ATTACHMENT 9

Geochemical Evaluations

(227 Pages)

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March 16, 2007

Mr. Rodney (Rod) A. Cooper
Vice President Operations & Chief Operating Officer
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Dear Rod:

Re: Preliminary Results of Phase I Geochemical Characterization Program

INTRODUCTION

Baffinland Iron Mines Corporation is currently carrying out a Definitive Feasibility Study (DFS) on the proposed Mary River iron ore project located on Baffin Island, Nunavut. As part of the DFS, Knight Piesold has initiated a phase I geochemical characterization test work program to assess the acid generating and metal leaching capacities of mined rock, borrow materials and overburden samples at the Mary River site ('the site').

Assessing the risks of acid generation and metal leaching at the site poses a unique challenge due to the semiarid conditions and the prevalence of ice and snow (i.e. the mean annual precipitation at the nearby community of Pond Inlet is only 190.8 mm, (Environment Canada, 2004)). Under these conditions the onset of natural acid rock drainage resulting in natural gossan development tends to be very slow. Nonetheless, within stored waste rock there is the potential for incremental accumulation of oxidation products (e.g. metals and acidity) throughout the year. These products can then be flushed out of the waste rock matrix during spring freshet, in areas of the waste rock pile that do not remain frozen.

Geochemical test work programs for mining projects are typically carried out using a phased approach. Phase I consists of so-called 'static' laboratory tests designed to quantify the fundamental geochemical characteristics of the materials. Based on the results of this test work program, the need for carrying out phase II 'kinetic' testing to assess geochemical reaction rates will be determined.

For maximum cost-effectiveness and to optimize the quality of the resulting data, it is considered best practice to proceed with geochemical testing in an iterative manner i.e. the requirement for, and design of, subsequent test work programs (if required) will be based upon the results of previous rounds of testing.

This report summarizes the initial results of phase I geochemical characterization test work carried out on samples of waste rock, overburden and railroad construction rock (i.e. ballast) collected at the site.

The methodology used in the phase I test work program generally follows the recommended methods outlined in Draft Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia (Price, 1997). The Price guidelines are recognized as representing best practice for assessing the risk of metal leaching and acid generation at mine sites and have been widely adopted by practitioners and regulators in Canada and worldwide.

Local Geology

The No. 1 Iron Deposit is located in the Mary River area (Figure 1) and outcrops along the crest of Nuluujaak Mountain. Deposit No. 1 is the largest of the five deposits with a total strike length of 3,800 m. The high-grade iron forms a 2,500 m long curved ridge of Nuluujaak Mountain (698 m elevation) and magnetic surveys suggest an additional 550 m extension to the south and 750 m to the north (Aker Kvaerner, 2006). The iron formation is found within a complexly folded, north-easterly plunging syncline that can be divided into North and South Limbs. The North Limb strikes at approximately 210° and dips at about 75° to the southeast, and the South Limb strikes at approximately 315° and dips at about 80° to the northeast (Watts, Griffis & McOuat, 1964)

The iron formation at Deposit No. 1 includes banded oxide and silicate facies iron formation and high grade iron formation, including hematite, magnetite, specularite and mixed varieties of the iron oxides (Jackson, 2000). The No. 1 iron deposit is predominately magnetite at its north and south ends and in the vicinity of Mary River, where it then becomes truncated by an inferred fault zone. The extent of hematization is most notably observed along the fold axis and along the South Limb of the deposit.

The iron formation at Deposit No. 1 is stratigraphically underlain to the west by quartz-feldspar-mica augen gneiss with interlayered bands of chlorite-amphibole schist and quartzite (herein referred to as the footwall of Deposit No. 1). To the east, it is stratigraphically overlain by chlorite-amphibole schist, mafic volcanic tuff and garnetiferous amphibolite (herein referred to as the hangingwall). Biotite is generally more abundant than muscovite, and microcline and albite are the predominant feldspars within the footwall gneiss (Jackson, 2000). There are also minor amounts of iron oxides, garnet, chlorite, cordierite, sillimanite, andalusite, spinel, amphibole and pyroxene present. The hangingwall mineralogy typically includes chlorite, mica, quartz, amphibole, feldspar and garnet, with minor amounts of pyroxene, andalusite, hematite and magnetite, pyrite and pyrrhotite (Jackson, 2000).

