9.0         2161         11.0         10.1         95.0         Pass           205         PE360         9549         S.         0.2         2080         9.0         2161         11.0         10.1         95.0         Pass           206         PE360         9549 <td< td=""><td>194</td><td>PE2900</td><td>954 9</td><td>S</td><td>0.2</td><td>2080</td><td>9.0</td><td>2172</td><td>9.29</td><td>104.4</td><td>95.0</td><td>Pass</td></td<>	194	PE2900	954 9	S	0.2	2080	9.0	2172	9.29	104.4	95.0	Pass
197         PE300         9549         S         0.2         2000         9.0         213         10.28         10.25         95.0         Pess           198         PE3100         9549         S         0.2         2000         9.0         2001         10.74         99.0         95.0         Pess           200         PE3200         9549         S         0.2         2000         9.0         2109         8.9         10.7         95.0         Pess           201         PE3200         954.9         S         0.2         2000         9.0         2106         11.10         10.11         95.0         Pess           202         PE3300         954.9         S         0.2         2000         9.0         2167         9.1         10.1         95.0         Pess           204         PE3400         954.9         S         0.2         2000         0.0         2167         9.91         10.3         95.0         Pess           206         PE3500         954.9         S         0.2         2000         0.0         2132         10.2         9.5.0         Pess           207         PE3500         954.9         S <td< td=""><td>195</td><td>PE2950</td><td>954 9</td><td>S</td><td>0.2</td><td>2080</td><td>9.0</td><td>2163</td><td>9.65</td><td>104 0</td><td>95.0</td><td>Pass</td></td<>	195	PE2950	954 9	S	0.2	2080	9.0	2163	9.65	104 0	95.0	Pass
197         PE300         9549         S         0.2         2000         9.0         213         10.28         10.25         95.0         Pess           198         PE3100         9549         S         0.2         2000         9.0         2001         10.74         99.0         95.0         Pess           200         PE3200         9549         S         0.2         2000         9.0         2109         8.9         10.7         95.0         Pess           201         PE3200         954.9         S         0.2         2000         9.0         2106         11.10         10.11         95.0         Pess           202         PE3300         954.9         S         0.2         2000         9.0         2167         9.1         10.1         95.0         Pess           204         PE3400         954.9         S         0.2         2000         0.0         2167         9.91         10.3         95.0         Pess           206         PE3500         954.9         S         0.2         2000         0.0         2132         10.2         9.5.0         Pess           207         PE3500         954.9         S <td< td=""><td>196</td><td>PE3000</td><td>954 9</td><td>S</td><td>0.2</td><td>2080</td><td>9.0</td><td>2131</td><td>9.47</td><td>102.5</td><td>95.0</td><td>Pass</td></td<>	196	PE3000	954 9	S	0.2	2080	9.0	2131	9.47	102.5	95.0	Pass
198         PE3100         954.9         S         0.2         2080         90.0         2131         102.8         102.5         95.0         Pass           200         PE3150         954.9         S         0.2         2080         90.0         2189         8.9         10.7.7         95.0         Pass           201         PE3250         954.9         S         0.2         2080         90.0         2189         8.9         10.7.1         95.0         Pass           202         PE3300         954.9         S         0.2         2080         90.0         2086         11.40         104.1         95.0         Pass           203         PE300         954.9         S         0.2         2080         90.0         2016         11.40         104.1         95.0         Pass           206         PE3150         954.9         S         0.2         2080         90.0         2187         934         100.7         95.0         Pass           206         PE3500         954.9         S         0.2         2080         90.0         2180         10.26         101.7         95.0         Pass           209         PE3500         95	-											
199         PF3100         954.9         S         0.2         200         9.0         200         10.7.7         95.0         Pass           201         PF2320         954.9         S         0.2         2000         9.0         2182         10.7.3         101.1         95.0         Pass           202         PF3300         954.9         S         0.2         2000         9.0         2186         11.30         101.1         95.0         Pass           203         PF2300         954.9         S         0.2         2080         9.0         2088         11.30         104.1         85.0         Pass           204         PF3400         954.9         S         0.2         2080         9.0         2187         9.31         105.1         85.0         Pass           206         PF3600         854.9         S         0.2         2080         9.0         2187         9.44         10.31         85.0         Pass           206         PF3500         854.9         S         0.2         2080         9.0         2186         10.34         85.0         Pass           210         PF370         854.9         S         0.2												
200         PF23200         954.9         S         0.2         2080         9.0         2192         9.8.9         106.7.         95.0         Pass           2021         PF23300         954.9         S         0.2         2080         9.0         2192         10.73         101.1         95.0         Pass           203         PF2068         954.9         S         0.2         2080         9.0         2088         11.40         194.1         95.0         Pass           204         PF2400         954.9         S         0.2         2080         9.0         2088         11.40         194.1         95.0         Pass           206         PF3500         954.9         S         0.2         2080         9.0         2187         9.94         10.3.4         95.0         Pass           206         PF2500         954.9         S         0.2         2080         9.0         2182         10.26         10.7         9.6.0         Pass           209         PF2560         954.9         S         0.2         2080         9.0         2118         10.326         101.7         9.6.0         Pass           210         PF2500 <t< td=""><td>-</td><td>PE3100</td><td>954 9</td><td></td><td>0 2</td><td>2080</td><td>9.0</td><td>2131</td><td></td><td>102 5</td><td>95.0</td><td>Pass</td></t<>	-	PE3100	954 9		0 2	2080	9.0	2131		102 5	95.0	Pass
201         PE3200         964.9         S         0.2         2000         9.0         2102         101.1         95.0         Pass           202         PE3300         964.9         S         0.2         2080         9.0         2268         11.10         104.1         95.0         Pass           204         PE3400         964.9         S         0.2         2080         9.0         2288         11.40         99.4         95.0         Pass           205         PE3400         964.9         S         0.2         2080         9.0         2261         11.07         96.1         95.0         Pass           206         PE3500         964.9         S         0.2         2080         9.0         2167         9.0.4         101.7         95.0         Pass           209         PE3500         964.9         S         0.2         2080         9.0         2116         102.6         101.7         95.0         Pass           210         PE3700         964.9         S         0.2         2080         9.0         2142         1010         101.5         9.0         Pass           211         PE370         964.9         S	199	PE3150	954 9	S	0 2	2080	9.0	2060	10.74	99.0	95.0	Pass
202         PE300         964.9         S         0.2         2080         9.0         22166         11.00         104.1         95.0         Pass           203         PE306         964.9         S         0.2         2080         9.0         2187         931         105.1         95.0         Pass           205         PE340         984.9         S         0.2         2080         9.0         2187         931         105.1         95.0         Pass           206         PE350         984.9         S         0.2         2080         9.0         2187         9.41         103.7         45.0         Pass           207         PE3500         954.9         S         0.2         2080         9.0         2181         9.9         103.4         45.0         Pass           210         PE3500         954.9         S         0.2         2080         9.0         2116         1050         101.3         95.0         Pass           212         PE3800         955.2         S         0.2         2080         9.0         2164         19.30         100.7         95.0         Pass           212         PE3800         955.2	200	PE3200	954 9	S	02	2080	9.0	2199	8.99	105.7	95.0	Pass
202         PE300         964.9         S         0.2         2080         9.0         22166         11.00         104.1         95.0         Pass           203         PE306         964.9         S         0.2         2080         9.0         2187         931         105.1         95.0         Pass           205         PE340         984.9         S         0.2         2080         9.0         2187         931         105.1         95.0         Pass           206         PE350         984.9         S         0.2         2080         9.0         2187         9.41         103.7         45.0         Pass           207         PE3500         954.9         S         0.2         2080         9.0         2181         9.9         103.4         45.0         Pass           210         PE3500         954.9         S         0.2         2080         9.0         2116         1050         101.3         95.0         Pass           212         PE3800         955.2         S         0.2         2080         9.0         2164         19.30         100.7         95.0         Pass           212         PE3800         955.2	201	PE3250	954 9	S	0.2	2080	9.0	2102	10.73	101.1	95.0	Pass
203         PE2008         96.4.9         S         0.2         200         9.0         216         11.40         99.4.4         95.0         Pass           204         PE3400         964.9         S         0.2         2080         9.0         2167         9.31         105.1         95.0         Pass           205         PE3450         964.9         S         0.2         2080         9.0         2167         9.94         103.7         96.0         Pass           206         PE3500         964.9         S         0.2         2080         9.0         2162         10.24         10.2         96.0         Pass           206         PE3400         964.9         S         0.2         2080         9.0         2112         10.24         10.2         96.0         Pass           211         PE370         964.9         S         0.2         2080         9.0         2112         10.11         10.15         85.0         Pass           213         PE380         965.2         S         0.2         2080         9.0         214.4         9.6         10.3.6         95.0         Pass           214         PE375         955.2	-											
204         PE3400         964.9         S         0.2         206         9.0         2167         9.31         105.1         95.0         Pess           205         PE3400         964.9         S         0.2         2080         9.0         2157         9.94         103.7         95.0         Pess           207         PE3500         954.9         S         0.2         2080         9.0         2157         9.94         103.7         95.0         Pess           208         PE3600         954.9         S         0.2         2080         9.0         211.6         10.6         101.7         95.0         Pess           201         PE3700         954.9         S         0.2         2080         9.0         211.6         10.16         10.5         95.0         Pess           211         PE3700         954.9         S         0.2         2080         9.0         215.4         10.01         10.5         95.0         Pess           213         PE3800         955.2         S         0.2         2080         9.0         215.4         9.56         10.3.6         95.0         Pess           214         PE3900         955.2 </td <td></td>												
205         PF3800         96.4.9         S         0.2         2080         9.0         2157         9.9.4         10.7         96.0         Pass           207         PF3350         964.9         S         0.2         2080         9.0         2157         9.9.4         103.4         95.0         Pass           208         PF3360         964.9         S         0.2         2080         9.0         2150         9.9.0         103.4         95.0         Pass           209         PF3360         964.9         S         0.2         2080         9.0         2116         10.50         101.7         95.0         Pass           211         PF3700         964.9         S         0.2         2080         9.0         2112         10.01         101.5         95.0         Pass           213         PF3860         955.2         S         0.2         2080         9.0         2154         9.56         103.6         95.0         Pass           214         PF2850         955.2         S         0.2         2080         9.0         2154         9.56         103.6         95.0         Pass           215         PF2875         955.2<	-	PE2068	954.9		0.2	2080	9.0	2068	11.40	99.4	95 0	Pass
206         PE3500         984.9         S         0.2         2080         9.0         2157         9.94         103.7         96.0         Pass           207         PE3560         964.9         S         0.2         2080         9.0         2132         10.24         102.5         96.0         Pass           208         PE3560         954.9         S         0.2         2080         9.0         2116         10.26         101.7         95.0         Pass           210         PE3500         954.9         S         0.2         2080         9.0         2116         10.26         101.7         95.0         Pass           211         PE3300         954.9         S         0.2         2080         9.0         210.4         10.01         101.7         95.0         Pass           213         PE3300         955.2         S         0.2         2080         9.0         215.4         9.88         103.8         95.0         Pass           216         PE2825         955.2         S         0.2         2080         9.0         215.9         8.89         103.8         95.0         Pass           216         PE2825         955.	204	PE3400	954.9	S	0.2	2080	9.0	2187	9.31	105.1	95.0	Pass
206         PE3500         984.9         S         0.2         2080         9.0         2157         9.94         103.7         96.0         Pass           207         PE3560         964.9         S         0.2         2080         9.0         2132         10.24         102.5         96.0         Pass           208         PE3560         954.9         S         0.2         2080         9.0         2116         10.26         101.7         95.0         Pass           210         PE3500         954.9         S         0.2         2080         9.0         2116         10.26         101.7         95.0         Pass           211         PE3300         954.9         S         0.2         2080         9.0         210.4         10.01         101.7         95.0         Pass           213         PE3300         955.2         S         0.2         2080         9.0         215.4         9.88         103.8         95.0         Pass           216         PE2825         955.2         S         0.2         2080         9.0         215.9         8.89         103.8         95.0         Pass           216         PE2825         955.	205	PE3450	954.9	S	0.2	2080	9.0	2061	11 07	99.1	95.0	Pass
207         PE3850         954.9         S.         0.2         2080         9.0         2150         9.99         103.4         95.0         Peass           208         PE3800         954.9         S.         0.2         2080         9.0         2118         10 24         1025         95.0         Peass           210         PE3700         954.9         S.         0.2         2080         9.0         2116         10 26         101.7         95.0         Peass           211         PE370         954.9         S.         0.2         2080         9.0         2112         10 01         101.5         95.0         Peass           212         PE3850         955.2         S.         0.2         2080         9.0         2154         95.0         Peass           214         PE3850         955.2         S.         0.2         2080         9.0         2159         8.89         103.8         95.0         Peass           215         PE2775         955.2         S.         0.2         2080         9.0         2159         8.89         103.8         95.0         Peass           216         PE2875         955.2         S. <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td></t<>											-	
208         PE3800         954.9         S         0.2         2080         9.0         2112         10 26         102.5         95.0         Peass           209         PE3800         954.9         S         0.2         2080         9.0         2116         10 26         101.7         95.0         Peass           211         PE3800         954.9         S         0.2         2080         9.0         2112         1011         011.7         95.0         Peass           212         PE3800         955.2         S         0.2         2080         9.0         2170         9.94         104.3         95.0         Peass           214         PE390         955.2         S         0.2         2080         9.0         2154         9.56         103.6         95.0         Peass           216         PE225         955.2         S         0.2         2080         9.0         2113         10.16         101.6         95.0         Peass           218         PE225         955.2         S         0.2         2080         9.0         2119         8.06         106.7         96.0         Peass           220         PE 2375         965											+	
209         PE360         954.9         S         0.2         2080         9.0         2116         10.26         1017         95.0         Pass           211         PE3700         954.9         S         0.2         2080         9.0         2112         10.01         1015         95.0         Pass           212         PE3800         954.9         S         0.2         2080         9.0         2112         10.01         1015         95.0         Pass           213         PE3850         955.2         S         0.2         2080         9.0         2164         9.56         103.6         95.0         Pass           214         PE3850         955.2         S         0.2         2080         9.0         2169         8.89         103.8         95.0         Pass           215         PE2875         955.2         S         0.2         2080         9.0         2101         9.80         101.0         85.0         Pass           216         PE3975         955.2         S         0.2         2080         9.0         2207         9.80         9.99         95.0         Pass           219         PE3975         955.2												
210         PE3700         954.9         S         0.2         2080         9.0         2116         10.60         10.13         95.0         Peass           211         PE3800         954.9         S         0.2         2080         9.0         2014         10.90         100.7         95.0         Peass           213         PE3850         955.2         S         0.2         2080         9.0         2170         9.44         10.43         95.0         Peass           214         PE3900         955.2         S         0.2         2080         9.0         2154         9.56         10.36         95.0         Peass           216         PE2825         955.2         S         0.2         2080         9.0         2113         10.16         101.6         95.0         Pass           217         PE325         955.2         S         0.2         2080         9.0         2101         9.98         101.0         95.0         Pass           218         PE325         955.2         S         0.2         2080         9.0         2201         95.0         Pass           220         PE325         955.2         S         0.2												
211         PE3750         954.9         S         0.2         2080         9.0         2112         10.01         10.15         95.0         Peass           213         PE3860         955.2         S         0.2         2080         9.0         2170         9.94         10.03         95.0         Peass           214         PE3800         955.2         S         0.2         2080         9.0         2170         9.94         10.03         95.0         Peass           216         PE2775         955.2         S         0.2         2080         9.0         2113         10.16         95.0         Peass           216         PE2875         955.2         S         0.2         2080         9.0         2113         10.16         95.0         Peass           218         PE2875         955.2         S         0.2         2080         9.0         2101         9.9.9         96.0         Pass           220         PE325         955.2         S         0.2         2080         9.0         2219         95.0         Pass           222         PE3125         955.2         S         0.2         2080         9.0         2221												
212         PE3800         954.9         S         0.2         2080         9.0         2094         10.90         100.7         950.0         Peass           214         PE3800         955.2         S         0.2         2080         9.0         2154         9.56         103.6         95.0         Pass           215         PE2775         955.2         S         0.2         2080         9.0         2154         9.56         103.6         95.0         Pass           216         PE2825         955.2         S         0.2         2080         9.0         2113         10.16         101.6         95.0         Pass           217         PE2825         955.2         S         0.2         2080         9.0         2101         9.98         101.0         95.0         Pass           218         PE2925         955.2         S         0.2         2080         9.0         2219         8.05         105.7         950.0         Pass           220         PE325         955.2         S         0.2         2080         9.0         2271         6.58         109.2         950.0         Pass           222         PE3125         955.2<												
213       PE3850       955.2       S       0.2       2080       9.0       2170       9.94       104.3       95.0       Pass         214       PE300       955.2       S       0.2       2080       9.0       2154       9.56       103.6       95.0       Pass         216       PE2275       955.2       S       0.2       2080       9.0       2113       10.16       101.6       96.0       Pass         217       PE2375       955.2       S       0.2       2080       9.0       2016       9.97       100.8       96.0       Pass         218       PE2375       955.2       S       0.2       2080       9.0       2017       9.90       99.9       95.0       Pass         220       PE325       955.2       S       0.2       2080       9.0       2232       8.06       107.3       96.0       Pass         221       PE3175       955.2       S       0.2       2080       9.0       2237       7.42       106.7       95.0       Pass         222       PE 3125       955.2       S       0.2       2080       9.0       2218       7.42       106.7       95.0 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>												
214         PE3900         955.2         S         0.2         2080         9.0         2158         8.89         103.6         95.0         Pass           216         PE2825         955.2         S         0.2         2080         9.0         2113         10.16         101.6         96.0         Pass           217         PE 2875         955.2         S         0.2         2080         9.0         2113         10.16         101.6         96.0         Pass           218         PE2975         955.2         S         0.2         2080         9.0         2011         9.98         101.0         95.0         Pass           219         PE 2975         955.2         S         0.2         2080         9.0         2077         9.60         96.0         Pass           221         PE 3075         955.2         S         0.2         2080         9.0         2220         7.42         106.7         95.0         Pass           2221         PE 3175         955.2         S         0.2         2080         9.0         2220         7.42         106.7         95.0         Pass           223         PE 3175         955.2         S </td <td></td>												
15         PE2775         985.2         S         0.2         2080         9.0         2159         8.89         103.8         95.0         Pass           217         PE2875         985.2         S         0.2         2080         9.0         2013         10.16         101.6         95.0         Pass           218         PE2875         985.2         S         0.2         2080         9.0         2011         9.98         101.0         95.0         Pass           219         PE2875         985.2         S         0.2         2080         9.0         2017         9.99         99.9         95.0         Pass           221         PE3075         955.2         S         0.2         2080         9.0         2232         8.08         107.3         95.0         Pass           222         PE3175         955.2         S         0.2         2080         9.0         2230         7.42         106.7         95.0         Pass           223         PE3175         955.2         S         0.2         2080         9.0         2220         7.42         106.7         95.0         Pass           224         PE3276         955.2												
216         PE2825         985.2         S         0.2         2080         9.0         2113         10.16         101.6         95.0         Pass           217         PE2825         985.2         S         0.2         2080         9.0         2101         9.98         1010         95.0         Pass           218         PE2825         985.2         S         0.2         2080         9.0         2101         9.98         1010         95.0         Pass           220         PE2325         955.2         S         0.2         2080         9.0         2199         8.05         105.7         95.0         Pass           221         PE3075         955.2         S         0.2         2080         9.0         2222         8.06         107.3         95.0         Pass           2223         PE3175         955.2         S         0.2         2080         9.0         2222         6.65         106.8         95.0         Pass           224         PE3375         955.2         S         0.2         2080         9.0         2188         8.27         103.8         95.0         Pass           225         PE3375         955.2												
217         PE 2875         955.2         S         0.2         2000         9.0         2010         9.97         10.0         85.0         Pass           219         PE 2975         955.2         S         0.2         2080         9.0         2101         9.98         101.0         95.0         Pass           220         PE 2325         955.2         S         0.2         2080         9.0         219         8.05         105.7         95.0         Pass           221         PE 3075         955.2         S         0.2         2080         9.0         2232         8.08         107.3         95.0         Pass           222         PE 3175         955.2         S         0.2         2080         9.0         2220         7.42         106.7         95.0         Pass           224         PE 3275         955.2         S         0.2         2080         9.0         2218         8.27         103.8         95.0         Pass           226         PE 3375         955.2         S         0.2         2080         9.0         2148         9.46         103.3         95.0         Pass           227         PE 3375         955.2												
18         PE2925         95.2         S         0.2         200         9.0         2101         9.88         101 0         95.0         Pass           219         PE2325         955.2         S         0.2         2000         9.0         2077         9.90         99.9         95.0         Pass           221         PE3075         955.2         S         0.2         2080         9.0         2232         8.08         105.7         95.0         Pass           222         PE3175         955.2         S         0.2         2080         9.0         2220         7.42         106.7         95.0         Pass           223         PE3175         955.2         S         0.2         2080         9.0         2220         7.42         106.7         95.0         Pass           224         PE325         955.2         S         0.2         2080         9.0         2220         7.42         106.7         95.0         Pass           225         PE325         955.2         S         0.2         2080         9.0         2168         8.27         103.8         95.0         Pass           226         PE3375         955.2												
19         PE 2975         955.2         S         0.2         2080         9.0         2077         9.90         99.9         95.0         Pass           220         PE 3226         955.2         S         0.2         2080         9.0         2232         8.08         107.3         95.0         Pass           221         PE 3125         955.2         S         0.2         2080         9.0         2232         8.08         107.3         95.0         Pass           223         PE 3175         955.2         S         0.2         2080         9.0         2220         7.42         106.7         95.0         Pass           224         PE 3275         955.2         S         0.2         2080         9.0         2188         8.27         103.8         95.0         Pass           226         PE 3375         955.2         S         0.2         2080         9.0         2148         9.46         103.3         95.0         Pass           227         PE 3375         955.2         S         0.2         2080         9.0         2127         9.81         102.0         9.0         Pass           228         PE 3426         955.2<												
220         PE 2325         955.2         S         0.2         2080         9.0         2199         8.05         105.7         95.0         Pass           221         PE 3075         955.2         S         0.2         2080         9.0         2232         8.08         107.3         96.0         Pass           223         PE 3125         955.2         S         0.2         2080         9.0         2220         7.42         106.7         95.0         Pass           224         PE 3225         955.2         S         0.2         2080         9.0         2220         7.42         106.8         95.0         Pass           225         PE325         955.2         S         0.2         2080         9.0         2158         8.27         103.8         95.0         Pass           226         PE 3375         955.2         S         0.2         2080         9.0         2103         10.11         101.1         95.0         Pass           227         PE 3375         955.2         S         0.2         2080         9.0         2127         9.81         102.3         95.0         Pass           230         PE 3475         955.												
221         PE 3075         955.2         S         0.2         2080         9.0         2232         8.08         107.3         95.0         Pass           222         PE 3175         955.2         S         0.2         2080         9.0         2271         6.58         109.2         95.0         Pass           224         PE 3175         955.2         S         0.2         2080         9.0         2222         6.65         106.8         95.0         Pass           226         PE 3325         955.2         S         0.2         2080         9.0         2188         8.27         103.8         95.0         Pass           226         PE 3375         955.2         S         0.2         2080         9.0         2148         9.46         103.3         95.0         Pass           227         PE 3475         955.2         S         0.2         2080         9.0         2121         9.61         102.3         95.0         Pass           229         PE 3475         955.2         S         0.2         2080         9.0         2121         9.15         102.0         95.0         Pass           231         PE 3675         955												
222         PE 3125         955.2         S         0.2         2080         9.0         2271         6.58         109.2         95.0         Pass           223         PE 3175         955.2         S         0.2         2080         9.0         2220         7.42         106.7         95.0         Pass           224         PE 3225         955.2         S         0.2         2080         9.0         2222         6.65         106.6         95.0         Pass           226         PE 3275         955.2         S         0.2         2080         9.0         2168         8.27         103.8         95.0         Pass           226         PE 3375         955.2         S         0.2         2080         9.0         2103         10.11         101.1         95.0         Pass           228         PE 3425         955.2         S         0.2         2080         9.0         2121         9.81         102.3         95.0         Pass           230         PE 3625         955.2         S         0.2         2080         9.0         2173         8.47         104.5         95.0         Pass           231         PE 3675         95												
PE 3175         955.2         S         0.2         2080         9.0         2220         7.42         106.7         95.0         Pass           224         PE 3225         955.2         S         0.2         2080         9.0         2222         6.65         106.8         95.0         Pass           225         PE 3275         955.2         S         0.2         2080         9.0         2168         8.27         103.8         95.0         Pass           226         PE 3325         955.2         S         0.2         2080         9.0         2148         9.46         103.3         95.0         Pass           227         PE 3375         955.2         S         0.2         2080         9.0         2103         10.11         101.1         95.0         Pass           228         PE 3475         955.2         S         0.2         2080         9.0         2173         8.47         104.5         95.0         Pass           230         PE 3675         955.2         S         0.2         2080         9.0         2190         9.11         106.3         95.0         Pass           231         PE 3675         955.2												
224PE 3225955 2S0.220809.022226.65106 895.0Pass225PE 3275955 2S0.220809.021688.27103 895.0Pass226PE 3255955 2S0.220809.021489.46103 395.0Pass227PE 3375955 2S0.220809.0210310.11101.195.0Pass228PE 3475955 2S0.220809.021279.81102 395.0Pass229PE 3475955 2S0.220809.021219.15102 095.0Pass230PE 3525955 2S0.220809.021738.47104 595.0Pass231PE3675955 2S0.220809.021909.11105 395.0Pass233PE 3675955 2S0.220809.021909.11105 395.0Pass234PE375955 2S0.220809.021229.64101 995.0Pass234PE 3675955 2S0.220809.021788.84104.795.0Pass235PE Aburnent956S0.220809.021248.23102.195.0Pass236PE 30urment956S0.2												
225PE3275955.2S0.220809.021588.27103.895.0Pass226PE 3325955.2S0.220809.021489.46103.395.0Pass227PE 3375955.2S0.220809.0210310.11101.195.0Pass228PE 3425955.2S0.220809.021279.81102.395.0Pass229PE 3475955.2S0.220809.021219.15102.095.0Pass230PE 3625955.2S0.220809.021738.47104.595.0Pass231PE3675955.2S0.220809.021909.11105.395.0Pass232PE3625955.2S0.220809.021788.84104.795.0Pass233PE 3675955.2S0.220809.021788.84104.795.0Pass234PE3725955.2S0.220809.021229.61101.995.0Pass235PE Abutment958S0.220809.021527.84103.595.0Pass236PE Abutment958S0.220809.021248.23102.195.0Pass236PE Abutment955.5S0.2 </td <td></td>												
226         PE 3325         955.2         S         0.2         2080         9.0         2148         9.46         103.3         95.0         Pass           227         PE 3375         955.2         S         0.2         2080         9.0         2103         10.11         101.1         95.0         Pass           228         PE 3425         955.2         S         0.2         2080         9.0         2127         9.81         102.3         95.0         Pass           229         PE 3475         955.2         S         0.2         2080         9.0         2121         9.15         102.0         95.0         Pass           230         PE 3625         955.2         S         0.2         2080         9.0         217.3         8.47         104.5         95.0         Pass           231         PE3675         955.2         S         0.2         2080         9.0         2190         9.11         105.3         95.0         Pass           233         PE 3675         955.2         S         0.2         2080         9.0         217.8         8.84         104.7         95.0         Pass           234         PE375         955												
227PE 3375955.2S0.220809.0210310.11101.195.0Pass228PE 3425955.2S0.220809.021279.81102.395.0Pass229PE 3475955.2S0.220809.021219.15102.095.0Pass230PE 3525955.2S0.220809.021738.47104.595.0Pass231PE3575955.2S0.220809.020969.27100.895.0Pass232PE 3675955.2S0.220809.021909.11105.395.0Pass233PE 3675955.2S0.220809.021788.84104.795.0Pass234PE3725955.2S0.220809.021229.61101.995.0Pass236PE Abutment958S0.220809.021248.23102.195.0Pass236PE Abutment956.5S0.220809.021248.23102.195.0Pass237PE3775955.5S0.220809.021997.37105.795.0Pass238PE3825955.2S0.220809.021997.37105.795.0Pass239PE3875955.5S0.2												
228         PE 3425         955 2         S         0.2         2080         9.0         2127         9.81         102 3         95.0         Pass           229         PE 3475         955 2         S         0.2         2080         9.0         2121         9.15         102 0         95.0         Pass           230         PE 3525         955 2         S         0.2         2080         9.0         2173         8.47         104 5         95.0         Pass           231         PE3575         955 2         S         0.2         2080         9.0         2196         9.27         100 8         95.0         Pass           233         PE 3675         955 2         S         0.2         2080         9.0         2178         8.84         104.7         95.0         Pass           234         PE3675         955 2         S         0.2         2080         9.0         2120         9.61         101 9         95.0         Pass           235         PE Abutment         958         S         0.2         2080         9.0         2124         8.23         102.1         95.0         Pass           236         PE Abutment <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>												
229PE 3475955 2S0.220809.021219.15102 095.0Pass230PE 3525955 2S0.220809.021738.47104 595.0Pass231PE3575955 2S0.220809.020969.27100 895.0Pass232PE3625955 2S0.220809.021909.11105 395.0Pass233PE 3675955 2S0.220809.021788.84104.795.0Pass234PE3725955 2S0.220809.021209.61101 99.5.0Pass235PE Abutment958S0.220809.021527.84103 595.0Pass236PE Abutment956S0.220809.021248.23102.195.0Pass237PE3725955.5S0.220809.021997.37105.795.0Pass238PE3825955.5S0.220809.021328.88105.495.0Pass239PE3875955.5S0.220809.021377.16102.695.0Pass240PE2800955.5S0.220809.021377.16102.795.0Pass244PE2900955.5S0.22												
230         PE 3525         955 2         S         0.2         2080         9.0         2173         8.47         104 5         95.0         Pass           231         PE3675         955 2         S         0.2         2080         9.0         2096         9.27         100 8         95.0         Pass           232         PE3625         955 2         S         0.2         2080         9.0         2190         9.11         100 5.3         95.0         Pass           233         PE 3675         955 2         S         0.2         2080         9.0         2178         8.84         104.7         95.0         Pass           234         PE3725         955 2         S         0.2         2080         9.0         2152         7.84         103 5         95.0         Pass           235         PE Abutment         956         S         0.2         2080         9.0         2124         8.23         102.1         95.0         Pass           236         PE Abutment         956         S         0.2         2080         9.0         2124         8.23         102.1         95.0         Pass           237         PE375         95												
231         PE3575         955.2         S         0.2         2080         9.0         2096         9.27         100.8         95.0         Pass           232         PE3625         955.2         S         0.2         2080         9.0         2190         9.11         1053         95.0         Pass           233         PE3675         955.2         S         0.2         2080         9.0         2178         8.84         101.47         95.0         Pass           234         PE3725         955.2         S         0.2         2080         9.0         2120         9.61         101.9         95.0         Pass           235         PE Abutment         956         S         0.2         2080         9.0         2122         7.84         103.5         95.0         Pass           236         PE Abutment         956         S         0.2         2080         9.0         2124         8.23         102.1         95.0         Pass           237         PE375         955.5         S         0.2         2080         9.0         2199         7.37         105.7         95.0         Pass           238         PE3875         955.5<												
232         PE3625         955.2         S         0.2         2080         9.0         2190         9.11         105.3         95.0         Pass           233         PE 3675         955.2         S         0.2         2080         9.0         2178         8.84         104.7         95.0         Pass           234         PE3725         955.2         S         0.2         2080         9.0         2120         9.61         101.9         95.0         Pass           235         PE Abutment         958         S         0.2         2080         9.0         2152         7.84         103.5         95.0         Pass           236         PE Abutment         956         S         0.2         2080         9.0         2124         8.23         102.1         95.0         Pass           237         PE3775         955.5         S         0.2         2080         9.0         2199         7.37         105.7         95.0         Pass           238         PE3875         955.5         S         0.2         2080         9.0         2192         8.88         106.4         95.0         Pass           239         PE3875         955.												
233PE 3675955.2S0.220809.021788.84104.795.0Pass234PE3725955.2S0.220809.021209.61101.995.0Pass235PE Abutment958S0.220809.021527.84103.595.0Pass236PE Abutment956S0.220809.021248.23102.195.0Pass237PE3775955.5S0.220809.021997.37105.795.0Pass238PE3825955.5S0.220809.021928.88105.495.0Pass239PE3875955.5S0.220809.021346.93102.695.0Pass240PE2800955.5S0.220809.021346.93106.195.0Pass241PE2800955.5S0.220809.022536.53108.395.0Pass242PE2900955.5S0.220809.022536.53108.395.0Pass243PE3950955.5S0.220809.021346.93106.195.0Pass244PE3000955.5S0.220809.022536.53108.395.0Pass243PE2950955.5S0.22080												
234         PE3725         955.2         S         0.2         2080         9.0         2120         9.61         101.9         95.0         Pass           235         PE Abutment         958         S         0.2         2080         9.0         2152         7.84         103.5         95.0         Pass           236         PE Abutment         956         S         0.2         2080         9.0         2124         8.23         102.1         95.0         Pass           237         PE3775         955.5         S         0.2         2080         9.0         2199         7.37         105.7         95.0         Pass           238         PE3875         955.5         S         0.2         2080         9.0         2199         7.37         105.7         95.0         Pass           239         PE3875         955.5         S         0.2         2080         9.0         2134         6.93         102.6         95.0         Pass           240         PE2800         955.5         S         0.2         2080         9.0         2137         7.16         102.7         95.0         Pass           241         PE2800         955.5												
235         PE Abutment         958         S         0.2         2080         9 0         2152         7.84         103 5         95 0         Pass           236         PE Abutment         956         S         0.2         2080         9 0         2152         7.84         103 5         95 0         Pass           237         PE3775         955.5         S         0.2         2080         9.0         2199         7.37         105.7         95 0         Pass           238         PE3825         955.2         S         0.2         2080         9.0         2199         7.37         105.7         95 0         Pass           239         PE3875         955.5         S         0.2         2080         9.0         2134         6.93         102.6         95.0         Pass           240         PE2800         955.5         S         0.2         2080         9.0         2137         7.16         102.7         95.0         Pass           241         PE2800         955.5         S         0.2         2080         9.0         22137         7.16         102.7         95.0         Pass           243         PE2900         955.												
236         PE Abutment         956         S         0.2         2080         9.0         2124         8.23         102.1         95.0         Pass           237         PE3775         955.5         S         0.2         2080         9.0         2199         7.37         105.7         95.0         Pass           238         PE3825         955.5         S         0.2         2080         9.0         2192         8.88         105.4         95.0         Pass           239         PE3875         955.5         S         0.2         2080         9.0         2134         6.93         102.6         95.0         Pass           240         PE2800         955.5         S         0.2         2080         9.0         2134         6.93         102.6         95.0         Pass           240         PE2800         955.5         S         0.2         2080         9.0         2207         7.38         106.1         95.0         Pass           241         PE2800         955.5         S         0.2         2080         9.0         2253         6.53         108.3         95.0         Pass           243         PE2900         955.5 <td></td>												
237         PE3775         955.5         S         0.2         2080         9.0         2199         7.37         105.7         95.0         Pass           238         PE3825         955.5         S         0.2         2080         9.0         2192         8.88         105.4         95.0         Pass           239         PE3875         955.5         S         0.2         2080         9.0         2134         6.93         102.6         95.0         Pass           240         PE2800         955.5         S         0.2         2080         9.0         2207         7.38         106.1         95.0         Pass           241         PE2800         955.5         S         0.2         2080         9.0         2137         7.16         102.7         95.0         Pass           242         PE2900         955.5         S         0.2         2080         9.0         2253         6.53         108.3         95.0         Pass           243         PE2950         955.5         S         0.2         2080         9.0         2068         10.47         99.4         95.0         Pass           243         PE2950         955.5												
238         PE3825         955.2         S         0.2         2080         9.0         2192         8.88         105.4         95.0         Pass           239         PE3875         955.5         S         0.2         2080         9.0         2192         8.88         105.4         95.0         Pass           240         PE2800         955.5         S         0.2         2080         9.0         2134         6.93         102.6         95.0         Pass           241         PE2850         955.5         S         0.2         2080         9.0         2137         7.16         100.7         95.0         Pass           242         PE2900         955.5         S         0.2         2080         9.0         2137         7.16         100.7         95.0         Pass           242         PE2900         955.5         S         0.2         2080         9.0         2253         6.53         108.3         95.0         Pass           243         PE2950         955.5         S         0.2         2080         9.0         2190         8.31         105.3         95.0         Pass           244         PE3050         955.5												
239         PE3875         955.5         S         0.2         2080         9.0         2134         6.93         102.6         95.0         Pass           240         PE2800         955.5         S         0.2         2080         9.0         2207         7.38         106.1         95.0         Pass           241         PE2850         955.5         S         0.2         2080         9.0         2137         7.16         102.7         95.0         Pass           242         PE2900         955.5         S         0.2         2080         9.0         2253         6.53         108.3         95.0         Pass           243         PE2950         955.5         S         0.2         2080         9.0         2253         6.53         108.3         95.0         Pass           243         PE2950         955.5         S         0.2         2080         9.0         2068         10.47         99.4         95.0         Pass           244         PE3050         955.5         S         0.2         2080         9.0         2115         8.87         101.7         95.0         Pass           245         PE3050         955.5												
240         PE2800         955.5         S         0.2         2080         9.0         2207         7.38         106.1         95.0         Pass           241         PE2800         955.5         S         0.2         2080         9.0         2137         7.16         102.7         95.0         Pass           242         PE2900         955.5         S         0.2         2080         9.0         2253         6.53         108.3         95.0         Pass           243         PE2950         955.5         S         0.2         2080         9.0         2268         10.47         99.4         95.0         Pass           243         PE2950         955.5         S         0.2         2080         9.0         2068         10.47         99.4         95.0         Pass           244         PE3050         955.5         S         0.2         2080         9.0         2168         10.47         99.4         95.0         Pass           245         PE3050         955.5         S         0.2         2080         9.0         2115         8.87         101.7         95.0         Pass           246         PE3100         955.5												
241         PE2850         955.5         S         0.2         2080         9.0         2137         7.16         102.7         95.0         Pass           242         PE2900         955.5         S         0.2         2080         9.0         2253         6.53         108.3         95.0         Pass           243         PE2950         955.5         S         0.2         2080         9.0         2068         10.47         99.4         95.0         Pass           244         PE3000         955.5         S         0.2         2080         9.0         2068         10.47         99.4         95.0         Pass           244         PE3000         955.5         S         0.2         2080         9.0         2190         8.31         105.3         95.0         Pass           245         PE3050         955.5         S         0.2         2080         9.0         2115         8.87         101.7         95.0         Pass           246         PE3100         955.5         S         0.2         2080         9.0         2036         110.3         97.9         95.0         Pass												
242         PE2900         955.5         S         0.2         2080         9.0         2253         6.53         108.3         95.0         Pass           243         PE2950         955.5         S         0.2         2080         9.0         2068         10.47         99.4         95.0         Pass           244         PE3000         955.5         S         0.2         2080         9.0         2190         8.31         105.3         95.0         Pass           245         PE3050         955.5         S         0.2         2080         9.0         2115         8.87         101.7         95.0         Pass           246         PE3100         955.5         S         0.2         2080         9.0         2036         11.03         97.9         95.0         Pass												
243         PE2950         955.5         S         0.2         2080         9.0         2068         10.47         99.4         95.0         Pass           244         PE3000         955.5         S         0.2         2080         9.0         2190         8.31         105.3         95.0         Pass           245         PE3050         955.5         S         0.2         2080         9.0         2115         8.87         101.7         95.0         Pass           246         PE3100         955.5         S         0.2         2080         9.0         2036         11.03         97.9         95.0         Pass												
244         PE3000         955.5         S         0.2         2080         9.0         2190         8.31         105.3         95.0         Pass           245         PE3050         955.5         S         0.2         2080         9.0         2115         8.87         101.7         95.0         Pass           246         PE3100         955.5         S         0.2         2080         9.0         2036         11.03         97.9         95.0         Pass												
245         PE3050         955.5         S         0.2         2080         9.0         2115         8.87         101.7         95.0         Pass           246         PE3100         955.5         S         0.2         2080         9.0         2036         1103         97.9         95.0         Pass												
246         PE3100         955.5         S         0.2         2080         9.0         2036         11.03         97.9         95.0         Pass												
		PE3050									95.0	Pass
247 PE3150 955.5 S 0.2 2080 9.0 2172 9.62 104.4 95.0 Pass												
	246											

