

TRANSMITTAL

Suite 1400 - 750 West Pender Street

Vancouver, BC V6C 2T8 Tel: 604.685.0543 Fax: 604.685.0147

TO: Mount Polley Mining Corporation DATE: March 15, 2011

P.O. Box 12

Likely, British Columbia FILE NO.: VA101-1/29-A.01

Canada, V0L 1N0

ATTENTION: Mr. Denis Bernardi CONT. NO.: VA11-00470

RE: 2010 Engineering Support for Mount Polley Mine

ITEM NO.	DESCRIPTION
1.	Table 1 – Summary of Knight Piésold Letters to Mount Polley Mine for 2010 and 2011
2.	pdf copies of all letters in Table 1
3.	

REMARKS:			

Signed: Approved:

Admin Staff Greg Johnston

Copy To: Ron Martel

TABLE 1

MONT POLLEY MINING CORP. MOUNT POLLEY MINE

SUMMARY OF KNIGHT PIESOLD LETTERS (2010 & 2011)

PA Number	Assignment	Date	Continuity No.	Regarding	Sent to	From (KP)
VA101-1/26	TSF Stage 6B Construction	05-Feb-10	VA10-00286	South Embankment Seepage Recycle Pond	Ron Martel	Mark Smith
VA101-1/28	2010 Environmental Services	05-May-10	VA10-00709	Hydrology Site Visit	Ron Martel	Cameron Butt
VA101-1/28	2010 Environmental Services	20-May-10	VA10-00866	Hazeltine Creek Weir Design	Ron Martel	Jeff FitzGerald
VA101-1/29	2010 Engineering Support	22-Jul-10	VA10-01175	Tailings Storage Facility Instrumentation Repair - Productivity Upgrade & Remote Monitoring Capacity	Ron Martel	Greg Johnston
VA101-1/29	2010 Engineering Support	23-Nov-10	VA10-01620	Tailings Storage Facility Instrumentation Replacement Program - Drilling Cost Estimates	Ron Martel	Greg Johnston
VA101-1/29	2010 Engineering Support	03-Feb-11	VA11-00252	Mount Polley Mine - Site Water Management	Ron Martel	Les Galbraith
VA101-1/29	2010 Engineering Support	10-Feb-11	VA11-00298	Mount Polley Tailings Storage Facility Engineer of Record	Brian Kynoch	Ken Brouwer

C:\Users\gjohnston\AppData\Roaming\Microsoft\Excel\[Summary Table for Report Letters Issued in 2010 (version 1).xlsb]Sheet1

[Α	15MAR'11	ISSUED WITH VA11-00470	RW	GIJ	LJG
[REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D



File No.:VA101-1/26-A.01 Cont. No.:VA10-00286 Suite 1400 - 750 West Pender Street Vancouver, BC Canada V6C 2T8

Tel: 604.685.0543 Fax: 604.685.0147 www.knightpiesold.com

February 5, 2010

Mr. Ron Martel Environmental Superintendent Mount Polley Mining Corporation P.O. Box 12 Likely, BC VOL 1N0

Dear Ron,

Re: South Embankment Seepage Recycle Pond

The Tailings Storage Facility (TSF) at Mount Polley Mine currently has seepage recycle ponds located downstream of the Main and Perimeter Embankments and a seepage collection sump located downstream of the South Embankment. Mount Polley is planning on developing a seepage recycle pond at the South Embankment in 2010 and has requested Knight Piésold provide estimated flows and an approximate size for the seepage pond. Water collected in the pond will be pumped into the TSF.

The South Embankment seepage recycle pond receives water from two sources: embankment seepage routed to the sump via the longitudinal drain, and runoff from the TSF embankment. The majority of the water entering the sump at the South Embankment is from embankment runoff, which does not meet discharge requirements and must be managed on site. Mount Polley requested the pond be sized to contain 24-hours of storage from embankment runoff during average freshet conditions, which corresponds to approximately 200 m³. A rectangular pond with approximate dimensions of 5 m x 20 m, with 2 m of live storage will provide storage for 24-hours of runoff from average freshet conditions. The actual daily runoff during the freshet varies and Mount Polley should therefore provide sufficient flexibility in the pumping system at the south dam to account for variations in runoff values as well as storm events.

Please do not hesitate to contact the undersigned if you have any questions on the seepage recycle pond at the South Embankment.

Yours truly,

KNIGHT PIESOLD LTD.

Signed:

Mark A C Smith, E.I.T.

Staff Engineer

Approved:

Ken Brouwer, P.Eng. Managing Director

/macs





File No.:VA101-1/28-A.01 Cont. No.:VA10-00709 Suite 1400 - 750 West Pender Street Vancouver, BC Canada V6C 2T8

Tel: 604.685.0543 Fax: 604.685.0147 www.knightpiesold.com

May 5, 2010

Mr. Ron Martel Environmental Superintendent Mount Polley Mining Corporation P.O. Box 12 Likely, BC V0L 1N0

Dear Ron,

Re: Hydrology Site Visit

A site visit was undertaken to the Mount Polley Mine from April 13 to April 14, 2010, by Cameron Butt, Project Scientist with Knight Piésold Limited (KPL). The purpose of the site visit was to;

- Install new staff gauge bridge mount at Hazeltine Creek
- Survey staff gauge to original 1994 gauge datum, and
- Estimate design requirements for upgrade of weir at Hazeltine Creek.

In addition to the above tasks, Cameron was also requested to;

- Review existing gauge network at various locations around the mine site and provide recommendations, and
- Undertake general training in hydrometric monitoring.

Colleen Hughes provided invaluable support to Cameron while on site, and has continued to be an invaluable resource.

Staff Gauge Installation at Hazeltine Creek

The requirement for reinstallation of the staff gauge mount at Hazeltine Creek came about because of progressive lifting of the existing staff gauge out of the bed. This was presumably resulting from processes similar to frost-jacking and/or ice-loading as has been discussed in detail in KPL Letter Report VA09-00317- Assessment of Hazeltine Creek Flows, April 14, 2009.

The reinstallation of the staff gauge was undertaken on April 13, 2010, and the final bench mark survey (which completed the installation) was undertaken on April 14, 2010. The design of the staff gauge was kept intentionally simple and robust. A flat metal plate was hung vertically from a large bridge beam directly into the gauge pool, as shown on Photos 1 and 2, in contrast to the original installation, as shown on Photo 3. The new mounting plate was designed so as to minimize bending or sagging by use of further reinforcement, and was constructed so as to facilitate removal prior to winter freezing, by unbolting the bottom portion of the mount, as shown on Photo 2. This seasonal removal will help to prevent any ice damage.

A one meter staff gauge was secured to the bottom, removal portion of the mount, and a full bench mark survey was undertaken to correctly (re)set the site gauge datum to the original site installation datum, established by Water Survey of Canada in 1994. For simplicity, the WSC bench mark values have been



reduced by exactly 1.000 meter, such that bench mark 1 has a value of 0.981, not 1.981. This alteration was considered necessary and important for sustainable monitoring as the previous assigned values were not intuitive to field technicians. A full bench mark survey should be undertaken annually and/or whenever the staff gauge is removed and reinstalled, which is also consistent with permit conditions. The vertical positioning and stability of the staff gauge is of fundamental importance in maintaining a defensive dataset.

Site Survey for Weir Installation & Upgrade

A survey of the control cross-section was undertaken to determine construction requirements for the proposed weir upgrade. Site access for excavators was established to be possible while minimizing any environmental impact. A complete design and construction schedule for the installation of a new weir is to be provided to MPMC as soon as possible.

Hydrometric Network Review

Cameron and Colleen visited several of the site gauging stations, which included both recording (dataloggers) and non-recording (staff gauge only) stations. H8 includes a PT2X pressure transducer enclosed with an aluminum conduit and staff gauge. The station appeared to be in good working order. W4 and W4DS were also visited. The choice of instrumentation that should be adopted at these sites (whether recording or non-recording), is largely dependant on the resolution and accuracy required. If continual flow data are required at both of these sites, then recording instruments and construction of small weirs at both of these locations should be considered as both would greatly assist in the acquisition of accurate flow data. Conversely, if relative water levels are all that is required at these stations, then the existing non-recording instruments may be adequate. However, both are situated on mobile beds and as such relative water levels, over an extended period of data collection, may become less relevant as the bed alters.

General Training

Hydrometric data collection can be complicated and Hazeltine Creek is no exception. Cameron undertook training for Colleen on the fundamentals of hydrometric monitoring, and specifically discussed the history of the Hazeltine Creek gauging station. This was presented as a combination of on-site and office training, over the two day site visit.

Summary & Recommendations

The site staff gauge, from which all gauge height and instrumentation data is to be corrected, has been restored to its originally installed height above the gauge datum (less 1 meter), as established in 1994. Bench mark values are given below.

Name	Description	WSC Value	Current Value
Bench mark 1	Lag Bolt on bridge piling on Right Bank opposite Recorder	1.981	0.981
Bench mark 2	Carriage bolt on 1/2" redi-rod, 11 m d/s & 2 m in-shore on R.B.	1.976	0.976
Bench mark 3	Carriage bolt on 1/2" redi-rod, 5 m d/s & 30 m in-shore on R.B.	3.419	2.419

It is recommended that these bench marks be located and tagged with the **ID** and **Value**, for future hydrometric bench mark surveying. Tagging could involve a simple aluminum tag, stamped with the aforementioned values, and stapled adjacent to the bench mark for rapid identification.



Should you have any questions or concerns about the work undertaken on site, please do not hesitate to contact the undersigned.

Yours truly,

KNIGHT PIESOLD LTD.

Şigned:

Cameron Butt, P.Geo., PMP

Project Scientist

Reviewed:

Greg Smyth

Senior Project Manager

Approved

Ken Brouwer, P.Eng.

Managing Director

Attachments:

Photo 1 Hazeltine Creek Gauging Station Chart Recorder and New Staff Gauge

Photo 2 Hazeltine Creek Gauging Station, New Staff Gauge Installation Showing Removable

Lower Portion

Photo 3 Hazeltine Creek Gauging Station Chart Recorder and Original Staff Gauge.

/cmb



PHOTO 1 – Hazeltine Creek Gauging Station Chart Recorder and New Staff Gauge. Photo taken in April 2010 following installation of new staff gauge support. Notice that the gauge Height is ~0.300, and water level is at the weir crest.

