Hope Bay Project

Geochemical Characterization Program for Quarry I, Doris

Report Prepared for

Hope Bay Mining Ltd.

Report Prepared by

srk consulting

November 2011

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Hope Bay Mining Ltd.

300 – 889 Harbourside Drive
North Vancouver, BC
Canada

SRK Consulting (Canada) Inc.
Suite 2200, 1066 West Hastings Street
Vancouver, B.C. V6E 3X2

Tel: 604.681.4196 Fax: 604.687.5532
E-mail: vancouver@srk.com Web site: www.srk.com

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Geochemical Characterization Program for Quarry I, Doris – Executive Summary

Hope Bay Mining Ltd. (HBML), a wholly owned subsidiary of Newmont Mining Company, is planning to develop additional infrastructure for the Doris deposit. The infrastructure, including a vent raise, would be situated within the boundaries of Quarry I.

In summer 2010, a geochemical characterization program was conducted for Quarry I. Using a backpack-type drill, for each quarry, the program consisted of obtaining shallow drill core samples across the strike of the geology, with the objective of examining geochemical variability according to lithology and/or sample location. A total of five samples were analyzed for elemental analysis by aqua regia digestion with ICP finish and acid-base accounting (ABA) parameters, including paste pH, total sulphur, sulphate sulphur, total inorganic carbon (TIC) and modified NP.

The mapping indicated that the geology was consistent across strike. Accordingly, the samples were representative of the quarry materials. The mapping of the geology was consistent across strike, indicating that the sample set is representative of Quarry I materials. Based on the geochemical characterization program, the material from Quarry I was considered to have a low potential for ARD generation based on NP/AP and TIC/AP ratios, and low sulphur content. Accordingly, materials from these quarries are suitable to be used as construction material.

Nunaliqutinut Qanugitnia Havagutit taphumunga Tuapaktaqvik I, Doris – Ataniuyunut Nainaqhimayut

Hope Bay Uyagakhiuqtit Nanminilgit (HBML-kut), tamaqminut nanminigiyauyut ilagiyat tapkuat Newmont Uyagakhiuqtit Nanminilgit, upalungaiyaqtut pivaliatitninut ilagiagutit havagutit taphumunga Doris piqaqnia. Tapkuat havagutit, ilautitlugiit qingaliuqhimayuq puqtuhivaliqnia, iniqaqniat iluani taphuma Tuapaktaqvik I.

Auyaani 2010-mi, nunaliqutinut qanugitni havagutit havaktauyut taphumunga Tuapaktaqvik I. Atuqhugu iliuqatqikhaqni-qanugittuni ikuutaq, atuni tuapaktaqviknut, tamna havagut ilalik ilukittumik ikuutaqnut amuyat naunaiyagat tahamuuna piqaqnit nunaliqutit, pinahuaqhugit naunaiyaqni nunaliqutit qanugitni allatqit malikhugit kinipanit naunaiyautai tamnalu/tamnaluniit nainaiyaiviuyuq inaa. Katitlugu tallimat naunaiyagat qauyihaqtauyut hunaqaqnit kinipanitnut pittaqhugit tapkununga ICP-ngi iniqtiqni huguilatqaqnilu piqaqnit (ABA-ngi) naunaiyagat, ilautitlugit nipittautit pH, katitlugu sulphur, sulphate sulphur, katitlugu huniumaittut carbon (TIC-ngi) ahianguqhimanilu NP-ngi.

Tapkuat nunauyaliuqnit naunaigutauyut tapkuat nunaliqutit malikhaqtut tahamuuna piqaqniuyumut. Taimattauq, tapkuat naunaiyagat pityutilgit tahapkunani tuapaktaqnit hunat. Tapkuat nunauyaliuqni nunaliqutit malikhaqtut tahamuuna piqaqnit, naunaigutauplutiklu tapkuat naunaiyagat ilagit pityutauyut taphumunga Tuapaktaqvik I hunataqaqnit. Piplugit tahapkuat nunaliqutinut qanugitni havagutit, tapkuat hunat talvanga Tuapaktaqvik I ihumagiqahiutiyauyut piqaqni pukkittumik piqalaqnit ARD-ngi pitaqnit piplugit tapkuat NP-ngi/AP-ngi tamnalu TIC-ngi/AP-ngi avikhimanit, pukkittumiklu sulphur piqaqni. Taimaittumik, hunat tahaokunanga tuapaktaqvit naamakni atuqtaunikhai hanatyutauyunut hunakhat.

ᓄᓇᒥᒃ ᐱᐅᓯᖅᓱᖅᑐᒥᒃ ᐱᔾᔪᑎᓖᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᑦ ᖃᓄᐃᑦᑑᓪᓚᓂᒻᒪᖔᑕ ᐅᔾᔨᖅᑑᑎᑦ ᐱᓕᕆᐊᖑᓲᑦ ᐅᔭᖅᑭᓂᕕᖕᒥ ᑐᐊᐸᒃᑕᖅᕕᖕᒥ I_ᒥ, ᐅᑯᐊ Doris_ᑯᑦ _ ᑐᓴᒐᒃᓴᑦ ᓇᐃᓈᖅᓯᒪᔪᑦ

ᐅᕙᓂ Hope Bay Mining Ltd.–ᑯᑦ ᐃᓘᓐᓇᑎᒃ ᑲᑐᔾᔨᖃᑎᒌᑦ ᐱᖁᑎᕆᔭᖏᑦ ᐅᑯᐊ ᐅᔭᕋᓐᓂᐊᖅᑏᑦ Newmont Mining Company–ᑯᑦ ᑖᒃᑯᐊ ᐸᕐᓇᐃᓯᒪᖕᒪᑕ ᐱᕙᓪᓕᐊᑎᑦᓯᖔᕆᒪᓪᓗᑎᒃ ᐃᓚᒋᓕᐅᑎᖔᖅᑕᒥᓐᓂᒃ ᐋᖅᑭᒃᓱᐃᓗᑎᒃ ᐅᕙᓂ Doris–ᒥ ᐱᑕᓕᖕᒥ. ᓇᑉᐸᖅᑕᐅᓛᖅᑐᑦ ᓴᓇᔭᐅᓗᑎᒃ, ᐃᓚᖅᑲᑎᓪᓗᒋᑦ ᐊᓄᕋᑕᓗᒃᕕᒃᓴᖅ ᓯᓚᒻᒧᐊᖕᒐᔪᖅ ᖁᕝᕙᓂᐊᖅᑕᐅᓗᓂ, ᑭᓪᓕᖕᒐᓅᖕᒐᔭᖅᑐᖅ ᐅᕗᖕᒐᖕᒐᓗᓂ ᑐᐊᐸᒃᑕᖅᕕᖕᒥ I–ᒥ.