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248	PE3200	955.5	S	0.2	2080	9.0	1974	10 86	94.9	95 0	Fail
249	PE3200	955.5	S	0.2	2080	9.0	2079	9.60	100 0	95 0	Pass
250	PE3250	955.5	S	0.2	2080	9.0	2202	8.20	105 9	95 0	Pass
251	PE3300	955.5	S	0.2	2080	9.0	2097	9.36	100 8	95.0	Pass
252	PE3350	955.5	S	0.2	2080	9.0	2219	8.17	106.7	95.0	Pass
253	PE3400	955.5	S	0.2	2080	9.0	2135	9.08	102.6	95.0	Pass
254	PE3450	955.5	S	0.2	2080	9.0	2184	8.49	102.0	95.0	Pass
255	PE3500	955.5	s	0.2	2080	9.0	2199	8.54	105.7	95.0	Pass
256		955.5	S	0.2	2080	9.0	2199	9.79		95.0	
	PE3550								101 8		Pass
257	PE3600	955.5	S	0.2	2080	9.0	2167	10 26	104 2	95.0	Pass
258	PE3650	955.8	S	0.2	2080	9.0	2141	8.89	102 9	95.0	Pass
260	PE3700	955.8	S	0.2	2080	9.0	2064	10 96	99.2	95.0	Pass
261	PE3750	955.8	S	0.2	2080	9.0	2234	8.83	107.4	95.0	Pass
262	PE3800	955.8	S	0.2	2080	9.0	2118	10 92	101 8	95.0	Pass
263	PE3850	955.8	S	0.2	2080	9.0	2044	11 53	98.3	95.0	Pass
264	PE4075	955.5	S	0.2	2080	9.0	2054	11.48	98.8	95.0	Pass
265	PE4125	955.5	S	0.2	2080	9.0	2111	10.44	101 5	95.0	Pass
266	PE4175	955.5	S	0.2	2080	9.0	2027	11 39	97.5	95.0	Pass
267	PE4225	955.5	S	0.2	2080	9.0	2057	10 98	98.9	95.0	Pass
268	PE4275	955.5	S	0.2	2080	9.0	2077	11.43	99.9	95.0	Pass
269	PE4325	955.5	s	0.2	2080	9.0	2067	10.43	99.4	95.0	Pass
	PE4375		s								
270		955 5		0.2	2080	9.0	2039	11.18	98.0	95.0	Pass
271	PE2775	955 8	S	0.2	2080	9.0	2077	8.82	99.9	95.0	Pass
272	PE2850	955 8	S	0.2	2080	9.0	2208	8.48	106 2	95.0	Pass
273	PE2900	955 8	S	0.2	2080	9.0	2155	8.99	103 6	95.0	Pass
274	PE2950	955 8	S	0.2	2080	9.0	2089	9.01	100.4	95.0	Pass
275	PE3000	955 8	S	0.2	2080	9.0	2238	8.10	107 6	95.0	Pass
276	PE3050	955 8	S	0.2	2080	9.0	2167	7.09	104 2	95.0	Pass
277	PE3100	955 8	S	0.2	2080	9.0	2139	8.39	102 8	95.0	Pass
278	PE4400	955 2	S	0.2	2080	9.0	2168	9.83	104 2	95.0	Pass
279	PE4450	955 2	S	0.2	2080	9.0	2029	9.61	97.5	95.0	Pass
280	PE3125	955 8	S	0.2	2080	9.0	2139	8.13	102.8	95.0	Pass
281	PE3175	955 8	S	0.2	2080	9.0	2100	8.68	102.0	95.0	Pass
282	PE3225	955 8	s	0.2	2080	9.0	2208	8.52	106 2	95.0	Pass
283	PE3225 PE3275	955 8	S	0.2	2080	9.0	2208	11 20	99.3	95.0	Pass
284	PE3225	955 8	S	02	2080	9.0	2163	9.91	104 0	95.0	Pass
285	PE3375	955 8	S	02	2080	9.0	2239	7.65	107 6	95.0	Pass
286	PE3425	955 8	S	02	2080	9.0	2171	9.19	104.4	95.0	Pass
287	PE3475	955 8	S	0 2	2080	9.0	2101	11 36	101 0	95.0	Pass
288	PE3525	955 8	S	0 2	2080	9.0	2146	10.16	103 2	95.0	Pass
289	PE3575	955 8	S	0 2	2080	9.0	2054	9.45	98.8	95.0	Pass
290	PE3625	955 8	S	0 2	2080	9.0	2119	9.35	101 9	95.0	Pass
291	PE3675	955 8	S	0 2	2080	9.0	2119	9.38	101 9	95.0	Pass
292	PE3725	955 8	S	02	2080	9.0	2158	9.13	103 8	95.0	Pass
293	PE3775	955 8	S	02	2080	9.0	2098	9.20	100 9	95.0	Pass
294	PE3825	956.1	S	02	2080	9.0	2033	10 58	97.7	95.0	Pass
295	PE3850	956.1	S	02	2080	9.0	2132	9.73	102 5	95.0	Pass
296	PE3900	956.1	S	02	2080	9.0	2102	10 88	102.0	95.0	Pass
297	PE4000	955 2	S	02	2080	9.0	2063	9.70	99.2	95.0	Pass
298	PE4050	955 6	S	02	2080	9.0	2065	9.70	99.3	95.0	Pass
299	PE4100	955 9	S	0 2	2080	9.0	2174	9.03	104 5	95.0	Pass
300	PE4150	955 9	S	0 2	2080	9.0	2094	8.65	100.7	95.0	Pass
301	PE4200	955.9	S	0.2	2080	9.0	2119	8.95	101 9	95 0	Pass
302	PE4250	955.9	S	0.2	2080	9.0	2233	8.60	107.4	95 0	Pass
303	PE4175	956.1	S	0.2	2080	9.0	2166	9.92	104.1	95 0	Pass
304	PE4125	956.1	S	0.2	2080	9.0	2170	9.37	104 3	95.0	Pass
305	PE4075	956.1	S	0.2	2080	9.0	2045	9.77	98.3	95.0	Pass
306	PE4025	956.1	S	0.2	2080	9.0	2173	9.25	104 5	95.0	Pass
307	PE4200	956.1	S	0.2	2080	9.0	2092	9.40	100.6	95.0	Pass
308	PE4300	955.8	s	0.2	2080	9.0	2069	10 38	99.5	95.0	Pass
309	PE4300	955.8		0.2		9.0		10 82	100 3	95.0	
			S		2080		2086				Pass
310	PE4375	955.8	S	0.2	2080	9.0	2153	9.38	103 5	95.0	Pass
311	PE4400	955.8	S	0.2	2080	9.0	2024	12 00	97.3	95.0	Pass
312	PE4450	955.6	S	0.2	2080	9.0	2038	12.11	98.0	95.0	Pass
313	ME2550	955.8	S	0.2	2080	9.0	2169	9.11	104 3	95.0	Pass
314	ME2525	955.8	S	0.2	2080	9.0	2067	10 54	99.4	95.0	Pass
315	ME2475	955.8	S	0.2	2080	9.0	2140	8.51	102 9	95.0	Pass
316	ME2425	955.8	S	0.2	2080	9.0	2141	9.07	102 9	95.0	Pass
317	ME2375	955.8	S	0.2	2080	9.0	2108	10.18	101 3	95.0	Pass
318	ME2325	955.8	S	0.2	2080	9.0	2129	9.93	102.4	95.0	Pass
319	ME2275	955.8	S	0.2	2080	9.0	2191	8.45	105 3	95.0	Pass
320	ME2225	955.8	S	0.2	2080	9.0	2148	9.03	103 3	95.0	Pass
321	ME2171	955.6	S	0.2	2080	9.0	2143	9.72	103 0	95.0	Pass
322	ME2125	955.6	S	0.2	2080	9.0	2152	8.92	103 5	95.0	Pass
323	ME2075	955.6	S	0.2	2080	9.0	2146	9.72	103 2	95.0	Pass
324	ME2025	955.5	S	0.2	2080	9.0	2191	8.74	105 3	95.0	Pass
325	PE4650	955.5	s	0.2	2080	9.0	2150	10 20	103.4	95.0	Pass
326	PE4600	955.5	S	0.2	2080	9.0	2130	9.27	101.4	95.0	Pass
320	PE4500	955.5	S	0.2	2080	9.0	2125	9.87	102 2	95.0	Pass
	PE4500 PE4700		S	0.2	2080	9.0	2125	9.87	102.2	95.0	
<u>328</u> 329	PE4700 PE4400	955.8 956.1	S	0.2	2080	9.0	2100	10 22			Pass Pass
					2080		2082	10 52 8.88	100.1 105.1	95.0	
						9.0	218b		1051	95.0	Pass
330	PE4450	955.8	S	0.2		~ ~ ~					
330 331	PE4450 PE4500	955.8 955.8	S S	0.2	2080	9.0	2107	8.69	101 3	95.0	Pass
330 331 332	PE4450 PE4500 PE4550	955.8 955.8 955 8	S S S	0.2	2080 2080	9.0	2107 2153	8.69 9.54	101 3 103 5	95.0 95.0	Pass Pass
330 331 332 333	PE4450 PE4500 PE4550 PE4600	955.8 955.8 955 8 955 5	S S S S	0.2 0.2 0.2	2080 2080 2080	9.0 9.0	2107 2153 2123	8.69 9.54 10 51	101 3 103 5 102.1	95.0 95.0 95.0	Pass Pass Pass
330 331 332 333 334	PE4450 PE4500 PE4550 PE4600 PE4700	955.8 955.8 955 8 955 5 955 5 955 8	S S S S S	0.2 0.2 0.2 0.2	2080 2080 2080 2080	9.0 9.0 9.0	2107 2153 2123 2122	8.69 9.54 10 51 2.69	101 3 103 5 102.1 102 0	95.0 95.0 95.0 95.0	Pass Pass Pass Pass
330 331 332 333 334 335	PE4450 PE4500 PE4550 PE4600 PE4700 PE4650	955.8 955.8 955 8 955 5 955 8 955 8 955 5	\$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0	2107 2153 2123 2122 2122 2128	8.69 9.54 10 51 2.69 9.08	101 3 103 5 102.1 102 0 102 3	95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass
330 331 332 333 334	PE4450 PE4500 PE4550 PE4600 PE4700	955.8 955.8 955 8 955 5 955 5 955 8	S S S S S	0.2 0.2 0.2 0.2	2080 2080 2080 2080	9.0 9.0 9.0	2107 2153 2123 2122	8.69 9.54 10 51 2.69	101 3 103 5 102.1 102 0	95.0 95.0 95.0 95.0	Pass Pass Pass Pass
330 331 332 333 334 335	PE4450 PE4500 PE4550 PE4600 PE4700 PE4650	955.8 955.8 955 8 955 5 955 8 955 8 955 5	\$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0	2107 2153 2123 2122 2122 2128	8.69 9.54 10 51 2.69 9.08	101 3 103 5 102.1 102 0 102 3	95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass
330 331 332 333 334 335 336 336 337	PE4450 PE4500 PE4550 PE4600 PE4700 PE4650 PE4550	955.8 955.8 955.8 955.5 955.8 955.8 955.5 955.8 955.8	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0 9.0	2107 2153 2123 2122 2122 2128 2091	8.69 9.54 10 51 2.69 9.08 10 51 9.39	101 3 103 5 102.1 102 0 102 3 100 5	95.0 95.0 95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass Pass Pass
330 331 332 333 334 335 336 337 338	PE4450 PE4500 PE4550 PE4600 PE4700 PE4650 PE4550 PE4600 PE4550	955.8 955.8 955 5 955 5 955 5 955 5 955 5 955 8 955 8 955 8 955 8	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0 9.0 9.0 9.0	2107 2153 2123 2122 2128 2091 2141 2119	8.69 9.54 10 51 2.69 9.08 10 51 9.39 8.93	101 3 103 5 102.1 102 0 102 3 100 5 102 9 101 9	95.0 95.0 95.0 95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass Pass Pass Pass
330 331 332 333 334 335 336 337 338 339	PE4450 PE4500 PE4500 PE4600 PE4700 PE4550 PE4550 PE4600 PE4550 ME1975	955.8 955.8 955.5 955.5 955.8 955.8 955.8 955.8 955.8 955.8 955.8	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	2107 2153 2123 2122 2128 2091 2141 2119 2170	8.69 9.54 10 51 2.69 9.08 10 51 9.39 8.93 7.95	101 3 103 5 102.1 102 0 102 3 100 5 102 9 101 9 104 3	95.0 95.0 95.0 95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass Pass Pass Pass
330 331 332 333 334 335 336 336 337 338 339 340	PE4450 PE4500 PE4500 PE4600 PE4700 PE4650 PE4550 PE4550 PE4550 ME1975 ME1925	955.8 955.8 955.5 955.5 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	2107 2153 2123 2122 2128 2091 2141 2119 2170 2143	8.69 9.54 10 51 2.69 9.08 10 51 9.39 8.93 7.95 7.77	101 3 103 5 102.1 102 0 102 3 100 5 102 9 101 9 104 3 103 0	95.0 95.0 95.0 95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass Pass Pass Pass
330 331 332 333 334 335 336 337 338 339 340 341	PE4450 PE4500 PE4500 PE4600 PE4600 PE4650 PE4550 PE4600 PE4550 ME1975 ME1925 ME1875	955.8 955.8 955.5 955.5 955.5 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	2107 2153 2123 2122 2128 2091 2141 2141 2170 2143 2206	8.69 9.54 10 51 2.69 9.08 10 51 9.39 8.93 7.95 7.77 7.54	101 3 103 5 102.1 102 0 102 3 100 5 102 9 101 9 104 3 103 0 106.1	95.0 95.0 95.0 95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass Pass Pass Pass
330 331 332 333 334 335 336 337 338 339 340 341 342	PE4450 PE4500 PE4550 PE4600 PE4650 PE4650 PE4550 PE4550 ME1975 ME1925 ME1925 ME1825	955.8 955.8 955.8 955.5 955.5 955.5 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8	ଚ ଚ	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	2107 2153 2123 2122 2128 2091 2141 2141 2119 2170 2143 2206 2170	8.69 9.54 10 51 2.69 9.08 10 51 9.39 8.93 7.95 7.77 7.54 8.22	101 3 103 5 102.1 102 0 102 3 100 5 102 9 101 9 104 3 103 0 106.1 104 3	95.0 95.0 95.0 95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass Pass Pass Pass
330 331 332 333 334 335 336 337 338 339 340 341 342 343	PE4450 PE4500 PE4550 PE4600 PE4700 PE4650 PE4550 PE4550 PE4550 ME1975 ME1925 ME1975 ME1825 ME1775	955.8 955.8 955.8 955.5 955.5 955.5 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	2107 2153 2123 2122 2128 2091 2141 2119 2170 2143 2206 2170 2143	8.69 9.54 10 51 2.69 9.08 10 51 9.39 8.93 7.95 7.77 7.54 8.22 8.02	$\begin{array}{c} 101 \ 3 \\ 103 \ 5 \\ 102.1 \\ 102 \ 0 \\ 102 \ 3 \\ 100 \ 5 \\ 102 \ 9 \\ 101 \ 9 \\ 104 \ 3 \\ 103 \ 0 \\ 106.1 \\ 104 \ 3 \\ 104 \ 9 \end{array}$	95.0 95.0 95.0 95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass Pass Pass Pass
330 331 332 333 334 335 336 337 338 339 340 341 341 342 343 344	PE4450 PE4500 PE4500 PE4600 PE4700 PE4650 PE4550 PE4550 ME1975 ME1925 ME1925 ME1825 ME1725	955.8 955.8 955.5 955.5 955.5 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8	ଁ ତ ତ ତ ତ ତ ତ ତ ତ ତ ତ ତ ତ ତ	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	2107 2153 2123 2122 2091 2141 2141 2119 2170 2143 2206 2170 2181 2196	8.69 9.54 10 51 2.69 9.08 10 51 9.39 8.93 7.95 7.77 7.54 8.22 8.02 7.97	101 3 103 5 102.1 102 0 102 3 100 5 102 9 101 9 104 3 103 0 106.1 104 3 104 9 105 6	95.0 95.0 95.0 95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass Pass Pass Pass
330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 344	PE4450 PE4500 PE4550 PE4600 PE4650 PE4550 PE4550 PE4550 ME1975 ME1925 ME1975 ME1825 ME1775 ME1725 ME1675	955.8 955.8 955.8 955.5 955.5 955.5 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8	୬ ୫ ୫ ୫ ୫ ୫ ୫ ୫ ୫ ୫ ୫ ୫ ୫ ୫ ୫ ୫ ୫ ୫ ୫ ୫	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	2107 2153 2123 2122 2128 2091 2141 2119 2170 2143 2206 2170 2181 2181 2196 2142	8.69 9.54 10 51 2.69 9.08 10 51 9.39 8.93 7.95 7.77 7.54 8.22 8.02 7.97 8.62	$\begin{array}{c} 101 \ 3 \\ 103 \ 5 \\ 102.1 \\ 102 \ 0 \\ 102 \ 3 \\ 100 \ 5 \\ 102 \ 9 \\ 101 \ 9 \\ 104 \ 3 \\ 103 \ 0 \\ 106.1 \\ 104 \ 3 \\ 104 \ 9 \\ 105 \ 6 \\ 103 \ 0 \\ \end{array}$	95.0 95.0 95.0 95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass Pass Pass Pass
330 331 332 333 334 335 336 337 338 339 340 341 341 342 343 344	PE4450 PE4500 PE4500 PE4600 PE4700 PE4650 PE4550 PE4550 ME1975 ME1925 ME1925 ME1825 ME1725	955.8 955.8 955.5 955.5 955.5 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8 955.8	ଁ ତ ତ ତ ତ ତ ତ ତ ତ ତ ତ ତ ତ ତ	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	2107 2153 2123 2122 2091 2141 2141 2119 2170 2143 2206 2170 2181 2196	8.69 9.54 10 51 2.69 9.08 10 51 9.39 8.93 7.95 7.77 7.54 8.22 8.02 7.97	101 3 103 5 102.1 102 0 102 3 100 5 102 9 101 9 104 3 103 0 106.1 104 3 104 9 105 6	95.0 95.0 95.0 95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass Pass Pass Pass