MOUNT POLLEY MINING CORPORATION MOUNT POLLEY PROJECT



PHOTO 2 – Hazeltine Creek Gauging Station, new staff gauge installation showing removable lower portion

MOUNT POLLEY MINING CORPORATION MOUNT POLLEY PROJECT

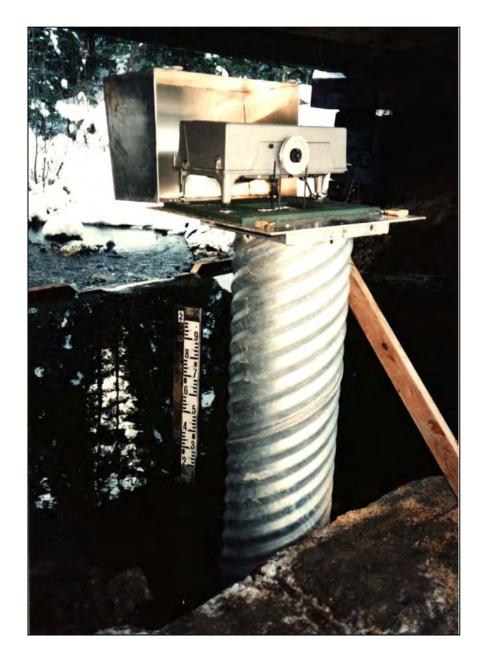


PHOTO 3 – Hazeltine Creek Gauging Station Chart Recorder and Original Staff Gauge. Photo taken in 1994. Notice that the gauge Height is ~0.200, and water level is ~0.1 m below weir crest

MOUNT POLLEY MINING CORPORATION MOUNT POLLEY PROJECT



File No.:VA101-1/28-A.01 Cont. No.:VA10-00866 Suite 1400 - 750 West Pender Street Vancouver, BC Canada V6C 2T8

Tel: 604.685.0543 Fax: 604.685.0147 www.knightpiesold.com

May 20, 2010

Mr. Ron Martel Environmental Superintendent Mount Polley Mining Corporation P.O. Box 12 Likely, BC V0L 1N0

Dear Ron,

Re: Hazeltine Creek Weir Design

Mount Polley Mining Corporation (MPMC) requested that Knight Piesold Ltd (KPL) redesign the existing weir structure at the Hazeltine Creek gauging station. The purpose of the weir redesign was to fulfill requirements for a water release permit.

The following letter provides a brief overview of the existing weir, the conceptual details of the proposed new weir design, and an approximate construction schedule. Construction of the new weir is tentatively scheduled for mid to late 2010.

EXISTING WEIR DESIGN

A detailed hydrological analysis of Hazeltine Creek and a description of the problems associated with the existing control weir are presented in KPL Letter VA09-00317 (April 14, 2009).

The Hazeltine Creek Gauging Station (H7) was installed by Environment Canada in 1994. The control structure consists of a low, broad-crested, compound weir constructed of 4" by 4" lumber. The notch of the weir is rectangular, sitting approximately 0.1 m above the downstream bed of the creek. A cross-section of the existing weir is shown on Figure 1 and pictures looking upstream are shown in Photo 1 and Photo 2.

A number of problems have been identified that adversely affect the accuracy of measuring discharge with this weir. These problems are outlined below;

- **Backwater:** During medium and high flow events, downstream water levels rise above the existing weir crest. This has been attributed to several factors including the low control notch in the weir sitting very close to the creek bed, the uncontrolled growth of downstream vegetation that encroaches on the stream channel, and the shallow channel slope of the creek.
- Structural instability: The existing compound weir structure is deforming and leaking. Ice-loading
 in the winter is causing the weir to deform downstream, creating gaps between the lumber and
 causing leaks.
- Low flow accuracy: The low flow control is inaccurate as a result of flow over the rough timber broad-crested surface, in conjunction with leaks and deformation as outlined above.





PROPOSED NEW WEIR DESIGN

The proposed new weir is shown on Figure 1 and an approximate outline is shown in Photo 2. The weir consists primarily of a reinforced concrete structure that would tie into the existing bridge abutments on either side of the creek. Discharge would occur in a series of three stages, with two lower thin plate overflow sections and one higher concrete broad-crested section. Aluminum plates will be bolted to the face of the concrete structure to form the low and mid levels of the compound weir.

Stage 1 – Low Flow Control

The lowest stage of the weir utilizes a thin aluminum plate to increase measurement accuracy, as shown on Figure 1. The thin plate section consists of a 5 mm aluminum plate bolted and sealed to the upstream face of the concrete structure. The overflow edges of the plate would be chamfered to at least 45 degrees below a 2 mm flat surface. The low flow weir width is approximately 1 m and is situated in the centre of the exiting stream with its notch level with the ground surface and 30 cm above the bed. Figure 3 illustrates that the lowest stage of the weir has the capacity to contain the majority of non-freshet flows up to discharges of 0.11 m³/s. Previous studies indicate that the maximum monthly non-freshet flow is approximately 0.07 m³/s.

Stage 2 – Freshet Flow Control

The Stage 2 weir is designed to entirely contain freshet peak flows. The weir dimensions are sized to pass 3.6 m³/s through the Stage 1 and 2 sections (the highest recorded flow in 15 years of data collection is 1.7 m³/s). The Stage 2 structure consists of a rectangular weir extending 2.5 m on each side of the Stage 1 weir, and with a crest 0.15 m above Stage 1 crest. It will be constructed as a continuation of the 5 mm aluminum plate used for the Stage 1 weir, as shown on Figure 1

Stage 3 – Flood Control

Should discharges exceed 3.6 m³/s, excess flow will pass over the Stage 3 weir, which will be comprised of broad-crested rectangular concrete weir sections extending beyond each side of the Stage 2 weir and tying into the bridge abutments, as shown on Figure 1.

Theoretical Rating Curve

A theoretical rating curve for the weir is shown on Figure 2, with the three stages of the weir clearly identified. Figure 3 displays the capacity of each weir stage in reference to the average annual hydrograph developed for Hazeltine Creek and outlined in KPL Letter Report VA09-00317. This figure indicates that the majority of the flow will be contained in the lower stages of the control weir.

In order to allow the provision of accurate and defensible discharge data, the new weir design must overcome the deficits in the existing design.

New Weir Design Considerations:

Backwater: The proposed Stage 1 weir crest is situated approximately 20 cm higher than the
existing weir's control notch. The proposed weir crest level roughly corresponds to the normal
backwater height during freshet flow periods. Some thinning of downstream vegetation may be
recommended to minimize backwater levels. It is expected that minor backwatering may result from
the downstream Fish Ladder during high flows, but the effects of this will be minimal.



- Structural Stability: The proposed weir will be constructed of reinforced concrete. This will eradicate leakage, and be able to withstand water and ice loading forces imposed by the creek, without deformation of the structure.
- Competent foundation: The proposed design will have a concrete footing with dowels anchoring it into the creek bed. In order to prevent any erosion and footing undermining as a result of weir overflow, a thin concrete apron will be constructed downstream of the weir.
- **low flow accuracy:** The proposed design utilizes a thin plate weir crest to increase measurement accuracy during the low flow periods
- **Fish migration:** The proposed design utilizes a small fish ladder downstream of the low flow section that has been sized to allow the passage of juvenile rainbow trout fish species. The design conservatively uses a step size of 15 cm. Various literature sources suggest a maximum step size of 30 cm for juvenile species.

CONSTRUCTION VOLUMES AND SCHEDULING

Concrete and grouted riprap is required to complete the main construction of the weir. Approximately 7.5 m³ of concrete is required for the weir foundation and bulkheads. An additional 3 m³ of grouted riprap will be required for the downstream apron and fish ladder. A 5 mm Aluminum plate be required to be fabricated and installed on the upstream edge of the weir bulkheads.

Construction is intended to take place in mid to late 2010, when flows are low and can be easily diverted via pumping for the duration of construction. It is intended that a temporary sand bag coffer dam be installed upstream to capture water for pumping. Once all necessary permits have been obtained, construction will be undertaken using the following approach;

- 1. Environmental construction works, flow diversion & sediment control
- 2. Foundation excavation
- 3. Dowel anchoring and reinforcement
- 4. Concrete weir pouring, shaping and smoothing
- 5. Fish ladder construction, and
- 6. Weir Plate placement, sealant and installation.

The total in-creek construction time has been conservatively estimated to be 4-5 days. However, efficiencies in construction can reduce this estimated time.

REMARKS

The proposed new weir design addresses the deficits in the previous design by elevating the weir crest level and creating a more robust structure to withstand the natural forces imposed by the creek. Elevating the weir crest will eliminate the backwater problems and the thin plated weir will increase discharge measurement accuracy for the non-freshet low flow periods.

Knight Piésold

Should you have any questions or comments on the proposed design, please do not hesitate to contact us.

Yours truly,

KNIGHT PIESOLD LTD.

Signed:

Jeff FitzGerald, E.I.T.

Staff Engineer

Reviewed:

Cameron Butt, P.Geo., PMP

Project Scientist

Reviewed:

Jaime Cathcart, PhD, P.Eng.

Specialist Hydrotechnical Engineer

Approved:

Ken Brouwer, P.Eng.

