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April 1, 2010

Nunavut Water Board
P.O. Box 119
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Attn: Dionne Filiatrault, Executive Director
Phyllis Beaulieu, Manager of Licensing

Dear Ms. Filiatrault and Ms. Beaulieu;

Follow Up Submission re Notification of Proposed Modification - Doris North Water Licence 2AM-DOH0713 Part H, Item 1 (Location of Portal) dated February 26, 2010

Further to Hope Bay Mining Ltd.'s ("HBML") Notification of Proposed Modification (Location of Portal) dated February 26, 2010 (the "Notice"), HBML wishes to inform the Nunavut Water Board that SRK Consulting has now completed the geochemical analysis referred to in the Notice. The geochemical analysis conducted by SRK has confirmed HBML's preliminary view set out in the Notice that the portal development rock and rock associated with the change in alignment of the decline is not potentially acid generating rock. The geochemical analysis is attached at Appendix A to this Letter.

Should you have any questions regarding this submission or require any additional information, please do not hesitate to contact me directly.

Sincerely,

Christopher C. Hanks

Digitally signed by Christopher C. Hanks
DN: cn=Christopher C. Hanks, o=Hope Bay Mining Company, ou=Environment and Social Responsiblity, email=chris.hanks@newmont.com, c=US
Date: 2010.04.01 17:08:53 -07'00'

Chris Hanks
Director, Environmental & Social Responsibility
Hope Bay Mining Ltd.

cc. Stephanie Autut, NIRB
KIA

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Memo

To:	Chris Hanks, Newmont	**Date:**	March 30, 2010
cc:	Lea-Marie Bowes-Lyon, Newmont	**From:**	Madeleine Corriveau Lisa Barazzuol Kelly Sexsmith
Subject:	Geochemical Characterization and Recommendations for Portal Face-Off Area Construction Rock, Doris North, Hope Bay Project - DRAFT	**Project #:**	1CH008.029.3600

1 Introduction

Hope Bay Mining Ltd. (HBML) is planning to start construction of their Doris North mine in 2010, and is currently seeking approval from the Kitikmeot Inuit Association (KIA) to relocate the portal, excavate a rock cut in the portal area and use the blasted rock to create a pad for other infrastructure requirements. Upon submission of the license amendment application to the KIA in early 2010, samples from the actual development footprint for the portal face-off area were not available, but a review of near-vicinity samples of the same rock type (diabase) concluded that the material would be suitable for construction use without any special management plans (SRK 2010, Attachment 1).

Samples from the portal face off development area were recently obtained and characterized both geologically and geochemically. This memorandum compares the the portal face-off samples with previous findings and addresses management and monitoring plans. New data for diabase rock from the Doris North mine decline are also presented.

2 Methods

One geochemical drillhole (SRK-GC-10-01) was drilled in February 2010 within the portal face-off footprint to confirm the sub-surface geology of the development area (Figure 1). The hole was drilled using an Atlas Copco D9 ROC drill. Rock chip samples weighing approximately 2 kg each were collected by an SRK engineer. There were a total of 22 samples collected, each sample representing approximately 1 m of drill core. The rock chips were logged by a Newmont geologist using standardized Newmont lithology codes (Attachment 2).

Samples were submitted to CANTEST Ltd., in Burnaby BC for testing. All samples were analyzed for total sulphur. A sub-set of samples were selected to confirm previous geochemical results. Six samples, representing about every 4th meter down hole, were submitted for trace metals analysis by aqua regia digestion and ICP-MS finish, and complete ABA analysis including: paste pH, total inorganic carbon (TIC), sulphate sulphur and Modified Sobek neutralization potential (NP).

Two samples of diabase from the mine decline were also selected from exploration drill hole 08TDD632 (Figure 1). These two samples were submitted for Modified ABA and trace metals at CANTEST. QA/QC of both data sets was performed by SRK.

Figure 1: Drill Hole Locations for Portal Face-Off Area and Diabase Samples, Doris North