240	MEDEED	050.4	C	0.0	2000	0.0	2007	7.04	100.0	05.0	Dava
348 349	ME2550 ME2500	956.1 956.1	S S	0.2	2080 2080	9.0 9.0	2097 2180	7.64 7.88	100 8 104 8	95 0 95 0	Pass Pass
350	ME2300 ME2450	956.1	S	0.2	2080	9.0	2180	7.41	104 8	95 0	Pass
351	ME2400	956.1	S	0.2	2080	9.0	2177	8.15	104.7	95 0	Pass
352	ME2350	956.1	S	0.2	2080	9.0	2026	8.66	97.4	95 0	Pass
353	ME2300	955.8	S	0.2	2080	9.0	2174	8.55	104 5	95 0	Pass
354	ME2250	955.8	S	0.2	2080	9.0	2178	8.65	104.7	95 0	Pass
355	ME2600	955.8	S	0.2	2080	9.0	2123	8.79	102.1	95 0	Pass
356	ME2650	955.8	S	0.2	2080	9.0	2116	9.47	101.7	95 0	Pass
357 358	ME2750 PE3975	955.8 955.2	S S	0.2	2080 2080	9.0 9.0	2123 2097	10.11 10.44	102.1 100.8	95 0 95.0	Pass Pass
359	PE3975 PE3925	955.2	S	0.2	2080	9.0	2107	9.88	101 3	95.0	Pass
360	PE3975	955.5	s	0.2	2080	9.0	2131	9.54	102 5	95.0	Pass
361	PE3925	955.5	S	0.2	2080	9.0	2064	10 88	99.2	95.0	Pass
362	PE3975	955.8	S	0.2	2080	9.0	2005	11.10	96.4	95.0	Pass
363	PE3925	955.8	S	0.2	2080	9.0	2114	10 32	101 6	95.0	Pass
368	PE4600	956.1	S	0.2	2080	9.0	2204	6.22	106 0	95.0	Pass
369	PE4550	956.1	S	0.2	2080	9.0	2064	7.41	99.2	95.0	Pass
370	PE4500	956.1	S	0.2	2080	9.0	2118	7.19	101 8	95.0	Pass
371 372	PE4450 PE4375	956.1 956.1	S S	0.2	2080 2080	9.0 9.0	2090 2154	5.90 7.02	100 5 103 6	95.0 95.0	Pass
372	PE4375 PE4650	956.1	S	0.2	2080	9.0	2154	7.02	103.6	95.0	Pass Pass
374	PE4325	956.1	S	0.2	2080	9.0	2148	7.13	102 3	95.0	Pass
375	PE4275	956.1	S	0.2	2080	9.0	2117	7.54	101 8	95.0	Pass
376	PE4225	956.1	S	0.2	2080	9.0	2150	6.93	103.4	95.0	Pass
377	PE3975	956.1	S	0.2	2080	9.0	2177	6.70	104.7	95.0	Pass
378	PE3925	956.1	S	0.2	2080	9.0	2206	7.30	106.1	95.0	Pass
379	PE3875	956.1	S	0.2	2080	9.0	2093	8.17	100 6	95.0	Pass
380	PE3825	956.1	S	0.2	2080	9.0	2198	8.10	105.7	95.0	Pass
381	PE3775	956.1	S	0.2	2080	9.0	2228	7.52	107.1	95.0	Pass
382 383	PE3725 PE3675	956.1 956.1	S S	0.2	2080 2080	9.0 9.0	2171 2242	6.53 6.82	104.4 107 8	95.0 95.0	Pass Pass
383	PE3675 PE3625	956.1	S	0.2	2080	9.0	2242	6.48	107.8	95.0	Pass
385	PE3625 PE3575	956.1	S	0.2	2080	9.0	2173	8.43	104 5	95.0	Pass
386	PE3525	956.1	S	0.2	2080	9.0	2093	9.23	100 6	95.0	Pass
387	PE3475	956.1	S	0.2	2080	9.0	2195	7.63	105 5	95.0	Pass
388	PE3425	956.1	S	0.2	2080	9.0	2132	8.77	102 5	95.0	Pass
389	PE3375	956.1	S	0.2	2080	9.0	2169	7.67	104 3	95.0	Pass
390	PE3325	956.1	S	0.2	2080	9.0	2093	8.46	100 6	95.0	Pass
391	PE3275	956.1	S	0 2	2080	9.0	2158	7.72	103 8	95.0	Pass
392	PE3975	956.1	S	0 2	2080	9.0	2159	7.58	103 8	95.0	Pass
393	PE3225	956.1	S	02	2080	9.0	2215	6.95	106 5	95.0	Pass
394 395	PE3175 PE3125	956.1 956.1	S S	02	2080 2080	9.0 9.0	2208 2122	7.36 6.72	106 2 102 0	95.0 95.0	Pass Pass
395	PE3125 PE3075	956.1	S	02	2080	9.0	2083	8.33	102.0	95.0	Pass
397	PE3025	956.1	S	02	2080	9.0	2003	6.31	107.4	95.0	Pass
398	PE2975	956.1	S	02	2080	9.0	2169	7.04	107.4	95.0	Pass
399	PE2925	956.1	S	02	2080	9.0	2146	6.53	103 2	95.0	Pass
400	PE2875	956.1	S	0 2	2080	9.0	2147	6.76	103 2	95.0	Pass
401	PE2825	956.1	S	0 2	2080	9.0	2193	7.28	105.4	95.0	Pass
402	PE2775	956.1	S	0 2	2080	9.0	2115	7.61	101.7	95.0	Pass
403	ME2725	956.1	S	0 2	2080	9.0	2099	7.67	100 9	95.0	Pass
404	ME2675	956.1	S	0.2	2080	9.0	2181	6.32	104 9	95 0	Pass
405	ME2625	956.1	S	0.2	2080	9.0	2128	6.00	102 3	95 0	Pass
406 407	ME2375 ME2325	956.1 956.1	S S	0.2	2080 2080	9.0 9.0	2010 2036	6.52 6.55	96.6 97.9	95 0 95 0	Pass Pass
407	ME2325 ME2275	956.1	S	0.2	2080	9.0	2036	5.84	97.9	95 0	Pass
409	ME2225	956.1	s	0.2	2080	9.0	2109	7.62	101.4	95.0	Pass
410	ME2175	956.1	S	0.2	2080	9.0	2133	7.75	102.5	95.0	Pass
411	ME2125	956.1	S	0.2	2080	9.0	2163	7.98	104 0	95.0	Pass
412	ME2075	956.1	S	0.2	2080	9.0	2105	8.36	101 2	95.0	Pass
413	ME1575	956.1	S	0.2	2080	9.0	2146	5.74	103 2	95.0	Pass
414	ME1625	956.1	S	0.2	2080	9.0	2100	7.37	101 0	95.0	Pass
415	ME1675	956.1	S	0.2	2080	9.0	2066	7.86	99.3	95.0	Pass
416	ME1725	956.1	S	0.2	2080	9.0	2119	7.53	101 9	95.0	Pass
417 418	ME1775	956.1	S S	0.2	2080 2080	9.0	2080	6.91	100 0 103.4	95.0	Pass
418	ME1825 ME1875	956.1 956.1	S	0.2	2080	9.0 9.0	2150 2071	7.15 6.45	99.6	95.0 95.0	Pass Pass
419	ME1925	956.1	S	0.2	2080	9.0	2046	5.81	98.4	95.0	Pass
421	ME1925	956.1	S	0.2	2080	9.0	2117	7.21	101 8	95.0	Pass
422	SE1425	955.5	S	0.2	2080	9.0	2032	11 21	97.7	95.0	Pass
423	SE1550	955.8	S	0.2	2080	9.0	2017	10 57	97.0	95.0	Pass
424	SE1250	955.5	S	0.2	2080	9.0	2080	9.96	100 0	95.0	Pass
425	SE1200	955.8	S	0.2	2080	9.0	2149	8.97	103 3	95.0	Pass
426	SE1275	955.5	S	0.2	2080	9.0	2101	9.41	101 0	95.0	Pass
427	SE1375	955.8	S	0.2	2080	9.0	2156	9.10	103.7	95.0	Pass
428 429	SE1450 SE0900	955.8 955.5	S S	0.2	2080 2080	9.0 9.0	2130 2084	9.32 10 33	102.4 100 2	95.0 95.0	Pass Pass
429	SE0900 SE1500	955.5 956.1	S	0.2	2080	9.0	2084	9.67	97.9	95.0	Pass
430	SE1350	956.1	S	0.2	2080	9.0	2037	11 82	97.9	95.0	Pass
431	SE1200	956.1	S	0.2	2080	9.0	2032	9.62	98.4	95.0	Pass
433	SE0900	956.1	S	0.2	2080	9.0	2042	10 87	98.2	95.0	Pass
434	SE0850	955.3	S	0.2	2080	9.0	2108	8.28	101 3	95.0	Pass
435	SE0750	955.3	S	0.2	2080	9.0	2061	11 22	99.1	95.0	Pass
436	SE0900	955.3	S	0.2	2080	9.0	2137	8.98	102.7	95.0	Pass
437	SE0800	955.3	S	0.2	2080	9.0	2138	9.49	102 8	95.0	Pass
438	SE0700	955.3	S	0.2	2080	9.0	2169	9.06	104 3	95.0	Pass
439 440	SE0650	955.8	S	0.2	2080	9.0	2078	11 01	99.9	95.0	Pass
	SE0600	955.8	S	0.2	2080	9.0	2070	10 86	99.5	95.0	Pass
		956.1	S S	0.2	2080 2080	9.0 9.0	2059 2203	11 37 6.38	99.0 105 9	95.0 95.0	Pass Pass
441	SE0700 SE0625				2080	9.0	2203	6.98			
441 442	SE0625	956.1 956.1		0.2					105.5	95.0	Pass
441 442 443	SE0625 SE0675	956.1	S	0.2					105 3 105 9	95.0 95.0	Pass Pass
441 442	SE0625			0.2 0.2 0.2	2080 2080 2080	9.0 9.0	2190 2203 2190	6.38 6.98	105 3 105 9 105 3	95.0 95.0 95.0	Pass Pass Pass
441 442 443 444	SE0625 SE0675 SE0625	956.1 956.1	S S	0.2	2080	9.0	2203	6.38	105 9	95.0	Pass Pass
441 442 443 444 445 445 446 447	SE0625 SE0675 SE0625 SE0675 PE2800 PE2850	956.1 956.1 956.1 956.4 956.4	S S S S S	0.2 0.2 0.2 0.2	2080 2080 2080 2080	9.0 9.0 9.0 9.0	2203 2190 2128 2047	6.38 6.98 10 35 10 08	105 9 105 3 102 3 98.4	95.0 95.0 95.0 95.0	Pass
441 442 443 444 445 445 446 447 448	SE0625 SE0675 SE0625 SE0675 PE2800 PE2850 PE2900	956.1 956.1 956.1 956.4 956.4 956.4	\$ \$ \$ \$ \$ \$	0.2 0.2 0.2 0.2 0.2	2080 2080 2080 2080 2080	9.0 9.0 9.0 9.0 9.0	2203 2190 2128 2047 2166	6.38 6.98 10 35 10 08 8.75	105 9 105 3 102 3 98.4 104.1	95.0 95.0 95.0 95.0 95.0 95.0	Pass Pass Pass Pass Pass
441 442 443 444 445 446 446 447	SE0625 SE0675 SE0625 SE0675 PE2800 PE2850	956.1 956.1 956.1 956.4 956.4	S S S S S	0.2 0.2 0.2 0.2	2080 2080 2080 2080	9.0 9.0 9.0 9.0	2203 2190 2128 2047	6.38 6.98 10 35 10 08	105 9 105 3 102 3 98.4	95.0 95.0 95.0 95.0	Pass Pass Pass Pass

451	PE3050	956.4	S	0.2	2080	9.0	2095	10 67	100.7	95 0	Pass
452	PE3100	956.4	S	0.2	2080	9.0	2128	10 88	102 3	95.0	Pass
453	PE2800	956.7	S	0.2	2080	9.0	2179	7.91	104 8	95.0	Pass
454	PE2850	956.7	S	0.2	2080	9.0	2160	7.04	103 8	95.0	Pass
455	PE2900	956.7	S	0.2	2080	9.0	2119	8.93	101 9	95.0	Pass
456	PE2950	956.7	S	0.2	2080	9.0	2094	9.66	100.7	95.0	Pass
457	PE3000	956.7	S	0.2	2080	9.0	2066	10.40	99.3	95.0	Pass
458	PE3050	956.7	S	0.2	2080	9.0	2070	11 04	99.5	95.0	Pass
459	PE3100	956.7	S	0.2	2080	9.0	2049	9.89	98.5	95.0	Pass
460	PE3150	956.7	S	0.2	2080	9.0	2074	10 87	99.7	95.0	Pass
461	PE3200	956.7	S	0.2	2080	9.0	2137	9.43	102.7	95.0	Pass
462	PE3250	956.7	S	0.2	2080	9.0	2114	9.80	101 6	95.0	Pass
463	PE3300	956.4	S	0.2	2080	9.0	2083	10 62	100.1	95.0	Pass
464	PE3350	956.4	S	0.2	2080	9.0	2114	9.98	101 6	95.0	Pass
465 466	PE3400 PE3450	956.4 956.4	S S	0.2	2080 2080	9.0 9.0	2096 2119	10 66 10.16	100 8 101 9	95.0 95.0	Pass Pass
466	PE 2800	957.0	S	0.2	2080	9.0	2119	8.03	101 6	95.0	Pass
468	PE 2850	957.0	S	0.2	2080	9.0	2153	8.25	103 5	95.0	Pass
469	PE 2875	957.0	S	0.2	2080	9.0	2133	9.08	103.5	95.0	Pass
403	PE 2900	957.0	s	0.2	2080	9.0	2086	8.93	100.3	95.0	Pass
471	PE 2950	957.0	s	0.2	2080	9.0	2135	8.91	102 6	95.0	Pass
472	PE 3000	957 0	Š	0.2	2080	9.0	2096	9.01	100 8	95.0	Pass
473	PE 3050	957 0	S	0.2	2080	9.0	2050	9.99	98.6	95.0	Pass
474	PE 3100	957 0	S	0.2	2080	9.0	1996	10 54	96.0	95.0	Pass
475	PE 3150	957 0	S	0.2	2080	9.0	2162	8.53	103 9	95.0	Pass
476	PE 3200	957 0	S	0.2	2080	9.0	2074	9.49	99.7	95.0	Pass
477	PE 3250	957 0	S	0.2	2080	9.0	2135	8.25	102 6	95.0	Pass
478	PE 3325	956.7	S	0.2	2080	9.0	2135	7.92	102 6	95.0	Pass
479	PE 3350	956.7	S	0.2	2080	9.0	2168	8.26	104 2	95.0	Pass
480	PE 3400	956.7	S	0.2	2080	9.0	2172	7.80	104.4	95.0	Pass
481	PE 3450	956.7	S	0.2	2080	9.0	2168	7.81	104 2	95.0	Pass
482	PE 3500	956.4	S	0.2	2080	9.0	2186	7.78	105.1	95.0	Pass
483	PE 3550	956.4	S	0 2	2080	9.0	2179	8.26	104 8	95.0	Pass
484	PE 3600	956.4	S	02	2080	9.0	2098	8.46	100 9	95.0	Pass
485	PE 3750	956.4	S	02	2080	9.0	2073	8.89	99.7	95.0	Pass
486	PE 3800	956.4	S	02	2080	9.0	2125	9.53	102.2	95.0	Pass
487	PE 3850	956.4	S	02	2080	9.0	2135	9.67	102 6	95.0	Pass
488	PE 3900	956.4	S	02	2080	9.0	2126	9.51	102 2	95.0	Pass
489	PE 4000	956.4	S	02	2080	9.0	2156	9.38	103.7	95.0	Pass
490	PE 4050	956.4	S	02	2080	9.0	2127	9.69	102 3	95.0	Pass
491	PE 4100	956.4	S	02	2080	9.0	2106	20 24	101 3	95.0	Pass
492	PE 4150	956.4	S	02	2080	9.0	2073	10 30	99.7	95.0	Pass
493 494	PE 4200 PE 4250	956.4 956.4	S S	02	2080 2080	9.0 9.0	2080 2106	10 30 9.76	100 0 101 3	95.0 95.0	Pass Pass
494	PE 4250 PE 4300	956.4	S	02	2080	9.0	2084	10.70	1013	95.0	Pass
495	PE 4300 PE 4350	956.4	S	02	2080	9.0	2084	9.59	100 2	95.0	Pass
497	PE 2800	957 3	S	02	2080	9.0	2120	8.05	100.5	95.0	Pass
498	PE 2850	957 3	S	02	2080	9.0	2060	6.43	99.0	95.0	Pass
499	PE 2900	957 3	S	02	2080	9.0	2117	6.45	101.8	95.0	Pass
500	PE 2950	957 3	S	02	2080	9.0	2057	8.27	98.9	95.0	Pass
501	PE 3000	957 3	S	02	2080	9.0	2114	8.85	101 6	95.0	Pass
502	PE 3050	957 3	S	0 2	2080	9.0	2121	10.75	102 0	95.0	Pass
503	PE 3100	957.3	S	0.2	2080	9.0	2079	9.76	100 0	95 0	Pass
504	PE 3150	957.3	S	0.2	2080	9.0	2146	9.94	103 2	95 0	Pass
505	PE 4400	956.4	S	0.2	2080	9.0	2089	9.13	100.4	95 0	Pass
506	PE 4450	956.4	S	0.2	2080	9.0	2093	9.09	100 6	95.0	Pass
507	PE 4500	956.4	S	0.2	2080	9.0	2063	9.56	99.2	95.0	Pass
508	PE 4550	956.4	S	0.2	2080	9.0	2065	10.11	99.3	95.0	Pass
509	PE 4600	956.4	S	0.2	2080	9.0	2073	10 81	99.7	95.0	Pass
510	PE 4650	956.4	S	0.2	2080	9.0	2084	9.59	100 2	95.0	Pass
511	PE 4700	956.4	S	0.2	2080	9.0	2147	8.41	103 2	95.0	Pass
512	PE 4750	956.7	S	0.2	2080	9.0	2079	9.53	100 0	95.0	Pass
513	PE 3200	957.0	S	0.2	2080	9.0	2060	11 06	99.0	95.0	Pass
514	PE 3250	957.0	S	0.2	2080	9.0	2071	11.71	99.6	95.0	Pass
515	PE 3300	957.0	S	0.2	2080	9.0	2077	12.18	99.9	95.0	Pass
516 517	PE 3350 PE 3400	957.0 956.7	S S	0.2	2080 2080	9.0 9.0	2085 2017	11.13 13 84	100 2 97.0	95.0 95.0	Pass
517	PE 3400 PE 3450	956.7 957.0	S	0.2	2080	9.0	2017	13 84	97.0	95.0	Pass Pass
518	PE 3450 PE 3500	956.7	S	0.2	2080	9.0	2000	11 25	96.2	95.0	Pass
520	PE 3550	956.6	S	0.2	2080	9.0	1979	11 92	95.1	95.0	Pass
521	PE 3600	956.6	s	0.2	2080	9.0	2069	11 80	99.5	95.0	Pass
522	PE 3650	956.7	s	0.2	2080	9.0	2000	10 67	100 5	95.0	Pass
523	PE 3700	956.7	S	0.2	2080	9.0	2087	10 38	100 3	95.0	Pass
524	PE 3750	956.7	S	0.2	2080	9.0	2115	11 07	101.7	95.0	Pass
525	PE 3800	956 6	S	0.2	2080	9.0	2157	10.41	103.7	95.0	Pass
526	PE 3850	956.7	S	0.2	2080	9.0	2109	10.76	101.4	95.0	Pass
527	PE 3900	956.7	S	0.2	2080	9.0	2118	10 91	101 8	95.0	Pass
528	PE 4000	956.7	S	0.2	2080	9.0	2101	11.42	101 0	95.0	Pass
529	PE 4050	956.7	S	0.2	2080	9.0	2098	10.10	100 9	95.0	Pass
530	PE 4100	956.7	S	0.2	2080	9.0	2121	9.83	102 0	95.0	Pass
531	PE 4150	956.7	S	0.2	2080	9.0	2211	7.91	106 3	95.0	Pass
532	PE 4200	956.7	S	02	2080	9.0	2186	7.81	105.1	95.0	Pass
533	PE 4250	956.7	S	02	2080	9.0	2111	9.06	101 5	95.0	Pass
534	PE 4300	956.7	S	02	2080	9.0	2063	9.02	99.2	95.0	Pass
535	PE 4350	956.7	S	02	2080	9.0	2137	10.12	102.7	95.0	Pass
536	PE 4400	956.7	S	02	2080	9.0	2155	9.12	103 6	95.0	Pass
537	PE 4450	956.7	S	02	2080	9.0	2143	9.92	103 0	95.0	Pass
538 539	PE 4500 PE 4550	956.7 956.7	S S	02	2080 2080	9.0 9.0	2137 2098	9.53 9.91	102.7 100 9	95.0 95.0	Pass Pass
539	PE 4550 PE 4600	956.7	S	02	2080	9.0	2098	9.91	99.3	95.0	Pass
540	PE 4600 PE 4650	956.7	S	02	2080	9.0	2065	9.76	102.4	95.0	Pass
542	PE 4030 PE 4700	956.7	S	02	2080	9.0	2129	10 57	102.4	95.0	Pass
543	PE 4700 PE 4750	956.7	S	02	2080	9.0	2116	10 37	101.7	95.0	Pass
543	PE 3200	957.3	S	02	2080	9.0	2127	8.71	102.5	95.0	Pass
545	PE 3250	957 3	S	02	2080	9.0	2055	12 23	98.8	95.0	Pass
546	PE 3300	957 3	S	02	2080	9.0	2035	11 83	99.8	95.0	Pass
547	PE 3350	957 3	s	02	2080	9.0	2157	11.14	103.7	95.0	Pass
548	PE 3400	957 3	S	02	2080	9.0	2177	8.49	104.7	95.0	Pass
549	PE 3450	957 3	S	02	2080	9.0	2150	9.01	103.4	95.0	Pass