Managing Director

Attachments:

Figure 1 Rev 0 Proposed Compound Weir Plan and Sections

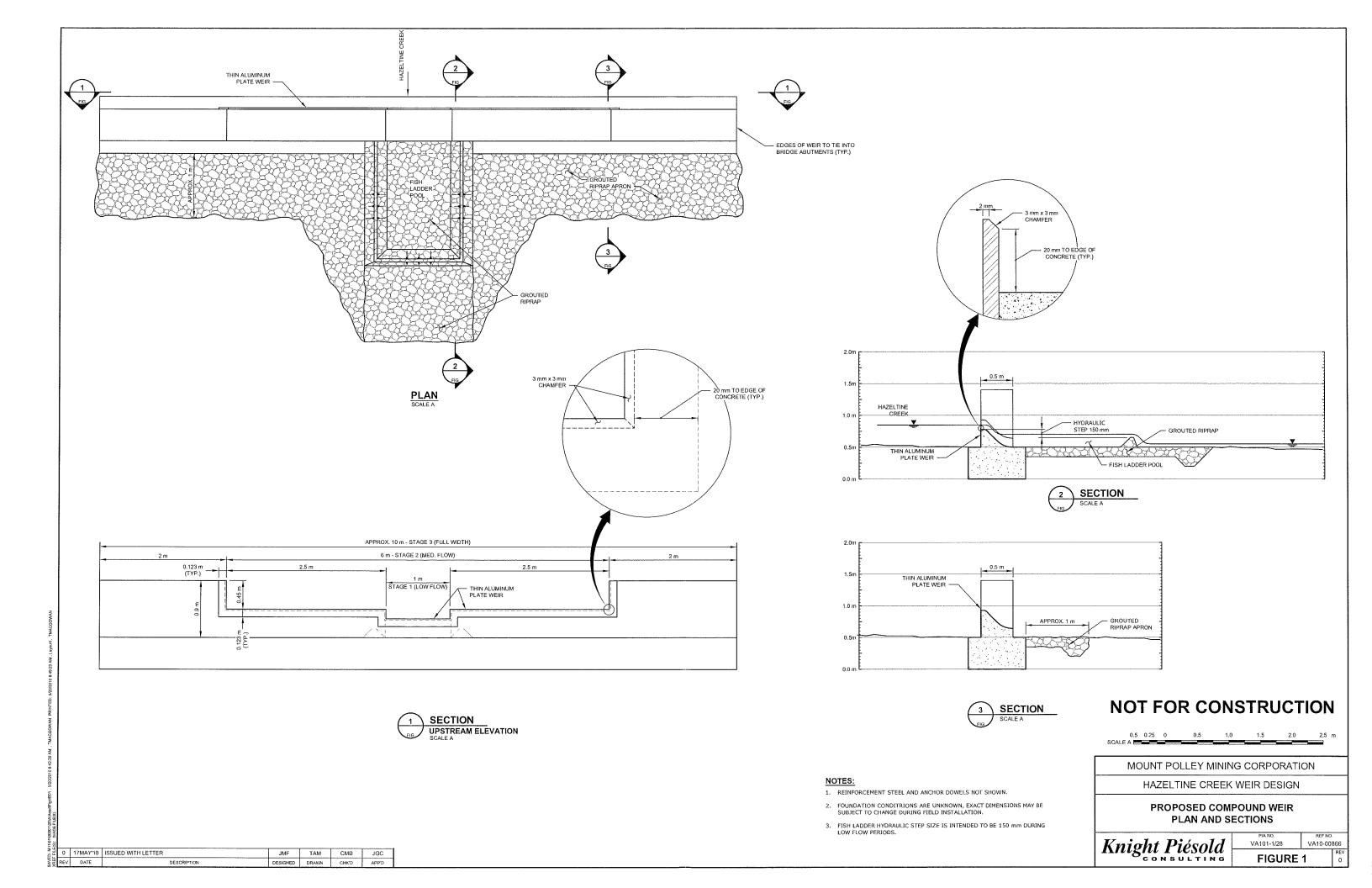
Figure 2 Rev 0 Theoretical Flow Over Proposed Hazeltine Creek Weir

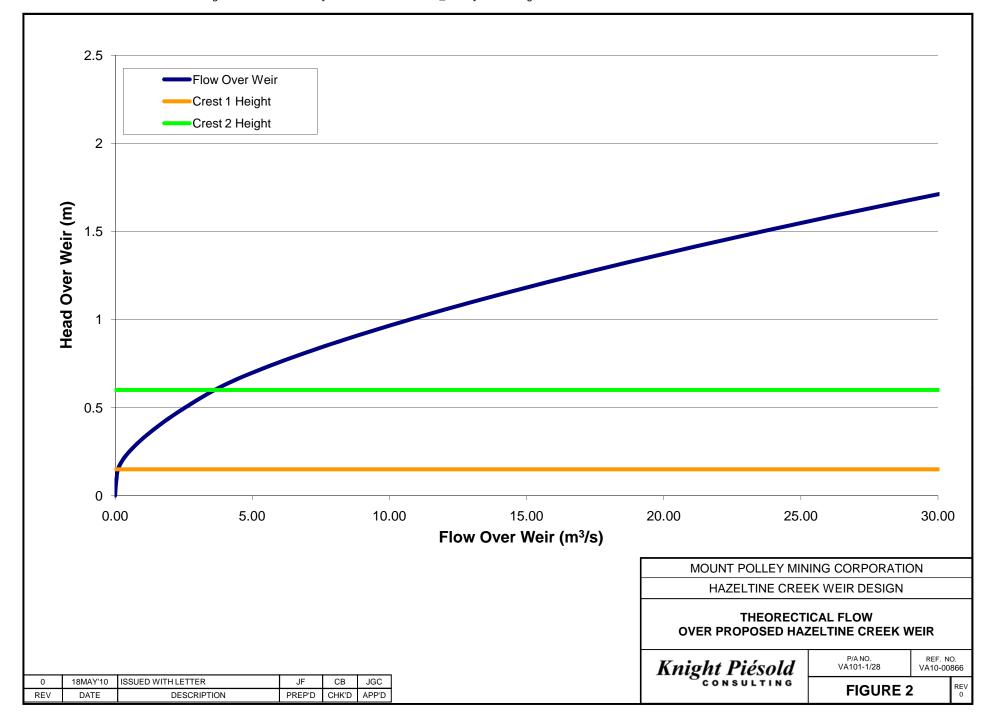
Figure 3 Rev 0 Estimated Hazeltine Creek Hydrograph

Photo 1 Existing Weir

Photo 2 Existing Weir and Approximate Profile of New Weir Structure

/cmb





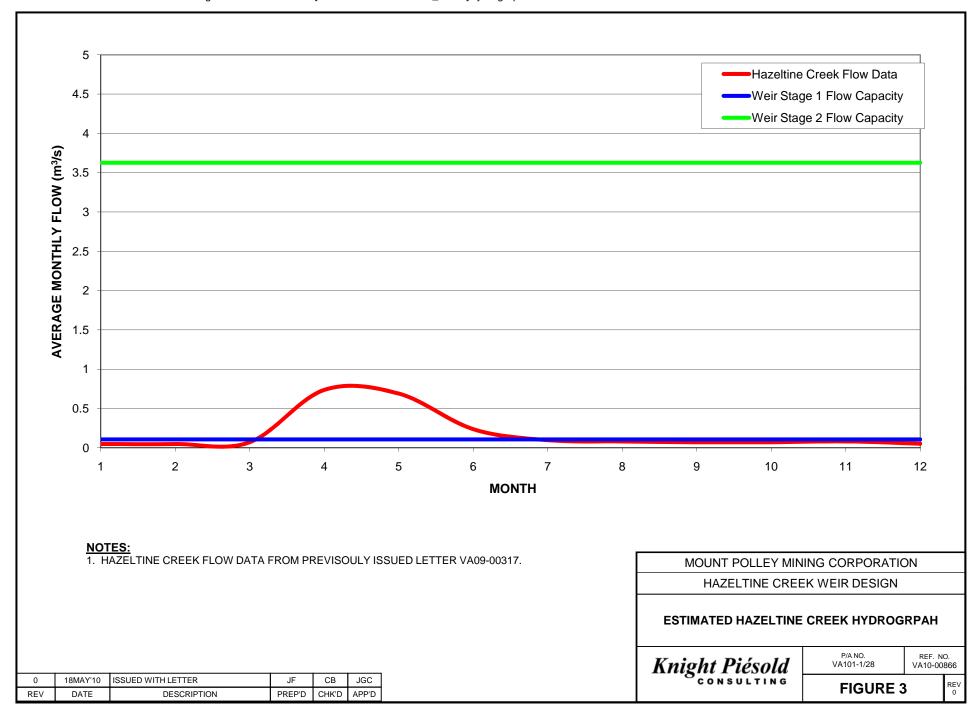




PHOTO 1 - Existing Weir



PHOTO 2 – Existing Weir and Approximate Profile of New Weir Structure.

MOUNT POLLEY MINING CORPORATION HAZELTINE CREEK WEIR DESIGN



File No.:VA101-1/29-A.01 Cont. No.:VA10-01175 Suite 1400 - 750 West Pender Street Vancouver, BC Canada V6C 2T8

Tel: 604.685.0543 Fax: 604.685.0147 www.knightpiesold.com

July 22, 2010

Mr. Ron Martel Environmental Superintendent Mount Polley Mining Corporation P.O. Box 12 Likely, BC VOL 1N0

Dear Ron,

Re: Mount Polley Tailings Storage Facility

Instrumentation Repair, Productivity Upgrade and Remote Monitoring Capacity

Introduction

The Mount Polley Mine Tailings Storage Facility is a large earth and rock fill embankment located in central British Columbia. The Tailings Storage Facility is monitored on a regular basis to ensure safety, as an early warning of undesirable conditions and to confirm the structure meets or exceeds regulatory requirements. The regulatory requirements include regular dam safety reviews by a suitably qualified and experienced engineer. The most recent dam safety review was completed by AMEC in late 2006. This review indicated that there is "about the right" amount of instrumentation in the embankment but there is little redundancy. The dam safety review recommended that lost instrumentation be re-established, Knight Piésold (KP) agrees with this recommendation.

The two major types of instrumentation in the Tailings Storage Facility (TSF) are piezometers and inclinometers. The piezometers provide information on the internal water pressure in various parts of the embankment and foundation. The piezometers are all vibrating wire (VW) type instruments. VW piezometers are widely used in geotechnical instrumentation, are generally robust and have a long life span. However, over time there have been failures of instrumentation and damage to data cables resulting in non-functional instrumentation. The inclinometers are industry standard slotted pipe that is read by a manually operated probe.

This letter summarizes the replacement of instrumentation and highlights two options for improving the TSF instrumentation, as follows:

- A Base Case to replace non-functional instrumentation to develop a satisfactory level of TSF instrumentation
- A Productivity Improvement to significantly reduce the amount of time required to complete routine monitoring of the TSF instrumentation, and
- The installation of Remote Monitoring capability for instrumentation on the TSF.

An estimated cost has been developed for the replacement and modifications to the TSF instrumentation. The estimated cost for instrumentation includes input from sole sourced suppliers for the major expense items. The cost estimate is to establish the approximate cost of each option and some efficiencies may be achieved by a soliciting a more detailed bid of the work required.





Current TSF Instrumentation Status

The installed instrumentation in the TSF includes a total of 91 piezometers and 5 inclinometers. Of these 48 piezometers are functional and 43 piezometers are not functional, 4 inclinometers are functional and 1 is not functional. The inclinometers are all installed in the main embankment. The functional inclinometers include 3 that are generally showing minimal movement and 1 inclinometer that shows localized movement.