ᒪᑐᒪ ᐊᐅᔭᖓᓂ 2010, ᓄᓇᓕᕆᔪᑦ ᖃᐅᔨᓴᔪᒻᒪᑕ ᐅᔾᖃᑦ ᖃᓄᐃᑦᑑᖕᒪᖔᑕ ᐊᐅᓚᕝᔪᒻᒪᑕ ᐅᕙᓂ ᐅᔾᖃᕆᓪᓗᑎᒃ I–Γ. ᐃᑯᑕᖃᑦᑕᔪᔪᑦ ᐊᑐᖅᓱᑎᒃ ᐃᖅᓱᖅᑕᐅᓲᒥᒃ ᐊᔾᔭᖅᑕᐅᓲᒥᒃ ᐃᑯᑕᐳᒻᒥᒃ, ᖃᐅᔨᓴᖅᓱᑎᒃ ᐅᔾᖃᓂᒃ, ᒪᑯᓂᖓ ᐱᓕᕆᐊᖃᔪᔪᑦ ᐲᖅᓯᖃᑦᑕᖅᓱᑎᒃ ᐅᔾᖃᓂᒃ ᓱᓪᓗᑯᑖᒃᑯᑦ ᐃᑯᑕᖅᓱᑎᒃ ᖃᐅᔨᓴᕐᖃᒃᓴᓂᒃ ᓇᓗᓇᐃᖅᓯᕖᑦᓯᒪᔭᒥᓐᓂ ᓄᓇᒥ ᖃᐅᔨᓴᖅᓱᑎᒃ, ᓱᖃᑯᐃᖅᓯᒐᓱᐊᔪᒻᒪᑕ ᓄᓇᐅᑉ ᐃᓗᐊᓅᖓᓗᐊᖏᑦᑐᒥᒃ ᐊᑐᖅᓱᑎᒃ ᐃᑯᑕᐳᒻᒥᒃ ᖃᒧᖓᓘᖏᑦᑐᖅ ᐲᖅᓯᖃᑦᑕᖅᓱᑎᒃ ᓄᓇᓕᕆᔾᔪᑎᒥᒍᑦ, ᖃᐅᔨᓴᕐᖃᒃᓴᒥᓐᓂᒃ ᖃᓄᑐᐃᓐᓇᖅ ᕿᒥᕐᕈᖃᑦᑕᖅᓱᑎᒃ ᐅᔾᖃᑦ ᖃᓄᐃᑦᑐᖅᑕᖃᒻᒪᖔᑕ ᐆᒃᑐᕐᖃᑦᑕᖅᓱᑎᒃ ᑕᒫᖓᑦ ᐱᓪᓗᑎᒃ. ᐃᓅᓐᓇᑎᒃ ᑖᓕᒪᑦ ᖃᐅᔨᓴᖅᑕᐅᔪᑦ ᖃᓄᐃᑦᑐᖅᑕᖃᒻᒪᖔᑕ ᑐᙱᔪᖅᑕᑦ ᐅᔾᖃᑦ ᐱᑕᖃᔪᔪᑦ ᐃᒪᓐᓇᐃᑦᑐᓂᒃ ICP ᐊᒻᒪᓗ ᐅᔾᖃᑦ ᖃᐅᔨᓴᖅᑕᐅᓪᓗᑎᒃ ᐱᑕᖃᒻᒪᖔᑕ ᓱᕋᒍᓐᓇᖅᑐᓂᒃ ᐆᑎᕆᔪᓐᓇᖅᑐᖅᑕᖃᓲᓂᒃ ᓈᓴᐅᑎᑎᒍᑦ ᐅᔮᖅᑐᖅᑕᐅᓪᓗᑎᒃ ᖃᓄᐃᓪᓗᐊᕐᓂᖏᑦ, ᐃᓚᒋᔭᐅᓪᓗᓂ ᖃᐅᓯᓕᖅᑎᑕᐅᕙᒃᓱᑎᒃ ᑭᓂᖅᑕᕈᖅᑕᐅᓪᓗᑎᒃ ᒪᕋᖅᑎᑐᑦ ᑕᐃᒪᓐᓇ ᖃᐅᔨᓴᖅᑕᐅᓪᓗᑎᒃ, ᖃᓄᑎᒋᓗ ᐱᐅᓯᖃᕈᓐᓇᕐᒪᖔᑕ ᑎᖅᑎᓕᓲᖃᒻᒪᖔᑕ ᑕᕆᐅᖓᓂᖏᑦ ᖃᐅᔨᓴᖅᑕᐅᓪᓗᑎᒃ, ᐱᐅᓯᖅᓱᖅᑐᓪᓗ ᐸᓂᓕᕈᑎᒃ ᖃᓄᐃᑦᑐᕈᕈᓐᓇᕐᒪᖔᑕ ᐊᒻᒪᓗ ᓱᕋᒃᑕᐅᓪᓗᑎᒃ ᑭᖑᕐᖓᒍᑦ ᓱᕋᓐᓂᖏᑦ ᖃᓄᖅ ᓱᕋᓲᖑᒻᒪᖔᑕ.

ᓄᓇᖑᐊᓕᕆᑎᓪᓗᒋᑦ ᖃᐅᔨᒍᑕᐅᔪᔪᑦ ᓴᓂᒧᐊᖓᔪᓂᒃ ᐃᐸᖃᒻᒪᑦ ᓄᓇᐅᑉ ᖄᖓᒍᑦ. ᑕᒪᒃᑯᐊ ᖃᐅᔨᓴᖅᑐᓄᑦ ᒪᓕᒃᑕᐅᓪᓗᑎᒃ ᐅᒃᑐᕋᐅᑕᐅᔪᔪᑦ ᐅᔾᕿᓇᓪᓗᑎᒃ ᓯᖃᑦᓕᔭᐅᕙᒃᑐᓂᒃ ᑐᐊᐸᒃᑕᖅᑮᖕᒥ. ᓄᓇᖑᐊᓕᐅᖅᓱᑎᒃ ᓄᓇᓕᕆᓪᓗᑎᒃ ᓄᓇᐅᑉ ᖄᖓᒍᑦ ᓴᓂᒧᑦ ᐃᐸᓕᖕᓂᒃ ᑎᑎᖅᓯᒪᔪᑦ ᐱᐅᓯᖅᓱᖅᑐᑦ ᒪᓕᒃᓯᒋᑦ, ᑕᒪᒃᑯᐊ ᐆᒃᑐᕋᐅᑕᐅᓪᓗᑎᒃ ᐅᔾᕿᓇᖎᖓ ᐅᕙᓂ I–Γ̇ᑦᑐᒥ. ᖃᐅᔨᓴᖅᓱᑎᒃ ᖃᓄᐃᑦᑐᓂᒃ ᐱᑕᖃᒻᒪᖔᖅ, ᐅᔾᖃᑦ ᐲᔭᖅᑕᐅᓪᓗᑎᒃ ᐅᕙᖓ ᑐᐊᐸᓕᕆᖎᖓᒥᒃ I–Γᒃ ᑖᕙᖓᑦ ᐱᔭᑦ ᐊᒃᐸᓯᖕᓂᖃᔪᔪᑦ ᐱᑕᖃᑐᐃᓐᓇᕆᐊᖃᓐᓂᖏᑦ ᐅᑎᕆᔪᓐᓇᖅᑐᓂᒃ ᐅᔾᖃᓂᒃ ᐊᓯᐊᓅᕈᑎᒃ ᐱᑕᑑᑦ ᕿᒥᕐᕈᔭᐅᓪᓗᑎᒃ ᐊᒻᒪᓗ ᖃᓄᐃᓪᓗᐊᖅᑎᕆᔪᓂᒃ ᐱᑕᖃᒻᒪᖔᖅ ᐆᒃᑐᖅᓱᑎᒃ, ᐊᒃᐸᓯᖕᓂᖃᔪᔪᑦ ᑕᕆᐅᖓᔪᒥᒃ ᐱᑕᓕᒃ. ᑕᒪᒃᑯᐊ ᓴᕿᐅᒪᓂᖃᔪᒻᒪᑕ ᐅᔾᖃᑦ ᓯᖃᑦᓕᔭᐅᖃᑦᑕᖅᓱᑎᒃ ᑐᐊᐸᓕᕆᖎᖓᒥᒃ ᓈᒻᒪᒃᑐᓂᒃ ᐊᑐᖅᑕᐅᒐᔭᖅᑐᓂᒃ ᐃᒡᓗᓕᐅᖅᑐᖃᓕᖅᐸᑦ.