550	PE 3500	957.0	S	0.2	2080	9.0	2207	7.96	106.1	95 0	Pass
551	PE 3550	957.0	S	0.2	2080	9.0	2204	7.02	106 0	95 0	Pass
552	PE 3600	957.0	S	0.2	2080	9.0	2174	8.96	104 5	95 0	Pass
553	PE 3650	957.0	S	0.2	2080	9.0	2132	9.91	102 5	95.0	Pass
554 555	PE 3700 PE 3750	957.0 957.0	S S	0.2	2080 2080	9.0 9.0	2111 2010	13 90 13 95	101 5 96.6	95.0 95.0	Pass Pass
556	PE 3750 PE 3800	957.0	S	0.2	2080	9.0	1996	14 02	96.0	95.0	Pass
557	PE 3850	957.0	s	0.2	2080	9.0	2028	14 37	97.5	95.0	Pass
558	PE 3700	957.3	S	0.2	2080	9.0	2167	6.67	104.2	95.0	Pass
559	PE 3750	957.3	S	0.2	2080	9.0	2134	9.89	102 6	95.0	Pass
560	PE 3800	957.3	S	0.2	2080	9.0	2179	7.23	104 8	95.0	Pass
561	PE 3850	957.3	S	0.2	2080	9.0	2125	9.67	102 2	95.0	Pass
562	PE 3900	957.3	S	0.2	2080	9.0	2102	9.58	101.1	95.0	Pass
563	PE 4000	957.0	S	0.2	2080	9.0	2100	9.25	101 0	95.0	Pass
564	PE 4050	956.7	S	0.2	2080	9.0	2094	8.79	100.7	95.0	Pass
565	PE 4100	957.0	S	0.2	2080	9.0	2209	7.08	106 2	95.0	Pass
566	PE 4150	957.0	S	0.2	2080	9.0	2192	6.79	105.4	95.0	Pass
567	PE 4200	957.0	S	0.2	2080	9.0	2177	7.41	104.7	95.0	Pass
568	PE 4250	957.0	S	0.2	2080	9.0	2175	7.71	104 6	95.0	Pass
569	PE 4300	957.0	S	0.2	2080	9.0	2232	6.69	107 3	95.0	Pass
570 571	PE 4350 PE 4400	957.0 957 0	S S	0.2	2080 2080	9.0 9.0	2200 2184	8.32 7.83	105 8 105 0	95.0 95.0	Pass Pass
572	PE 4400 PE 4450	957 0	S	0.2	2080	9.0	2104	8.44	103.0	95.0	Pass
573	PE 4500	957 0	S	0.2	2080	9.0	2136	8.80	104.7	95.0	Pass
574	PE 4550	957 0	S	0.2	2080	9.0	2130	9.26	102.7	95.0	Pass
575	PE 4600	957 0	S	0.2	2080	9.0	2123	9.19	102.1	95.0	Pass
576	SE 500	957 0	S	0.2	2080	9.0	2074	10 51	99.7	95.0	Pass
577	PE 4650	957 0	S	0.2	2080	9.0	2102	10 01	101.1	95.0	Pass
578	PE 4700	957 0	S	0.2	2080	9.0	2185	9.63	105 0	95.0	Pass
579	PE 4750	957 0	S	0.2	2080	9.0	2168	8.53	104 2	95.0	Pass
580	PE 4000	957 3	S	0.2	2080	9.0	2152	8.29	103 5	95.0	Pass
581	PE 4050	957 0	S	0.2	2080	9.0	2170	8.75	104 3	95.0	Pass
582	PE 4100	957 3	S	0.2	2080	9.0	2158	9.22	103 8	95.0	Pass
583	PE 4150	957 3	S	0 2	2080	9.0	2141	9.49	102 9	95.0	Pass
584	PE 4200	957 3	S	0 2	2080	9.0	2133	9.87	102 5	95.0	Pass
585	PE 4250	957 3	S	02	2080	9.0	2119	9.17	101 9	95.0	Pass
586	PE 4300	957 3	S	02	2080	9.0	2111	9.24	101 5	95.0	Pass
587	PE 4350	957 3	S	02	2080	9.0	2123	9.72	102.1	95.0	Pass
588	PE 4400	957 3	S	02	2080	9.0	2123	9.80	102.1	95.0	Pass
589	PE 4450	956.7	S	02	2080	9.0	2184	7.23	105 0	95.0	Pass
590	PE 4500	956.7	S S	02	2080	9.0	2154	6.83	103 6	95.0	Pass
591 592	PE 4550 PE 4600	956.7 956.7	S	02	2080 2080	9.0 9.0	2215 2143	6.61 7.29	106 5 103 0	95.0 95.0	Pass Pass
592	PE 4600 PE 4650	956.7	S	02	2080	9.0	2143	7.49	103.0	95.0	Pass
594	PE 4030	956.7	S	02	2080	9.0	2195	6.81	105 5	95.0	Pass
595	PE 4750	956.7	S	02	2080	9.0	2133	7.40	102 5	95.0	Pass
596	ME 2350	956.7	S	02	2080	9.0	2130	8.07	102.5	95.0	Pass
597	ME 2400	956.7	S	0 2	2080	9.0	2200	7.65	105 8	95.0	Pass
598	ME 2450	956.7	S	0 2	2080	9.0	2159	7.83	103 8	95.0	Pass
599	ME 2500	956.7	S	0 2	2080	9.0	2074	8.33	99.7	95.0	Pass
600	ME 2550	956.7	S	0 2	2080	9.0	2159	7.73	103 8	95.0	Pass
601	ME 2600	956.7	S	0 2	2080	9.0	2191	6.90	105 3	95.0	Pass
602	ME 2650	956.7	S	0.2	2080	9.0	2139	8.08	102 8	95 0	Pass
603	ME 2700	956.7	S	0.2	2080	9.0	2101	6.93	101 0	95 0	Pass
604	ME 2350	957.0	S	0.2	2080	9.0	2118	9.76	101 8	95 0	Pass
605	ME 2400	957.0	S	0.2	2080	9.0	2123	8.46	102.1	95.0	Pass
606	ME 2450	957.0	S	0.2	2080	9.0	2126	9.14	102 2	95.0	Pass
607	ME 2500	957.0	S	0.2	2080	9.0	2272	7.23	109 2	95.0	Pass
608	ME 2550	957.0	S	0.2	2080	9.0	2131	8.06	102 5	95.0	Pass
609	ME 2600	957.0	S	0.2	2080	9.0	2119	7.62	101 9	95.0	Pass
<u>610</u> 611	ME 2650 ME 2700	957.0	S S	0.2	2080 2080	9.0 9.0	2179 2191	8.01 8.25	104 8 105 3	95.0 95.0	Pass
		957.0	<u> </u>								Pass
612 613	ME 2350 ME 2400	957.3 957.3	S	0.2	2080 2080	9.0	2071 2019	8.57 8.66	99.6 97.1	95.0 95.0	Pass Pass
614	ME 2450	957.3	S	0.2	2080	9.0	2066	9.16	99.3	95.0	Pass
615	ME 2500	957.3	S	0.2	2080	9.0	2133	9.87	102 5	95.0	Pass
616	ME 2550	957.3	S	0.2	2080	9.0	2035	9.51	97.8	95.0	Pass
617	ME 2600	957.3	S	0.2	2080	9.0	2087	9.83	100 3	95.0	Pass
618	ME 2650	957.3	S	0.2	2080	9.0	2150	7.55	103.4	95.0	Pass
619	ME 1700	956.7	S	0.2	2080	9.0	2155	7.61	103 6	95.0	Pass
620	ME 1750	956.7	S	0.2	2080	9.0	2086	8.74	100 3	95.0	Pass
621	ME 1800	956.7	S	0.2	2080	9.0	2069	9.07	99.5	95.0	Pass
622	ME 1850	956.7	S	0.2	2080	9.0	2130	8.11	102.4	95.0	Pass
623	ME 1900	956.7	S	0.2	2080	9.0	2153	7.41	103 5	95.0	Pass
624	ME 2000	956.7	S	0.2	2080	9.0	2094	7.86	100.7	95.0	Pass
625	ME 2050	956.7	S	0.2	2080	9.0	2011	7.43	96.7	95.0	Pass
626 627	ME 2100 ME 1925	956.7 957.0	S S	0.2	2080 2080	9.0 9.0	2088 2084	8.26 10 82	100.4 100 2	95.0 95.0	Pass Pass
628	ME 1925 ME 1975	957.0	S	0.2	2080	9.0	2084 2107	9.17	100 2	95.0	Pass
629	ME 2000	957 3	S	0.2	2080	9.0	2069	10 65	99.5	95.0	Pass
630	ME 2000	956.7	S	0.2	2080	9.0	2138	8.46	102.8	95.0	Pass
631	ME 2020	957 0	S	0.2	2080	9.0	2164	7.90	102.0	95.0	Pass
632	ME 2100	957 0	S	0.2	2080	9.0	2172	8.72	104.4	95.0	Pass
633	ME 2150	957 0	S	0.2	2080	9.0	2209	8.70	106 2	95.0	Pass
634	ME 1850	957 0	S	0.2	2080	9.0	2124	8.35	102.1	95.0	Pass
635	ME 1800	957 0	S	0.2	2080	9.0	2144	8.84	103.1	95.0	Pass
636	ME 1750	957 0	S	0.2	2080	9.0	2125	6.94	102 2	95.0	Pass
637	ME 1700	957 0	S	02	2080	9.0	2158	8.38	103 8	95.0	Pass
638	ME 1650	957 0	S	02	2080	9.0	2129	9.02	102.4	95.0	Pass
639	ME 1600	957 0	S	02	2080	9.0	2045	10 00	98.3	95.0	Pass
640	SE 1550	956.7	S	02	2080	9.0	2130	9.50	102.4	95.0	Pass
641	SE 1500	956.7	S	02	2080	9.0	2103	9.19	101.1	95.0	Pass
642	SE 1450	956.7	S	02	2080	9.0	2123	9.86	102.1	95.0	Pass
643 644	SE 1400 SE 1350	956.7 956.7	S S	02	2080 2080	9.0 9.0	2093	10 98 10 07	100 6	95.0 95.0	Pass Pass
644 645	SE 1350 SE 1300	956.7 956.7	S	02	2080	9.0	2098 2105	10 07	100 9 101 2	95.0 95.0	Pass Pass
646	SE 1300 SE 1250	956.7	S	02	2080	9.0	2105	10.22	1012	95.0	Pass
647	SE 1200	956.7	S	02	2080	9.0	2124	7.20	102.1	95.0	Pass
648	SE 1150	956.7	S	02	2080	9.0	2192	6.51	105.4	95.0	Pass
040											

	05 4 4 9 9						00.11	0.00	107.0		
649	SE 1100	956.7	S	0.2	2080	9.0	2244	6.83	107 9	95 0	Pass
650	SE 1050	956.7	S	0.2	2080	9.0	2189	6.74	105.2	95 0	Pass
651	SE 1000	956.7	S	0.2	2080	9.0	2031	3.83	97.6	95 0	Pass
652	SE 950	956.7	S		2080	9.0	2139	4.56	102.8	95 0	Pass
653	SE 900	956.7	S	0.2	2080	9.0	2148	5.97	103 3	95 0	Pass
654	SE 850	956.7	S	0.2	2080	9.0	2244	6.83	107 9	95 0	Pass
655	SE 800	956.7	S S	0.2	2080	9.0	2091	6.13	100 5	95 0	Pass
656	SE 750	956.7		0.2	2080	9.0	2204	6.26	106 0	95 0	Pass
657	SE 700	956.7	S	0.2	2080	9.0	2218	6.32	106 6	95 0	Pass
658	SE 650	956.7	S	0.2	2080	9.0	2178	6.13	104.7	95 0	Pass
659	ME 1600	956.7	S	0.2	2080	9.0	2033	8.25	97.7	95.0	Pass
660	ME 1650	956.7	S	0.2	2080	9.0	1993	9.34	95.8	95.0	Pass
661	ME1700	956.7	S	0.2	2080	9.0	2196	4.74	105 6	95.0	Pass
662	ME1750	956.7	S	0.2	2080	9.0	2053	5.93	98.7	95.0	Pass
663	ME 1800	956.7	S	0.2	2080	9.0	2103	6.97	101.1	95.0	Pass
664	ME1850	956.7	S	0.2	2080	9.0	2075	7.14	99.8	95.0	Pass
665	ME1900	956.7	S	0.2	2080	9.0	2078	60 50	99.9	95.0	Pass
666	ME1950	956.7	S	0.2	2080	9.0	2136	7.28	102.7	95.0	Pass
667	ME 2000	956.7	S	0.2	2080	9.0	2003	9.35	96.3	95.0	Pass
668	ME 2050	956.7	S	0.2	2080	9.0	2197	4.78	105 6	95.0	Pass
669	ME 2100	956.7	S	0.2	2080	9.0	2053	5.96	98.7	95.0	Pass
670	ME 2150	956.7	S	0.2	2080	9.0	2105	6.99	101 2	95.0	Pass
671	ME 2200	956.7	S	0.2	2080	9.0	2045	7.01	98.3	95.0	Pass
672	ME 2250	956.7	S	0.2	2080	9.0	2079	6.06	100 0	95.0	Pass
673	ME 2300	956.7	S	0.2	2080	9.0	2133	7.24	102 5	95.0	Pass
674	ME 2350	956.7	S	0.2	2080	9.0	2031	8.21	97.6	95.0	Pass
675	ME 2400	956.7	S	0.2	2080	9.0	2199	5.25	105.7	95.0	Pass
676	ME 2450	956.7	S	0.2	2080	9.0	2196	5.28	105 6	95.0	Pass
677	ME 2500	956.7	S	0.2	2080	9.0	2107	7.02	101 3	95.0	Pass
678	ME 2550	956.7	S	0.2	2080	9.0	2046	7.05	98.4	95.0	Pass
679	ME 2600	956.7	S	0.2	2080	9.0	2080	60 90	100 0	95.0	Pass
680	ME 2650	956.7	S	0.2	2080	9.0	2131	7.21	102 5	95.0	Pass
681	ME 2700	956.7	S	0.2	2080	9.0	2028	8.18	97.5	95.0	Pass
682	SE 600	956.7	S	0.2	2080	9.0	2110	5.71	101.4	95.0	Pass
683	SE 550	956.7	S	0.2	2080	9.0	1980	10 23	95.2	95.0	Pass
684	SE 500	956.7	S	0.2	2080	9.0	2067	9.57	99.4	95.0	Pass
685	SE 450	956.7	S	0.2	2080	9.0	2012	11 94	96.7	95.0	Pass
686	SE 1500	956.7	S	0.2	2080	9.0	2108	6.22	101 3	95.0	Pass
687	SE 1450	956.7	S	0.2	2080	9.0	2076	7.82	99.8	95.0	Pass
688	SE 1400	956.7	S	0.2	2080	9.0	2044	7.42	98.3	95.0	Pass
689	SE 1350	956.7	S	0.2	2080	9.0	2073	6.20	99.7	95.0	Pass
690	SE 1300	956.7	S	0.2	2080	9.0	2114	7.21	101 6	95.0	Pass
691	SE 1250	956.7	S	0.2	2080	9.0	2186	6.34	105.1	95.0	Pass
692	SE 1200	956.7	S	0.2	2080	9.0	2243	5.66	107 8	95.0	Pass
693	SE 1100	956.7	S	0.2	2080	9.0	2146	7.57	103 2	95.0	Pass
694	SE 1050	956.7	S	0.2	2080	9.0	1980	6.96	95.2	95.0	Pass
695	SE 1000	956.7	S	0.2	2080	9.0	2093	6.67	100 6	95.0	Pass
696	SE 950	956.7	S	0.2	2080	9.0	2127	5.89	102 3	95.0	Pass
697	SE 900	956.7	S	0.2	2080	9.0	2185	6.99	105 0	95.0	Pass
698	SE 850	956.7	S	0.2	2080	9.0	2047	9.71	98.4	95.0	Pass
699	SE 800	956.7	S	0.2	2080	9.0	2080	6.76	100 0	95.0	Pass
700	SE 750	956.7	S	0.2	2080	9.0	2075	8.55	99.8	95.0	Pass
701	SE 700	956.7	S	0.2	2080	9.0	2111	7.24	101 5	95 0	Pass
702	PE 3200	958.0	S	0.2	2080	9.0	2078	9.32	99.9	95 0	Pass
703	PE 3250	958.0	S	0.2	2080	9.0	2111	7.62	101 5	95 0	Pass
704	PE 3300	958.0	Š	0.2	2080	9.0	2002	6.98	96.3	95 0	Pass
705	PE 3350	958.0	Š	0.2	2080	9.0	2142	6.25	103 0	95.0	Pass
706	PE 3400	958.0	S	0.2	2080	9.0	2099	7.18	100 9	95.0	Pass
707	PE 3450	958.0	S	0.2	2080	9.0	2042	8.23	98.2	95.0	Pass
708	PE 3500	958.0	S	0.2	2080	9.0	2146	7.44	103 2	95.0	Pass
709	PE 3500	958.0	s	0.2	2080	9.0	2068	7.15	99.4	95.0	Pass
710	PE 3600	958.0	Š	0.2	2080	9.0	2201	7.26	105 8	95.0	Pass
711	PE 3650	958.0	S	0.2	2080	9.0	2111	7.62	101 5	95.0	Pass
712	PE 3700	958.0	S	0.2	2080	9.0	2002	6.98	96.3	95.0	Pass
712	PE 3750	958.0	S	0.2	2080	9.0	2142	6.25	103 0	95.0	Pass
714	PE 3800	958.0	S	0.2	2080	9.0	2099	7.18	100 9	95.0	Pass
715	PE 3850	958.0	S	0.2	2080	9.0	2099	8.23	98.2	95.0	Pass
716	PE 3900	958.0	S	0.2	2080	9.0	2146	7.44	103 2	95.0	Pass
717	PE 3950	958.0	s	0.2	2080	9.0	2068	7.15	99.4	95.0	Pass
718	PE 3150	958.0	S	0.2	2080	9.0	1987	10.47	95.5	95.0	Pass
719	PE 3100	958.0	s	0.2	2080	9.0	2025	9.11	97.4	95.0	Pass
719	PE 3050	958.0	S	0.2	2080	9.0	2023	9.76	97.2	95.0	Pass
720	PE 3000	958.0	S	0.2	2080	9.0	2022	9.50	97.9	95.0	Pass
722	PE 2950	958.0	S	0.2	2080	9.0	2062	10 35	99.1	95.0	Pass
723	PE 2900	958.0	S	0.2	2080	9.0	1998	7.50	96.1	95.0	Pass
724	PE 2850	958.0	S	0.2	2080	9.0	1998	9.21	95.1	95.0	Pass
725	PE 2800	958.0	S	0.2	2080	9.0	1976	12 01	95.0	95.0	Pass
726	PE 2000 PE 4020	958.0	S	0.2	2080	9.0	2031	9.57	97.6	95.0	Pass
720	PE 4020 PE 4000	958.0	S	0.2	2080	9.0	2031	8.78	98.5	95.0	Pass
728	ME 2000	958.0	S	0.2	2080	9.0	1986	10.75	98.5	95.0	Pass
729	ME 2000 ME 2050	958.0	S	0.2	2080	9.0	1986	10.75	95.3	95.0	Pass
730	ME 2000	958.0	S	0.2	2080	9.0	2022	6.02	95.3	95.0	Pass
730	ME 2100 ME 2200	958.0 958.0	S	0.2	2080	9.0	2022	7.12	97.2	95.0	Pass
731 732	ME 2200 ME 2250	958.0 958.0	S	0.2		9.0	2002	7.12	96.3	95.0	Pass
732			S		2080			7.64			
	ME 2300	958 0		0.2	2080	9.0	1989 2011		95.6	95.0	Pass
734	ME 23050	958 0	S S		2080	9.0		8.25	96.7	95.0	Pass
735	ME 2400	958 0		0.2	2080	9.0	2001	6.98	96.2	95.0	Pass
736	ME 2450	958 0	S	0.2	2080	9.0	2126	7.21	102 2	95.0	Pass
737	ME 2500	958 0	S	0.2	2080	9.0	2045	7.68	98.3	95.0	Pass
738	ME 2550	958 0	S	0.2	2080	9.0	2006	7.92	96.4	95.0	Pass
739	ME 2600	958 0	S	0.2	2080	9.0	2162	7.85	103 9	95.0	Pass
740	ME 2650	958 0	S	0.2	2080	9.0	2062	8.05	99.1	95.0	Pass
741	ME 2700	958 0	S	0.2	2080	9.0	2144	8.62	103.1	95.0	Pass
742	ME 1950	958 0	S	0.2	2080	9.0	2064	9.44	99.2	95.0	Pass
743	ME 1900	958 0	S	0.2	2080	9.0	1995	9.10	95.9	95.0	Pass
744	ME 1850	958 0	S	02	2080	9.0	2018	9.59	97.0	95.0	Pass
745	ME 1800	958 0	S	02	2080	9.0	2036	9.44	97.9	95.0	Pass
746	ME 1750	958 0	S	02	2080	9.0	2032	8.93	97.7	95.0	Pass
747	ME 1700	958 0	S	0 2	2080	9.0	2101	8.80	101 0	95.0	Pass