The distribution of non-functioning piezometers is not random and a large portion of the Main Embankment foundation instruments have stopped functioning. In total 20 piezometers have been installed in the Main embankment foundation and 7 (35%) are functional. All 6 of the foundation piezometers in the A instrumentation plane have been damaged, 2 piezometers remain functional in the B instrumentation plane. This is the main area of concern due to a low strength glaciolacustrine unit that underlies a portion of the Main Embankment including the A and B instrumentation planes. The inclinometers and Main Embankment foundation piezometers are installed to monitor this glaciolacustrine unit. The TSF monitoring program is in part to confirm that the displacement and pore pressure in the glaciolacustrine unit are within acceptable limits.

The Ministry of Energy Resources, Petroleum and Mines (MEMPR) have previously expressed concerns about the characterization and behavior of the glaciolacustrine unit under the Main Embankment. A point of concern that has been raised by MEMPR is the amount of laboratory testing available to define the strength of the glaciolacustrine unit.

Base Case

The base case is to replace non-function VW piezometer instrumentation and install a level of redundancy in the VW piezometers. The collection of samples for laboratory testing can be completed at the same time as drilling the new instrumentation holes. This base case is a minimum level of replacement TSF instrumentation required. The base case includes the following:

- 5 holes in the TSF main embankment for replacement instrumentation. Of these drill holes, 2 holes
 60 m deep will be drilled from the crest of the dam and 3 holes 25 m deep will be drilled from the dam buttress. A total drilling length of approximately 200 m is estimated.
- · Install inclinometer casing in all holes.
- Install 4 VW piezometers in each hole (3 as replacement instruments and 1 for redundancy).
- Recovery of samples of the glaciolacustrine unit for laboratory testing.
- Laboratory testing of samples from the glaciolacustrine unit.

The drilling costs are based on a cost estimate by Geotech Drilling attached in Appendix A. The drilling cost estimate includes for inclinometer supply and installation, VW piezometer installation and soil sampling. The drilling cost estimate should be considered as an approximate cost as adjustments to the program are likely required. The KP costs and laboratory testing costs have been estimated by Knight Piésold.

Productivity Improvement

The productivity upgrade includes everything described in the Base Case and additional items to significantly reduce the time and complexity of instrumentation monitoring. The goal is to reduce the work



load and time taken monitoring the TSF. An additional benefit is automation is expected to improve the accuracy of the data. Two additional items are proposed:

- 1. Centralize the location of VW piezometer reading points. This will include developing an upstream and downstream readout location on each embankment. The readout locations would collate the data collection for the instrumentation planes and provide a common interface. The piezometer cables would be extended and routed to the appropriate readout location. For example, on the Perimeter Embankment a downstream readout location would be installed in the vicinity of the seepage collection pumps house. The VW piezometer cables from the 3 instrumentation planes in the perimeter embankment would be routed to the readout location. The cost for establishing centralized readout locations has been estimated by KP.
- 2. Install a fixed inclinometer consisting of a ShapeAccelArray from Measurand in the existing inclinometer that is showing deflections. A ShapeAccelArray (SAA) is a comparatively new method in geotechnical engineering for monitoring deflections in inclinometers. The SAA is significantly faster and easier to read using a laptop computer. A SAA is cheaper to automate compared with traditional inclinometers. A brochure for the ShapeAccelArray is attached.

The installation of an SAA will allow automation of the inclinometer. Automation will facilitate regular inclinometer readings collected remotely from the Mount Polley site office. The readings from a fixed inclinometer can be completed very rapidly in a small fraction of the time currently required to complete an inclinometer survey. A cost estimate for an inclinometer SAA and remote retrieval package from Measurand is attached. The cost of automation is approximately 60% of the quoted cost and savings could be made by electing to complete manual readings using a laptop. This cost estimate is approximate and may be adjusted based on the data retrieval method selected by Mount Polley Mine.

Remote Monitoring

The remote monitoring of all of the geotechnical instrumentation is possible. The remote monitoring would require the work described in the Base Case and Improved Productivity. In addition the VW piezometers would be monitored by a remote solar powered system and radio communications system. The current inclinometers would all have arrays installed and would be able to be remotely read. A cost estimate for the VW piezometer readout system has been provided by Measurand and is attached.

Summary

The instrumentation at the Mount Polley TSF has experienced damage over time. The replacement of some of the non-functional instrumentation is now necessary. This letter details the base cost to replace non-functional instrumentation and summarizes opportunities for reduced the difficulty and time required for TSF monitoring. The monitoring of the TSF instrumentation requires a reasonable time investment by Mount Polley Mine staff and/or KP staff. Two systems to reduce the time required to monitor the TSF and the setup cost to implement the systems are summarized.

It is recommended that the TSF instrumentation replacement be completed this year. To help satisfy concerns previously raised by MEMPR it is recommended that the replacement instrumentation should be either installed or at an advanced planning stage in time for the annual inspection of the Mount Polley TSF.

Knight Piésold

The estimated cost for the replacement of non-functional piezometers and installation of additional slope inclinometers is in total \$195,000, the total cost for the alternative option to simplify the monitoring of the TSF is estimated to be \$230,000. The total cost for a second alternative for remote monitoring of the TSF geotechnical instrumentation is estimated to be \$310,000. A breakdown of the estimated costs is included on Table 1. We trust this information will assist you in planning for the TSF. Please contact us if you have any questions or would like additional information on the described systems.

Yours truly,

KNIGHT PIESOLD LTD.

Prepared by:

Greg Johnston, M.Sc.

Engineering Geology and Geotechnical Specialist

Approved:

Ken Brouwer, P.Eng. Managing Director

Attachments:

Table 1 Rev A Cost Estimate

Geotech Drilling - Cost Estimate

Measurand - ShapeAccelArray (SAA) Brochure

Measurand - Quote 38 - Fixed Inclinometer

Measurand - Quote 40 - Remote Monitoring of VW Piezometers

/gj



TABLE 1

MOUNT POLLEY MINING CORPORATION TAILINGS STORAGE FACILITY

INSTRUMENTATION REPLACEMENT COST ESTIMATE

Option	Item		Item Cost	Total
Base Cost				
	Drilling		\$130,000	
	Replacement VW Piezometers		\$15,000	
	Laboratory testing		\$20,000	
	Knight Piesold site and office support		\$30,000	
		Total		\$195,000
Productivity Improvements				
	Base Cost plus the following		\$195,000	
	Mount Polley Excavator for 3 days (NOTE 1)			
	VW piezometer cable and readout locations		\$7,000	
	Fixed Inclinometer		\$23,000	
	Knight Piesold site support		\$5,000	
		Total		\$230,000
Remote Mor	nitoring			
	Productivity Improvements plus the following		\$230,000	
	Additional fixed inclinometers		\$28,000	
	Remote monitoring for VW Piezometers		\$44,000	
	Knight Piesold site support		\$8,000	
		Total		\$310,000

M:\1\01\00001\29\A\Correspondence\VA10-01175 - Instrumentation Replacement\Tables\[Table 1 - Cost Est.xlsx]Sheet1

NOTES:

1. MOUNT POLLEY MINE EXCAVATOR TIME NOT INCLUDED

Α	22JUL'10	ISSUED WITH LETTER VA10-01175	GL	GIJ	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D



Cost Estimate

Bill to: Knight Piesold Ltd.

Care of: Knight Piesold Ltd.

1400 750 West Pender Street Vancouver, BC V6C 2T8

ATTN: Mark Smith/Greg Lewsley

Tel: 1-604-685-6543

Email: msmith2@knightpiesold.com

Date: Tuesday, October 27, 2009

Revised No./Date: 5-Jul-10

Project Manager: Ryan Samis

Cost Estimate No.: 1KRS10-0043

Unit No. (Drill Rig): Odex/Mud Rotary Drill

Location: Mount Polley

Province: BC

Scope: This cost estimate is for 5 boreholes to 40 meters (130 ft) with 2 vibrating Wire installs per hole. 4 boreholes to 30 meters (100 ft) with 2.75" SI casing installed, and 3 boreholes to 30 meters (100 ft) with 2" monitoring wells installed. Soil coring (HQ3) will be required in the last 40 ft of the vibrating well installs, and the last 75 ft of the inclinometer holes. No sampling required in monitoring well holes.

ltm	Qty	Unit	Description	Price	Extended
1	190	hrs	Odex Drilling / Soil Coring	275.00	52,250.00
2	70	hrs	Overtime (after 8 hours, weekends, stats/two man crew)	65.00	4,550.00
3	1	L/S	Mob / Demob to Mount Polley	2750.00	2,750.00
4	54	hrs	Crew travel	149.00	8,046.00
5	19	shift	Support vehicle(truck mount)	249.00	4,731.00
6	19	shift	Crew subsistence (two man crew)	279.00	5,301.00
7	19	shift	Air compressor (300/200)	425.00	8,075.00
8	19	shift	Grout pump /Mud Pump Rental	199.00	3,781.00
9	9	hrs	Safety meeting	149.00	1,341.00
10	500	ft	Diamond Bit Wear Consumption	19.50	9,750.00
11	850	ft	Odex bit wear consumption	5.75	4,887.50
12	16	shift	High Pressure Diamond Pump Rental	249.00	3,984.00
13					-
14					-
15	27	10 ft	P - Solid 1", 1.5" or 2" p.v.c. well casing	36.87	995.49
16	3	10 ft	P - Slotted 1", 1.5" or 2" p.v.c. well casing	49.45	148.35
17	6	ea	P - 1", 1.5" or 2" slip caps	3.45	20.70
18	650	ft	P - 1" PVC (for Vibrating wire installs)	1.87	1,215.50
19	40	10 ft	P - 2.75" Slope Inclinometer	148.35	5,934.00
20	3	ea	P - 2.75" Slope Inclinometer Top Cap	6.90	20.70
21	3	ea	P -2.75" Slope Inclinometer Grout Anchor	417.00	1,251.00
22	60	bags	P - Bentonite Chips (Possible Option)	28.55	1,713.00
23	22	bags	P - Sand	15.52	341.44
24	105	5 ft	P - Acrylic Liners for Soil Coring	20.40	2,142.00
25	15	bags	P - Premix grout	34.44	516.60
26	12	bags	P - Fast Set Concrete	17.25	207.00
27	36	bags	P - Portland Cement	23.75	855.00
28	12	ea	P - Stand up casing protectors	109.25	1,311.00
29					-
fees & res	stocking charges	may apply if less that	valid for 60 days. Underground / Overhead utilities are the sole responsibility of the client. Lost, broken or unrecoverable tooling will be charged at cost plus 15%. Cancellation n 48 hours notice. Invoice Payment terms: Upon Receipt. 2% interest charges will apply on past due accounts. Invoice considered accepted and approved 15 days after	Subtotal	\$ 126,118.28
receipt un	nless written noti	fication is received.	**Overtime is applicable after 8 hours, weekends, and statutory holidays**	P.S.T.	\$ 1,167.02
			Line items beginning with P denote PST chargeable items	G.S.T.	\$ 6,305.91
Brit	British Columbia				\$ 133,591.22

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Promotion Code:

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Frequently Asked Questions

How long is a typical SAA?