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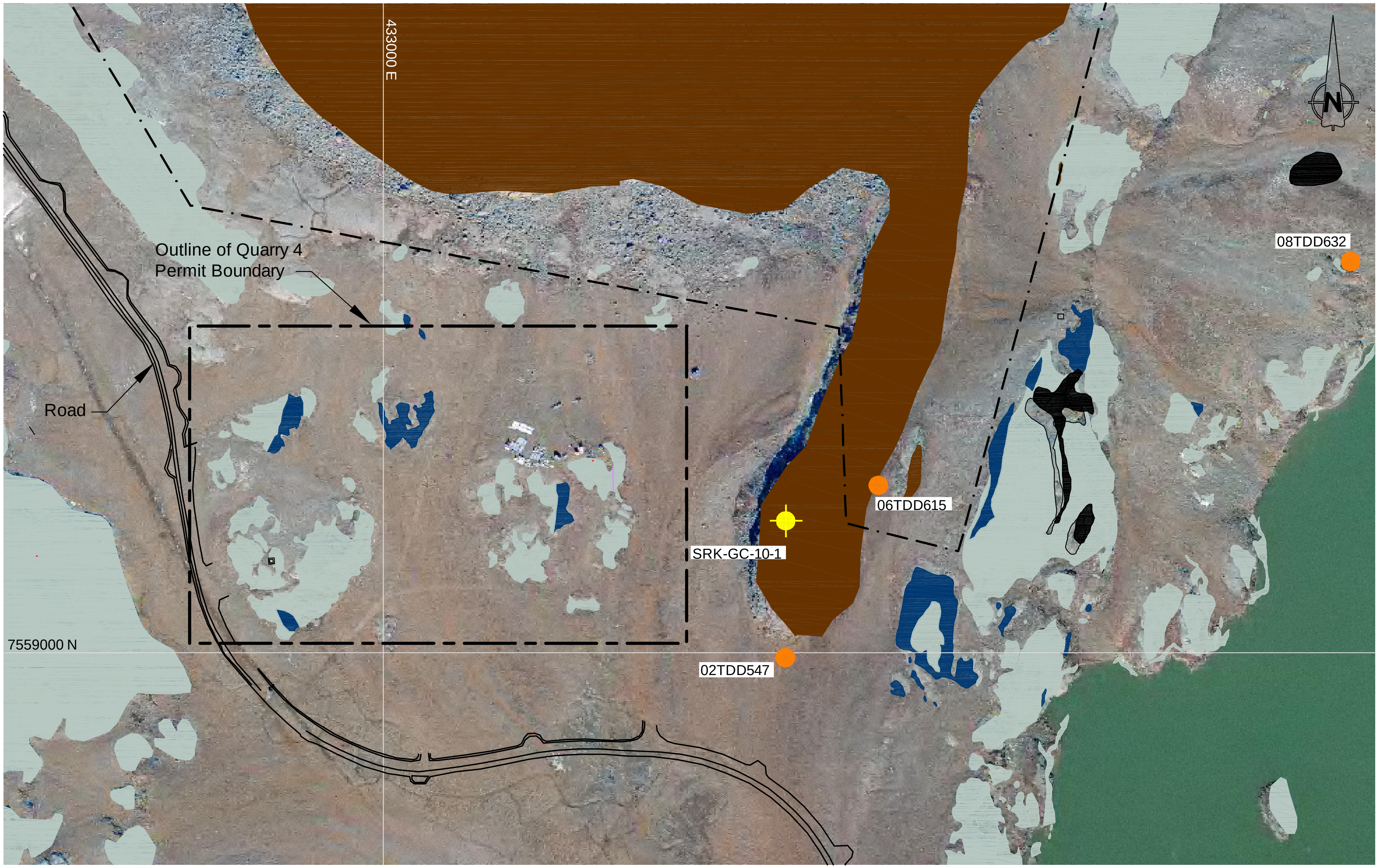

SRK Consulting
Engineers and Scientists
Vancouver B.C.

SRK JOB NO.: 1CH008.028
FILE NAME: RB-DN Geochem Characterization2.dwg

HOPE BAY MINING LTD.

HOPE BAY PROJECT

-

Drill Hole Locations for Diabase Samples, Portal Face-off Area, Doris North

DATE:	APPROVED:	FIGURE:
Mar. 25, 2010	-	1

3 Results

ABA and trace metal data are presented in Attachments 3 and 4.

3.1 Portal Face-Off Area

All of the samples were logged as diabase, confirming that the proposed portal face off area is geologically consistent with surface mapping and existing geochemical samples in the near vicinity of the portal face-off area.

Total sulphur content for the 22 samples was very low, ranging from 0.03 to 0.05% (median 0.04%). Trace levels of pyrite were noted by the geologist in two of the samples (540301 and 540311). Total sulphur content for both of these samples was 0.04%.

Table 1 presents data for the 6 samples submitted for full ABA analysis. NP content was low, ranging from 13 to 18 kg $CaCO_3$/tonne. TIC content was uniformly less than NP, ranging from 1.1 to 3.0 kg $CaCO_3$/tonne.

The data indicate that all of the samples are classified[1] as not potentially acid generating (not-PAG) on the basis of NP/AP ratios, and as uncertain on the basis of TIC/AP ratios. However, the low sulphur content in the samples suggests the potential for acid generation in the diabase samples will be limited.

Table 1: ABA Data, 6 Portal Face-Off Area Samples, Drillhole SRK-GC-10-01

Sample ID	Paste pH	Total Sulphur	Sulphate Sulphur	AP	NP	TIC	NNP	NP/AP	TIC/AP
	s.u.	%	%	Kg $CaCO_3$/tonne				ratio	ratio
540490	9.0	0.05	<0.01	1.6	18.4	1.8	17	12	1.2
540494	9.4	0.04	<0.01	1.3	14.8	2.5	14	12	2.0
540498	9.5	0.03	<0.01	0.9	12.9	1.1	12	14	1.2
540302	9.3	0.04	<0.01	1.3	17.8	3.0	17	14	2.4
540307	9.6	0.03	<0.01	0.9	17.1	1.4	16	18	1.5
540311	9.5	0.04	<0.01	1.3	14.8	1.6	14	12	1.3

The apparent discrepancy in the ARD classifications is due to the low levels of carbonate minerals, as indicated by the TIC content, and the more appreciable amounts of non-carbonate buffering minerals, as indicated by the higher levels of NP. Given the low sulphide content of these samples, these differences are not considered to be important, and buffering by silicate minerals is likely to be adequate for maintaining neutral pH conditions.

Trace metal content for the six samples submitted for analysis was typical of basaltic rocks. There were no samples with trace metal content greater than ten times the average crustal abundance for basaltic rocks (Price 1997).

3.2 Doris North Underground Workings

The two diabase samples from the mine decline intersect the same diabase dyke as the portal face-off samples, but at depth and to the northeast. Both samples had very low total sulphur content (0.02%)

[1] ARD classifications as follows: not-PAG defined as NP/AP or TIC/AP > 3; uncertain defined as NP/AP or TIC/AP between 1 and 3; PAG defined as NP/AP or TIC/AP ≤ 1

and NP/AP ratios that indicate the samples are not-PAG (Table 2). TIC is very low in these samples and TIC/AP ratios indicate that one of the samples is PAG, with the other samples classified as non-PAG. As previously discussed, the potential for acid generation in these samples will be limited by the very low sulphur content. These data are comparable to the portal-face off samples, which suggest geochemical consistency within this diabase dyke.