772         SE 0500           773         SE 0450           773         SE 0450           Comments         766		Proctor No. R-S6b-ZS-01-201 R-S6b-ZS-02-201 R-S6b-ZS-02-201 R-S6b-ZS-05-201 R-S6b-ZS-05-201 R-S6b-ZS-07-201 R-S6b-ZS-07-201 R-S6b-ZS-09-201 R-S6b-ZS-09-201 R-S6b-ZS-10-201 R-S6b-ZS-11-201 R-S6b-ZS-12-201	0 10 0 0 0 0 0 0 0 0 0 0 0	Kg/m³           2030           2190           2170           2130           2140           2120           2080           2140           2140	110 70 80 90 85 80 100 100 90 100 100		2.7 60 9 9 0 3.1 9.1 roctor Descriptic 95% 1929 2081 2062 2024 2033 2014 1976 1976 2033 1967 2005 2033	87.7 128.4 101 6 3.7 101.7		
772         SE 0500           773         SE 0450           773         SE 0450           Comments         Number of Tests:		R-S6b-ZS-01-201 R-S6b-ZS-02-201 R-S6b-ZS-04-201 R-S6b-ZS-05-201 R-S6b-ZS-06-201 R-S6b-ZS-06-201 R-S6b-ZS-09-201 R-S6b-ZS-09-201 R-S6b-ZS-10-201 R-S6b-ZS-10-201 R-S6b-ZS-11-201	0 10 0 0 0 0 0 0 0 0 0 0 0	Kg/m <sup>3</sup> 2030 2190 2170 2130 2140 2140 2080 2080 2080 2080 2080 2140 2070 2110	Maximum Median andard Deviation Average M.C. 110 70 80 90 85 80 90 100 100 100 100 100 100 100	2671.0 2114.0 77 0 2114.5 P	60 9 9 0 3.1 9.1 roctor Descriptic 95% 1929 2081 2062 2024 2033 2014 1976 1976 2033 1967 2005	128.4 101 6 3.7 101.7		
772         SE 0500           773         SE 0450           Comments           Number of Tests:		R-S6b-ZS-01-201 R-S6b-ZS-02-201 R-S6b-ZS-02-201 R-S6b-ZS-04-201 R-S6b-ZS-05-201 R-S6b-ZS-06-201 R-S6b-ZS-07-201 R-S6b-ZS-09-201 R-S6b-ZS-10-201	0 10 0 0 0 0 0 0 0 0 0 0 0	Kg/m <sup>3</sup> 2030 2190 2170 2130 2140 2120 2080 2080 2080 2080 2080 2080 208	Maximum Median andard Deviation Average M.C. 110 70 80 90 85 80 100 100 90 100 90 100 90 100 90 100	2671.0 2114.0 77 0 2114.5 P	60 9 9 0 3.1 9.1 roctor Descriptic 95% 1929 2081 2062 2024 2024 2033 2014 1976 1976 2033 1967	128.4 101 6 3.7 101.7		
772         SE 0500           773         SE 0450           Comments           Number of Tests:		R-S6b-ZS-01-201 R-S6b-ZS-02-201 R-S6b-ZS-04-201 R-S6b-ZS-04-201 R-S6b-ZS-05-201 R-S6b-ZS-06-201 R-S6b-ZS-08-201 R-S6b-ZS-08-201 R-S6b-ZS-09-201	0 10 0 0 0 0 0 0 0	Kg/m <sup>3</sup> 2030 2190 2170 2130 2140 2140 2120 2080 2080 2140	Maximum Median andard Deviation Average <b>M.C.</b> <b>M.C.</b> <b>M.C.</b> <b>M.C.</b> <b>0</b> <b>0</b> <b>0</b> <b>0</b> <b>0</b> <b>0</b> <b>0</b> <b>0</b>	2671.0 2114.0 77 0 2114.5 P	60 9 9 0 3.1 9.1 roctor Descriptic 95% 1929 2081 2062 2024 2033 2014 1976 1976 2033	128.4 101 6 3.7 101.7		
772         SE 0500           773         SE 0450           Comments           Number of Tests:		R-S6b-ZS-01-201 R-S6b-ZS-02-201 R-S6b-ZS-2(b)-20 R-S6b-ZS-04-201 R-S6b-ZS-05-201 R-S6b-ZS-06-201 R-S6b-ZS-07-201 R-S6b-ZS-08-201	0 10 0 0 0 0 0 0	Kg/m <sup>3</sup> 2030 2190 2170 2130 2140 2140 2120 2080 2080	Maximum           Median           andard Deviation           Average           M.C.           110           70           80           90           85           80           100           100	2671.0 2114.0 77 0 2114.5 P	60 9 9 0 3.1 9.1 roctor Descriptic 95% 1929 2081 2062 2024 2033 2014 1976 1976	128.4 101 6 3.7 101.7		
772         SE 0500           773         SE 0450           773         SE 0450           Comments         Sumber of Tests:		R-S6b-ZS-01-201 R-S6b-ZS-02-201 R-S6b-ZS-2(b)-20 R-S6b-ZS-04-201 R-S6b-ZS-05-201 R-S6b-ZS-06-201 R-S6b-ZS-07-201	0 10 0 0 0 0	Kg/m <sup>3</sup> 2030 2190 2170 2130 2140 2140 2140 2080	Maximum Median andard Deviation Average M.C. 110 70 80 90 85 80 100	2671.0 2114.0 77 0 2114.5 P	60 9 9 0 3.1 9.1 roctor Descriptic 95% 1929 2081 2062 2024 2002 2024 2033 2014	128.4 101 6 3.7 101.7		
772         SE 0500           773         SE 0450           773         SE 0450           Comments         Sumber of Tests:		R-S6b-ZS-01-201 R-S6b-ZS-02-201 R-S6b-ZS-2(b)-207 R-S6b-ZS-04-201 R-S6b-ZS-05-201 R-S6b-ZS-06-201	0 10 0 0 0	Kg/m <sup>3</sup> 2030 2190 2170 2130 2130 2140 2120	Maximum Median andard Deviation Average M.C. 110 70 80 90 85 80	2671.0 2114.0 77 0 2114.5 P	60 9 9 0 3.1 9.1 roctor Descriptic 95% 1929 2081 2062 2024 2033 2014	128.4 101 6 3.7 101.7		
772         SE 0500           773         SE 0450           773         SE 0450           Comments         Jumber of Tests:		R-S6b-ZS-01-201 R-S6b-ZS-02-201 R-S6b-ZS-2(b)-20 R-S6b-ZS-04-201	0 10 0	Kg/m <sup>3</sup> 2030 2190 2170 2170 2130	Maximum Median andard Deviation Average M.C. 110 70 80 90	2671.0 2114.0 77 0 2114.5 P	60 9 9 0 3.1 9.1 roctor Descriptio 95% 1929 2081 2062 2024	128.4 101 6 3.7 101.7		
772         SE 0500           773         SE 0450           773         SE 0450           Somments         Jumber of Tests:		R-S6b-ZS-01-201 R-S6b-ZS-02-201 R-S6b-ZS-2(b)-20 R-S6b-ZS-04-201	0 10 0	Kg/m <sup>3</sup> 2030 2190 2170 2170 2130	Maximum Median andard Deviation Average M.C. 110 70 80 90	2671.0 2114.0 77 0 2114.5 P	60 9 9 0 3.1 9.1 roctor Descriptio 95% 1929 2081 2062 2024	128.4 101 6 3.7 101.7		
772         SE 0500           773         SE 0450           773         SE 0450           Comments         Sumber of Tests:		R-S6b-ZS-01-201 R-S6b-ZS-02-201	0	<b>Kg/m<sup>3</sup></b> 2030 2190 2170	Maximum Median andard Deviation Average M.C. 110 70 80	2671.0 2114.0 77 0 2114.5 P	60 9 9 0 3.1 9.1 roctor Descriptic 95% 1929 2081	128.4 101 6 3.7 101.7		
772         SE 0500           773         SE 0450           Comments         Number of Tests:		R-S6b-ZS-01-201		<b>Kg/m<sup>3</sup></b> 2030	Maximum Median andard Deviation Average M.C. 11 0	2671.0 2114.0 77 0 2114.5 P	60 9 9 0 3.1 9.1 roctor Descriptic 95% 1929	128.4 101 6 3.7 101.7		
772         SE 0500           773         SE 0450           773         SE 0450           Comments         Sumber of Tests:			0	Kg/m <sup>3</sup>	Maximum Median andard Deviation Average M.C.	2671.0 2114.0 77 0 2114.5 P	60 9 9 0 3.1 9.1 roctor Descriptio 95%	128.4 101 6 3.7 101.7		
772 SE 0500 773 SE 0450 Comments		Proctor No.			Maximum Median andard Deviation Average	2671.0 2114.0 77 0 2114.5 P	60 9 9 0 3.1 9.1 roctor Descriptio	128.4 101 6 3.7 101.7		
772 SE 0500 773 SE 0450		Proctor No.		Sta	Maximum Median andard Deviation	2671.0 2114.0 77 0 2114.5	60 9 9 0 3.1 9.1	128.4 101 6 3.7 101.7		
772 SE 0500 773 SE 0450				Sta	Maximum Median andard Deviation	2671.0 2114.0 77 0 2114.5	60 9 9 0 3.1 9.1	128.4 101 6 3.7 101.7		
772 SE 0500				Sta	Maximum Median andard Deviation	2671.0 2114.0 77 0	60 9 9 0 3.1	128.4 101 6 3.7		
772 SE 0500				Sta	Maximum Median andard Deviation	2671.0 2114.0 77 0	60 9 9 0 3.1	128.4 101 6 3.7		
772 SE 0500				Sta	Maximum Median	2671.0 2114.0	60 9 9 0	128.4 101 6		
772 SE 0500					Maximum	2671.0	60 9	128.4		
772 SE 0500										
772 SE 0500					Minimum	1825.0	2.7	87.7		
772 SE 0500										
772 SE 0500		-	-							
		S	0.2	2080	9.0	2014	9.02	96.8	95.0	Pass
		S	0.2	2080	9.0	2125	8.25	102.2	95.0	Pass
771 SE 0550		S	0.2	2080	9.0	2018	7.92	97.0	95.0	Pass
770 SE 0600		S	0.2	2080	9.0	2321	8.12	111 6	95.0	Pass
769 SE 0650		S	0.2	2080	9.0	2011	8.62	96.7	95.0	Pass
767 SE 0750		S	0.2	2080	9.0	2125	8.86	102.2	95.0	Pass
767 SE 0750		S	0.2	2080	9.0	2125	8.86	102.2	95.0	Pass
765 SE 0850		S	0.2	2080	9.0	2031	8.66	98.3	95.0	Pass
764 SE 0900 765 SE 0850		S	0.2	2080	9.0	2031	9.61	95.9	95.0	Pass Pass
763 SE 0950 764 SE 0900		S S	0.2	2080 2080	9.0 9.0	2086 1995	5.95 8.68	100 3 95.9	95.0 95.0	Pass
762 SE 1000		S	0.2	2080	9.0	2131	8.66	102 5	95.0	Pass
761 SE 1050		S	0.2	2080	9.0	2061	7.62	99.1	95.0	Pass
760 SE 1100		S	0.2	2080	9.0	2030	7.81	97.6	95.0	Pass
759 SE 1150		S	0.2	2080	9.0	2011	8.88	96.7	95.0	Pass
758 SE 1200		S	0.2	2080	9.0	2017	9.09	97.0	95.0	Pass
757 SE 1250		S	0.2	2080	9.0	2161	5.96	103 9	95.0	Pass
756 SE 1300		S	0.2	2080	9.0	2088	6.65	100.4	95.0	Pass
755 SE 1350		S	0.2	2080	9.0	2133	8.61	102 5	95.0	Pass
754 SE 1400		S	0.2	2080	9.0	2069	7.63	99.5	95.0	Pass
753 SE 1450		S	0.2	2080	9.0	2056	7.51	98.8	95.0	Pass
752 SE 1500	958.0	S	0.2	2080	9.0	1985	8.69	95.4	95.0	Pass
751 SE 1580	958.0	S	0.2	2080	9.0	1992	10 92	95.8	95.0	Pass
750 SE 1550	958.0	S	0.2	2080	9.0	1977	10.44	95.0	95 0	Pass
749 ME 1600	958.0	S	0.2	2080	9.0	2023	9.62	97.3	95 0	Pass



# **APPENDIX C**

# PIEZOMETER FIGURES

Appendix C1	Tailings Piezometers
Appendix C2	Foundation Piezometers
Appendix C3	Fill Piezometers
Appendix C4	Drain Piezometers

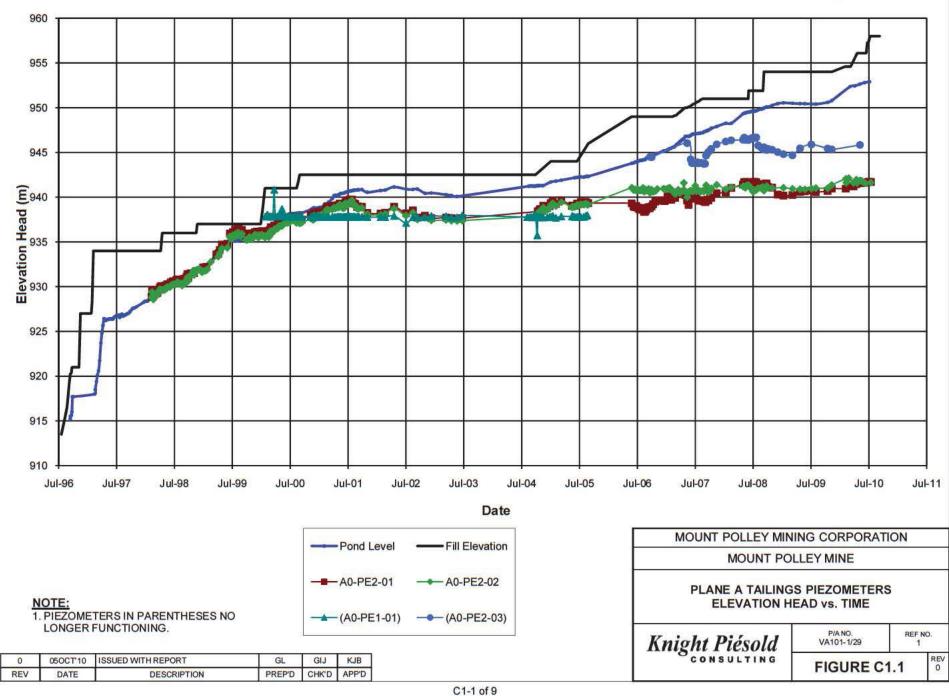


# **APPENDIX C1**

TAILINGS PIEZOMETERS

(Pages C1-1 to C1-9

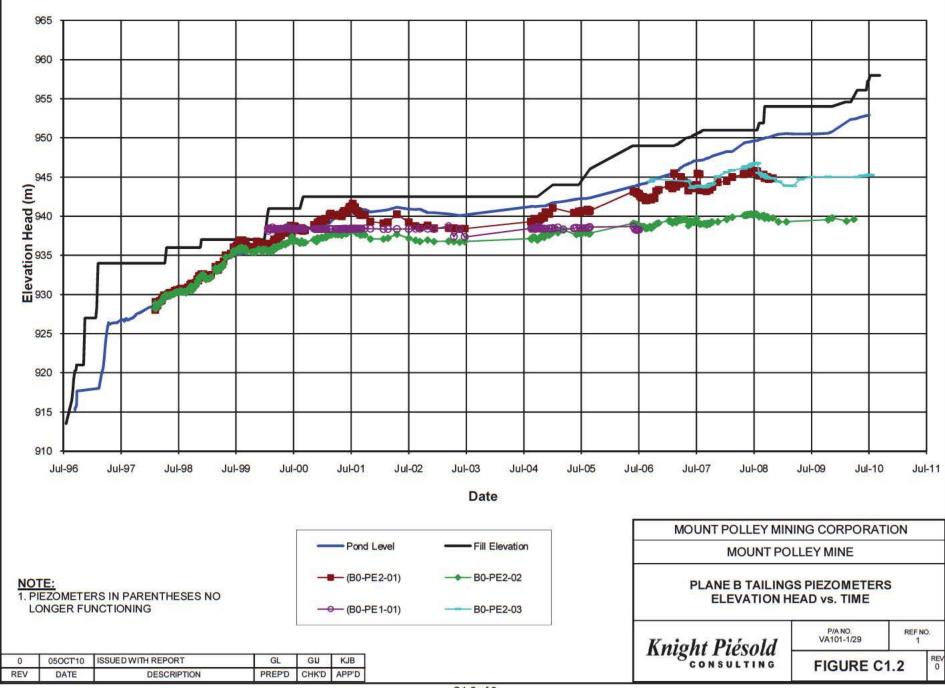
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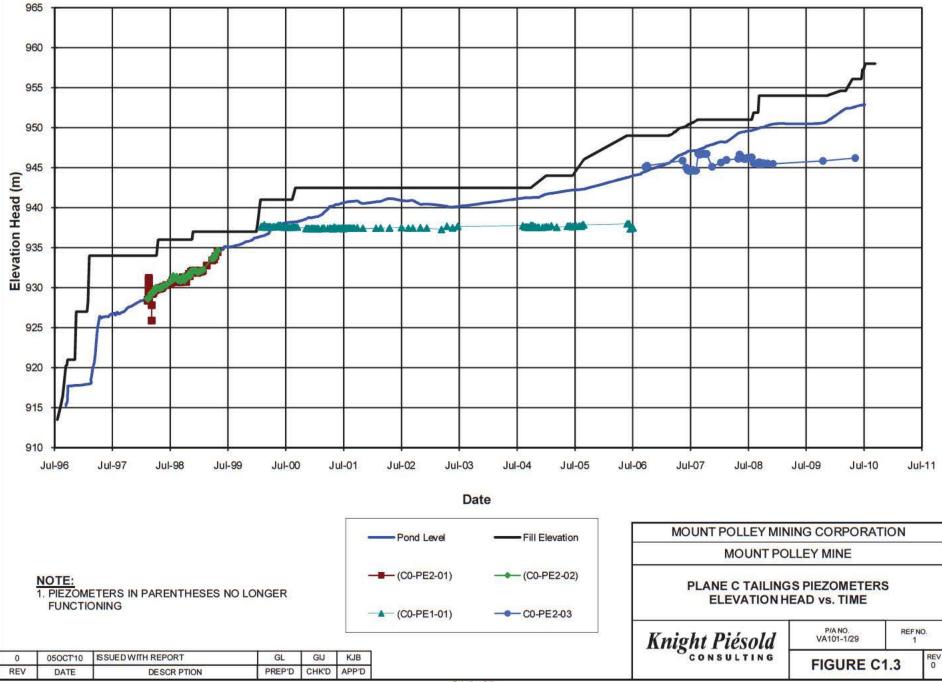
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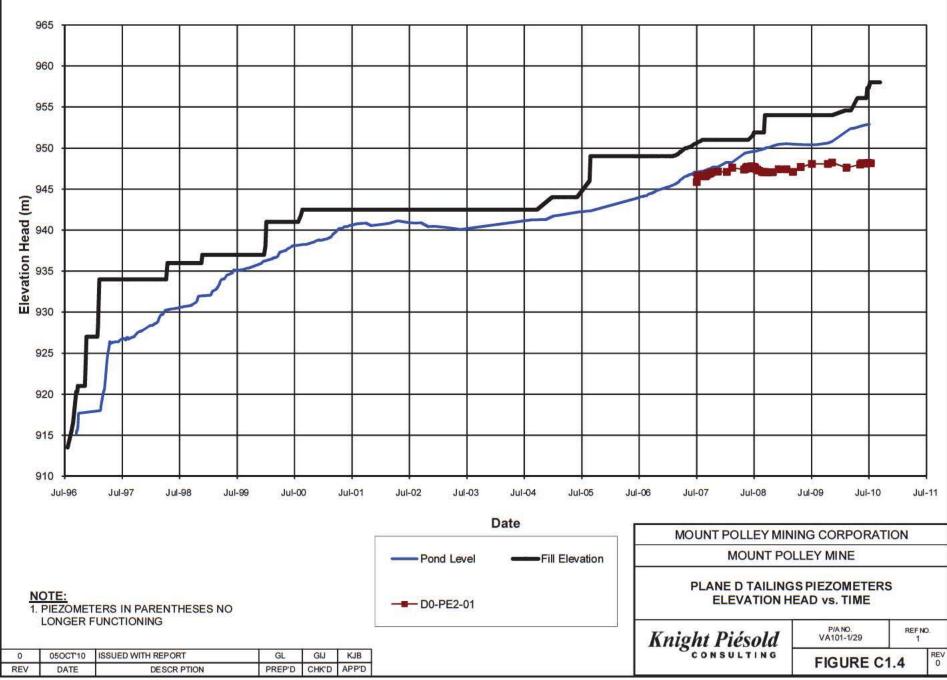
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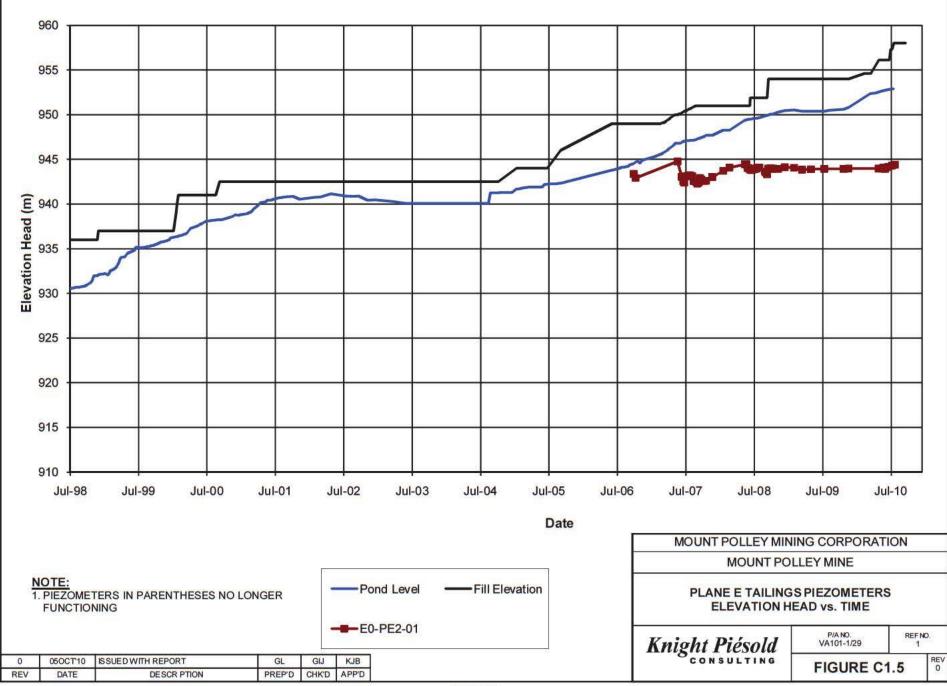
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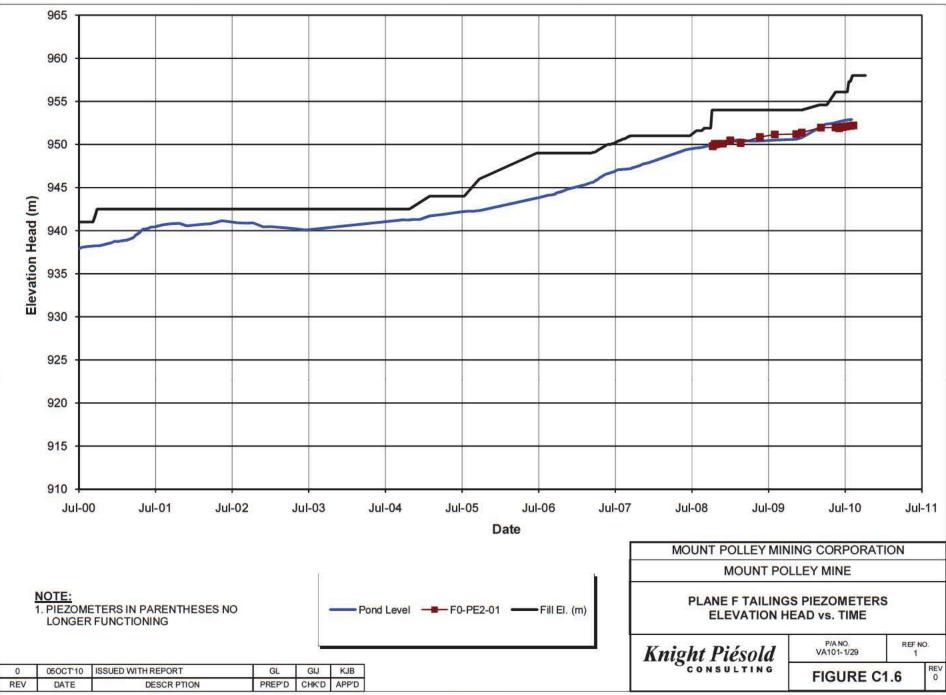
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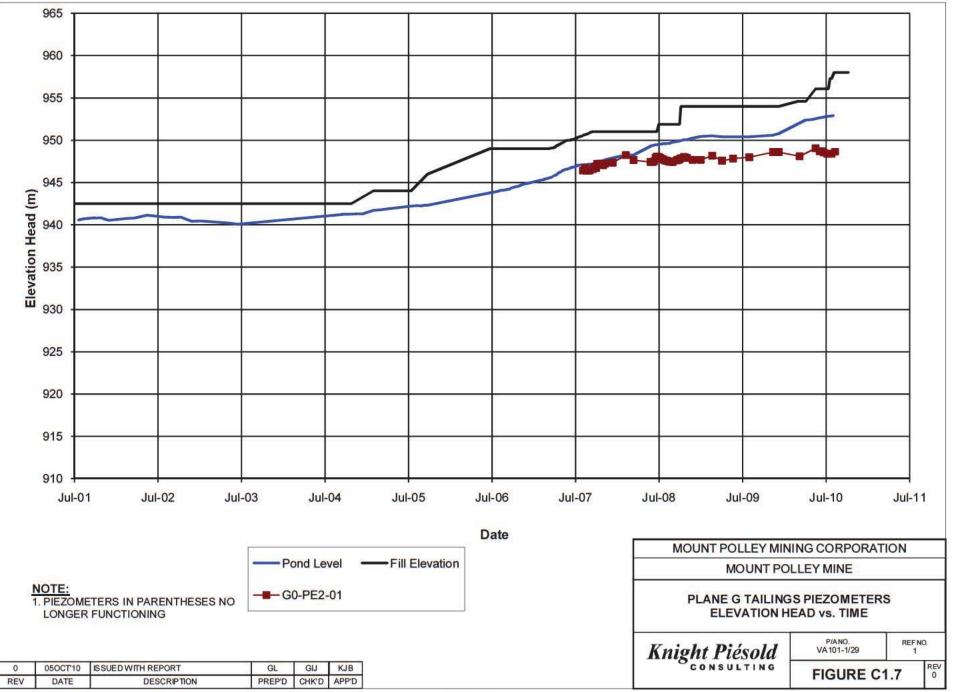


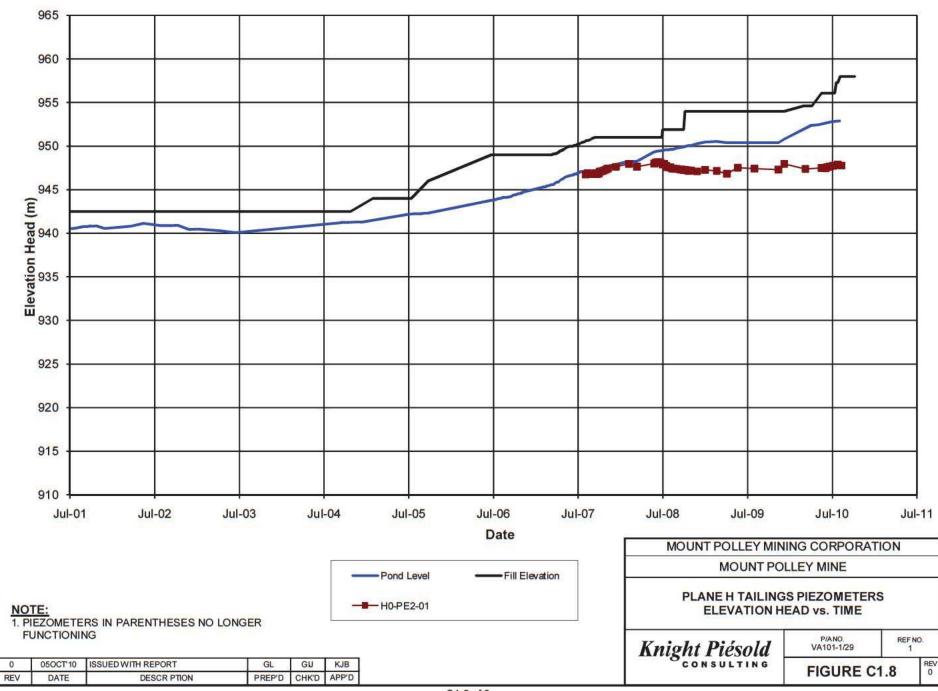


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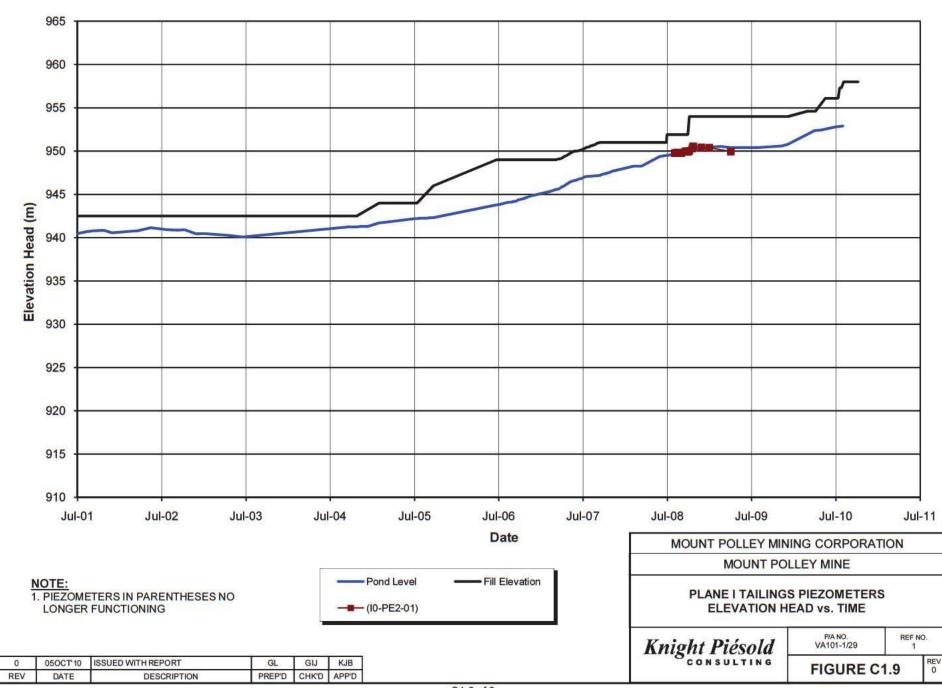