Technical Summary

Hope Bay Mining Ltd. (HBML), a wholly owned subsidiary of Newmont Mining Company, is planning to develop additional infrastructure for the Doris deposit. The infrastructure, including a vent raise, would be situated within the boundaries of Quarry I.

In summer 2010, a geochemical characterization program was conducted for Quarry I. Using a backpack-type drill, for each quarry, the program consisted of obtaining shallow drill core samples across the strike of the geology, with the objective of examining geochemical variability according to lithology and/or sample location. A total of five samples were analyzed for elemental analysis by aqua regia digestion with ICP finish and acid-base accounting (ABA) parameters, including paste pH, total sulphur, sulphate sulphur, total inorganic carbon (TIC) and modified NP.

The mapping indicated that the geology was consistent across strike, indicating that the sample set is representative of Quarry I materials. Based on the geochemical characterization program, the material from Quarry I was considered to have a low potential for ARD generation based on NP/AP and TIC/AP ratios, and low sulphur content. Accordingly, materials from these quarries are suitable to be used as construction material.

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Appendix B: Acid-Base Accounting Data
Appendix C: Solid-Phase Trace Element Data

1 Introduction

Hope Bay Mining Ltd. (HBML), a wholly owned subsidiary of Newmont Mining Company, is planning to develop additional infrastructure for the Doris deposit. The infrastructure, including a vent raise, would be situated within the boundaries of Quarry I. In summer 2010, a geochemical characterization program was conducted for Quarry I. This report presents the results of the geochemical characterization assessment for the samples obtained.

2 Methods

Samples for geochemical characterization were collected in September 2010. The samples were obtained using a backpack-type drill operated by Rocky Mountain Soil Sampling (RMSS).

Figure 2.1 shows the regional geology of the Doris Central area, location of the prospective quarry site and drill holes. The drilling program was designed to obtain a number of shallow drill core samples distributed across the strike of the geology, with the objective of determining geochemically variability according to lithology and/or sample location. One drillhole (SRK-GC-10-E5) was situated at the location of the proposed vent raise.

Newmont geology performed the drill core logging and sampling. Each sample, representing 1 m of drill core, weighed approximately 1 kg. The logs included rock and alteration type using Newmont's standard codes and comments on the occurrence of sulphide and carbonate minerals (Appendix A).

A total of five samples were shipped to ALS Laboratory in Yellowknife, NWT, Canada, where they were crushed and assayed. A sample split was shipped to Maxxam Analytics, in Burnaby, BC for the analysis of elemental analysis by aqua regia digestion with ICP finish and acid-base accounting (ABA) parameters, including paste pH, total sulphur, sulphate sulphur, total inorganic carbon (TIC) and modified NP. QA/QC of the data was performed by SRK and determined that the data was acceptable. Analytical methods for the ABA parameters and data are presented in Appendix B.

Figure 2.1: Location of Geochemistry Drillholes for Quarry I, Doris

3 Results and Discussion

3.1 Geology

Table 3.1 lists the rock types present in Quarry I, according to regional mapping and the drill core logging. The mapping indicated that the geology was consistent across strike. Accordingly, the samples were representative of the quarry materials.

Table 3.1: Geology of Geochemistry Samples

Quarry	Regional mapping	Geological Core Logging
I	– Mafic to ultramafic metavolcanics (unit 1)	– Mafic to ultramafic metavolcanics (unit 1)

3.2 Acid-Base Accounting

The acid-base accounting (ABA) data for the five samples are presented in Appendix B.

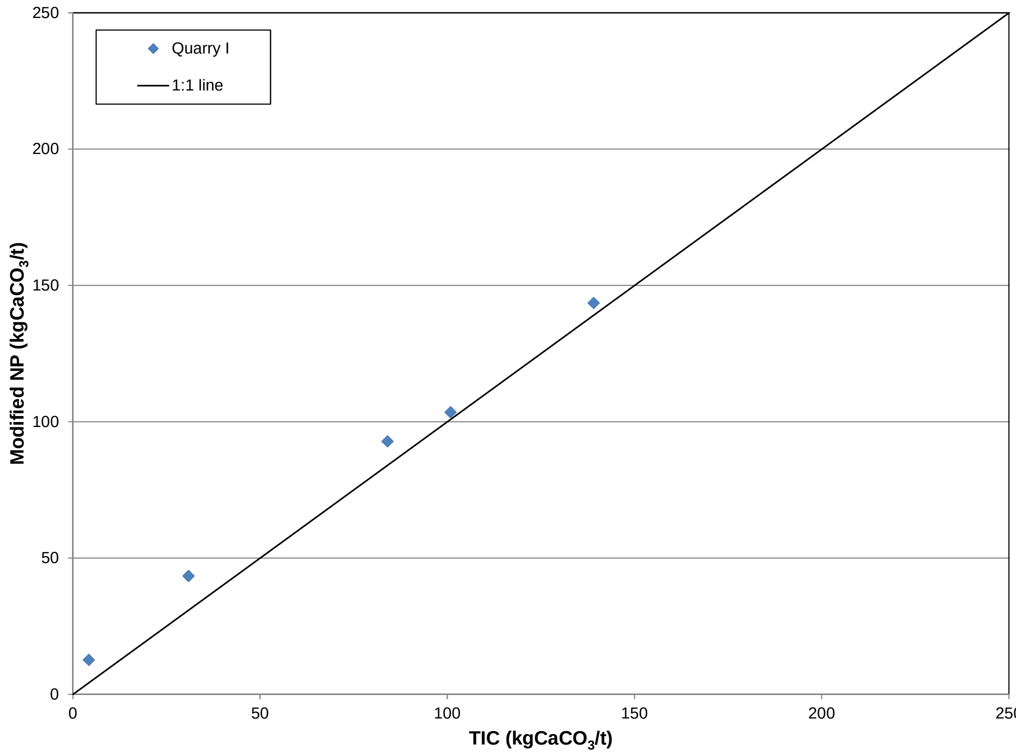
Paste pH values for the samples were alkaline, ranging from 9.3 to 9.9.

Total sulphur levels were low, with maximum levels of 0.08%. Sulphate sulphur levels were all below the level of analytical detection, implying that sulphide sulphur was the dominant sulphur form. Where visible, sulphides were present in trace amounts and as pyrite.

Levels of modified NP and TIC were typically high with median levels of 93 and 84 kg $CaCO_3$ eq/tonne, respectively (Figure 3.1). All samples had NP and TIC levels greater than 30 kg $CaCO_3$ eq/tonne except for one sample with TIC content less than 5 kg $CaCO_3$ eq/tonne. TIC and modified NP levels were comparable, with levels of NP slightly higher than TIC, indicating that the NP method measures silicate minerals with buffering capacity.