Most Field SAAs are near 32 m (104'). Most Research SAAs are 7.32m (24') long. Lengths up to 100m (300') are possible.

How long are the rigid segments in an array?

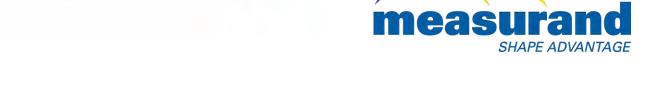
Standard joint-center to joint-center lengths are 305 mm (12") and 500 mm (19.7").

Do I need a casing for SAAs?

SAA should be installed in 27mm (1.05") ID casing (inexpensive PVC electrical conduit). The array and casing are flexible enough to survive deformations of tens of cm (feet). The 27 mm casing will fit into inclinometer casing, enabling recovery of some defunct SI sites.

Can I re-use an SAA?

After typical deformations, SAA may be removed from the casing and installed elsewhere.



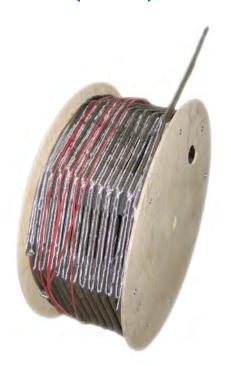
For more information on Shape-AccelArray and other Measurand products:



2111 Hanwell Rd Fredericton, NB CANADA E3C 1M7 (ph)506.462-9119 (fax)506.462-9095

www.MeasurandGeotechnical.com www.measurand.com

ShapeAccelArray (SAA)



Introduction

SAAF (Field Arrays)

SAAR (Hi-Bandwidth Research Arrays)

SAA is an array of rigid segments separated by special joints. Triaxial MEMS gravity sensors in the segments measure tilt. SAA produces data equivalent to inclinometer data but over much larger deformations. SAA may be used vertically to track magnitude and direction of lateral deformation, and horizontally to track vertical deformation. In any pose, 3D vibration data are available from selected locations along the array.

There are two basic types: Field and Research. Each is available in increments of 8 segments, where standard segment lengths include 305 mm (12") and 500 mm (19.7").

The main distinctions are speed, number of segments, and power consumption.

SAAF is designed for solar-powered installations with wireless communication. SAAF may be up to 100 m long. Long-term accuracy for 30 m (96') SAAFs is 1.5 mm (0.06").

Vibration data are available from up to 3 segments along the array at 40 Hz sampling, and at 35 Hz from 4 segments.

All communication in the array is digital. Data are carried in a small cable to a digital logger. Most installations use solar power and provide wireless data over the internet.





SAAR is designed to collect high frequency data from all sensors continuously.

Each microprocessor in an SAAR (1 microprocessor per 8 segments) has a dedicated communication line.

SAAR can be supplied with up to 24 high-speed segments.



Quotation

Quote Prepared For Greg Lewsley Knight Piesold

750 West Pender Street

Suite 1400

Vancouver, BC V6C 2T8 CAN (604) 685-0543 Fax: (604) 685-0147

Quote Date Quote Number

Jun-24-2010 38

Sales Contact: DJ Sno

DJ Snodgrass

Quote for 2 holes with remote data retrieval

Item	Description	Qty	Price	DD	Extended Price
SAAF500	SAA Field Octet (0.5 m segments)	4	\$1,673.30		\$6,693.20
Enclosure	Earth Station Enclosure	1	\$993.25		\$993.25
SAAReg	SAA Charge Regulator	1	\$269.10		\$269.10
SAA232	RS485 to RS232 converter w/Power switching	2	\$450.15		\$900.30
¶*ProSupport	Project Support Time Installation assistance cost (Inclusive)	1	\$5,000.00		\$5,000.00
Custom	Radio package for retreival of data (Includes Radios, Antennas and mounting Hardware)	1	\$3,700.00		\$3,700.00
SAAUSB	RS485 to USB PC connection kit for SAA	1	\$596.90		\$596.90
*CR1000	Campbell Scientific CR1000 Datalogger	1	\$2,397.45		\$2,397.45
CR1000IntPack	SAA-CR1000 Integration Package	1	\$978.55		\$978.55
Solar20W	20 Watt Solar Panel	1	\$391.40		\$391.40
SolarBracket	Solar Panel Bracket	1	\$97.85		\$97.85

Total Items	\$22,018.00
Labor / Shipping	\$0.00
Harmonized Sales Tax Exempt	\$0.00

Total Quote \$22,018.00

All Quotes are valid for 60 Days. All Pricing are in USD unless otherwise specified.

* Denotes Distributor discounts do not apply

¶ Please contact Measurand Inc. Prior to ordering

NOTES:

(1) a) Unless otherwise specified, SAAs have no unsensorized segment at the far end;

b) Unless otherwise specified, SAAs have one unsensorized segment at the near end that provides an attachment point and junction to the cable. This segment and a stiffer portion of the cable occupy approximately 30 cm (1') "extra" beyond the length of sensorized segments. The cable can

 $Sales@measurand.com \\ http://www.measurand.com$

Item Description Qty Price <u>DD</u> Extended Price

be turned 90 degrees within this dimension. When planning installation depth, this "extra" length must be accounted for;

c) SAAFs are built in groups of 8 segments called octets. A SAAF may be ordered with a partial octet (example: 14 segments instead of the standard 2 x 8 = 16 segments). Because this entails a special production run, pricing is per fully-populated octet. For the example above, this entails pricing for 2 octets (16 segments instead of 14).

(2) Payment Terms: Net 30 days from time of shipping. Overdue accounts will be subject to interest and penalties;

(3) Freight charges not included in total prices unless otherwise specified. Please indicate preferred shipping method on purchase order. Freight charges will be added at time of sale;

(4)Applicable taxes will be calculated and added at time of sale

Components Description:

See "Specification/Ordering List" and "Ordering Guide" at www.MeasurandGeotechncial.com/downloads" for assistance in interpreting the quoted components, dimensions, and installation variables.

Not included in the above:

Drilling

Casing Excavation

Backfilling

Lift equipment

Security fencing

Electrical supply

Lightning protection

All quoted items are FOB Fredericton, New Brunswick, Canada. Any shipping and taxes due will be the responsibility of the customer Prices: Prices are subject to change without notice.

Terms & Conditions Concerning Delivered Products

- 1. Warranty: Measurand Inc. Warrants that its products are free from defects in material and workmanship for a period of one (1) year from date of delivery unless otherwise specified by Measurand Inc. In writing. This warranty applies only if the products have not been opened and have not been subjected to misuse, neglect, accident or improper installation or care. Said improper care includes but is not limited to supply of power not as specified by Measurand Inc. If Measurand Inc. Products fail due to no fault of the Buyer, Measurand Inc. Will, at its option, either repair the defective product and restore it to normal operation without charge for parts and labor or will provide a new replacement product in exchange for the defective product. Repair work shall be warranted for the remainder of the original warranty period or for a period of 60 days, whichever is longer. Measurand Inc. Hereby disclaims any implied warranty of merchantability.
- 2. Limitations of Liability: In no event will Measurand Inc. Be liable for any indirect, incidental or consequential damages or any lost profits or like expectancy damages arising out of the delivery of its products. Measurand Inc.'s liability for personal injury and/or property damage shall not exceed its general liability insurance policy limitations.
- 3. Inspection and Rejection of Products: Buyer shall notify Measurand, Inc., within seven (7) business days after receipt, of the discovery of any defects in delivered products and/or its acceptance/non-acceptance thereof; otherwise, it shall be deemed to have accepted the products.
- 4. Return Goods Authorization: Measurand Inc. Shall not accept returned or rejected products/parts unless first authorized with a return merchandise authorization (RMA) number. The Buyer is responsible for handling, insurance and transportation of unit to Measurand Inc. Measurand Inc. Shall be responsible for inspecting the unit and repair as necessary. Measurand Inc. Shall pay for the return of the repaired/new unit to the Buyer via Ground Transportation only.
- 5. Title & Delivery: Title/risk of loss or damaged goods shall pass to the Buyer upon Measurand Inc. Delivery of products. Measurand Inc. Shall retain a security interest with repossession rights for products shipped on open account until all obligations are met. The delivery date is an estimate only, based on a best forecast of conditions at time of order entry. Neither party shall be liable to the other party for any failure to perform any of its obligations under this Agreement during any period in which such performance is delayed by circumstances beyond its reasonable control including, but not limited to fire, flood, war, terrorism, embargo, strike, constrained markets, riot or the intervention of any governmental authority ("Force Majeure"). In such event, however, the delayed party must promptly provide the other party with written notice of the Force Majeure. The delayed party's time for performance will be excused for the duration of the Force Majeure, but, if the Force Majeure event lasts longer than thirty (30) days, the other party may immediately terminate the Agreement by giving written notice to the delayed party.
- 6. Delivery Times/Expedited Delivery: Standard Delivery time is 3-4 weeks ARPO. In some cases, expedited delivery may be possible. Measurand Inc. Reserves the right to apply an expedite fee of 10% of the total cost of the equipment purchased or a minimum charge of \$200.00 USD, whichever is greater.
- 7. BIS: The US Bureau of Industry and Security (BIS) may limit exports of USA made goods to certain individuals and organizations. A license application may need to be completed and submitted to Measurand before equipment may be shipped.