Table 2: ABA Data, 2 Mine Decline Samples, Drillhole 08TDD632

Sample ID	Paste pH	Total Sulphur	Sulphate Sulphur	AP	NP	TIC	NNP	NP/AP	TIC/AP
	s.u.	%	%	kg $CaCO_3$/tonne				ratio	ratio
08TDD632-SRK-WR-683	9.0	0.02	<0.01	0.6	13	2.5	12	21	4.0
08TDD632-SRK-WR-684	8.9	0.02	<0.01	0.6	15	<0.5	14	24	0.8*

*TIC level assumed to be equivalent to the detection limit (0.5 kg $CaCO_3$/tonne).

4 Discussion

This section compares data for diabase samples from the portal face-off and mine decline areas with other existing samples of diabase.

4.1 Near-Vicinity Diabase Samples

As discussed in Attachment 1, there were existing geochemical data for samples of diabase from the same outcrop as the portal face-off development area, including one sample from drill hole 02TDD547 and 30 samples from drill hole 06TDD615 (Figure 1).

Total sulphur content for these samples was very similar to samples from the portal face-off area and mine decline, ranging from 0.02 to 0.05% (median 0.02%). ARD classifications were also very similar. Based on NP/AP ratios, all 31 portal area samples were classified as not-PAG (Attachment 1). On the basis of TIC/AP ratios, most portal area samples were classified as uncertain or PAG.

4.2 Diabase Samples from Doris and Madrid Deposit Areas

As discussed in Attachment 1, samples from the Doris and Madrid deposit areas are considered to be relevant due to their common origin and uniform geological and geochemical characteristics.

Doris and Madrid samples had slightly higher total sulphur content than mine development diabase samples (portal face-off and near vicinity samples, and mine decline), ranging from 0.02 to 0.13% (median 0.07%). NP and TIC content was also higher for Doris area samples, ranging from 15 to 138 kg $CaCO_3$/t (median 70 kg $CaCO_3$/t) and 0.83 to 178 kg $CaCO_3$/t (median 9.7 kg $CaCO_3$/t), respectively. This suggests that the samples from the deposit area may be from a different phase of diabase intrusion.

As was observed for other diabase samples, those from the Doris and Madrid deposits were all classified as not-PAG based on NP/AP ratios and were classified as either PAG, uncertain or not-PAG using TIC/AP ratios.

5 Summary and Recommendations

Diabase samples from the mine development areas, including the portal face-off area, other drill holes in close proximity (02TDD547 and 06TDD615) and the Doris underground workings (08TDD632), contained low levels of total sulphur (maximum 0.05%), NP and TIC.

ABA classifications for these samples were similar and are classified as not-PAG on the basis of NP/AP and uncertain or PAG on the basis of TIC/AP. The low total sulphur content suggests that these samples have a limited potential for acid generation. Accordingly, the recommendations for the portal face-off material suggested in SRK (2010) are appropriate, and are summarized as follows:

- Special management plans are not required.
- In the unlikely event that localized acidic conditions develop in this material, this could be mitigated by placement of a thin cover of basalt with geochemical properties like that of material from Quarry 2. This measure would provide additional alkalinity from the dissolution of carbonates.
- Once placed, construction rock would be visually inspected and monitored (both solids and seepage flowing from infrastructure).

6 References

SRK 2010. Geochemical Characterization Program for the Portal Face-Off Area, Doris North, Hope Bay Project. Memo submitted to Newmont January 25, 2010.

Attachment 1

SRK (2010)

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Memo

To:	Lea-Marie Bowes-Lyon, Newmont	**Date:**	January 25, 2009
cc:	Chris Hanks, Newmont Ken Black, SRK Maritz Rykaart, SRK Lowell Wade, SRK	**From:**	Lisa Barazzuol Kelly Sexsmith
Subject:	Geochemical Characterization Program for the Portal Face-Off Area, Doris North, Hope Bay Project	**Project #:**	1CH008.029.3600

1 Introduction

Hope Bay Mining Ltd. (HBML) is planning to start construction of their Doris North mine in 2010, and is currently seeking approval from the Kitikmeot Inuit Association (KIA) for some changes to the currently boundary limits of Quarry 4. These include relocation of the portal, excavation of a rock cut in the portal area and use of the blasted rock to create a pad for other infrastructure requirements. The portal face-off area is to be the primary access portal for the Doris North underground mine (Figure 1). The area of excavation is approximately about 35 m x 100 m and to an approximate depth of 16 m.

This memorandum is to be included in an information package that is being submitted by Newmont to the KIA. Included is an overview of the current knowledge of the geology and geochemistry of this area. Ongoing field and test programs are also presented, as well as monitoring and mitigation plans.

2 Geology

Table 2.1 outlines the three published geology maps of the Doris North area (Sherlock 2002, Stubley 2009 and HBML 2010). All maps have designated the portal face-off area as diabase. This type of rock is an intrusive volcanic rock that was deposited a long time after the gold deposits and their associated sulphide mineralization formed. The diabase has not been subjected to the kinds of events that result in changes to the original mineralogy, therefore this rock is expected to have relatively uniform geochemical characteristics.