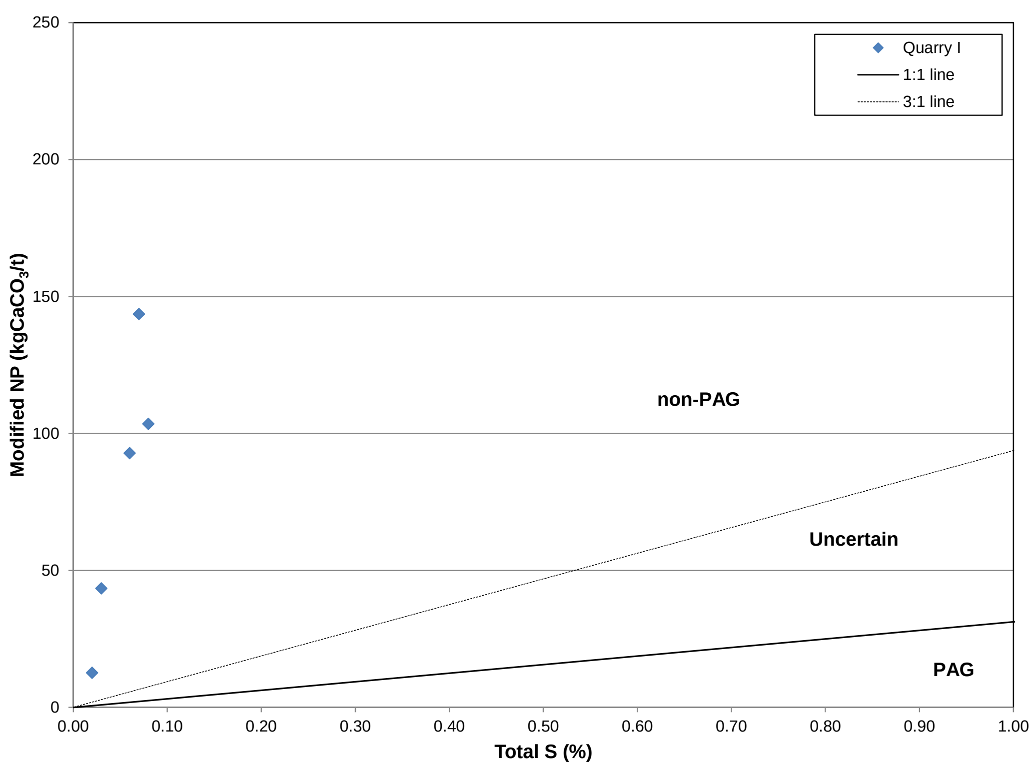
All samples from Quarry I were classified[1] as non-PAG on the basis of NP/AP and TIC/AP (Figures 3.2 and 3.3).

[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.



S:\Hope.Bay\1CH008.005_Geochemistry (Doris, Madrid, Boston)\3.ABA data\201105_Quarry I Geochem Report\Working Files\[Sept2010DrillingABASamples_1CH008.029_lnb_Rev02.xlsx]

Figure 3.1: Comparison of Modified NP and TIC



S:\Hope.Bay\1CH008.005_Geochemistry (Doris, Madrid, Boston)\3.ABA data\201105_Quarry I Geochem Report\Working Files\[Sept2010DrillingABASamples_1CH008.029_lnb_Rev02.xlsx]

Figure 3.2: NP to AP (Expressed as Sulphur)

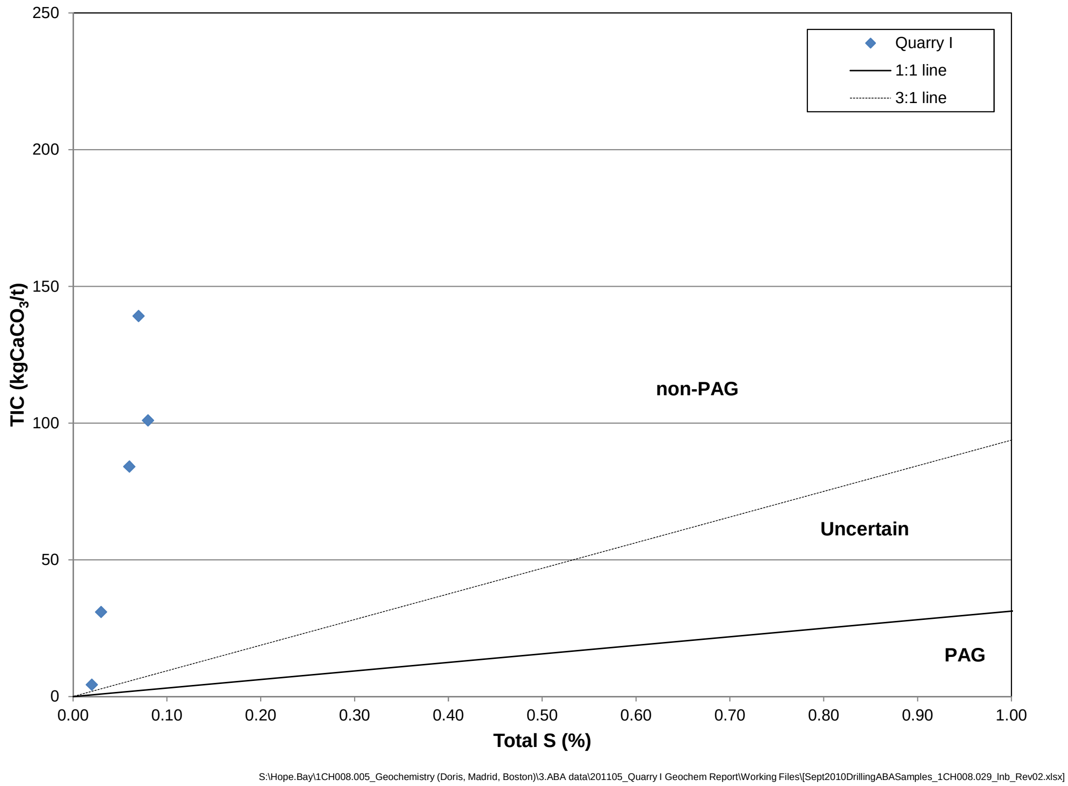


Figure 3.3: TIC to AP (Expressed as Sulphur)

3.3 Solid-Phase Trace Elements

There were solid-phase elemental data for the five samples. Data are presented in Appendix C.

Parameters were screened by comparing levels against ten times the average crustal abundance for basalt (Price 1997). Selenium could not be assessed because detection limits were high. All other trace elements were less than ten times the average crustal abundance threshold, indicating there was no appreciable enrichment in these rocks.

4 Summary and Recommendations

The sample set for Quarry I is characterized as containing low total sulphur (maximum levels of 0.08%) and high buffering capacity (median and maximum levels of 88 and 144 kg $CaCO_3$ eq/tonne, respectively). Trace metal content for all samples was below the threshold of ten times the average crustal abundance for basalt. This suggests there is no appreciable enrichment of metals in the samples. All samples from Quarry I were classified as non-PAG.

Special management plans are not required to prevent acidic drainage from developing in this material. SRK recommends a monitoring program to verify the characteristics of these materials, as per the requirements of other Quarries at Doris.