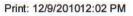


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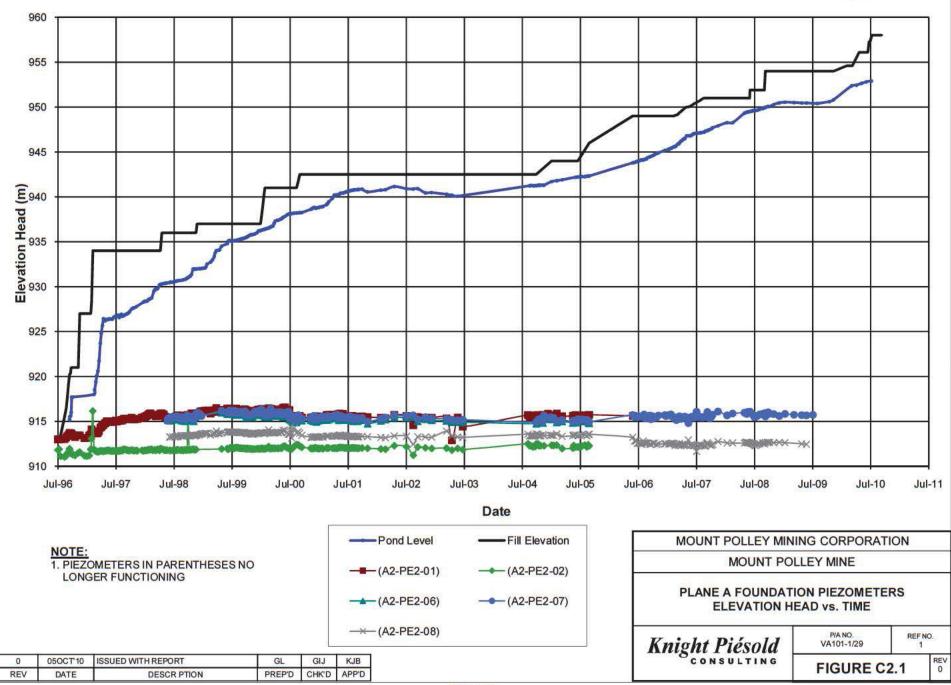


# **APPENDIX C2**

FOUNDATION PIEZOMETERS

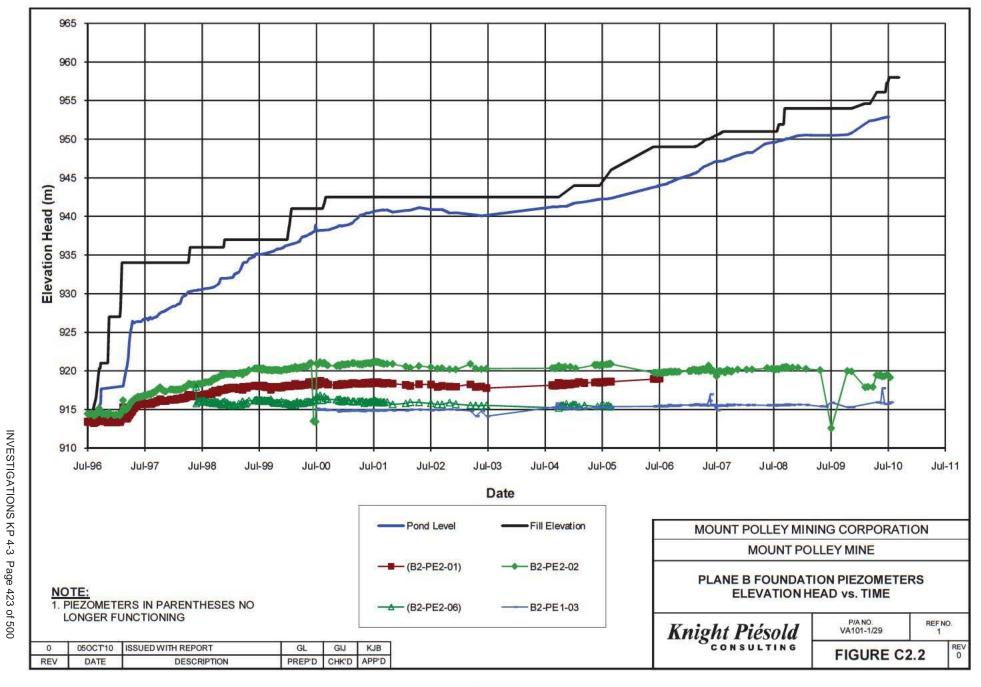
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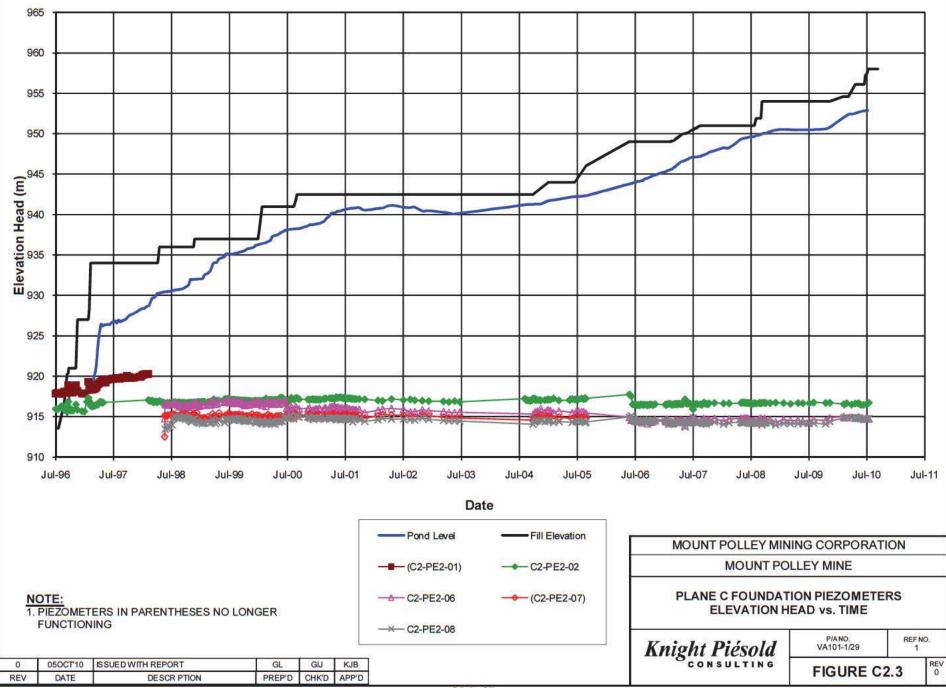


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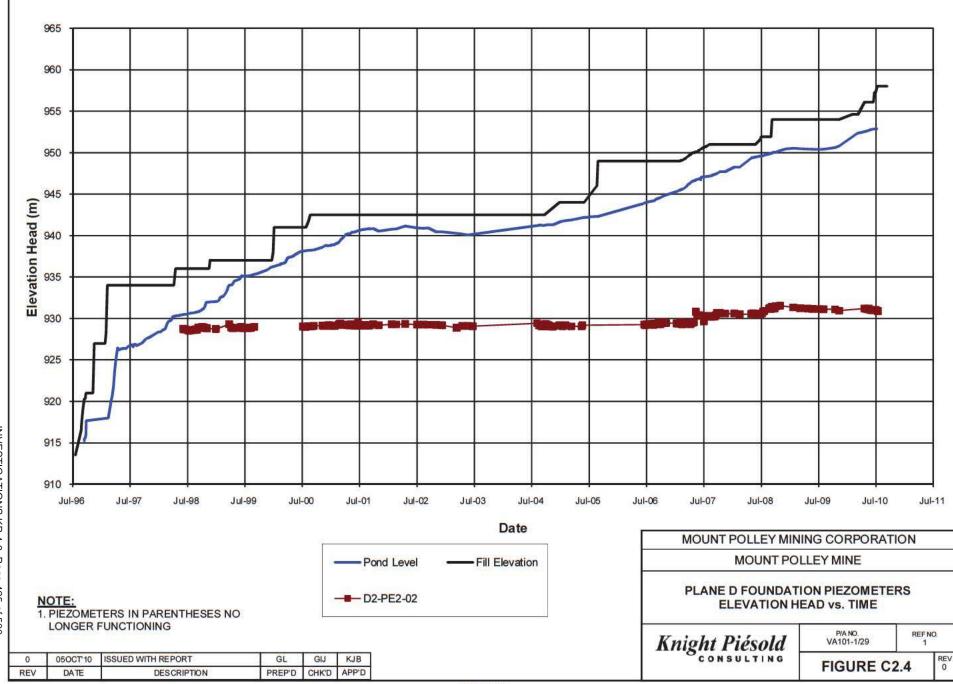
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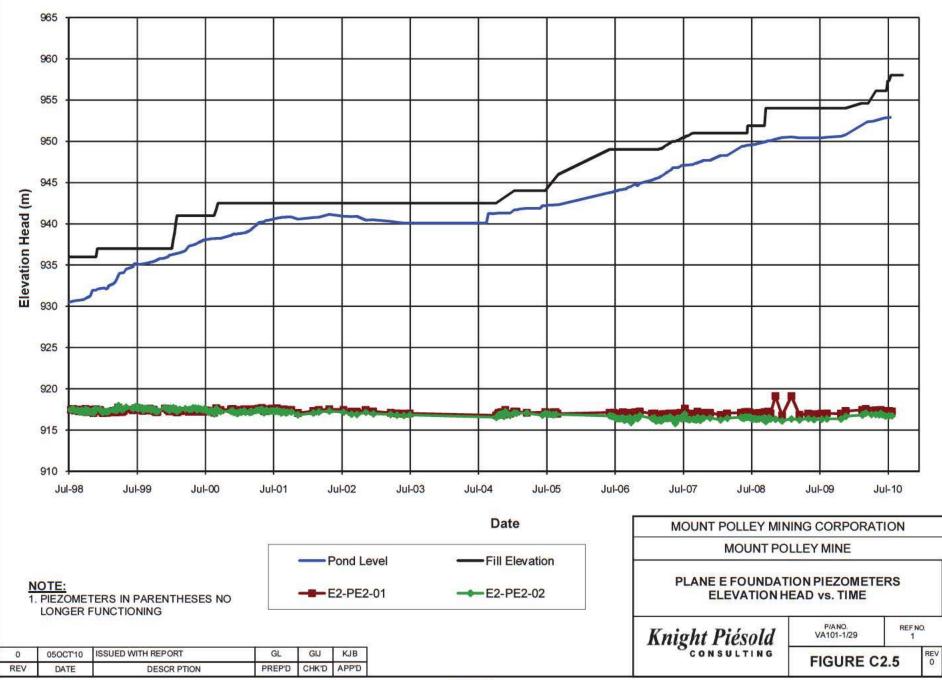
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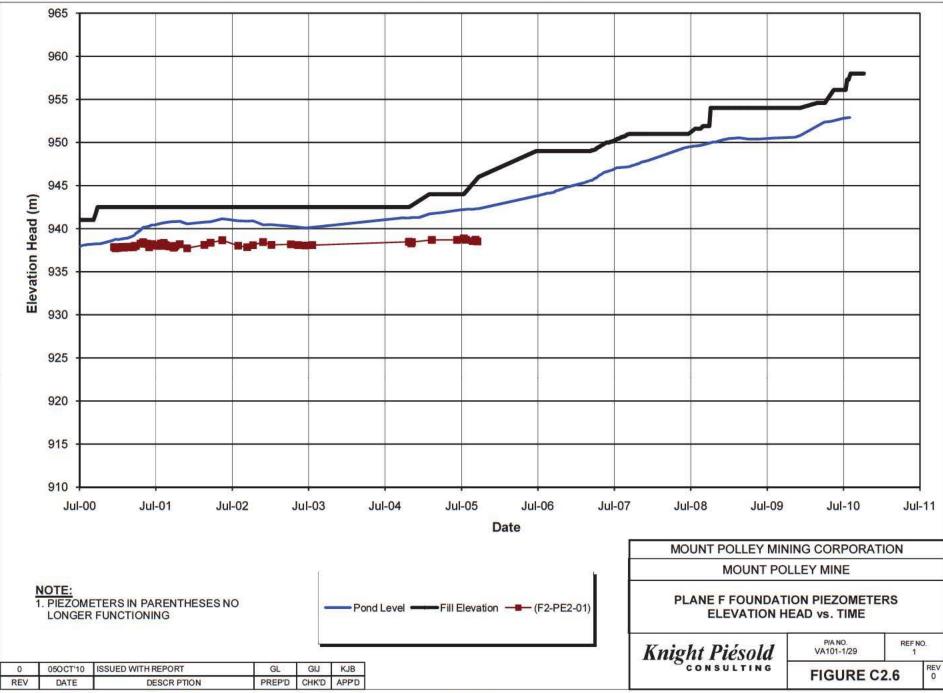
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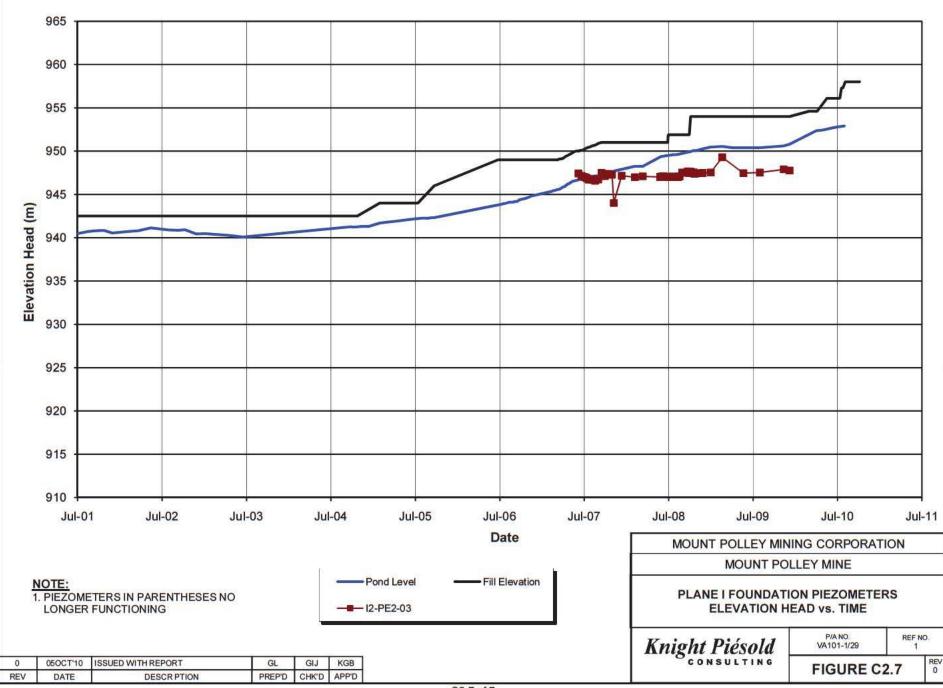


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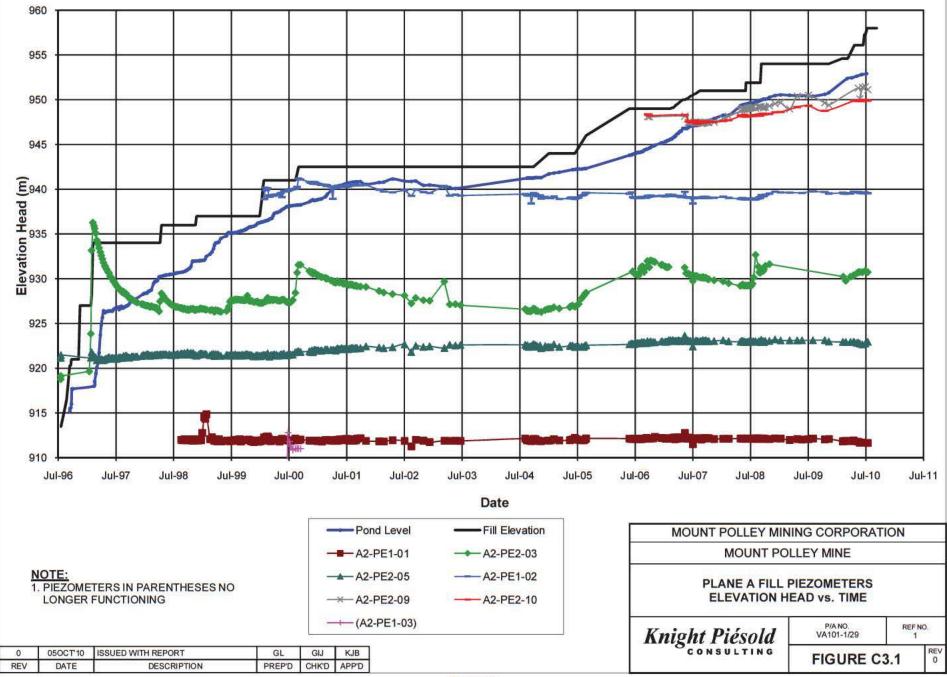


## **APPENDIX C3**

FILL PIEZOMETERS

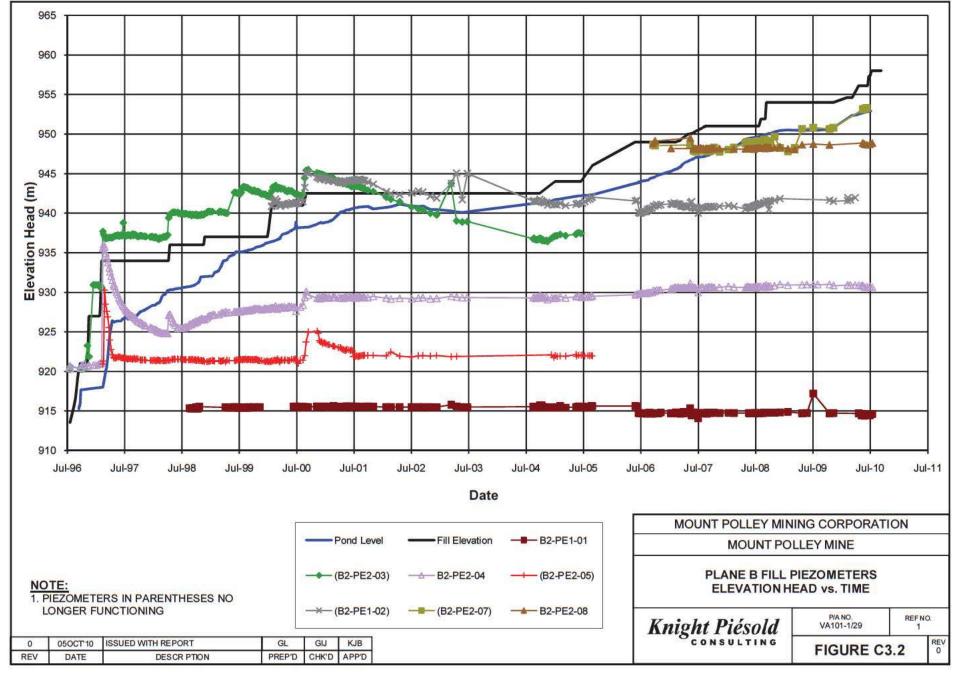
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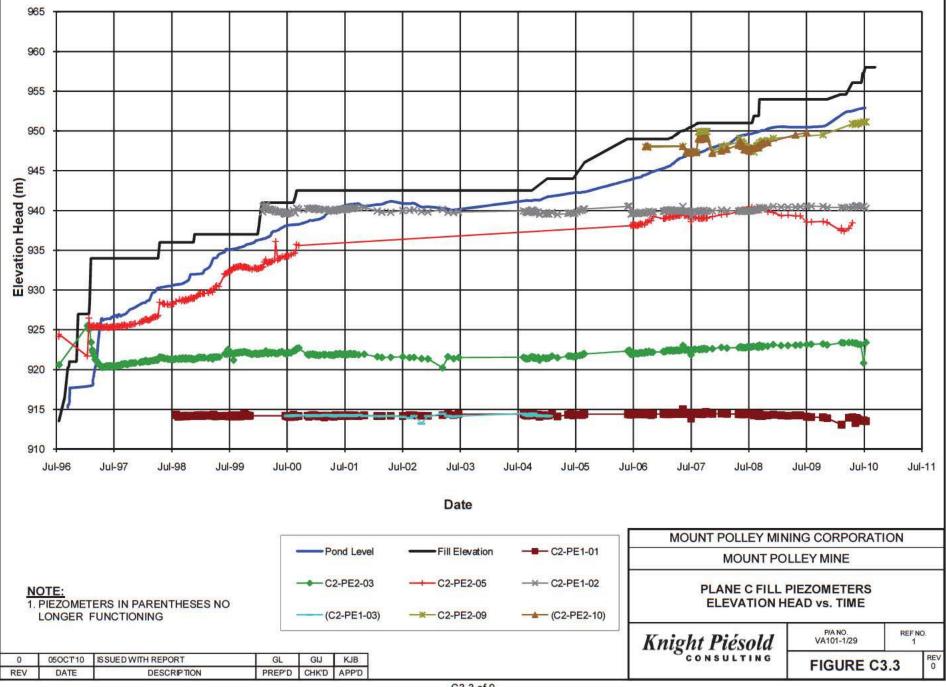
VA101-1/29-1 Rev 0 December 15, 2010 INVESTIGATIONS KP 4-3 Page 429 of 500



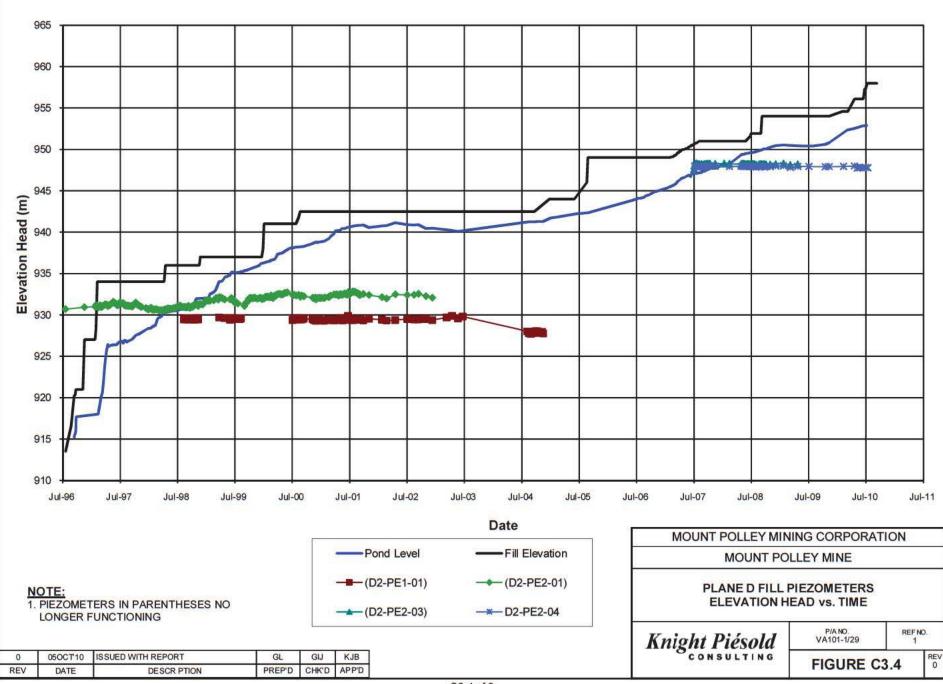
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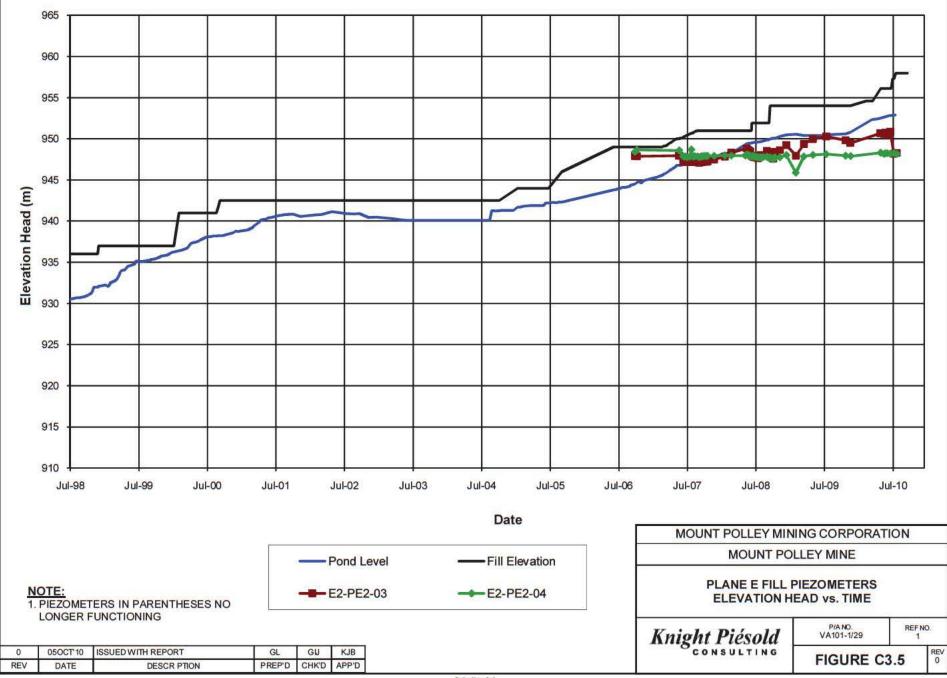
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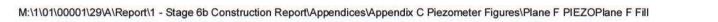