Table 2.1: Geological Review of Portal Face-Off Area

Reference	Rock Type	Method
Sherlock (2002)	Diabase	Bedrock mapping
Stubley (2009)	Diabase	Bedrock mapping
HBML (2010)	Franklin diabase (11)	Bedrock mapping

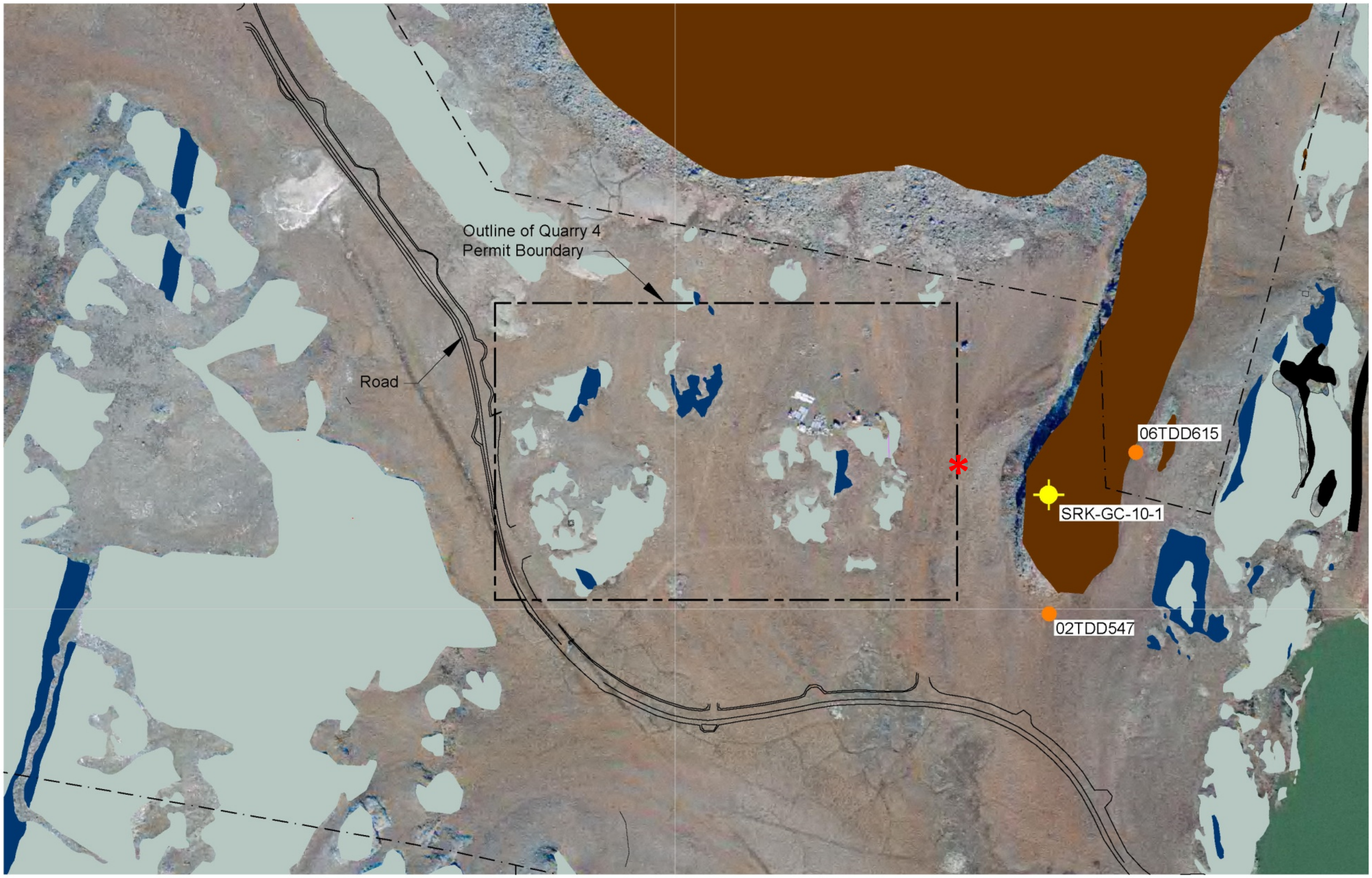

Figure 1: Proposed portal face-off area (area denoted by red star), Doris North

3 Geochemical Characteristics

Although there are presently no geochemical characterization data for diabase from within the portal face-off footprint, there are some data from a nearby location and from other locations in the Hope Bay area. Additionally, a field and laboratory testing program has been initiated to collect additional data within the actual footprint area. This section presents the current understanding of diabase geochemistry samples from existing samples. Also, details of the ongoing programs are presented, including the geochemical drill program specific to the portal face-off area.

3.1 Existing Geochemical Data

3.1.1 Portal Area

Existing geochemical data for samples of diabase from the same outcrop as the portal face-off development area include one sample from drill hole 02TDD547 (AMEC 2005) and 30 samples from drill hole 06TDD615 (SRK 2007) (Figure 1). AMEC (2005) and SRK (2007) data were previously presented to the KIA, Nunavut Impact Review Board (NIRB) and Nunavut Water Board (NWB) as part of the Doris North regulatory process (Miramar 2007).

Table 2.2 presents the ARD classifications for the 31 samples based on NP/AP and TIC/AP. The data indicate that most samples are classified[1] as uncertain or potentially acid generating (PAG) on the basis of TIC/AP only, or not-PAG on the basis of NP/AP ratios. However, the potential acid generation in the diabase samples will be limited by the very low sulphide values (0.02 to 0.05%, median 0.02%).

The apparent discrepancy in the ARD classifications is due to the low levels of carbonate minerals, as indicated by the total inorganic carbon (TIC) content (0.2 to 5.0 kg$CaCO_3$/t, median 1.0 kg$CaCO_3$/t), but more appreciable amounts of non-carbonate buffering minerals, as indicated by the higher levels of neutralization potential (NP). Given the low sulphide content of these samples, these differences are not considered to be important, and buffering by silicate minerals is likely to be adequate for maintaining neutral pH conditions.