5 Document Control Record

This, *Hope Bay Project, Geochemical Characterization Program for Quarry G, H and I,* November 2010, has been reviewed and is approved by:

Document Approval

Position	Name	Signature	Date
Environmental Compliance Manager			
Environmental Affairs Manager			
Environmental & Social Responsibility Director			
Operations Manager			

The re-issuance of this document have been reviewed and approved by the Quality Assurance and Management and are authorized for use within Hope Bay Mining Ltd.

Document Control Revision History

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This report, "**Hope Bay Project - Geochemical Characterization Program for Quarry I, Doris Deposit**", was prepared by SRK Consulting (Canada) Inc.

Prepared by

Lisa Barazzuol, G.I.T. (BC)
Environmental Geochemist

Reviewed by

Kelly Sexsmith, P.Geo. (BC)
Principal Geochemist

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

6 References

Price (1997) Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia, DRAFT. British Columbia Ministry of Employment and Investment, April 1997.

Appendices

Appendix A
Geology Logs for Quarry G, H and I Drillholes

LEGEND

Outcrop Lithologies

Proterozoic Rocks

13 Proterozoic Sandstones

11
a Franklin diabase
b MacKenzie diabase
c diabase (unsubdivided)

Archean Rocks

10 Late* Mafic-Ultramafic Intrusive Rocks
a gabbro
b fine- to medium-grained mafic dyke
c fine- to medium-grained ultramafic dyke
d diorite
f feldspar-phyric
h hornblende-phyric
p hypabyssal porphyritic rock
l xenolithic mafic-ultramafic intrusion

9 Late* Granitoid Rocks (mainly post-volcanic)
a granite
b syenite
c granodiorite
d monzonite and quartz monzonite
e monzodiorite and quartz monzodiorite
g granitic gneiss and migmatite
f feldspar-phyric granitoid
q quartz-phyric granitoid
l xenolithic granitoid and intrusion breccia
p porphyritic hypabyssal granitoid
t granitoid with less than 50% wallrock xenoliths (transitional to country rock)**
k fine-grained felsic dyke
n fine-grained intermediate dyke

8 Early* Granitoid Rocks (mainly synvolcanic)
a tonalite
b trondjhemite
c granodiorite
d diorite and quartz diorite
e monzodiorite and quartz monzodiorite
f feldspar-phyric granitoid
g tonalitic gneiss and migmatite
q quartz-phyric granitoid
l xenolithic granitoid and intrusion breccia
p porphyritic hypabyssal granitoid
i fine-grained massive intermediate to felsic rock; may be equivalent to 3i, 4i****
t granitoid with less than 50% wallrock xenoliths (transitional to country rock)**

7 Early* Mafic and Ultramafic Intrusive Rocks (mainly synvolcanic)
a gabbro
b leucogabbro
c melanogabbro
d diorite
h anorthosite
f feldspar-phyric gabbroic (includes glomeroporphyritic texture)
i fine-grained massive mafic/ultramafic rock; may be equivalent to 1i****
q quartz -bearing gabbroic rock
m magnetite-ilmenite bearing mafic-ultramafic rock
o pyroxenite
r peridotite (includes serpentinite)
t gabbroic rock containing less than 50% granitoid dykes**
l xenolithic gabbroic to ultramafic intrusive rock
s (talc)-chlorite schist
u ultramafic intrusive rock (composition not specified)

6 Late* Sedimentary Rocks of the Conglomerate-Arenite facies (postvolcanic)
a argillite
b siltstone
c arenite
d conglomerate
e biotite hornfels or schist (amphibolite facies)
f feldspathic arenite
l lithic arenite
q quartzose arenite
g iron formation
m magnetite bearing clastic rock
p granitoid clasts
o polymictic (otherwise monomictic)***
k thick bedded (>30cm)
n thin bedded (<30cm)
r limestone/marble
s metasedimentary schist
t metasedimentary rock cut by less than 50% granitoid**

5 Early* Sedimentary Rocks of Wacke-Mudstone Facies (syn- to post volcanic)
a argillite
b siltstone
c wacke
d conglomerate
e porphyroblastic biotite schist (amphibolite facies)
f feldspathic wacke
l lithic wacke
q quartzose wacke
s biotite schist
g iron formation
m magnetite-bearing wacke
o polymictic (otherwise monomictic)***
k thick bedded (>30 cm)
n thin bedded (<30 cm)
r biotite migmatite less than 50% leucosome
v volcanic sandstone and conglomerate (may be equi valent to 4j)
t metasedimentary rock cut by less than 50% granitoid*
s metasedimentary schist

4 Felsic Metavolcanic Rocks
a flow
b tuff
c lapilli-(stone)
d breccia
e quartz-albite-biotite schist (amphibolite facies)
f feldspar-phyric (includes glomeroporphyritic rocks)
q quartz-phyric (includes glomeroporphyritic rocks)
i fine- to medium-grained massive felsic rock; may be eqivalent to 8i****
j felsic volcanic sandstone, pebbly sandstone and conglomerate
k thick bedded (>30cm)
n thin bedded (<30cm)
o heterolithic fragmental rock (otherwise monolithic)***
s quartz-sericite schist
t felsic metavolcanic rock containing less than 50% granitoid dykes**
w flow banded structure
y amygdaloidal/vesicular

3 Intermediate to Felsic Metavolcanic Rocks
a flow
b tuff
c lapilli-(stone)
d breccia
e quartz-plagioclase-actinolite schist (amphibolite facies)
f feldspar-phyric (includes glomeroporphyritic rocks)
i fine- to medium-grained massive intermediate to felsic rock; may be equivalent to 8i****
j intermediate to felsic volcanic sandstone, pebbly sandstone and conglomerate
k thick bedded (>30cm)
n thin bedded (<30cm)
o heterolithic fragmental rock (otherwise monolithic)***
q quartz-phyric
s quartz-chlorite-sericite schist
t felsic to intermediate volcanic rock containing less than 50% granitoid dykes**
y amygdaloidal/vesicular structure

2 Intermediate Metavolcanic Rocks
a flow
b tuff
c lapilli-(stone)
d breccia
e epidote-plagioclase amphibolite (amphibolite facies)
f feldspar-phyric (includes glomeroporphyritic rocks)
h hornblende-phyric
i fine-to medium-grained massive intermediate rock; may be equivalent to 7i****
j interflow chert/argillite/sandstone
k thick pillow selvedges (>2cm)
n thin pillow sedvedges (<2cm)
o heterolithic fragmental rock (otherwise monolithic)
p pillowed flow
s chlorite schist
t intermediate volcanic rock containing less than 50% granitoid dykes**
v variolitic flow
y amygdaloidal/vesicular flow

1 Ultramafic to Mafic Metavolcanic Rocks
a flow
b tuff
c lapilli-(stone)
d breccia
e amphibolite (amphibolite facies)
f feldspar-phyric (includes glomeroporphyritic rocks)
i fine-to medium-grained massive mafic rock; may be equivalent to 7i****
j interflow chert/argillite/sandstone
k thick pillow selvedges (>2cm)
n thin pillow selvedges (<2cm)
o heterolithic fragmental rock (otherwise monolithic)***
p pillowed flow
r polysutured flow
s chlorite schist
t mafic metavolcanic rock containing less than 50% granitoid dykes**
u ultramafic volcanic rock
v variolitic
w white- to light-weathering mafic metavolcanic (quartz-epidote alteration)
x spinifex-textured flow
y amygdaloidal/vesicular flow

1F Ultramafic to Mafic Metavolcanic Rocks
F Iron Tholeiite

Generic Codes: z - unmapped or questionable litholo gy, C - Calc alkaline, M - Magnesian Tholeiite, T - Tholeiite, F - Iron Tholeiite, B - Basaltic Komati ite, K - Komatiite

NOTES:
*early and late used in a relative sense only. ** s uffix "t" should only be used for transition from s upracrustal to adjacent intrusions, rock type chose n on dominant (>50%) lithology.
*** suffix "o" separates heterolithic from monolith ic volcanic fragmental rocks and polymictic from mo nomictic sedimentary rocks. No suffix required for rocks with single clast population.
**** may be fine- (coarse) -grained equivalents of rocktypes shown in brackets. eg: fine-grained gabbr o versus coarse-graned basalt.