Drill core from recent programs have revealed visible deleterious minerals such as iron sulphides (including pyrite and pyrrhotite). Thus far, they have primarily been observed as disseminated or as small vein-like occurrences within some of the deposit rocks. They are thought to be predominately associated with magnetite-rich oxides (Aker Kvaerner, 2006) although it is not known whether the sulphide occurrence is lithologically controlled. The extent and total distribution of the sulphides is not known but they appear discontinuous. Recent observation from the available drill core suggests that the majority of the recovered material has no to only trace amounts of visible sulphides.

METHODS

Sample Selection

Waste Rock Samples

In 2006, 78 waste rock samples were collected from existing drill core from Deposit No. 1 from the 2004-2006 drill programs. The samples were selected in an effort to best represent the overall rock mass. Ore was unavailable to sample from the 2004-2005 core as it had already been cut and sampled for assay and so ore was sampled from the 2006 drill program Twenty-four (24) of the waste rock samples were sent to SGS Lakefield Research Limited in Lakefield, Ontario and results are discussed in this letter. An additional 25 waste rock and ore samples have been recently sent for test work and results are anticipated within approximately 6 weeks. The sample locations are shown on Figure 2.

Overburden and Ballast Samples

Seven (7) overburden samples and 6 ballast samples were collected from Northern Baffin Island around the Mary River Project area. The overburden samples were duplicates taken from various potential borrow sites for possible bulk sample road construction material. The ballast samples were collected from potential borrow sources for railroad ballast. The sites for the overburden and ballast samples are shown on Figure 3. The samples were sent to SGS Lakefield for acid rock drainage (ARD) and metal leaching (ML) characterization and were analysed using the same set of tests as the waste rock samples.

Laboratory Test Work

It should be noted that no single laboratory test can adequately characterize a sample. Rather, the geochemical properties are interpreted based on an overall assessment of the results from several different types of tests, as described below.

<u>Acid Base Accounting</u>

Acid Base Accounting (ABA) was carried out using Modified ABA methodology. ABA testing is designed to assess the risk of acid generation resulting from the oxidation of sulphide minerals. When exposed to air and water, sulphide minerals undergo oxidation resulting in the generation of sulphuric acid and leaching of metals, which are commonly referred to as acid rock drainage.

ABA testing quantifies the acid generating potential (AP) and the acid neutralizing potential (NP) of a sample. If NP exceeds AP, then the sample is less likely to generate ARD. These determinations are based on both measured and calculated data and hence, interpretation of ABA results should be done cautiously. ABA testing does not evaluate the rates of acid neutralization vs. acid generation reactions (i.e. if the minerals providing the bulk of the AP are relatively unreactive, even though AP may exceed NP, the material may not be ARD generating).

The ABA screening criteria used to evaluate the ABA results were based on Price, 1997, as summarised in the following table. Although empirical in nature, these criteria have found wide acceptance within the mining industry and regulators.

ABA Screening Criteria (Based on Price (1997))

Potential for ARD	Initial Screening Criteria	Comments
Likely	NP/AP <1	Likely acid generating, unless sulphide minerals are non-reactive.
Possibly	1<NP/AP<2	Possibly acid generating if NP is insufficiently reactive or is depleted at a rate faster than sulphides.
Low	NP/AP 2-4	Not potentially acid generating unless significant preferential exposure of sulphides along fractures planes, or extremely reactive sulphides in combination with insufficiently reactive NP.
None	NP/AP >4	Not acid generating.

Samples with an NP/AP ratio of greater than 4 are considered to be non-acid generating and no further testing is required. Another general rule presented by Price is that if the sulphide concentration is less than 0.3 wt% and the rinse pH is greater than 5.5, then the sample is considered to be non-acid generating, unless the rock is comprised entirely of base-poor minerals (i.e. silicates, potassium feldspar, phyllosilicates like mica, etc.).