Table 3.1: ARD Classifications, 30 Diabase Samples, Drill Hole 06TDD615

ARD Classification	NP/AP # of samples	TIC/AP # of samples	Sulphide Sulphur (%)
≤ 1	0	7	0.02 to 0.03
1< x ≤ 3	0	21	0.02 to 0.06
> 3	31	3	0.02 to 0.05

3.1.2 Doris Area

Samples of diabase from other areas in the vicinity of the Doris deposit area are considered to be relevant due to their common origin and uniform geological and geochemical characteristics. Diabase samples from other areas of the site include six samples from Doris and two from Madrid (SRK 2009a).

[1] ARD classifications as follows: not-PAG defined as NP/AP or TIC/AP > 3; uncertain defined as NP/AP or TIC/AP between 1 and 3; PAG defined as NP/AP or TIC/AP ≤ 1

Mineralogy data for these samples indicated minor amounts of ferroan dolomite or calcite in some samples, and no detectable carbonates in others. Tables 2.3 and 2.4 present the ABA data and ARD classifications for these samples. The results were generally consistent with the results from the portal area, with some samples classified as either PAG or uncertain using TIC/AP ratios and not-PAG by NP/AP ratios. However, a higher proportion of samples were not-PAG by both classification methods. As with the other diabase samples, the potential for acid generation will be limited by the very low levels of sulphur.

Table 3.2: ABA Data for 8 Diabase (11c, 11cm) Waste Rock Samples, Doris & Madrid

Statistic	AP Sulphur (%)	NP ($kgCaCO_3/t$)	TIC ($kgCaCO_3/t$)
Min	0.02	15.11	0.83
P25	0.05	24.08	2.15
P50	0.07	70.11	9.66
P75	0.11	130.33	20.19
Max	0.13	137.50	177.50

Table 3.3: ARD Classifications for 8 Diabase (11c, 11cm) Waste Rock Samples, Doris and Madrid

ARD Classification	NP/AP	TIC/AP	Sulphide	Deposit
	# of samples	# of samples	(%)	
≤ 1	--	3	0.05 to 0.13	Doris
1< x ≤ 3	--	1	0.13	Doris
> 3	8	4	0.02 to 0.11	Doris/Madrid
# of Samples	8	8	8	--

3.2 Geochemical Programs in Progress

3.2.1 January 2010 Field Program for Portal Face-Off Area

One geochemical drill hole (SRK-GC-10-01) within the portal face-off footprint (Figure 1) will be drilled to confirm the sub-surface geology of the development area. Drilling is scheduled to start the week of January 17, 2010.[2] The hole will be logged by a Newmont geologist. Based on the drill logs, selected samples will be geochemically characterized.

[2] Since presenting this information to the KIA, it has been established that access to the proposed location may not be possible, and it may be necessary to defer the drilling program to a later date or to substitute chip samples from the surface of the outcrop area. Because the diabase has very uniform geochemical properties, we are confident that there will be no differences between the geochemical properties of the face-off area diabase and the samples that have already been characterized in previous programs. Therefore, the results from this program are not considered to be time sensitive.

3.2.2 Geochemical Characterization of Doris North Underground Workings

The mine decline will intersect the same diabase dyke as the portal face-off area, but at depth and to the northeast. Additional testing of rock from the underground workings is currently underway. As part of that work, an additional sample of diabase waste rock is currently being analyzed at the lab.

3.2.3 Humidity Cell Tests

Two humidity cell (HC) tests containing diabase material from the Doris deposit area were initiated in January 2010. Results are not yet available but the data supplement the geochemical database for diabase rock, and results from the first month of testing should be available prior to construction.

4 Management Recommendations

The information currently available for the diabase indicates a limited potential for acid generation, indicating that special management plans are not require to prevent acidic drainage from developing in this material.

In the unlikely event that localized acidic conditions develop, this could be mitigated by placement of a thin cover of basalt with geochemical properties like that of material from Quarry 2. SRK also recommends that the pads built using diabase material be recorded during construction. .

5 Monitoring

SRK recommends a monitoring program to verify the characteristics of these materials following construction. The program would include visual inspection and sampling of both solid materials and seepage flowing from infrastructure, as has already been conducted for the existing Doris North camp, airstrip and roads (SRK 2009b).

6 Summary

The rock that would be excavated from the portal face-off area is an intrusive volcanic rock called diabase. It has not been mineralized, and it is expected to be geochemically uniform.

There are data for 32 samples in the near vicinity of the portal face-off area. These all show low sulphur, negligible carbonate content, and low neutralization potential. These data were previously reported to NIRB, NWB and KIA. The results give a mixed ARD classification depending on the form of NP that is used for the classification. However, given the very low sulphur content, these materials are considered to have a limited potential for ARD. Further work is in progress to confirm the properties of actual portal face off material. Humidity cell tests were also recently initiated on two samples of diabase from the Doris deposit area.

No special management plans would be required, but in the unlikely event that localized acidic conditions develop in this material, this could be mitigated by placement of a thin cover of basalt with geochemical properties like that of material from Quarry 2. Once placed, construction rock would be visually inspected and monitored (both solids and seepage flowing from infrastructure).

7 References

AMEC 2005. ARD and Metal Leaching Characterization Studies in 2003 – 2005, Doris North Project, Nunavut, Canada. Report

HBML 2010. Hope Bay belt regional geology map. Provided electronically to SRK as a shape file.

Miramar 2007. REVISED Water License Application Support Document, Doris North Project, Nunavut Canada. Submitted to the Nunavut Water Board by Miramar Hope Bay Ltd., April 2007.

SRK 2007. Geochemical Characterization of Portal Development Rock, Doris North Project, Hope Bay, Nunavut, Canada - Supporting Document S8 of the Revised Water License Application Support Document, Doris North Project, Nunavut, Canada. Supporting Document S8 prepared by SRK Consulting Ltd (Canada) for Miramar Hope Bay Ltd., Revised March 2007.