Appendix A: Geology Logs

Facility	Sample ID	Drillhole	From (m)	To (m)	Rock Type*		ACODE	Sulphides	Carbonates	Full Description
					Regional Map	Drill core				
Quarry I	1142958	SRK-GC-10-E1	0	1	1	1p	0	Fine grained pyrite in pillow rind.	Vigorous reaction to 10% HCl on calcite veinlets	1p fine grained pillow basalt, ACODE0 (Chl). Fine grained pyrite in pillow rind. Vigorous reaction to 10% HCl on calcite veinlets
Quarry I	1142959	SRK-GC-10-E2	0	1	1	1p	0	None observed	Vigorous reaction to 10% HCl on calcite veinlets	1p fine grained pillow basalt, ACODE0 (Chl). No visible sulphides observed. Vigorous reaction to 10% HCl on calcite veinlets
Quarry I	1142960	SRK-GC-10-E3	0	1	1	1p	0	Fine grained isolated pyrite.	Vigorous reaction to 10% HCl on isolated calcite veinlets	1p fine grained possible pillow basalt, ACODE0 (Chl). Fine grained isolated pyrite. Vigorous reaction to 10% HCl on isolated calcite veinlets
Quarry I	1142961	SRK-GC-10-E4	0	1	1	1a	0	Fine grained isolated pyrite.	Vigorous reaction to 10% HCl on isolated calcite veinlets	1a fine to medium grained basalt, ACODE0 (Chl). Fine grained isolated pyrite. Vigorous reaction to 10% HCl on isolated calcite veinlets
Quarry I	1142962	SRK-GC-10-E5	0	1	1	1p	0	Isolated fine grained pyrite.	Vigorous reaction to 10% HCl on calcite veinlets	1p fine grained pillow basalt, ACODE0 (Chl). Isolated fine grained pyrite. Vigorous reaction to 10% HCl on calcite veinlets

*See attached key of lithology codes

P:\01_SITES\Hope.Bay\1CH008.005_Geochemistry (Doris, Madrid, Boston)\3.ABA data\201105_Quarry I Geochem Report\Working Files\[Sept2010DrillingABASamples_1CH008.029_lnb_Rev02.xlsx]

Appendix B
Acid-Base Accounting Data

Appendix B: Acid-Base Accounting Data

Maxxam Analytics 4606 Canada Way, Burnaby, BC Canada V5G 1K5 Tel: 604 734 7276 Fax: 604 731 2386 www.maxxam.ca

NMS-Doris/Patch Portals & Quarry G H I, 38 Plup Samples (from ALS), 19-Oct-10

Table 1: ABA Test Results for 38 NMS-Hopebay (Doris/Patch Portals & Quarry G, H, & I program) Pulp Samples - October 2010

			Acme		Acme				Mod. ABA NP	
S. No.	Sample ID	Paste pH	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)	Fizz Rating
1	1049474	9.4	0.75	17.0	0.07	<0.01	0.07	2.2	29.3	Moderate
2	1049475	9.4	0.16	3.6	0.15	<0.01	0.15	4.7	13.1	None
3	1049476	9.4	1.22	27.7	0.04	<0.01	0.04	1.3	38.5	Strong
4	1049477	9.3	0.93	21.1	<0.02	<0.01	<0.02	<0.6	34.0	Strong
5	1049478	9.6	2.17	49.3	0.11	<0.01	0.11	3.4	60.7	Strong
6	1049479	9.3	0.84	19.1	0.04	<0.01	0.04	1.3	32.5	Strong
7	1049480	9.2	2.74	62.3	0.06	<0.01	0.06	1.9	72.9	Strong
8	1049481	9.3	0.36	8.2	0.06	<0.01	0.06	1.9	17.9	Moderate
9	1049482	9.1	7.33	166.6	<0.02	<0.01	<0.02	<0.6	168.3	Strong
10	1049483	9.2	6.67	151.6	0.13	<0.01	0.13	4.1	157.4	Strong
11	1049484	9.3	9.75	221.6	<0.02	<0.01	<0.02	<0.6	212.8	Strong
12	1049485	9.2	8.36	190.0	0.11	<0.01	0.11	3.4	193.9	Strong
13	1049486	9.4	1.30	29.5	0.08	<0.01	0.08	2.5	40.3	Strong
14	1049487	9.1	4.29	97.5	0.07	<0.01	0.07	2.2	109.5	Strong
15	1049488	9.3	6.42	145.9	0.19	<0.01	0.19	5.9	136.5	Strong
16	1049489	9.4	1.58	35.9	0.09	<0.01	0.09	2.8	45.9	Strong
17	1049490	9.2	8.73	198.4	0.05	<0.01	0.05	1.6	188.9	Strong
18	1142956	9.4	3.92	89.1	<0.02	<0.01	<0.02	<0.6	97.6	Strong
19	1142957	9.4	3.47	78.9	0.04	<0.01	0.04	1.3	82.5	Strong
20	1142958	9.3	6.12	139.1	0.07	<0.01	0.07	2.2	143.5	Strong
21	1142959	9.3	4.44	100.9	0.08	<0.01	0.08	2.5	103.5	Strong
22	1142960	9.3	3.70	84.1	0.06	<0.01	0.06	1.9	92.8	Strong
23	1142961	9.5	0.19	4.3	0.02	<0.01	0.02	0.6	12.6	Slight
24	1142962	9.9	1.36	30.9	0.03	<0.01	0.03	0.9	43.4	Strong
25	1056300	9.2	7.30	165.9	0.10	<0.01	0.10	3.1	171.6	Strong
26	1056301	9.3	4.62	105.0	<0.02	<0.01	<0.02	<0.6	118.0	Strong
27	1056302	9.2	5.79	131.6	0.02	<0.01	0.02	0.6	140.0	Strong
28	1056303	10.1	1.39	31.6	0.04	<0.01	0.04	1.3	37.8	Strong
29	1056304	9.4	1.11	25.2	0.05	<0.01	0.05	1.6	37.7	Strong
30	1056305	9.4	0.89	20.2	0.07	<0.01	0.07	2.2	34.8	Strong
31	1056306	9.2	6.05	137.5	0.05	<0.01	0.05	1.6	153.5	Strong
32	1056307	9.2	6.71	152.5	0.07	<0.01	0.07	2.2	166.1	Strong
35	1056310	8.4	1.11	25.2	0.05	<0.01	0.05	1.6	31.0	Strong
36	1056311	9.4	6.99	158.9	0.03	<0.01	0.03	0.9	167.9	Strong
37	1056312	8.4	0.07	1.6	<0.02	<0.01	<0.02	<0.6	3.1	None
38	1056313	10.1	2.12	48.2	0.08	<0.01	0.08	2.5	54.2	Strong
Detection Limits		*0.5*	*0.02*	*0.5*	*0.02*	*0.01*	*0.02*	*0.6*		
Maxxam SOP No:		*7160*	*LECO*	*Calculation*	*LECO*	*7410*	*Calculation*	*Calculation*	*7150*	*7150*

Notes:

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

CO2 Analysis: A 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 controlled 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.