Whole Rock Analysis

Whole rock analysis is used to quantify the concentrations of a range of major elements. Whole rock analysis uses a more thorough sample digestion method than is typically used in inductively coupled plasma (ICP) analysis for total elements, hence elemental concentrations reported from whole rock analysis are frequently higher than those found with ICP.

It should be noted that whole rock analysis results are reported as oxide equivalents. This does not infer that those oxide concentrations are present, rather it is a data reporting convention peculiar to this type of analysis. For actual elemental concentrations, the oxide equivalent data must be converted to elemental concentration.

Total Element Analysis

Total element concentrations were measured using ICP. This analysis provides an estimate of the concentrations of a wide range of elements present in the sample. Total element analysis does not provide any information concerning the risk of metal leaching and hence it is normal practice to carry out leach tests (as described below).

X-ray Diffraction (XRD) Analysis

XRD analysis is used to provide information concerning the mineralogy of the sample. Mineralogical information is important, since it can provide supporting information to assess the environmental reactivity of the samples.

Synthetic Precipitation Leaching Procedure (SPLP) 1312 Analysis

The SPLP test was designed by the US Environmental Protection Agency (USEPA) to mimic metal leaching under acid rain conditions. The leaching reagent is a mixture of nitric and sulphuric acids adjusted to pH 4.2, with a 20:1 liquid to solid ratio (by wt.). The sample is crushed to -9.5 mm (if required) and both sample and leaching reagent are placed in a flask, which is rotated end over end over a 24hr period. The leachate is then drained, filtered and analysed.

Toxicity Characteristic Leaching Procedure (TCLP) 1311 Analysis

The TCLP test was also designed by USEPA for assessing metal leaching from mine wastes co-deposited with municipal refuse. The TCLP uses an organic acid leaching reagent (as opposed to mineral acids used in SPLP). TCLP testing has traditionally been carried out for mine rock samples, although its use has tailed off since mine wastes are rarely exposed to organic acids during normal storage conditions.

RESULTS

The results of testing of the initial 24 waste rock samples, 7 overburden samples and 6 ballast samples are discussed below. The lab results for the remaining 29 (of 78 in total) waste rock and ore samples will be come available soon after geomechanical testing has been completed on the samples. An additional 25 waste rock and ore samples have been recently sent for ARD / ML test work and results are anticipated within approximately 6 weeks. Analysis and interpretation will be carried out subsequent to receipt of the results.

Acid-Base Accounting

Waste Rock Samples

The ABA testing results for the waste rock samples can be found on Table 1 and on Figures 4 to 6. The sample results were divided into four main lithological units: gneiss, amphibolite/tuff, greywacke and schist to best represent the non-ore (waste) rock units within the deposit.

Figure 4 shows a plot of sulphide sulphur against total sulphur. Inspection of Figure 4 shows that the sulphide concentration in all samples was less than the 0.3 wt% threshold put forward by Price, with the exception of hangingwall schist sample ARD 19 that had a sulphide concentration of 1.45 wt%. The results on Table 1 also show that the paste pH for all samples ranged from pH 8.0 to 10.2. Based on the Price guidelines, these results indicate that all but one of the waste rock samples is likely to be non-acid generating. However, it is noted that most of the hangingwall is composed primarily of quartz, chlorite and mica which all have relatively poor capacities to neutralize acidity. The carbonate neutralization potential (Ca-NP) is plotted against NP on Figure 5. From this figure it can be seen that of the total NP present, only between 0.9 % and 20.5 % consisted of readily reactive Ca-NP (with the exception of sample ARD 15 whose total NP comprised 75 % Ca-NP).

Sample ARD 19 was collected from the drill core from MR1-05-47 in the hangingwall along the North Limb of Deposit No.1. The sample was taken from 160 m depth and lithologically is a biotite schist. Sample ARD 12 was also taken from the same drill hole and schist unit but contained <0.01 % sulphides. This suggests that there is variability within the hangingwall unit itself.