SRK 2009a. Database of Static Test Results for Hope Bay Project. Last updated January 2010.

SRK 2009b. Hope Bay Project Quarry Monitoring. Prepared for Hope Bay Mining Ltd. by SRK Consulting Canada (Ltd.), November 2009.

Sherlock R.L. (2002) Bedrock geology of the Wolverine-Doris corridor, Hope Bay volcanic belt, Nunavut. Map prepared by author based on fieldwork completed during summers of 2001 and 2002 in collaboration with Miramar Mining and DIAND (Iqaluit).

Stubley (2009) Distribution of Actinolite-free and Actinolite-bearing Samples within the Northern Infrastructure Area. Geological map (Figure 4, PHTGCL 2009-06) prepared for Hope Bay District Framework Study.

Attachment 2

Geology Log for Drill Hole SRK-GC-10-01

Attachment 2

Portal Face-Off Drillhole Log (SRK-GC-10-01)

HOLE-ID	FROM (m)	TO (m)	SAMPLE #	LITH_Code	NOTES
SRK-GC-10-01	0	1	540490	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars.
SRK-GC-10-01	1	2.2	540491	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5% magnetite
SRK-GC-10-01	2.2	3.3	540492	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5% magnetite
SRK-GC-10-01	3.3	4.4	540493	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5% magnetite
SRK-GC-10-01	4.4	5.5	540494	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5% magnetite
SRK-GC-10-01	5.5	6.6	540495	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5% magnetite
SRK-GC-10-01	6.6	7.7	540496	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5% magnetite
SRK-GC-10-01	7.7	8.8	540497	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars, finely fractured and bluish-tinged. 5% magnetite
SRK-GC-10-01	8.8	9.9	540498	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars, finely fractured and bluish-tinged. 5-10% magnetite
SRK-GC-10-01	9.9	11	540499	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars, finely fractured and bluish-tinged. 5-10% magnetite
SRK-GC-10-01	11	12.1	540500	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars, finely fractured and bluish-tinged. 5-10% magnetite
SRK-GC-10-01	12.1	13.1	540301	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; trace anhedral pyrite in magnetite grains; no fizz. Very magnetic. Accessory clear feldspars, finely fractured and bluish-tinged. 5-10% magnetite

Attachment 2
Portal Face-Off Drillhole Log (SRK-GC-10-01)

HOLE-ID	FROM (m)	TO (m)	SAMPLE #	LITH_Code	NOTES
SRK-GC-10-01	13.1	14.1	540302	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; grain size fining downwards, but still coarse; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5-10% magnetite
SRK-GC-10-01	14.1	15.1	540303	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; grain size fining downwards, but still coarse; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5-10% magnetite
SRK-GC-10-01	15.1	16.1	540304	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; grain size fining downwards, but still coarse; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5-10% magnetite
SRK-GC-10-01	16.1	17.1	540305	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; grain size fining downwards, but still coarse; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5-10% magnetite
SRK-GC-10-01	17.1	18.1	540306	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5% magnetite
SRK-GC-10-01	18.1	19.1	540307	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5% magnetite
SRK-GC-10-01	19.1	20.1	540308	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5% magnetite
SRK-GC-10-01	20.1	21.1	540309	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5% magnetite
SRK-GC-10-01	21.1	22.1	540310	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; no pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5% magnetite
SRK-GC-10-01	22.1	23.1	540311	11	Coarse black diabase, with dark plagioclase and amphibole, some muscovite (phlogopite?) forming on plagioclase lath faces; trace pyrite; no fizz. Very magnetic. Accessory clear feldspars. 5% magnetite

Attachment 3

ABA and Trace Metal Data for 22 Portal Face-Off Area Samples

Attachment 3
Data for 22 Portal Face-Off Area Samples

CANTEST Ltd. 4606 Canada Way, Burnaby, BC Canada V5G 1K5 Tel: 604 734 7276 Fax: 604 731 2386 www.cantest.com

S. No.	Sample ID	Paste pH	Acme CO2 (Wt.%)	CaCO3 Equiv.* (Kg CaCO3/Tonne)	Acme Total Sulphur (Wt.%)	Sulphate Sulphur (Wt.%)	Sulphide Sulphur** (Wt.%)	Maximum Potential Acidity*** (Kg CaCO3/Tonne)	Mod. ABA NP Neutralization Potential (Kg CaCO3/Tonne)	Net Neutralization Potential**** (Kg CaCO3/Tonne)	Fizz Rating
1	540490	9.0	0.08	1.8	0.05	<0.01	0.05	1.6	18.4	16.8	None
2	540491				0.04						
3	540492				0.04						
4	540493				0.04						
5	540494	9.4	0.11	2.5	0.04	<0.01	0.04	1.3	14.8	13.5	None
6	540495				0.03						
7	540496				0.04						
8	540497				0.03						
9	540498	9.5	0.05	1.1	0.03	<0.01	0.03	0.9	12.9	11.9	None
10	540499				0.05						
11	540500				0.03						
12	540301				0.04						
13	540302	9.3	0.13	3.0	0.04	<0.01	0.04	1.3	17.8	16.5	None
14	540303				0.03						
15	540304				0.03						
16	540305				0.03						
17	540306				0.03						
18	540307	9.6	0.06	1.4	0.03	<0.01	0.03	0.9	17.1	16.2	None
19	540308				0.03						
20	540309				0.03						
21	540310				0.04						
22	540311	9.5	0.07	1.6	0.04	<0.01	0.04	1.3	14.8	13.5	None
Detection Limits		*0.5*	*0.02*	*0.5*	*0.02*	*0.01*	*0.02*	*0.6*			
CANTEST SOP No:		7160	LECO	Calculation	LECO	7410	Calculation	Calculation	7150	Calculation	7150

Notes:

Total sulphur and carbonate carbon (CO2; HCl direct method) by Leco done at Acme Labs.