Appendix C
Solid-Phase Trace Element Data

Appendix C: Solid-Phase Trace Element Data

Maxxam Analytics 4606 Canada Way, Burnaby, BC Canada V5G 1K5 Tel: 604 734 7276 Fax: 604 731 2386 www.maxxam.ca

Table 3: Trace Metals Using Aqua Regia Digestion with ICP-MS Finish for 38 NMS-Hopebay (Doris/Patch Portals & Quarry G, H, & I program) Pulp Samples - October 2010

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	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	Te ppm
1	1049474	0.1	167	0.5	66	<0.1	28.3	33.7	1294	6.29	3.6	<0.1	<0.5	0.2	14	<0.1	<0.1	<0.1	157	1.4	0.036	2	24	1.76	15	0.401	<20	2.7	0.09	0.07	<0.1	<0.01	4.8	<0.1	0.06	10	<0.5	<0.2
2	1049475	0.3	155.6	0.2	59	<0.1	81.1	36.4	752	5.03	1.6	<0.1	<0.5	0.1	19	0.1	<0.1	<0.1	64	0.77	0.026	2	101	2	7	0.19	<20	2.7	0.039	0.04	<0.1	<0.01	2.7	<0.1	0.15	4	<0.5	<0.2
3	1049476	0.2	194.7	0.4	352	1.3	83	40.2	1069	5.3	2	<0.1	<0.5	0.1	10	1	<0.1	<0.1	97	1.67	0.024	1	128	2.11	19	0.269	<20	2.96	0.066	0.05	<0.1	0.03	3.7	<0.1	<0.05	6	<0.5	<0.2
4	1049477	0.3	162.6	0.2	87	0.2	92.2	43.8	1017	5.99	1.7	<0.1	<0.5	0.1	25	0.1	<0.1	<0.1	107	1.47	0.027	1	120	3.37	25	0.25	<20	3.83	0.017	0.04	<0.1	<0.01	4.1	<0.1	<0.05	6	<0.5	<0.2
5	1049478	0.3	155.2	0.4	62	<0.1	85.9	43.9	1012	4.35	3.4	<0.1	7	0.1	9	0.2	<0.1	<0.1	117	2.8	0.02	<1	160	1.32	9	0.292	<20	2.12	0.095	0.01	<0.1	<0.01	4.8	<0.1	0.12	6	<0.5	<0.2
6	1049479	0.1	153.4	0.4	66	0.2	93.4	39.1	939	5.28	4.6	<0.1	0.9	0.1	15	0.1	<0.1	<0.1	95	1.36	0.024	1	122	2.47	12	0.241	<20	3.19	0.036	0.01	<0.1	<0.01	3.7	<0.1	<0.05	5	<0.5	<0.2
7	1049480	0.2	153.7	0.3	83	<0.1	117.6	47.5	1054	5.4	17	<0.1	0.9	0.1	21	0.2	<0.1	<0.1	116	3.09	0.026	1	160	2.61	8	0.229	<20	3.38	0.025	0.02	0.4	<0.01	4.1	<0.1	0.05	6	<0.5	<0.2
8	1049481	0.2	148.9	0.2	63	0.2	102.5	39.5	819	4.96	1.2	<0.1	1.3	0.1	13	0.1	<0.1	<0.1	76	0.92	0.025	1	86	2.18	19	0.184	<20	2.92	0.032	0.02	<0.1	<0.01	2.3	<0.1	0.06	5	<0.5	<0.2
9	1049482	0.1	139.3	0.3	85	0.3	96.1	44.2	3105	8.1	1.5	<0.1	<0.5	0.1	17	0.1	<0.1	<0.1	160	6.93	0.026	1	173	3.46	2	0.25	<20	4.57	0.014	<0.01	<0.1	<0.01	7	<0.1	<0.05	9	<0.5	<0.2
10	1049483	0.3	153.5	0.3	64	0.2	84.7	38.3	1410	4.89	2.6	<0.1	4.6	<0.1	15	<0.1	<0.1	<0.1	98	6.82	0.02	<1	131	1.69	8	0.304	<20	2.56	0.035	0.01	<0.1	<0.01	4.5	<0.1	0.13	5	<0.5	<0.2
11	1049484	0.3	93.2	0.5	54	0.4	101	40.6	1298	4.85	13.9	<0.1	<0.5	<0.1	23	<0.1	<0.1	<0.1	96	9.41	0.013	<1	92	2.39	33	0.177	<20	3.18	<0.001	0.08	<0.1	<0.01	7.2	<0.1	<0.05	6	<0.5	<0.2
12	1049485	0.2	100.7	3	64	0.2	89.4	36.3	1172	4.39	16.1	<0.1	0.9	<0.1	18	0.2	<0.1	<0.1	112	6.66	0.016	<1	94	1.89	20	0.187	<20	2.91	0.019	0.06	<0.1	<0.01	9.3	<0.1	0.16	6	<0.5	<0.2
13	1049486	0.1	123.6	0.2	51	<0.1	81.4	33	719	3.92	0.8	<0.1	0.9	<0.1	17	<0.1	<0.1	<0.1	63	1.98	0.019	<1	72	1.74	4	0.249	<20	2.46	0.032	<0.01	<0.1	<0.01	3	<0.1	0.1	3	<0.5	<0.2
14	1049487	0.1	117.9	0.4	65	<0.1	124.1	56.5	1631	5.41	1.1	<0.1	8.8	<0.1	18	0.1	<0.1	<0.1	79	4.18	0.021	<1	81	2.14	2	0.207	<20	3.41	0.013	<0.01	<0.1	<0.01	4.8	<0.1	0.1	4	<0.5	<0.2
15	1049488	0.1	131.9	0.2	56	0.2	102	42.3	1550	5.02	2.4	<0.1	1.8	<0.1	12	0.2	<0.1	<0.1	95	5.2	0.016	<1	94	1.78	9	0.261	<20	2.79	0.044	<0.01	<0.1	<0.01	3.5	<0.1	0.23	5	0.5	<0.2
16	1049489	0.4	229.8	0.2	59	1.3	93.4	101	794	4.26	0.6	<0.1	4.6	<0.1	35	0.9	<0.1	<0.1	74	2.13	0.024	1	76	2.23	3	0.191	<20	2.88	0.043	<0.01	0.5	<0.01	3.7	<0.1	0.11	4	<0.5	<0.2
17	1049490	0.2	87	0.6	62	<0.1	62	32.7	2119	6.2	7.8	<0.1	2.1	0.2	88	<0.1	<0.1	<0.1	98	6.34	0.028	2	85	2.31	12	0.004	<20	4.37	0.011	0.09	<0.1	<0.01	9.8	<0.1	0.1	10	<0.5	<0.2
18	1142956	<0.1	137.6	0.4	62	<0.1	90	35.6	1233	4.9	3.4	<0.1	2.1	<0.1	41	<0.1	<0.1	<0.1	106	3.72	0.022	<1	184	2.3	2	0.29	<20	2.91	0.062	0.01	<0.1	<0.01	4.2	<0.1	0.06	6	<0.5	<0.2
19	1142957	<0.1	134.7	0.4	53	<0.1	89.9	35.1	1012	4.23	1.4	<0.1	3.2	<0.1	36	<0.1	<0.1	<0.1	84	3.66	0.019	<1	156	1.89	2	0.32	<20	2.63	0.042	<0.01	<0.1	<0.01	4.1	<0.1	0.07	4	<0.5	<0.2