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Quotation

Quote Prepared For Greg Lewsley Knight Piesold

750 West Pender Street

Suite 1400

Vancouver, BC V6C 2T8 CAN (604) 685-0543 Fax: (604) 685-0147

Quote Date Jun-28-2010
Quote Number 40

Sales Contact: DJ Snodgrass

Quote for datalogging equipment for monitoring Peizometers around site.

Item	Description	Qty	Price	<u>DD</u>	Extended Price
Custom	10 installations for monitoring Peisometers. Can	1	\$38,733.0		\$38,733.00
	monitor multiple probes on each station		0		
	Item includes logging equipment as well as radio commuradio.	inications to allo	w for one collection	n point via	
Solar20W	20 Watt Solar Panel	11	\$391.40		\$4,305.40
SolarBracket	Solar Panel Bracket	11	\$97.85		\$1,076.35
		Total Ite	ems		\$44,114.75
		Labor / Shipping Harmonized Sales Tax Exempt Total Quote		\$0.00	
				\$0.00	
				\$44,114.75	

All Quotes are valid for 60 Days. All Pricing are in USD unless otherwise specified.

* Denotes Distributor discounts do not apply

¶ Please contact Measurand Inc. Prior to ordering

NOTES:

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 - c) SAAFs are built in groups of 8 segments called octets. A SAAF may be ordered with a partial octet (example: 14 segments instead of the standard 2 x 8 = 16 segments). Because this entails a special production run, pricing is per fully-populated octet. For the example above, this entails pricing for 2 octets (16 segments instead of 14).

(2)Payment Terms: Net 30 days from time of shipping. Overdue accounts will be subject to interest and penalties;

(3) Freight charges not included in total prices unless otherwise specified. Please indicate preferred shipping method on purchase order. Freight charges will be added at time of sale;

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Components Description:

See "Specification/Ordering List" and "Ordering Guide" at www.MeasurandGeotechncial.com/downloads" for assistance in interpreting the quoted

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Item Description Qty Price <u>DD</u> Extended Price

components, dimensions, and installation variables.

Not included in the above:

Drilling

Casing

Excavation Backfilling

Lift equipment

Security fencing

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Electrical supply

Lightning protection

All quoted items are FOB Fredericton, New Brunswick, Canada. Any shipping and taxes due will be the responsibility of the customer Prices: Prices are subject to change without notice.

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- 2. Limitations of Liability: In no event will Measurand Inc. Be liable for any indirect, incidental or consequential damages or any lost profits or like expectancy damages arising out of the delivery of its products. Measurand Inc.'s liability for personal injury and/or property damage shall not exceed its general liability insurance policy limitations.
- 3. Inspection and Rejection of Products: Buyer shall notify Measurand, Inc., within seven (7) business days after receipt, of the discovery of any defects in delivered products and/or its acceptance/non-acceptance thereof; otherwise, it shall be deemed to have accepted the products.
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- 5. Title & Delivery: Title/risk of loss or damaged goods shall pass to the Buyer upon Measurand Inc. Delivery of products. Measurand Inc. Shall retain a security interest with repossession rights for products shipped on open account until all obligations are met. The delivery date is an estimate only, based on a best forecast of conditions at time of order entry. Neither party shall be liable to the other party for any failure to perform any of its obligations under this Agreement during any period in which such performance is delayed by circumstances beyond its reasonable control including, but not limited to fire, flood, war, terrorism, embargo, strike, constrained markets, riot or the intervention of any governmental authority ("Force Majeure"). In such event, however, the delayed party must promptly provide the other party with written notice of the Force Majeure. The delayed party's time for performance will be excused for the duration of the Force Majeure, but, if the Force Majeure event lasts longer than thirty (30) days, the other party may immediately terminate the Agreement by giving written notice to the delayed party.
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File No.:VA101-1/29-A.01 Cont. No.:VA10-01620 Suite 1400 - 750 West Pender Street Vancouver, BC Canada V6C 2T8

Tel: 604.685.0543 Fax: 604.685.0147 www.knightpiesold.com

November 23, 2010

Mr. Ron Martel Environmental Superintendent Mount Polley Mining Corporation P.O. Box 12 Likely, BC V0L 1N0

Dear Ron,

Re: Tailings Storage Facility Instrumentation Replacement Program, Drilling Cost Estimates

Introduction

The Mount Polley Mine has several options for the instrumentation replacement program required at the Tailings Storage Facility. These options are described in the Knight Piésold Letter VA10-01175. The installation of the replacement instrumentation will include a drilling program; this drilling program is the largest cost item in the instrumentation replacement program. Mr. Ron Martel of Mount Polley Mine has requested Knight Piésold assist with the selection of a suitably qualified drilling contractor.

To assist Mount Polley in managing the drilling costs Knight Piésold has obtained three competitive quotes from qualified drilling contractors. Knight Piésold has experience working with all three contractors on similar programs and based on our experience, we believe that all are capable of completing the work.

Drilling Program

The drilling contractors were requested to provide cost estimates and comment on drill availability. The drilling program is summarized as:

- 5 drill holes in total, 2 drill holes to 60m and 3 drill holes to 25m
- Supply and install slope indicator casing in each drill hole
- Install 4 vibrating wire piezometers in each drill hole, (supply by others)
- Collect soil samples and evaluate geotechnical conditions encountered in the foundation soils, and
- All drill sites will be truck accessible (Mount Polley to provide suitable drill site access)

Cost Estimate

Three drilling contractors were requested to provide cost estimates. A copy of the cost estimates provided by each of the drilling contractors is attached. The cost estimate provided by Foundex Explorations Ltd. included for the supply of vibrating wire piezometers. To facilitate a cost comparison between the potential contractors the HST has been excluded and the Foundex Explorations Ltd. cost estimate has been adjusted to exclude supply of vibrating wire piezometer and cable. The summarized cost estimates excluding HST are:





Mud Bay Drilling Co. Ltd. \$63,700
 Geotech Drilling \$69,700
 Foundex Explorations Ltd. \$81,300

All three contractors have verbally confirmed they have a drill available before the end of the year.

Summary

The selection of a drilling contractor from this short list is required by Mount Polley Mine. It is recommended that Mount Polley directly contract the drilling contractor in order to avoid any mark-ups that would be applied by Knight Piésold. Knight Piésold is available to assist Mount Polley with the drilling contract document review.

In addition to the drilling costs, the specified instrumentation will also need to be purchased. Knight Piésold is expecting cost estimates for the instrumentation purchase later this week, and will be reported in a separate letter.

We trust this will help your selection of a drilling contractor. This instrumentation replacement program is overdue and we recommend that it be initiated as soon as possible. Please call Greg or Ken if you have any questions.

Yours truly,

KNIGHT PIESOLD LTD.

Signed:

Greg Johnston, M.Sc.

Engineering Geology and Geotechnical Specialist

Approved:

Ken Brouwer, P.Eng. Managing Director

Attachments:

Cost Estimates by:

Geotech Drilling (1 page)

Mud Bay Drilling Co. Ltd. (1 page)

Foundex Explorations Ltd. (3 pages)

Copy To:

Luke Moger

/gj



Cost Estimate

Bill to: Knight Piesold Ltd.

Care of: Knight Piesold Ltd.

1400 750 West Pender Street Vancouver, BC V6C 2T8

ATTN: Mark Smith

Tel:

Email: msmith2@knightpiesold.com

Date: October 27, 2009

Revised No./Date: 04-Nov-10

Project Manager: Ryan Samis

Cost Estimate No.: 1KRS10-0043

Unit No. (Drill Rig): Odex/Mud Rotary Drill

Location: Mount Polley Mine

Province:

Scone:	This cost estimate is for 2 boreholes to 60 meters (200 ft) with 4 Vibrating Wire Installs per hole and 3 boreholes to 25 meters ('s (100 ft) with 2.75"
ocopo.	Casing installed and 4 Vbrating Wires per hole,. Soil coring(HQ3) will be required in the last 65 ft of each hole.

ltm	Qty	Unit	Description	Price	Extended
1	96	hrs	Odex Drilling / Soil Coring	249.00	23,904.00
2	52	hrs	Overtime (after 8 hours, weekends, stats)(two man crew)	65.00	3,380.00
3	1	L/S	Mob/Demob to Mount Polley	2750.00	2,750.00
4	30	hrs	Crew travel	150.00	4,500.00
5	12	shift	Support vehicle(truck mount)	249.00	2,988.00
6	12	shift	Crew subsistence (two man crew)	279.00	3,348.00
7	12	shift	Air compressor rental (300/200)	4 25.00	5,100.00
8	12	shift	Grout/Mud pump rental	199.00	2,388.00
9	5	hrs	Safety meeting	149.00	745.00
10	311	ft	Diamond Bit Wear Consumption	19.75	6,142.25
11	590	ft	Odex bit wear consumption (Vibrating Wire BH's, Inclinometers and Monitoring Wells)	5.75	3,392.50
12	12	shift	High Pressure Diamond Pump Rental	175.00	2,100.00
13					<u>-</u> -
14)		-
15					- 1
16					_
17					<u>.</u>
18	400	ft	1" PVC (for Vibrating wire installs)	1.87	748.00
19	25	10 ft	2.75" Slope Inclinometer Pipe	148.35	3,708.75
20	3	ea	2.75" Slope Inclinometer Top Cap	6.90	20.70
21	3	ea	2.75" Slope Inclinometer Grout Anchor	58.69	176.07
22	40	bags	Bentonite chips (If grouting does not work, chips will be used as backfill material in rock fill)	21.84	873.60
23	12	bags	Sand (Vibrating Wire Installs if required)	15.52	186.24
24	5	ea	Stand up casing protectors	109.25	546.25
25	5	bags	Fast set pre-mix concrete	17.25	86.25
26	65	5 ft	Acrylic Liners for Soil Coring	28.75	1,868.75
27	7	bags	Premix Grout	34.44	241.08
28	21	bags	Portland cement	23.75	498.75
29					-
ees & resi	tocking charges	may apply if less tha	valid for 60 days. Underground / Overhead utilities are the sole responsibility of the client. Lost, broken or unrecoverable looling will be charged at cost plus 15%. Cancellation n 48 hours notice. Invoke Payment terms: Upon Receipt. 2% interest charges will apply on past due accounts Invoke considered accepted and approved 15 days after	Subtotal \$	69,692.19
		ication is received.	**Overtime is applicable after 8 hours, weekends, and statutory holidays**	HST \$	8.363.06

British Columbia

5052 Hartway Drive • Prince George • British Columbia • Canada • V2K 5B7

Tel: (250)962-9041 • Fax: (250)962-9046 • Web: geotechdrilling.com

Promotion Code:

Thank You for Your Business!