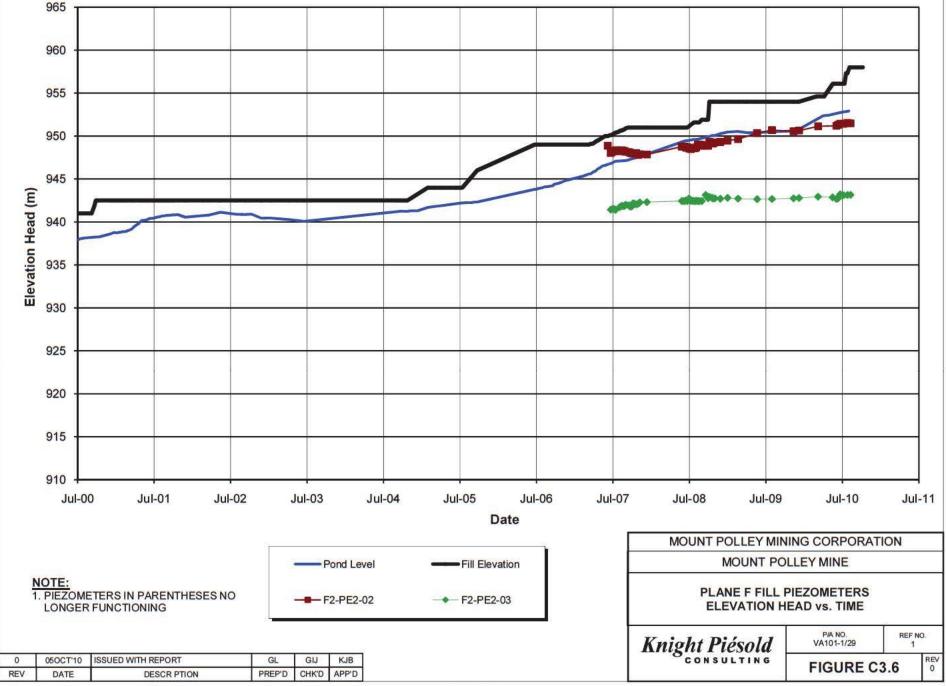
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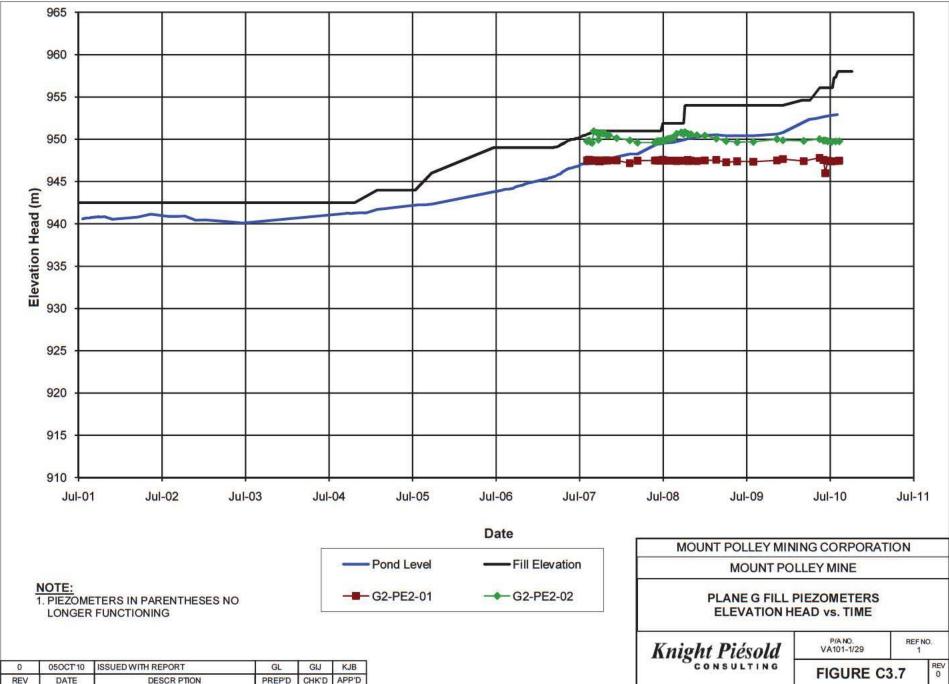


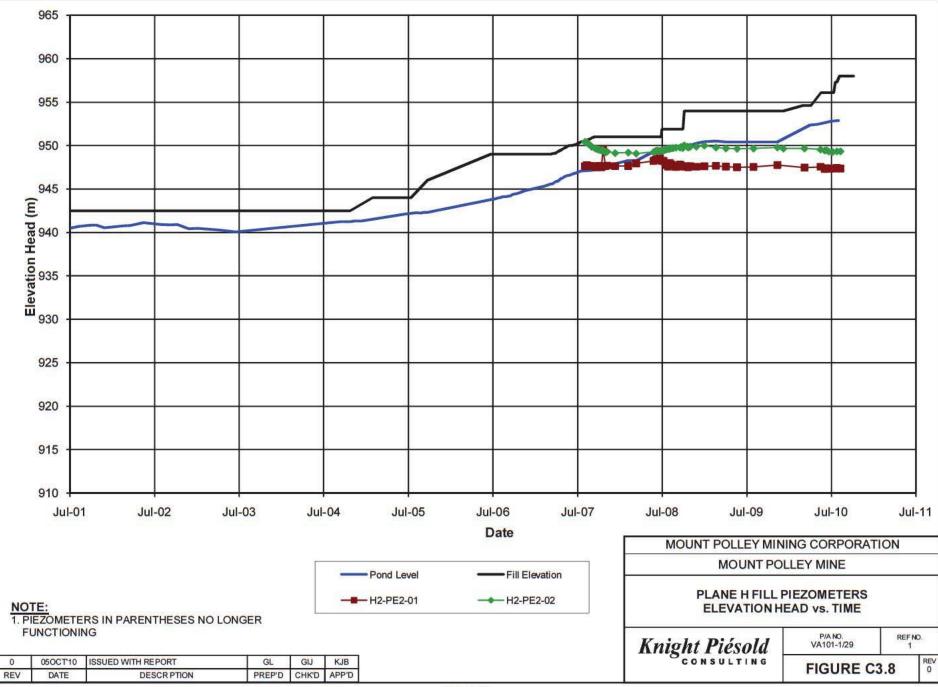


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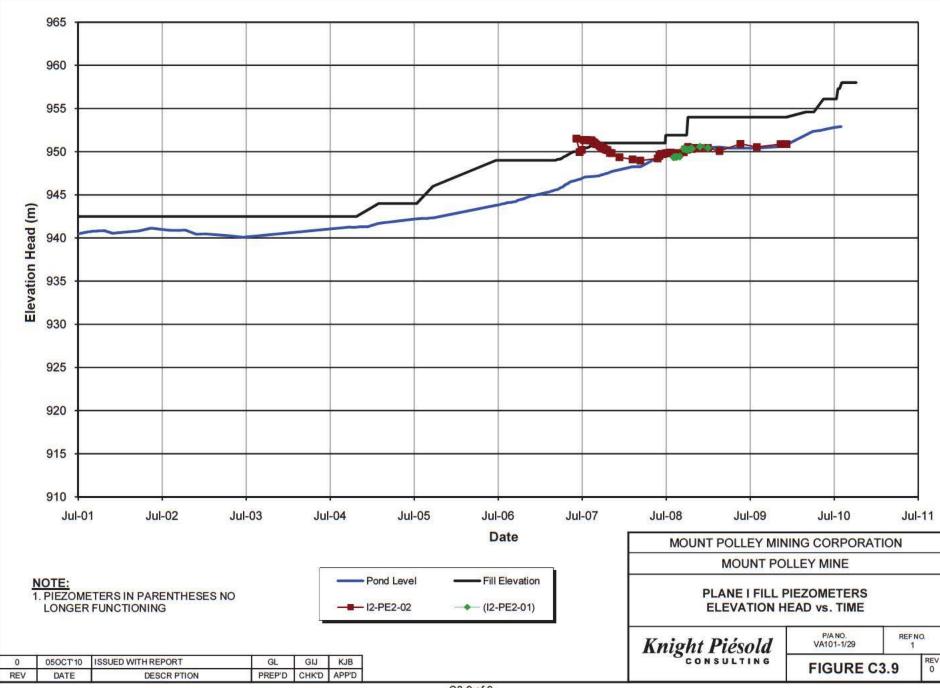








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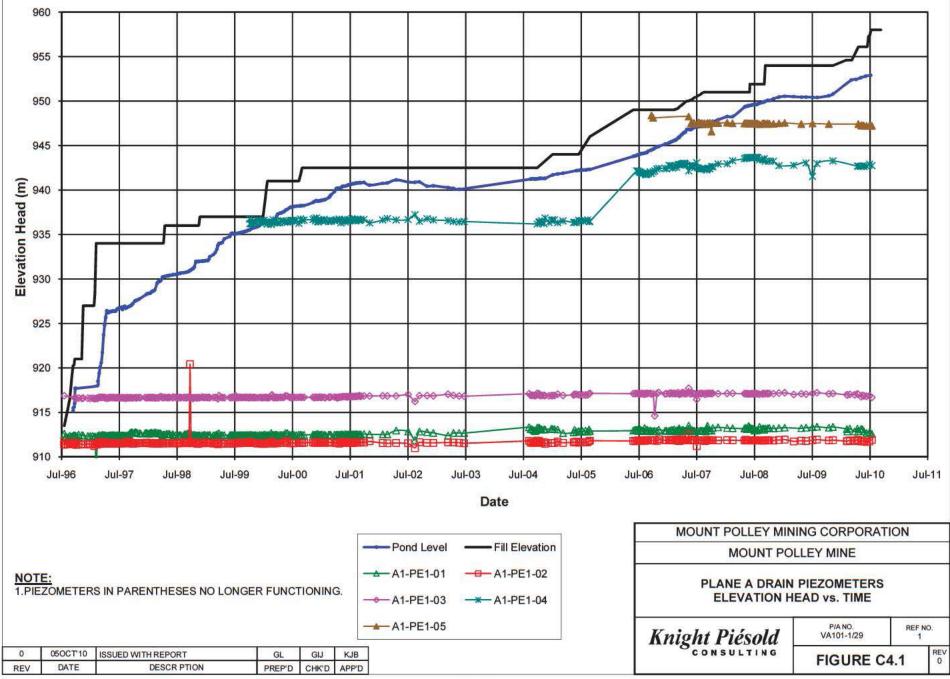


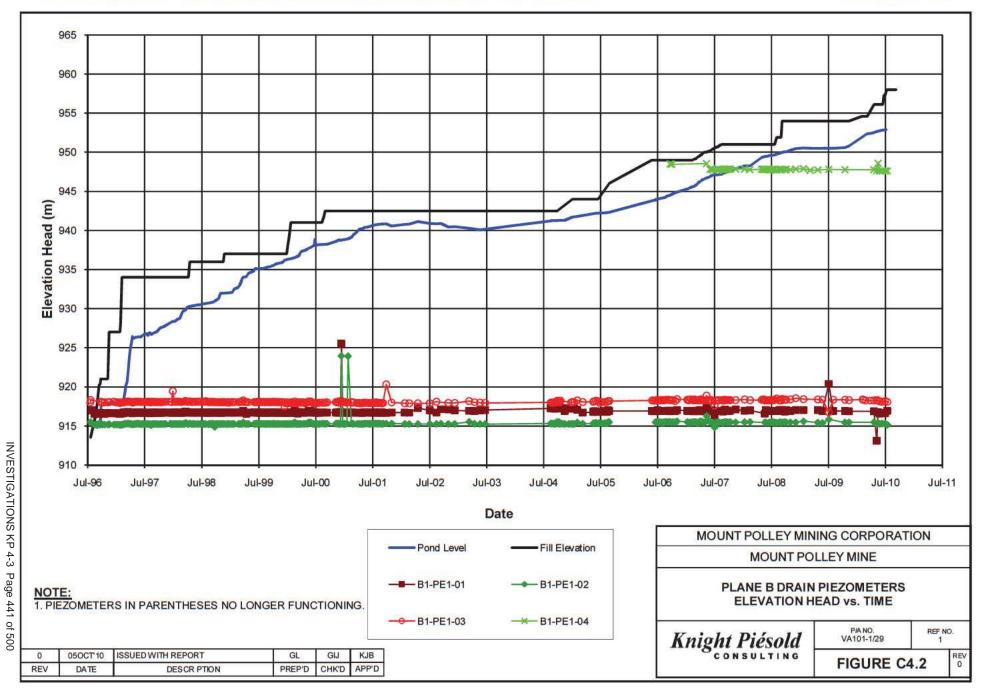
## **APPENDIX C4**

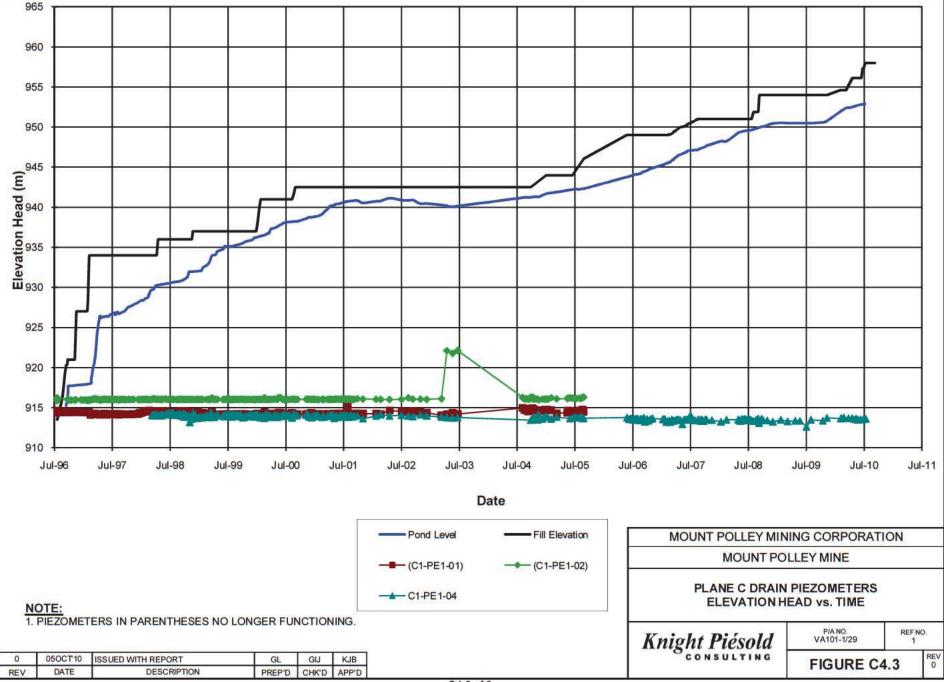
DRAIN PIEZOMETERS

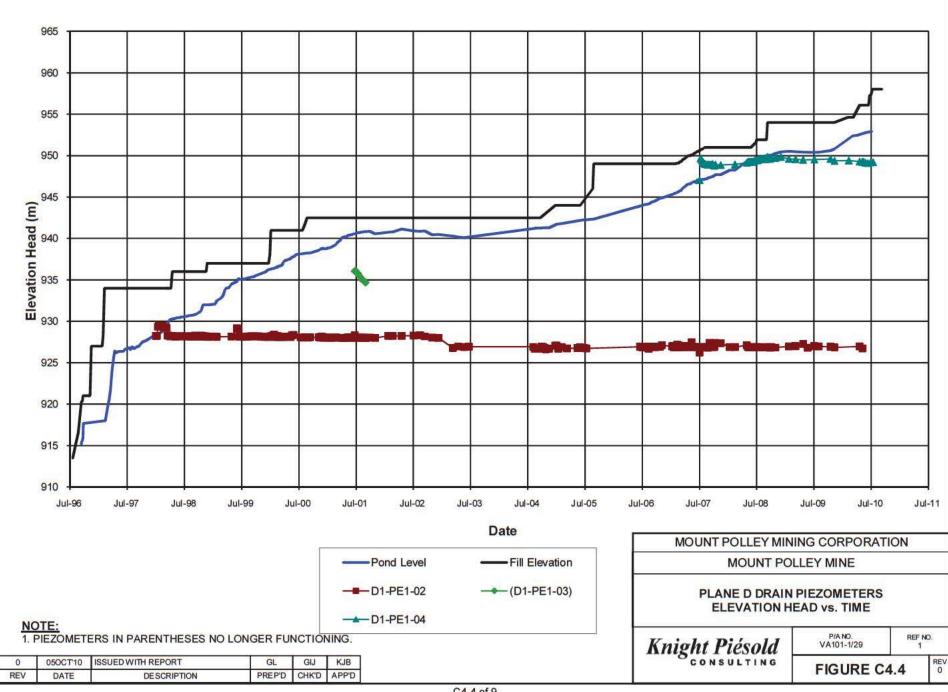
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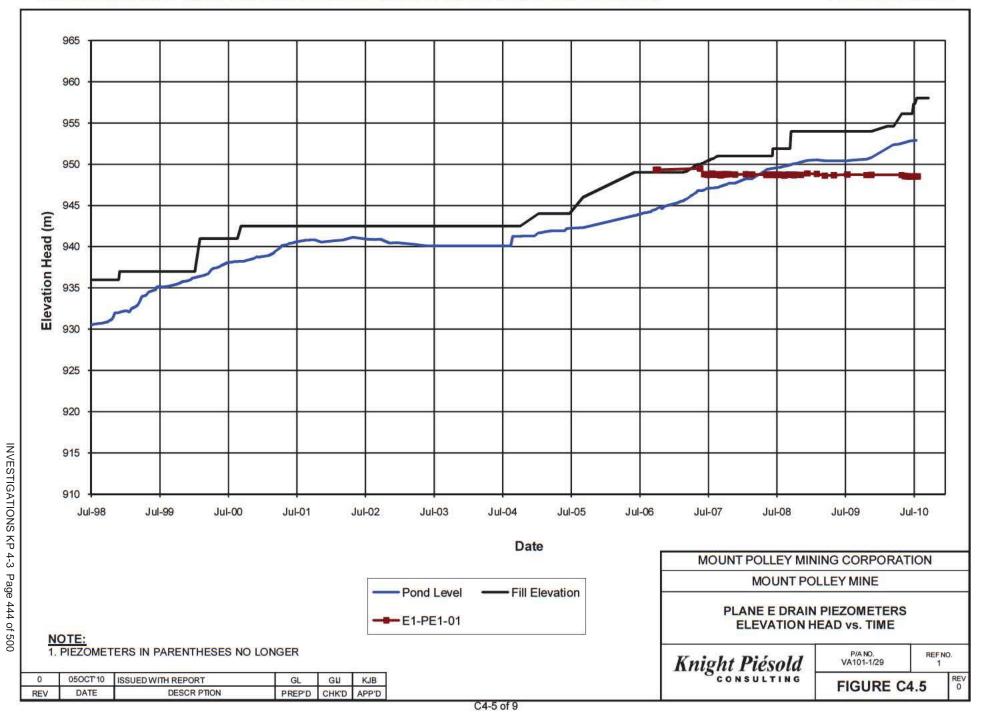
VA101-1/29-1 Rev 0 December 15, 2010 INVESTIGATIONS KP 4-3 Page 439 of 500