20	1142958	0.1	124.4	0.2	74	<0.1	91.2	45.3	1460	5.8	0.6	<0.1	1	<0.1	19	0.1	<0.1	<0.1	94	5.28	0.022	<1	129	1.9	1	0.305	<20	3.22	0.02	<0.01	<0.1	<0.01	3.5	<0.1	0.11	5	<0.5	<0.2
21	1142959	<0.1	130.8	0.2	60	<0.1	82.4	36.3	1069	4.63	0.7	<0.1	1.9	<0.1	16	<0.1	<0.1	<0.1	76	4.11	0.02	<1	116	1.47	2	0.234	<20	2.49	0.023	<0.01	<0.1	<0.01	3	<0.1	0.12	4	<0.5	<0.2
22	1142960	<0.1	136.1	0.2	53	<0.1	77.7	33.2	1003	4.25	0.8	<0.1	1.1	<0.1	20	<0.1	<0.1	<0.1	74	3.82	0.021	<1	111	1.34	2	0.264	<20	2.38	0.039	<0.01	<0.1	<0.01	3.7	<0.1	0.09	4	<0.5	<0.2
23	1142961	<0.1	152.2	0.2	49	<0.1	64.2	28.4	744	4.24	<0.5	<0.1	1.2	<0.1	54	<0.1	<0.1	<0.1	69	1.27	0.025	<1	116	1.58	2	0.253	<20	2.57	0.035	<0.01	<0.1	<0.01	4.1	<0.1	<0.05	5	<0.5	<0.2
24	1142962	0.3	93.3	0.9	54	<0.1	46.6	20	584	3.37	0.6	0.2	<0.5	1.6	22	<0.1	<0.1	<0.1	77	1.77	0.049	9	82	1.32	5	0.193	<20	1.86	0.112	0.02	<0.1	<0.01	4.5	<0.1	<0.05	9	<0.5	0.4
25	1056300	<0.1	117.5	3.6	78	<0.1	120.6	42.9	1376	6.41	7.9	<0.1	0.9	<0.1	39	0.2	0.1	<0.1	198	5.9	0.02	1	222	3.51	3	0.261	<20	4.58	0.022	<0.01	<0.1	<0.01	20.4	<0.1	0.14	10	<0.5	<0.2
26	1056301	0.2	145.9	0.8	65	0.3	117.4	56.9	1062	5.45	2.5	<0.1	1.3	<0.1	57	<0.1	<0.1	<0.1	124	4.17	0.022	<1	213	3.49	1	0.172	<20	4.17	0.022	<0.01	0.1	<0.01	7.6	<0.1	<0.05	6	<0.5	<0.2
27	1056302	0.1	123.2	0.3	67	0.1	121.3	46.6	1277	6.28	4.3	<0.1	1.9	<0.1	32	<0.1	<0.1	<0.1	184	4.88	0.022	1	233	3.91	2	0.224	<20	4.77	0.013	<0.01	<0.1	<0.01	13.9	<0.1	0.05	9	<0.5	<0.2
28	1056303	0.4	35.5	1.4	54	<0.1	23.1	13	423	2.55	0.9	0.1	<0.5	0.4	16	<0.1	<0.1	<0.1	51	1.38	0.03	4	35	1.26	21	0.079	<20	1.63	0.111	0.05	<0.1	<0.01	3.5	<0.1	0.05	10	<0.5	<0.2
29	1056304	<0.1	126.1	0.4	53	<0.1	138.4	42	909	4.79	8.9	<0.1	3.1	<0.1	22	<0.1	<0.1	<0.1	96	1.38	0.022	<1	213	3.42	1	0.172	<20	3.47	0.025	<0.01	<0.1	<0.01	3.7	<0.1	0.06	6	<0.5	<0.2
30	1056305	0.1	125.7	0.6	47	<0.1	96.4	35.1	761	4.44	0.9	<0.1	0.8	<0.1	21	<0.1	<0.1	<0.1	85	1.65	0.022	1	188	2.39	2	0.236	<20	3.02	0.032	0.01	<0.1	0.01	4.7	<0.1	0.08	4	<0.5	<0.2
31	1056306	<0.1	119.2	0.3	65	0.2	165	49.6	1260	6.53	28.9	<0.1	1.3	0.1	24	<0.1	<0.1	<0.1	189	5.03	0.022	1	237	4.42	1	0.207	<20	5.04	0.025	<0.01	<0.1	<0.01	17.9	<0.1	0.08	11	<0.5	<0.2
32	1056307	<0.1	112.2	0.7	65	<0.1	148.3	45.1	1214	6.65	4.8	<0.1	2.6	<0.1	36	<0.1	<0.1	<0.1	155	5.35	0.022	1	202	4.44	27	0.128	<20	5.57	0.002	0.1	<0.1	<0.01	13	<0.1	0.12	11	<0.5	<0.2
35	1056310	0.5	35.6	2.2	42	<0.1	21.1	10.3	277	2.06	35.3	0.2	5.8	1.8	22	<0.1	<0.1	0.1	26	1.26	0.03	9	29	0.73	24	0.019	<20	1.05	0.025	0.1	<0.1	<0.01	1.9	<0.1	0.05	4	<0.5	<0.2
36	1056311	<0.1	98.5	0.4	60	<0.1	106.9	39.7	1223	5.64	4.4	<0.1	1.3	<0.1	49	<0.1	<0.1	<0.1	183	5.71	0.018	1	199	3.13	4	0.233	<20	4.05	0.037	0.02	<0.1	<0.01	19.4	<0.1	0.07	9	<0.5	<0.2
37	1056312	0.4	15.4	2.8	23	<0.1	18.8	7.8	255	2.03	4.5	0.4	0.8	4.8	15	<0.1	<0.1	<0.1	34	0.28	0.023	13	33	0.6	32	0.05	<20	0.92	0.05	0.11	<0.1	<0.01	2.4	<0.1	<0.05	3	<0.5	<0.2
38	1056313	0.4	26.5	2.4	55	<0.1	19.7	12.5	354	2.16	4.3	0.1	1.7	0.7	25	<0.1	<0.1	<0.1	20	2.17	0.029	6	19	0.75	43	0.052	<20	1.44	0.099	0.17	<0.1	0.01	1.8	<0.1	0.1	7	<0.5	<0.2
QAQC																																						
Duplicates																																						
27	1056302	0.1	118.2	0.2	66	0.1	118.6	45.5	1260	6.24	4.2	<0.1	2.1	<0.1	31	<0.1	<0.1	<0.1	179	4.79	0.021	1	225	3.87	2	0.212	<20	4.72	0.011	<0.01	<0.1	<0.01	13.4	<0.1	0.05	9	<0.5	<0.2
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*	*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*
Acme Group No.		*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*1DX*	*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.

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: Maxxam'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%