TOTAL DU \$ 78,055.25



ATTN: Greg Johnston

Tel: (604) 888-2206 Fax: (604) 888-4206

Suite 1400 - 750 West Pender St.

Knight & Piesold Ltd.

Vancouver, B.C., V6C 2T8

Cost Estimate

Date: August 13 2010

Revised No./Date:	
Cost Estimate No.:	1
Unit No. (Drill Rig):	Sonic Truck
Location:	Mount Polley

Scope: 2 boreholes to 60m and 3 boreholes to 25m. Slope indicator casing to be installed in each hole. 4 VW piezometers in each hole. Piezometers to be supplied by client.

	- 1					
ltm	Qty	Unit	Description		Price	Extended
1	1	ls.	Mobilization (Surrey/Mount Polley/Surrey)	\$	6,500.00	\$ 6,500.00
2	60	hrs	Drilling, sampling and installation	\$	550.00	\$ 33,000.00
3		hrs	Crew overtime (1.5)			\$ -
4		hrs	Crew overtime (2.0)			\$ -
5	12	hrs	Crew Travel	\$	185.00	\$ 2,220.00
6	6	days	Living allowance	\$	525.00	\$ 3,150.00
7	195	m	Bit Wear	\$	35.00	\$ 6,825.00
8		in.	Concrete coring (10 in dia.)			\$ -
9	195	m	2.75"/70mm INCLINOMETER CASING SNAP SEAL	\$	37.00	\$ 7,215.00
10		ft.	(2)" PVC blank			\$ -
11	5	ea	INCLINOMETER TOP/BOTTOM CAP	\$	27.00	\$ 135.00
12		ea	DCPT tips	\$	20.00	\$ -
13		ea	Shelby tubes	\$	40.00	\$ -
14		sacks	Silica sand	\$	16.00	\$ -
15		sacks	Bentonite chips	\$	20.00	\$ -
16	5	sacks	Concrete	\$	16.00	\$ 80.00
17	195	m	Grouting of Boreholes	\$	11.00	\$ 2,145.00
18		sacks	Quik-gel bentonite drilling mud	\$	20.00	\$ -
19		sacks	Asphalt patch	\$	22.00	\$ -
20		sacks	Portland cement	\$	20.00	\$ -
21	6	days	Support /Decontamination Unit	\$	300.00	\$ 1,800.00
22		days	Compressor rental for ODEX	\$	450.00	\$ -
23		ea	45 gal. Drums with lids	\$	60.00	\$ -
24	5	ea	Well covers (flush mounted, cast iron, above ground)	\$	135.00	\$ 675.00
25		ea	Core boxes	\$	60.00	\$ -
26						\$ -
27						-
28						-
29						-
Note	es:				Subtotal	\$ 63,745.00
Star	ndby of	f rig and			H.S.T.	\$ 7,649.40
	_	•	nan 8hrs onsite +\$75/hr e for contaminated soil/wast water removal	TC	TAL DUE	\$ 71,394.40

Client is responsible for contaminated soil/wast water removal Core boxes, if needed \$60/ea 45gal drums, if needed \$60/ea



Date: Oct. 28, 2010

Client Job#: N/A

4385 Equipment: CSR-1000 Proposal #

Project Details: Site:

To: Knight Piesold Consulting Suite 1400 - 750 West Pender Mount Polley Attention: Mark Smith Vancouver, BC V6C 2T8 Tel: 604-Single shif / double Estimate # of Shifts Estimate # of Days Single Shift 15 15

				Air Rotary			Mud Rotary		I	nstall/Backfill/G	
Hole #	Hole Depth (m)	Hole Depth (ft)	Move/Setup	Overburden (m)	Overburden (hrs)	Mud Rotary (m)	(hrs)	Coring (m)	Coring (hrs)	rout (hrs)	Total Hrs
60	60.00	196.80	1.00	40.00	13.33	12.00	8.00	8.00	8.00	6.00	36.33
60	60.00	196.80	1.00	40.00	13.33	12.00	8.00	8.00	8.00	6.00	36.33
25	35.00	114.80	1.00	15.00	5.00	12.00	8.00	8.00	8.00	4.00	26.00
25	35.00	114.80	1.00	15.00	5.00	12.00	8.00	8.00	8.00	4.00	26.00
25	35.00	114.80	1.00	15.00	5.00	12.00	8.00	8.00	8.00	4.00	26.00
QUANTITY:	225.00	738.00	5.00	125.00	41.67	60.00	40.00	40.00	40.00	24.00	150.67
UNITS:	Meters	Feet	Hourly	Meters	Hourly	Meters	Hourly	Meters	Hourly	Hourly	15
RATE:			\$390.00		\$390.00		\$390.00		\$390.00	\$390.00	
TOTAL:			\$ 1,950.00		\$ 16,250.00		\$ 15,600.00		\$ 15,600.00	\$ 9,360.00	

DENOTES WEEKEND OR HOLIDAY

* DENOTES WEEKEN	ID OR HOLIDAY									
	Production Rates			Hourly Rate	Calculator	\$20,650.00				
Moving	1	Hours Per Hole	Description	Rate	Quantity	Extension				
Air Rotary	3	Meters / hour	Rig	\$295.00	70.00	\$20,650.00				
Mud Rotary	1.5	Meters / hour	OT (per 2 man crew)	\$60.00	30.00	\$1,800.00				
Travel	2	Hours Per day	Travel (per 2 man crew)	\$120.00	14.00	\$1,680.00				
Holes	5	Project Total	Room & Board	\$300.00	7.00	\$2,100.00				
Work Week	70	Hours Per Week	Pick up truck	\$150.00	7.00	\$1,050.00				
Work Days	7	Days Per Week				\$0.00				
Contingency	10.00%	Per Job				\$0.00				
Hours Per Day	10.00	Hours Per Day				\$0.00				
Supervisor	0.00	Days Per week				\$0.00				
Extra Helper	0.00	Hours Per Week				\$0.00				
Crew	2.00	# of Men			Weekly Total	\$27,280.00				
R&B Rate / Man	150.00	Rate Per Man			Hourly Rate	390.00				
Rig Rate	\$295.00	Per Hour			Standby Rate	312.00				

	Consumables a	and Misc. Items		
Quantity	Description	Unit	Rate	Extension
40	HQ3 Coring	Per Meter	32.80	1,312.00
60	Mud Rotary Drilling	Per Meter	16.50	990.00
125	Air Rotary Drilling - 6' Symmetrix	Per Meter	50.00	6,250.00
40	Cement	Bags	15.15	606.00
10	X-Tra Gel Bentonite	Bags	12.50	125.00
5	Bentonite Chips	Bags	19.50	97.50
20	Time Release Pellets	Pails	103.80	2,076.00
40	Piezo Sand	Bags	10.17	406.80
250	3/4" PVC Pipe	Feet	0.55	137.50
18	2 3/4"x 10' linclinometer Casing	Each	98.50	1,773.00
2	2 3/4" Inclinometer Top Caps	Each	5.53	11.06
2	2 3/4" Inclinometer Grout Bottom Caps	Each	129.20	258.40
20	Vibrating Wire Piezometer	Each	550.00	11,000.00
321	Cable for VW	Per Meter	3.25	1,043.25
			TOTAL	00 000 54
			TOTAL	26,086.51

PROJECT DETAILS							
Water Availability	Unknown	Surface Casing	Yes	Accommodations	Williams Lake	Installation	N/A
Equipment Access	Truck	Casing Size	Symmetrix 6"	Fuel	N/R	PVC Size	N/A
Environmental Project	No	Drill Hole	Yes	Insurance certificate	N/R	Slot size	N/A
Any Permitting	By Others	Hole Size	Symmetrix 6"	Shipping Quote	N/R	Flush/Standup	N/A
Intended Driller	Unknown	Drill Method	Air, Mud, Core	Maps Required	Yes	Sand	N/A
Cutting Disposal	Left on site	Core Size	HQ3	Utility Locate Req.	By Others	Pellets	N/A
Drill Containment	No	SPT/Shelby	SPT and Shelby	Terms Sent	Yes	Grout	N/A
Rental Equipment	No	Wireline Samples	N/A	Start Date	Unknown	Backfill w/cuttings	Yes
Subcontractors	No	CPT / SCPT	N/A				
Service Vehicles	Yes	Development	N/A				
Grout Equipment	Yes	Packers	N/A				
Training Programs	No	BPT -Pull back	N/A			Pump lift	Unknown
Travel Arrangements	No	Piston Sampler	N/A			Hose Req'd	Unknown

^{***} THIS IS A COST ESTIMATE ONLY ** ACTUAL CHARGES WILL BE BASED ON FIELD LOGS AND OUR STANDARD TERMS AND CONDITIONS***

Sub Total: \$58,760.00 \$8,500.00 \$26,086.51 Mobilization: Materials: Contingency: \$8,484.65 Sub Total: \$101,831.16 HST @ 12%: \$12,219.74 \$114,050.90 Total:

STANDARD TERMS & CONDITIONS OF FOUNDEX EXPLORATIONS LTD.

1. General

- 1.1. Prices include a 2 man crew and all necessary drilling and sampling equipment.
- 1.2. FWA, regulated or Union wage rates would be at an additional charge.
- 1.3. Survey and layout of all drill locations to be the responsibility of others.
- 1.4. Authorized utility clearance to be provided to Foundex prior to drilling.
- 1.5. Suitable access for our equipment would be provided by others to the satisfaction of Foundex.
- 1.6. Removal of and transport of contaminated drilling and decontamination spoils from the drill sites to be the responsibility of others.
- 1.7. Foundex's minimum work schedule is 10 hours per day and 5 days per week along with being a continuous operation until the work is complete. Overtime rate is in effect for all hours after 8 hrs per day, and after 40 hours per week, and on weekends and holidays. Work schedule revisions will be at the discretion of Foundex Explorations Ltd. based on project specific situations.
- 1.8. Client will provide site specific Health and Safety Plan for environmental projects. Equipment spill containment systems would be at an additional cost and only be provided at the specific request of the client. Pricing assumes Level "D" personnel protection unless specifically indicated otherwise.
- 1.9. Any or all traffic control to be provided by others.
- 1.10. Security for our equipment to be the responsibility of others.
- 1.11. Potable water supply, utility permits, misc. permits etc to be provided by others.