CO2 Analysis: 0.2g of pulp sample is digested with 6 ml of 1.8N HCl in a hot water bath of 70 ˚C for 30 minutes. The CO2 that evolves is trapped in a gas chamber that is controlied with a stopcock, once the stopcock is opened the CO2 gas is swept into the Leco analyser with an oxygen carrier gas. Leco then determines the CO2 as total-carbon which is calculated to total CO2.

Calculations:

*CaCO3 equivalents is based on carbonate carbon.

**Sulphide sulphur is based on difference between total sulphur and sulphate sulphur.

***MPA (Maximum Potential Acidity) is based on sulphide sulphur .

**** NNP (Net Neutralization Potential) is based on difference between Neutralization Potential (NP) and MPA.

References:

Reference for Mod ABA NP method (SOP No. 7150): MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

Sample ID	Ag ppm	Al %	As ppm	Au ppb	B ppm	Ba ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
540490	0.1	1.2	0.7	16.7	<20	59	<0.1	0.97	0.1	23.6	1	591.4	6.21	10	<0.01	0.32	7	0.51	608
540491																			
540492																			
540493																			
540494	<0.1	1.23	<0.5	9.9	<20	47	<0.1	1	0.1	25.6	1	416.9	6.49	10	<0.01	0.25	5	0.49	597
540495																			
540496																			
540497																			
540498	0.1	1.23	<0.5	14.2	<20	35	<0.1	0.91	0.2	30	2	395.6	7.07	11	<0.01	0.17	4	0.43	569
540499																			
540500																			
540301																			
540302	0.1	1.42	<0.5	14.3	<20	42	<0.1	1.07	0.2	29.6	8	387	7.05	11	<0.01	0.2	5	0.55	558
540303																			
540304																			
540305																			
540306																			
540307	<0.1	1.88	0.6	13.3	<20	27	<0.1	1.32	<0.1	22.2	9	208.3	5.31	10	<0.01	0.17	5	0.87	415
540308																			
540309																			
540310																			
540311	<0.1	1.81	0.5	6.1	<20	57	<0.1	1.33	<0.1	18.1	8	287.3	4.29	9	<0.01	0.2	4	0.67	395

QAQC																			
Reference Material (1)																			
STD OREAS45PA	1.2	654.4	21.1	130	0.3	322.9	112.6	1166	16.94	5.1	1.4	46.3	7.5	17	<0.1	0.2	0.2	239	0.24
True Value STD OREAS45PA	**0.9**	**600**	**19**	**119**	**0.3**	**281**	**104**	**1130**	**16.559**	**4.2**	**1.2**	**43**	**6**	**14**	**0.09**	**0.13**	**0.18**	**221**	**0.2411**
Percent Difference	33.3	9.1	11.1	9.2	0.0	14.9	8.3	3.2	2.3	21.4	16.7	7.7	25.0	21.4	0.0	53.8	11.1	8.1	-0.5
Reference Material (2)																			
STANDARD DS7	20.4	110	74.6	414	0.8	56.7	9.8	672	2.45	52.5	5	47.1	4.8	82	7.2	5.4	6.1	85	1
True Value STD DS7	**20.5**	**109**	**70.6**	**411**	**0.9**	**56.0**	**9.7**	**627**	**2.4**	**48.2**	**4.9**	**70.0**	**4.4**	**68.7**	**6.4**	**4.6**	**4.5**	**84.0**	**0.9**
Percent Difference	-0.5	0.9	5.7	0.7	-10.1	1.3	1.0	7.2	2.5	8.9	2.0	-32.7	9.1	19.4	12.9	17.4	35.3	1.2	7.5
Detection Limits	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.1	0.5	0.1	1	0.1	0.1	0.1	2	0.01
Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX

Note:
Analysis done at Acme Labs.

Sample ID	Mo ppm	Na %	Ni ppm	P %	Pb ppm	S %	Sb ppm	Sc ppm	Se ppm	Sr ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
540490	0.7	0.217	9	0.103	3.7	<0.05	<0.1	4.1	0.8	28	<0.2	0.5	0.282	<0.1	<0.1	348	0.1	137
540491																		
540492																		
540493																		
540494	0.4	0.247	14.6	0.072	2.5	<0.05	<0.1	3.8	<0.5	31	<0.2	0.5	0.386	<0.1	<0.1	565	<0.1	122
540495																		
540496																		
540497																		
540498	0.6	0.244	23	0.053	4.4	<0.05	<0.1	3.3	<0.5	32	<0.2	0.4	0.624	<0.1	<0.1	764	<0.1	121
540499																		
540500																		
540301																		
540302	0.9	0.28	30.4	0.067	4.6	<0.05	<0.1	3.9	<0.5	33	<0.2	0.5	0.564	<0.1	0.1	786	<0.1	110
540303																		
540304																		
540305																		
540306																		
540307	0.7	0.357	24.8	0.058	2.7	<0.05	<0.1	4.1	<0.5	39	<0.2	0.4	0.293	<0.1	1.3	454	<0.1	64
540308																		
540309																		
540310																		
540311	0.6	0.378	17.8	0.062	3.3	<0.05	<0.1	3.7	<0.5	44	<0.2	0.4	0.243	<0.1	<0.1	315	<0.1	81