Sample ARD 10 is classified according to the Price guidelines as borderline, possibly acid generating as shown on Figure 6. The sample was taken from the drill core from MR1-05-77 along the North Limb within the hangingwall close to the ore contact. It was sampled from 117 m depth within the mixed amphibolite and chlorite tuff unit.

Most rock samples have been determined to be likely non-acid generating unless there is possibly a significant preferential exposure of sulphides in the open pit, or there are extremely reactive sulphides in combination with insufficiently reactive or rapid depletion of neutralizing material. However, even though there may not be a large amount of neutralizing potential within these samples, there are sources of neutralization (i.e. carbonates such as limestone and dolostone) in the local overburden as well as bedrock sources within close proximity.

Overburden and Ballast Samples

The ABA testing results for the overburden and ballast samples are presented on Table 2 and on Figures 7 to 9. All samples had a sulphide concentration of less than 0.3 wt% and a paste pH of greater than 5.5 and hence are considered to be non-acid generating as shown on Figure 9. Overburden samples SC27, SC28, SC50 and SC51 also have a strong neutralizing potential that is on the order of 30 times that of the other overburden and ballast samples. This neutralizing potential is in the range of 75 % to 100 % of readily reactive Ca-NP for all overburden samples with the exception of sample BC10. The neutralizing potential of the ballast samples contained at least 80 % to upwards of 100 % of reactive Ca-NP.

Whole Rock

Waste Rock Samples

The results for the Whole Rock analysis testing are shown on Table 3. The samples were rich in silica, aluminium, iron, magnesium and potassium. This is to be expected since the major components that make up the deposit are quartz, amphiboles, feldspar group minerals, and iron oxides.

Overburden and Ballast Samples

Both the overburden and ballast sample results for the Whole Rock analysis testing are shown on Table 4. In general, all overburden samples had similar compositions, being comprised mainly of silica, with varying amounts of aluminum, iron, potassium, calcium and magnesium.

The ballast samples were all generally comprised of mainly silica and aluminium, with lesser amounts of iron, calcium, sodium, potassium, magnesium and titanium, with the exception of sample BC9 (diabase). BC9 had comparably lower amounts of silica and aluminium and slightly higher secondary minerals percentages. The sample had a notably higher calcium concentration compared to the other samples because of the anorthitic nature of diabase.

Total Elements

Waste Rock Samples

The ICP elemental analysis results are shown on Table 5. The metals with the highest concentrations were aluminium, iron, potassium, and magnesium, all of which are largely present in the mineralogy that makes up the waste rocks. Calcium, manganese and titanium were also present but in less significant concentrations. Calcium is also present in many minerals such as plagioclase, amphiboles and pyroxenes. Manganese is present as a cation in garnets and chlorite and titanium is found in rutile and ilmenite. Barium was also slightly higher within the gneissic samples when compared to the other sampled units. It should be noted that barium can be present as a cation substitute in feldspars and micas. Again, the sample results are largely consistent with the results from the whole rock analysis and also correspond with the minerals and metals present in the deposit rocks.

Overburden and Ballast Samples

The ICP elemental analysis results are shown on Table 6. The metals with the highest concentrations in the overburden samples are aluminium, calcium, iron, potassium, and magnesium. Barium, chromium, manganese and titanium are also present but in less significant concentrations. The ballast samples are similar to the overburden samples in that the highest concentrations of metals tend to be aluminium, calcium, iron, potassium, and magnesium which are all major cations present in major mineral assemblages such as amphiboles, micas, feldspars, chlorite, pyroxenes and iron oxides.

The ICP results for all samples were largely consistent with the results from the whole rock analysis.

X-ray Diffraction

Waste Rock Samples

The XRD results are presented on Table 7 and indicate that most of the waste rock samples do not contain detectable amounts of pyrite, pyrrhotite, chalcopyrite, arsenopyrite, galena, sphalerite or siderite. The schist samples contain chlorite as their major constituent as well as mica and quartz in smaller amounts. Only sample ARD 19 (hangingwall schist) tested positive for trace amounts of pyrite.