2. Marine Work and Marine Transportation

- 2.1. When contracting Marine vessels, Foundex will flow thru to the client all the terms and conditions of the supplier.
- 2.2. Standby will apply to all time that the barge and drill are unable to work due to tides, weather, permits or anything else that is beyond the control of the drill crew and/or barge operator.
- 2.3. When required by Foundex the Client will provide suitable moorage for barge and work boats.
- 2.4. All Marine vessels supplied by the client shall meet Foundex's minimum requirements for offshore drilling.
- 2.5. Minimum day for all rigs is 10 hours. Standby due to weather will be charged at agreed rates for 10 hours per day.
- 2.6. Cargo insurance for FEL's equipment while being transported by non-scheduled marine transportation will be charged on a cost plus basis or be provided by the client.

3. Heliportable Work

- 3.1. When requested, contracting helicopter services, Foundex will flow thru to the client all the terms and conditions of the supplier.
- 3.2. Suitable Helipads and work platforms when required will be provided for by others.
- 3.3. All Permitting when required will be provided by the client
- 3.4. When requested, Fuel will be supplied at cost plus 10% to the client.
- 3.5. Cargo insurance for FEL'S equipment while in flight is to be provided for by the client and hen Foundex provides cargo insurance it would be at Cost plus 10%.

4. Technical

- 4.1. Any artesian water flows will be dealt with on a cost plus basis.
- 4.2. Standby at 80 % of our unit rates includes but is not limited to, site orientation, safety meetings, engineering, health & safety plan protocols, personal protection equipment upgrades, water sampling, and lab analysis. Client will be invoiced for actual time consumed.
- 4.3. Materials are based on identified scope of work and include materials and supplies required to complete the work.

 Additional materials and supplies can be made available provided as mutually agreed.

- 4.4. Estimate is subject to final scope of work, terms and conditions, health & safety plan and rig availability. Client will be invoiced for actual units consumed.
- 4.5. Reasonable drilling and sampling refusal based upon industry standard for applicable methodology. Refusal for Becker Drilling will be considered to be 200 blows per foot.
- 4.6. Foundex makes no guarantee desired maximum depths can be achieved. Potential for tool replacement if required by the client to drill or sample past the drill rig operators identified maximum safe depth. Potential for Becker pipe repair or replacement will be at cost plus 10% for any lost, damaged or bent pipe.

5. Financial

- 5.1. Any estimates offered by Foundex are for budgeting purposes only. Unless specifically indicated otherwise invoicing will be based upon actual time and quantities. Foundex does not guarantee that production rates used in the estimate will be achieved. Foundex reserves the right to modify our stated methodology to respond to differing site conditions. Should a not to exceed contract or footage rates be required Foundex requires this information prior to the bid date.
- 5.2. Sales tax or GST is not included in the above rates unless specifically indicated.
- 5.3. Upon prior approval of credit, payment terms are net 30 days from date of Invoice. All invoices issued by Foundex will be in digital format. All agreements that do not comply with these terms and conditions will be subject to a 5% mark-up on the total invoice. All invoices will also carry a 2% charge per month on any overdue balances.
- 5.4. Payment or performance bonds are not included in this proposal.
- 5.5. Any retention of funds due to Foundex shall be released in full within 30 days of completion of Foundex Explorations Ltd.'s Original scope of work.
- 5.6. Certificates of insurance will be submitted upon request only and any additional insurance requirements would be charged to the client at cost plus 10%.
- 5.7. When applicable a Fuel surcharge will be charged on Foundex projects.
- 5.8. Project cancellations after notice to proceed may incur costs payable by the client. Mobilization ends once the rig has arrived on site; set-up on the first borehole is per the terms of the proposal.
- 5.9. All proposals offered by Foundex are commercial in confidence and valid for 30 Days.
- 5.10. Upon Foundex receiving a purchase order or a verbal or written" notice to proceed", the client shall be deemed to have accepted and agreed to these terms and conditions unless specifically indicated otherwise and agreed to in writing prior to the commencement of the project. These terms and conditions incorporate the entire agreement between Foundex and the client, and supersede all prior understandings and agreements with respect to the project. If this document is a subcontract, then Foundex will not be bound by any term of the head contract unless specifically included in this document, or an amendment signed by Foundex and the client. No modification of this agreement will be effective unless made in writing and signed by Foundex and the client. There are no representations, warranties, terms, conditions, undertakings or collateral agreements express, implied or statutory, between Foundex and the client other than as expressly set forth in these terms and conditions.

Section" A" (Site specific terms)

To be Determined

Section "B" (Foundex Proposal and Scope of Work)

See Attached

Section "C" (Miscellaneous attachments)

To be Determined

Foundex Explorations Ltd.

End of Terms and Conditions



File No.:VA101-1/29-A.01 Cont. No.:VA11-00252 Suite 1400 - 750 West Pender Street Vancouver, BC Canada V6C 2T8

Tel: 604.685.0543 Fax: 604.685.0147 www.knightpiesold.com

February 3, 2011

Mr. Ron Martel Environmental Superintendent Mount Polley Mining Corporation P.O. Box 12 Likely, BC V0L 1N0

Dear Ron,

Re: Mount Polley Mine - Site Water Management

Knight Piésold (KP) recently issued the 2010 annual inspection report for the Tailings Storage Facility (TSF) at the Mount Polley Mine. Although the primary focus of the annual inspection is to evaluate the performance of the TSF, the inspection also considers site water management practices, as these can have a significant impact on water accumulation at the mine and the storage requirements for the tailings impoundment.

KP previously assisted with assessing the operational water balance for the overall site. However, Mount Polley Mining Corporation (MPMC) has been managing the water balance in-house for the last two years and KP has had no involvement with it during this time. The water balance for the mine site was operating with a significant water surplus when KP last reviewed the information, with surplus water progressively accumulating within the TSF and the Cariboo and Wight Pits. KP understands that the quality of the water that is stored in the TSF and the pits is not suitable for discharge to the environment, and that MPMC does not yet have a permit to discharge excess water.

MPMC recently provided KP with a copy of an amendment (2009) to the mine operating permit that allows for the transfer of water from the TSF to the Cariboo Pit. This permit amendment allows for filling of the Cariboo Pit up to a designated maximum water level, and also stipulates that a minimum water cover be maintained over Potentially Acid Generating (PAG) waste rock that has been placed in the pit. KP has a general knowledge of the Cariboo Pit, but has not completed relevant geotechnical or hydrological studies for it. However, our overview assessment of the TSF operations, conducted as part of the 2010 Annual Inspection, suggests that a significant amount of water was transferred out of the TSF as the impounded supernatant water was considerably less than in previous years. MPMC site staff confirmed that tailings supernatant water had been transferred from the TSF to the Cariboo Pit to reduce the volume of water stored within the TSF.

The storage capacity for surplus water in the Cariboo Pit is limited by the geometry of the pit, the amount of PAG waste rock being stored in the pit, and the upper storage limit as defined in the operating mine permit. It is our opinion that the volume of water currently being stored in the Cariboo Pit is lower than would have been predicted by the site water balance, and it is possible that significant leakage may have occurred during filling of the Cariboo Pit, resulting in the discharge of poor quality water to adjacent water courses.

KP included a recommendation in the 2010 Annual Inspection report that the water balance and water management practices be reviewed to ensure compliance with the intent of the current permits. Our





concern is that some of the water transferred from the TSF to the Cariboo Pit is not being contained, but rather is being discharged as seepage and/or overflow to adjacent receiving waters. KP therefore recommends that MPMC adopt a pro-active approach and have an experienced reviewer examine the overall site water management system, with particular focus on the hydrogeological characteristics of the Cariboo and Wight Pits, to evaluate the current practices for managing site surplus water to confirm compliance with existing storage and discharge permits.

We trust that this information will be of assistance to MPMC in their continuing operation of the Mount Polley Mine. Please contact the undersigned if you have any questions or comments.

Yours truly,

KNIGHT PESOLD LTD.

Signed:

Les Galbraith, P. Eng. Senior Engineer Approved:

Ken Brouwer, P.Eng. Managing Director

Copy To:

Tim Fisch (MPMC), Bryan Kynoch (Imperial Metals Corporation)

/lg



File No.:VA101-1/29-A.01 Cont. No.:VA11-00298 Suite 1400 - 750 West Pender Street Vancouver, BC Canada V6C 2T8

Tel: 604.685.0543 Fax: 604.685.0147 www.knightpiesold.com

February 10, 2011

Mr. Brian Kynoch Mount Polley Mining Corporation Suite 200 - 580 Hornby Street Vancouver, BC V6C 3B6

Dear Brian,

Re: Mount Polley Tailings Storage Facility Engineer of Record

We have completed all assignments and on January 25, 2011 issued to Mount Polley Mining Corporation (MPMC) the final versions of the 'Tailings Storage Facility - Report on the 2010 Annual Inspection' and 'Tailings Storage Facility - Report on Stage 6B Construction'.

We are currently assuming that MPMC will be retaining the services of a separate individual or organization to take over as the Engineer of Record for the tailings storage facility, as a result of Knight Piésold's decision to opt out of the bidding process implemented by MPMC late last year. We would like to facilitate a formal handover to the new individual/group, as it is essential that it be recognized that Knight Piésold will not have any responsibility for any aspects of the on-going operations, or of any modifications to the facilities that are undertaken from now onwards. To date, the tailings impoundment has been developed using the observational approach, wherein the design is modified as appropriate depending on actual performance and conditions. It must be understood that Knight Piésold will no longer have any responsibility for the performance of the tailings storage facility.

The embankments and the overall tailings impoundment are getting large and it is extremely important that they be monitored, constructed and operated properly to prevent problems in the future. Knight Piésold would be happy to assist in the formal handover to the new Engineer of Record.

As we have a long relationship with the Mines Branch and the Ministry of Energy, Mines and Petroleum Resources, we consider that it is prudent to notify them of the change in status. Therefore, we have copied them on this correspondence.

We would like to thank you for our long and constructive association at the Mount Polley Mine and look forward to working together again in the future.

Signed:

Ken Brouwer, P.Eng. Managing Director Approved:

Jeremy Haile, P.Eng.

President

Copy To:

Don Parsons (IMC), Ron Martel (MPMC), Tim Fisch (MPMC)

Al Hoffman, Chief Inspector of Mines

/kjb