QAQC																		
Reference Material (1)																		
STD OREAS45PA	0.036	18	850	0.12	213	0.165	<20	3.88	0.004	0.08	<0.1	0.02	45.8	<0.1	<0.05	17	0.6	<0.2
True Value STD OREAS45PA	**0.034**	**16.2**	**873**	**0.095**	**187**	**0.124**		**3.34**	**0.011**	**0.0665**	**0.011**	**0.03**	**43**	**0.07**	**0.03**	**16.8**	**0.54**	
Percent Difference	5.9	11.1	-2.6	26.3	13.9	33.1		16.2	-63.6	20.3		-33.3	6.5			1.2	11.1	
Reference Material (2)																		
STANDARD DS7	0.083	14	195	1.11	464	0.143	25	1.12	0.097	0.51	3.5	0.21	2.6	4.2	0.2	5	3.7	1.6
True Value STD DS7	**0.1**	**11.7**	**179**	**1.1**	**370**	**0.1**	**39**	**1.0**	**0.1**	**0.4**	**3.4**	**0.2**	**2.5**	**4.2**	**0.2**	**4.6**	**3.5**	**1.08**
Percent Difference	3.8	19.7	8.9	5.7	25.3	15.3	-35.9	16.8	9.0	15.9	2.9	5.0	4.0	0.2	5.3	8.7	5.7	48.1
Detection Limits	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX

Note:
Analysis done at Acme Labs.

Attachment 4
ABA and Trace Metal Data for 2 Portal Decline Samples

Attachment 4
Data for 2 Portal Decline Samples

Reported: 29-Jan-10

CANTEST Ltd. 4606 Canada Way, Burnaby, BC Canada V5G 1K5 Tel: 604 734 7276 Fax: 604 731 2386 www.cantest.com

			Acme		Acme		Acme				Mod. ABA NP		
S. No.	Sample ID	Paste pH	Total Carbon (Wt.%)	TOC* (Wt.%)	CO2 (Wt.%)	CaCO3 Equiv.** (Kg CaCO3/Tonne)	Total Sulphur (Wt.%)	Sulphate Sulphur (Wt.%)	Sulphide Sulphur*** (Wt.%)	Maximum Potential Acidity**** (Kg CaCO3/Tonne)	Neutralization Potential (Kg CaCO3/Tonne)	Net Neutralization Potential***** (Kg CaCO3/Tonne)	Fizz Rating
6	08TDD632-SRK-WR-683	9.0	0.05	0.02	0.11	2.5	0.02	<0.01	0.02	0.6	13.1	12.4	None
7	08TDD632-SRK-WR-684	8.9	0.04	0.04	<0.02	<0.5	0.02	<0.01	0.02	0.6	14.7	14.1	None
Detection Limits		*0.5*	*0.02*	*0.02*	*0.02*	*0.5*	*0.02*	*0.01*	*0.02*	*0.6*			
CANTEST SOP No:		7160	LECO	Calculation	LECO	Calculation	LECO	7410	Calculation	Calculation	7150	Calculation	7150

Notes:
Total sulphur, total carbon and carbonate carbon (CO2; HCl direct method) done by Leco at Acme Labs.
Calculations:
*TOC (Total Organic Carbon) is based on total carbon and CO2 values.
**CaCO3 equivalents is based on carbonate carbon.
***Sulphide sulphur is based on difference between total sulphur and sulphate sulphur.
****MPA (Maximum Potential Acidity) is based on sulphide sulphur .
*****NNP (Net Neutralization Potential) is based on difference between neutralization potential (NP) and MPA.
References:
Reference for Mod ABA NP method (SOP No. 7150): MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

Attachment 4
Data for 2 Portal Decline Samples

S. No.	Sample ID	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm
6	WR-683	0.3	295.4	2.1	58	<0.1	18.3	13.9	301	3.75	<0.5	<0.1	8	0.4	44	<0.1	<0.1	<0.1	251
7	WR-684	0.2	288.1	1	52	<0.1	21.9	14	295	3.78	<0.5	<0.1	7.4	0.5	51	<0.1	<0.1	<0.1	246
Detection Limits		0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.1	0.5	0.1	1	0.1	0.1	0.1	2
Method		1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX

S. No.	Sample ID	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm
6	WR-683	1.38	0.059	4	35	0.52	25	0.213	<20	1.98	0.386	0.16	<0.1	<0.01	2.3	<0.1	<0.05	8	<0.5
7	WR-684	1.47	0.062	4	37	0.56	25	0.22	<20	2.05	0.395	0.15	<0.1	<0.01	2.5	<0.1	<0.05	8	<0.5
Detection Limits		0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5
Method		1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX

Note:
Analysis done at Acme Labs.
Note: RE = Repeat (analyzed from the same extract)
Duplicates: Analysis done on another cut of the pulp sample

Acme's Comment on 1DX Package RDP:
1DX is generally listed as having a reproducibility of 10-15%. This is however dependent on
A) Proper sample preparation – Acme protocol states pulverization must meet 85% passing 200mesh. [Ivy's note: Cantest's samples meet this requirement]
B) The concentration of the analyte in the sample relative to the detection limit.
Acme uses a formula to evaluate each element, any one element in the 1DX failing will not cause a failure of the replicate but if many of the elements are flagged then the samples are sent for reanalysis.

P(% Diff) = (100xSDL)/(CONC) + LR
SDL=statistical detection limit
LR = Limiting Repeatability
For example assuming the SDL = DL of the method for Cu with a DL of 0.1 and a LR of 10%

If the sample concentration is at DL = 0.1 then the allowable % difference is 110%
If the sample concentration is at 10 x DL then the allowable % difference is 20%
If the sample concentration is 100 x DL then the allowable % difference is 11%
If the sample concentration is 1000 x DL then the allowable % difference is 10.1%