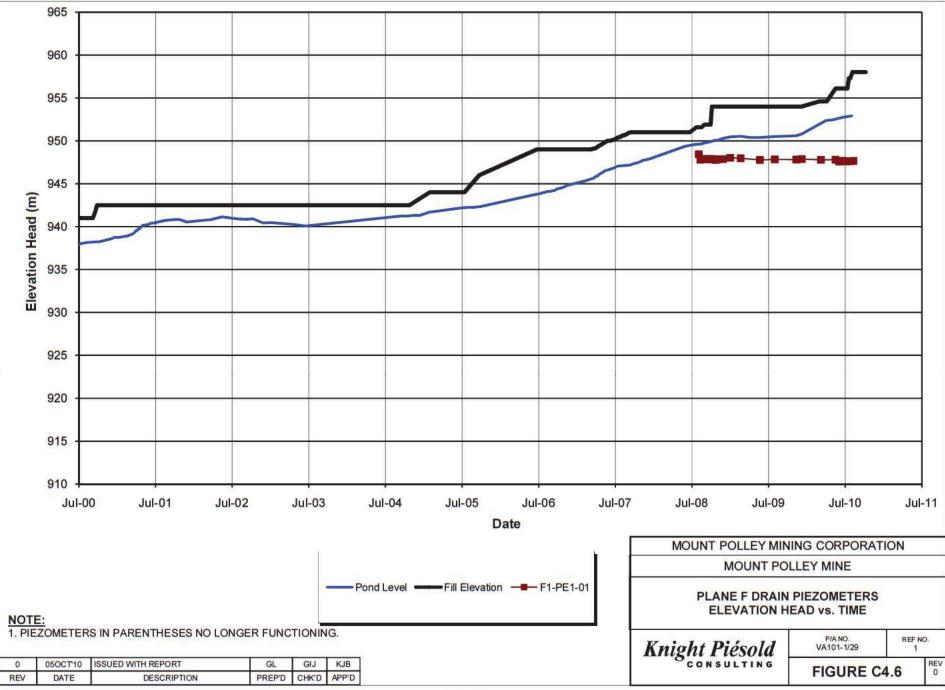


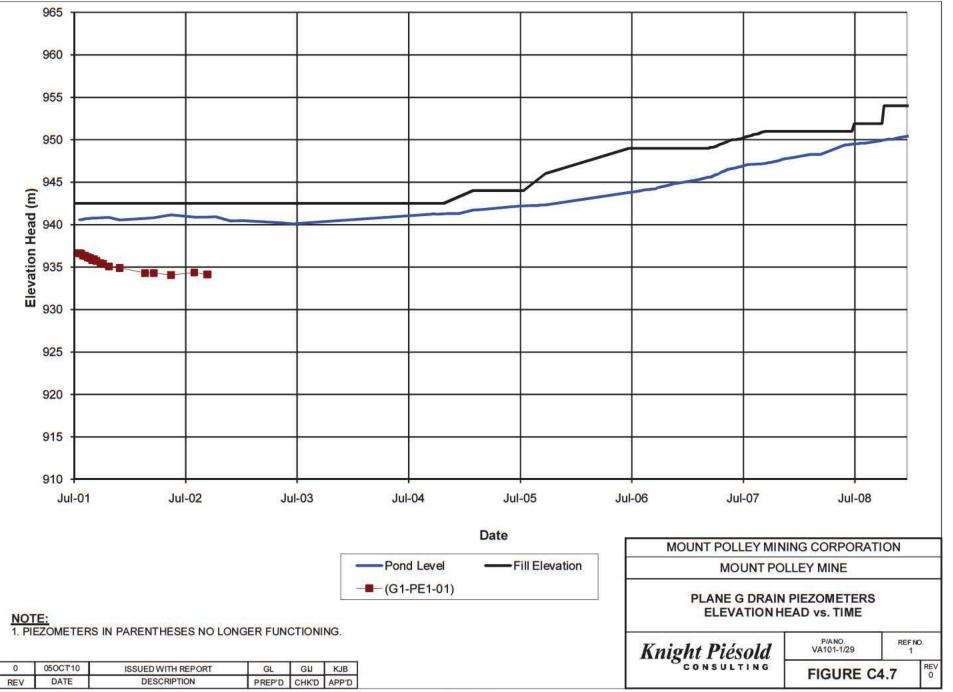


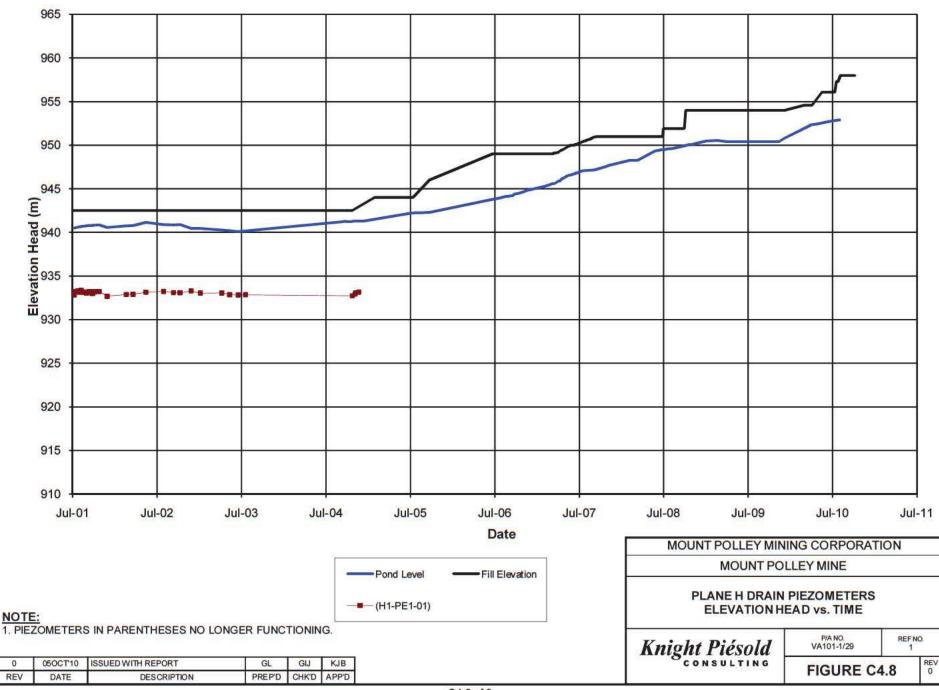




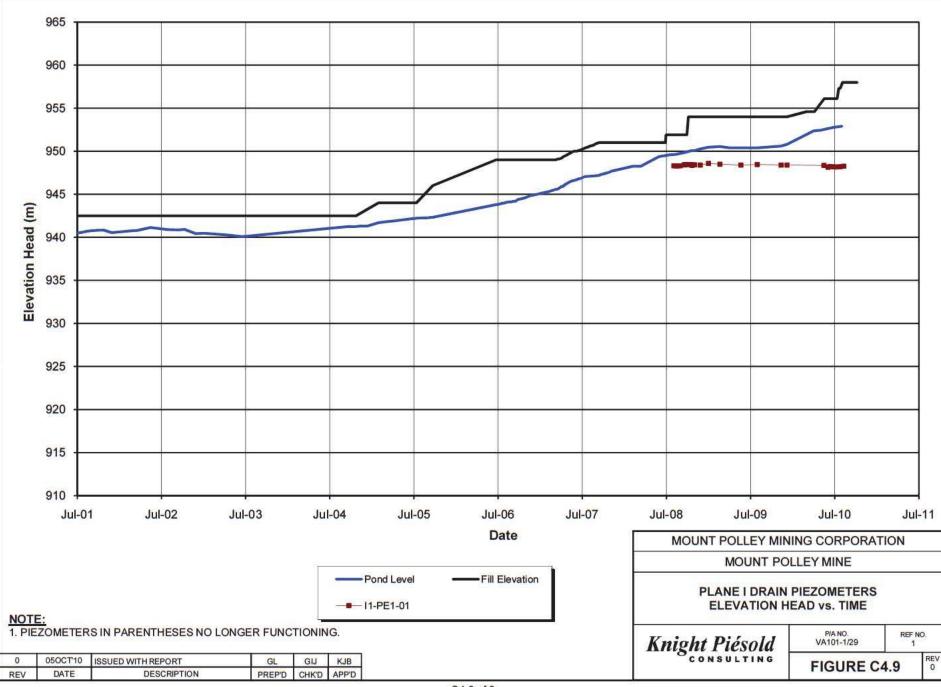
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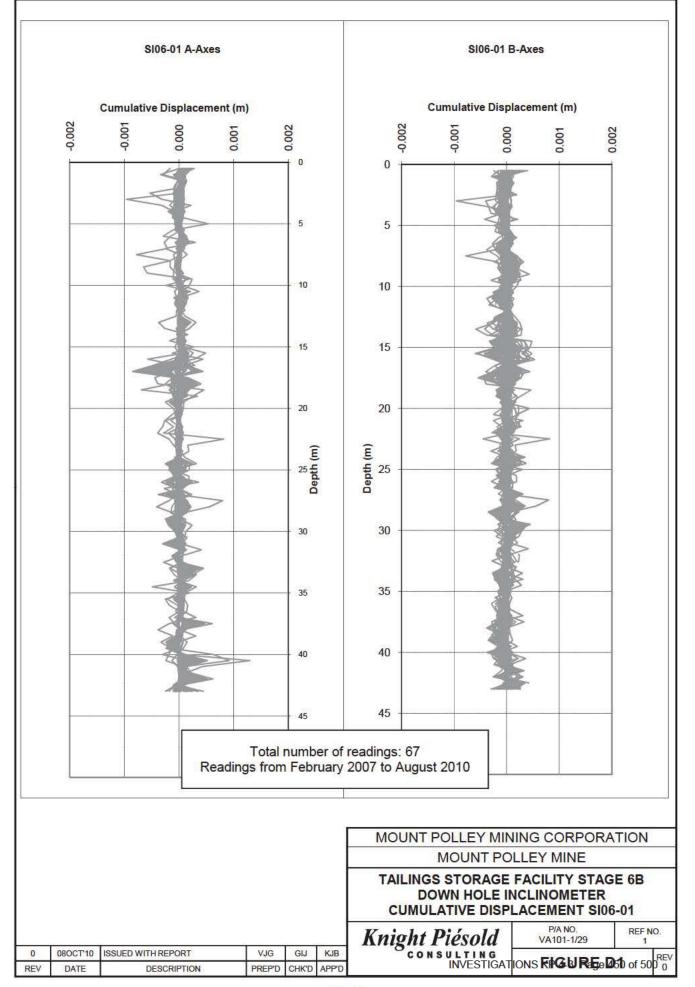


## APPENDIX D

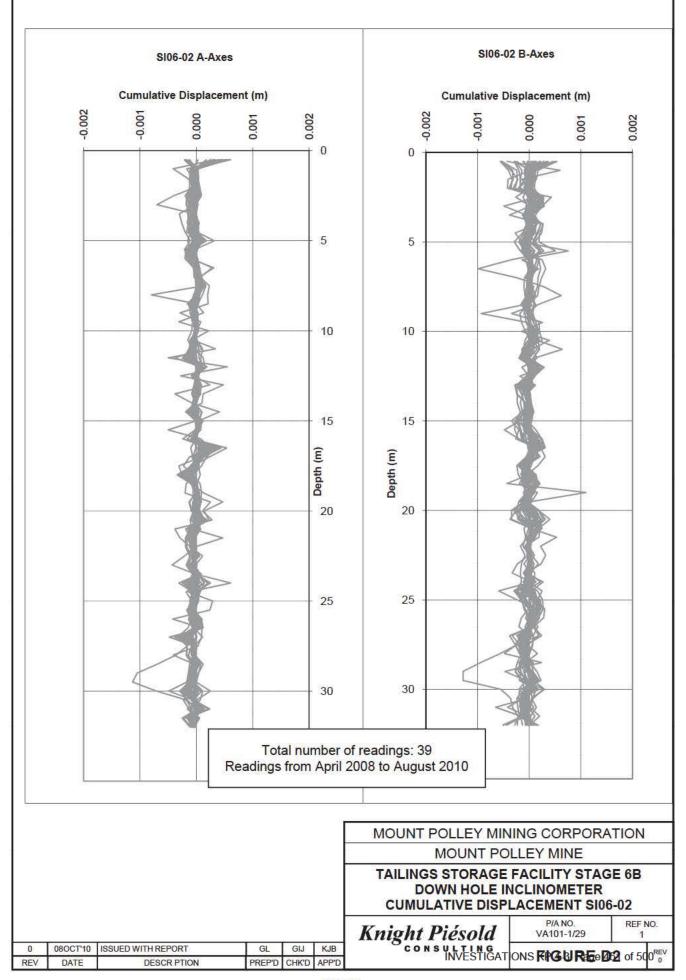
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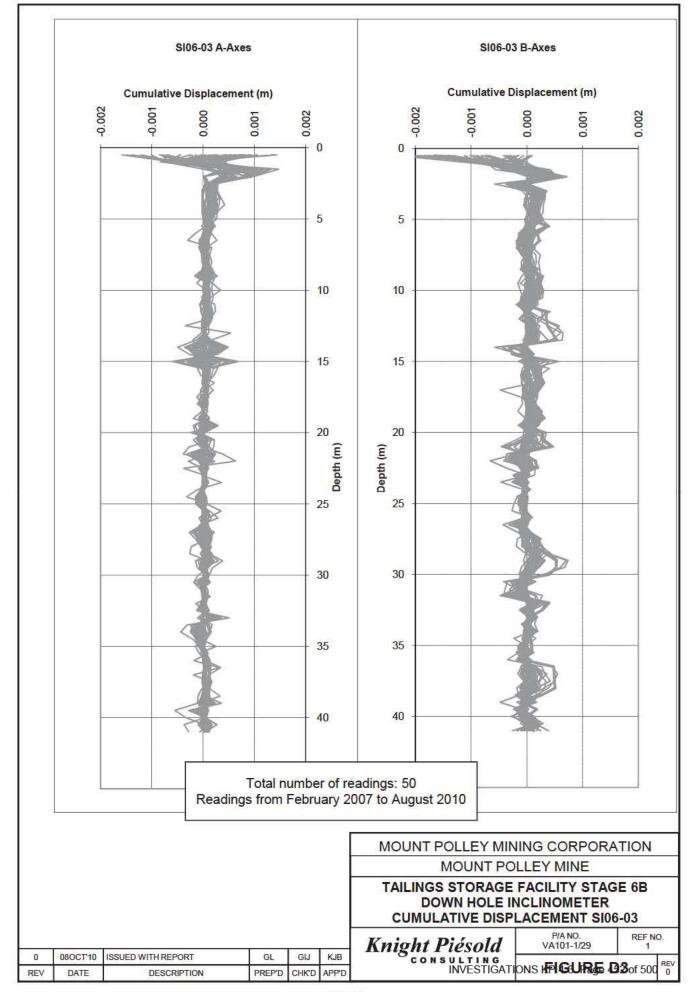
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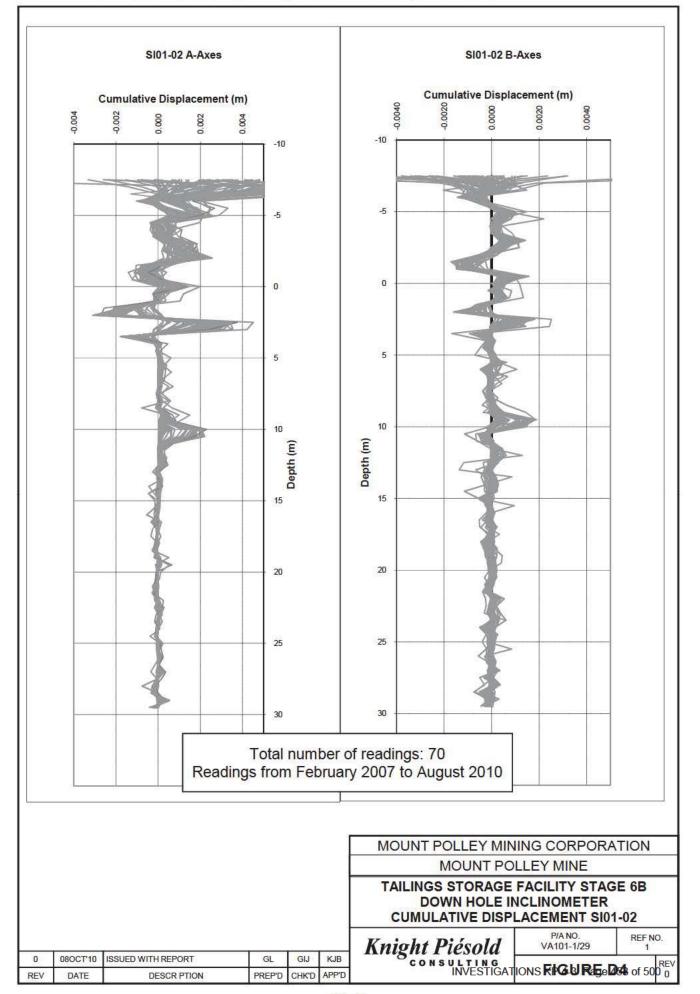
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## APPENDIX E

PHOTOGRAPHS

(Pages E-1 to E-12)

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PHOTO 1 – View of Mount Polley Tailings Storage Facility from the Pond Zone Open Pit



PHOTO 2 - Sand cell construction on the Perimeter Embankment

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**PHOTO 3** – Haulage of till material from the Perimeter Embankment borrow pit



PHOTO 4 - Placement of till material on the Main Embankment

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PHOTO 5 - Compaction of till material on the Perimeter Embankment



 $\ensuremath{\text{PHOTO}}\ 6$  – Control sampling of the till material at the Perimeter Embankment borrow pit

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**PHOTO 7** – Density testing of Zone S using a nuclear densometer on the South Embankment



**PHOTO 8** – Placement of Zone F filter material on the Perimeter Embankment

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**PHOTO 9** – Placement of Zone F filter material on the South Embankment



**PHOTO 10** – Compaction of Zone F filter material on the South Embankment

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**PHOTO 11** – Record sampling of the Zone F filter material on the Perimeter Embankment



**PHOTO 12** – Placement of Zone T transition material on the South Embankment

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**PHOTO 13** – Compaction of Zone T transition material on the South Embankment



**PHOTO 14** – Zone C NAG waste rock hauled to the Main Embankment using the mine fleet

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PHOTO 15 - Zone C NAG waste rock material placed in 2 m lifts



**PHOTO 16** – Construction of Zone U waste rock berm for future sand cell construction on the Perimeter Embankment





**PHOTO 17** – Placement of Zone U material on the Main Embankment using the mine fleet



PHOTO 18 - Toe drain extension on the South Embankment abutment

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PHOTO 19 - Tailings beach piezometers on the Perimeter Embankment



PHOTO 20 – Reclaim barge

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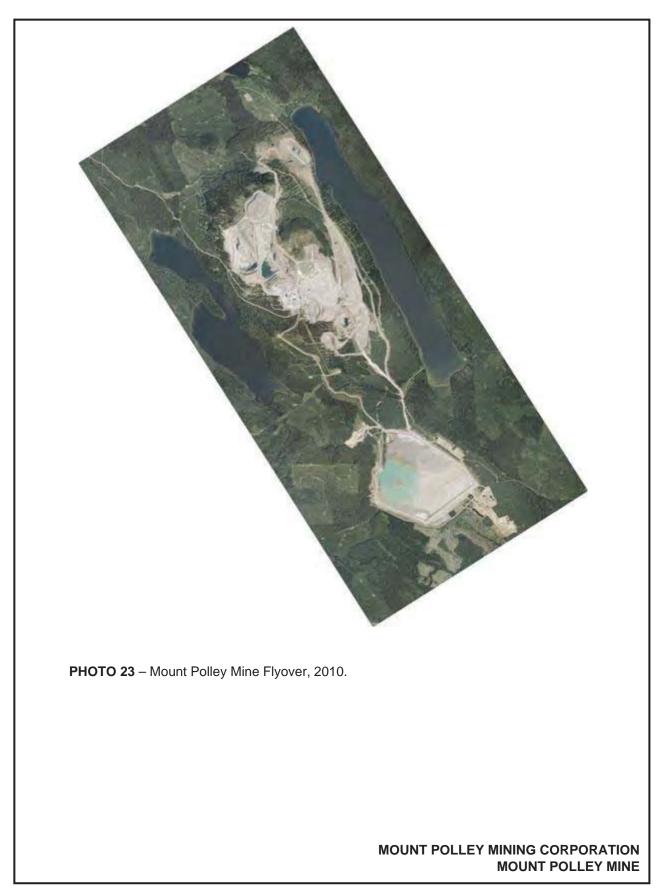
PHOTO 21 – Main Embankment seepage pond



**PHOTO 22** – Inclinometer measurements on the Main Embankment

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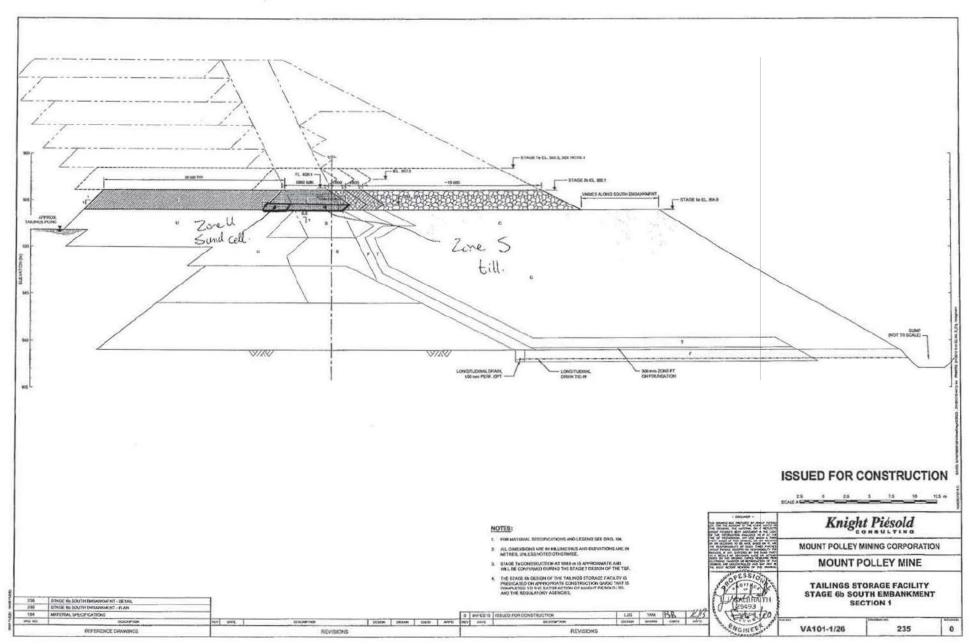
## APPENDIX F

DESIGN MODIFICATIONS

(Pages F-1 to F-5)

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FILE NO .:	2010-001	-	DATE:18-Feb-10
	1	REQUEST FOR APPROVAL BY D	
PROJECT:	Mt. Polley - Stage 6b Cor	struction	PROJECT NO.: 101-0001/29
AREA OF WO	South Emba	nkment 1+000 to corner 3 1+550	
GENERAL DE	ESCRIPTION OF PROPO	SED WORK:	
MPMC would	like to replace Zone U till	with sand cell construction below eleva	tion 954.6m.
Please review No. of Sheets:		ubstitution as per the attached sheets.	
Reference Dra	awings / Clauses:	See drawing 235	
Signed:			Originator: Mark Smith, EIT
		FOR VANCOUVER OFFICE	EUSE
Date Received	1: Feb 18/10		
Proposed char	, nge / substitution not appr	oved:	
	approved a	s submitted:	
	approved a	as amended:	
No. of sheets a	attached:	(amendments only)	
Signed:	Engineer:	JAllat	Director:A
Date Returned	: Feb 26/i	<u> </u>	
Knight Piesol		Notes:	
1400 - 750 Wes Vancouver, B.C Phone: (604) 68	C. V6C 2T8	2. Vancouver office to kee	py of all submissions and attachments. ep a file copy of completed request , marked up as described above.
	35-0147		en en restante en la seconda de la constante de la seconda de la se



TILE NO.: 2010-002	and the same of th	DATE: 30-Mar-10
		VAL BY DESIGN OFFICE
	OF CHANGE / S	SUBSTITUTION
PROJECT: Mt. Polley - Sta	age 6b Construction	PROJECT NO.: 101-0001/29
AREA OF WORK: All	l embankments	
GENERAL DESCRIPTION O	C DRODOGED WORK	
		Zone U till with mine waste rock. The new design will
have the Zone u constructed p		Zone o till with this waste lock. The new design will
lave the zone a constructed p		
	change / substitution as per the attache	d sheets.
No. of Sheets: 2		
Reference Drawings / Clauses	s: See drawing 226	
	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
11 /	· ~	
signed: Weark A	16:1	
Signed: Murl / 4	CANN	Originator: Mark Smith, EIT
and the second sec		
	FOR VANCOUV	<u>'ER OFFICE USE</u>
20	Mach 2010	
Date Received:	Middler COLU	
Proposed change / substitutio	on not approved:	
	a second s	
E	approved as submitted:	
	approved as submitted:	
	approved as amended:	2
		2
	approved as amended:	
No. of sheets attached:	approved as amended: <u>(27</u> <u>3</u> (amendments only)	Director MAAA'
	approved as amended:	Director:
No. of sheets attached:	approved as amended: <u>(27</u> <u>3</u> (amendments only)	Director: MAn
No. of sheets attached:	approved as amended: <u>(27</u> <u>3</u> (amendments only)	Director: MA.
No. of sheets attached:	approved as amended: <u>(27</u> <u>3</u> (amendments only)	Director:
No. of sheets attached:	approved as amended: 67 3 (amendments only) Engineer: 62 1 200 <u>Notes:</u>	
No. of sheets attached:	approved as amended: <u>(app 3</u> (amendments only) Engineer: <u>Cars</u> <u>1 2000</u> <u>Notes:</u> 1. Originator to	o keep a copy of all submissions and attachments.
No. of sheets attached:	approved as amended: 3 (amendments only) Engineer: 1. 2000 <u>Notes:</u> 1. Originator to 2. Vancouver of	

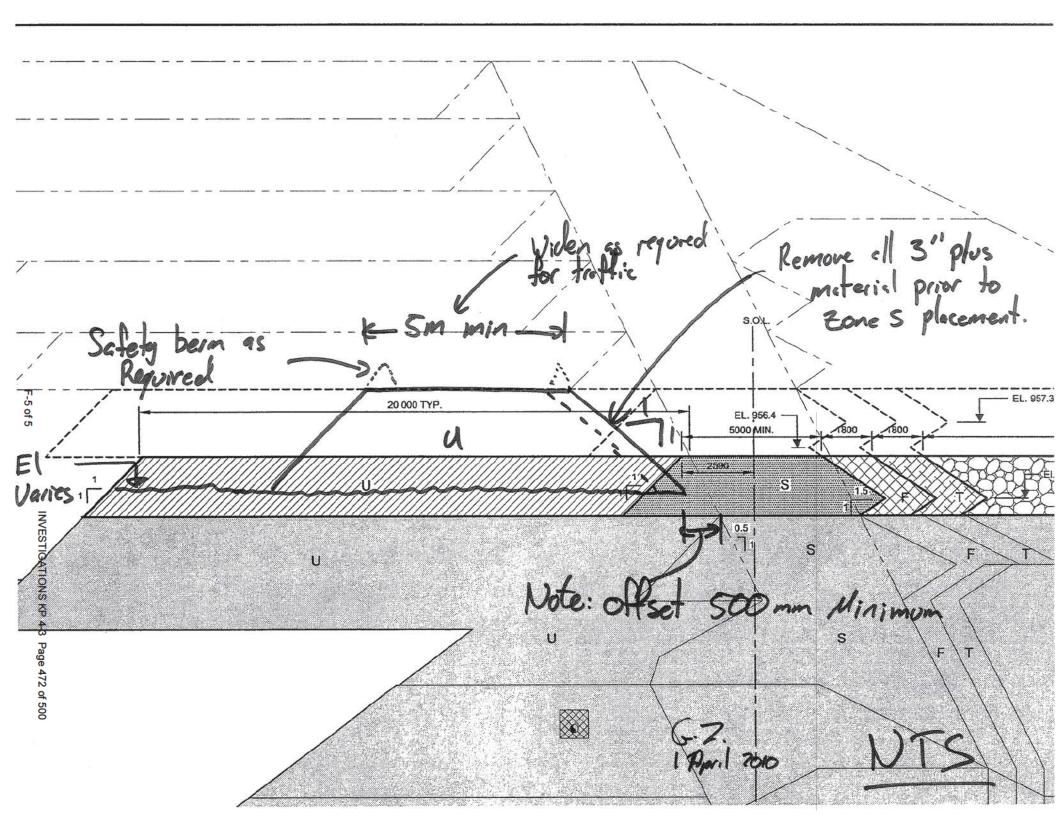
The design change to use waste rock for a reduced width zone U is approved with amendments. The amendments are shown on the attached sketch and summarized as follows.

- Maintain a minimum 5m crest width of zone U. Increase zone U crest width as required for haul traffic.
- Place and compact zone U as for zone C. Place in 2m lift max, compaction by haul traffic.
- Maintain a slope of 1H:1V or flatter on the zone U to zone C interface.
- Remove all particles larger than a coarse gravel, (+75mm or +3") from the interface between zone U and zone C.

The following comments address constructability of the revised zone U.

- Zone S should not be used for equipment traffic. The zone S material does not have sufficient strength or durability for heavy construction equipment traffic. Traffic on the zone S will result in damage to placed material. The zone S damage may include rutting and deformation. Damaged zone S material will need to be removed and replaced.
- Zone U waste rock will have sufficient strength and durability for heavy construction traffic. Use of zone U for construction traffic will need to meet the 'Health, Safety and Reclamation Code for Mine in BC'.

6-2- 1 Apr. 1 2010



# Knight Piésold

# TRANSMITTAL

Suite 1400 - 750 West Pender Street Vancouver, BC V6C 2T8 Tel: 604.685.0543 Fax: 604.685.0147

TO:	Imperial Metals Corporation 200 - 580 Hornby Street	DATE:	January 28, 2011
	Vancouver, BC V6C 3B6	FILE NO.:	VA101-1/29-A.01
ATTENTION:	Mr. Ron Martel	CONT. NO.:	VA11-00249

RE: 2010 Engineering Support for Mount Polley Mine

ITEM NO.	DESCRIPTION
1.	7 Copies (Copy No # 1 – 7) Report: MOUNT POLLEY MINING CORPORATION MOUNT POLLEY MINE
	TAILINGS STORAGE FACILITY REPORT ON STAGE 6B CONSTRUCTION VA101-1/29-1 Rev 1 January 25, 2011.
2.	7 Copies (Copy No # 1 -7) Report: MOUNT POLLEY MINING CORPORATION MOUNT POLLEY MINE
	TAILINGS STORAGE FACILITY REPORT ON 2010 ANNUAL INSPECTION VA101-1/29-2 Rev 1 January 25, 2011.

REMARKS: To be forwarded to Ron Martel by Imperial Metals Corp. to the Likely Mount Polley Mining Corporation address.

Signed: Nicola Sheridan

Approved: P Greg Johnston

INVESTIGATIONS KP 4-3 Page 473 of 500



# TRANSMITTAL

Suite 1400 - 750 West Pender Street Vancouver, BC V6C 2T8 Tel: 604.685.0543 Fax: 604.685.0147

TO:	Mount Polley Mining Corporation P.O. Box 12	DATE:	January 31, 2011
	Likely, BC VOL 1N0	FILE NO.:	VA101-1/29-A.01
ATTENTION:	Mr. Ron Martel	CONT. NO.:	VA11-00257

RE: 2010 Engineering Support for Mount Polley Mine

ITEM NO.	DESCRIPTION
1.	<u>1 CD – 2 PDF Files:</u>
	MOUNT POLLEY MINING CORPORATION MOUNT POLLEY MINE
	TAILINGS STORAGE FACILITY REPORT ON STAGE 6B CONSTRUCTION
	VA101-1/29-1
	Rev 1 January 25, 2011
	MOUNT POLLEY MINING CORPORATION MOUNT POLLEY MINE
	TAILINGS STORAGE FACILITY REPORT ON 2010 ANNUAL INSPECTION
	VA101-1/29-2
	Rev 1 January 25, 2011

REMARKS:

Signed: Nasheridan

Approved: Nasheriden.