The major assemblages within the amphibolite/tuff samples are quartz, mica and chlorite with moderate to smaller amounts of amphibole, pyroxene, iron oxides, feldspar, garnet and rutile.

The results for the gneiss samples indicate that quartz, chlorite and mica are the overall major assemblages present in the rock followed by minor to trace amounts of plagioclase and potassium feldspar, iron oxides, cordierite and andalusite. It is expected that the lack of plagioclase and potassium feldspar as a moderate to major component within the footwall samples is due to the variability within the footwall unit itself. The footwall rock varies from quartz-mica-feldspar augen gneiss to quartzite-metapelite and minor schistose lenses within.

Overburden and Ballast Samples

The XRD results are presented on Table 8 and indicate that neither the overburden nor the ballast samples contain detectable amounts of sulphides (i.e. pyrite, pyrrhotite, chalcopyrite, arsenopyrite, galena and sphalerite) which is consistent with the ABA results.

The major mineral assemblages within the overburden samples are quartz, plagioclase and potassium feldspar with more minor amounts of amphibole, mica, chlorite, pyroxene, dolomite and calcite.

The results for the ballast samples indicate that quartz, mica and plagioclase (albite and anorthite) are the overall major assemblages present in the rock, which is expected, since the rocks are generally of a granite-granodiorite to gneissic origin. Plagioclase and potassium feldspar, quartz and pyroxene also occur in moderate amounts while the minor assemblages were mica, chlorite, amphibole, iron oxides, and pyroxene.

Synthetic Precipitation Leaching Procedure (SPLP) 1312

Waste Rock Samples

The SPLP 1312 results presented on Table 9 indicate that iron, aluminum and barium, and to a lesser extent, boron and zinc may be prone to leaching from the waste rock. The results of the SPLP test should be viewed with caution, since the test methodology does not closely resemble actual site conditions. Nonetheless, the results of the SPLP test are useful in providing an indicator of which metals may be prone to leaching under acidic conditions if they were to occur.

The leachate pH ranged from 7.2 to 9.8, indicating that acid neutralizing minerals were reactive and capable of neutralizing the acidic leaching reagent.

Overburden and Ballast Samples

SPLP 1312 results for both the overburden and ballast samples are shown on Table 10. The results indicate that overburden samples were prone to minor leaching of aluminum and iron under the moderately acidic conditions of the test. The leachate pH was alkaline indicating that the overburden has some neutralizing capacity (confirmed by ABA results).

The SPLP results for ballast samples indicated that the ballast may be prone to moderate leaching of aluminum, iron and to a lesser extent boron and zinc. The leachate pH was alkaline indicating that the overburden has some neutralizing capacity (confirmed by ABA results).

Toxicity Characteristic Leaching Procedure (TCLP) 1311

Waste Rock Samples

The results for the TCLP 1311 analysis are presented on Table 11. The TCLP test was carried out using ethanoic (acetic) acid. The test results were generally comparable to the SPLP results.

Overburden and Ballast Samples

The TCLP results for overburden and ballast samples are presented on Table 12. The TCLP results for the overburden samples indicated moderate leaching of barium, boron and zinc and minor leaching of aluminum and iron. Notably high concentrations of some metals, in particular aluminium, copper and iron, could potentially be overrepresented due to certain methodologies used by the lab.

The TCLP results for the ballast samples indicated moderate leaching of barium, copper and iron and minor leaching of aluminum and zinc.

The leachate pH for all samples was also alkaline.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations from the initial phase I test work results are discussed below.

Conclusions

Based on the initial results from a limited number of samples it was concluded that:

Waste Rock

1. Waste rock elemental composition was generally consistent with the predicted mineralogy.

2. Based on the Price guidelines, the initial ABA test results indicate that almost all waste rock samples (with the exception of sample ARD 19) were considered to be non-acid generating. However, the hangingwall is predominately composed of quartz, mica and chlorite minerals that have low capacities to neutralize acidity. Hangingwall acid generating and neutralizing capabilities will be evaluated further once additional laboratory results become available.

3. Schist sample ARD 19 from the hangingwall had a sulphide content of 1.45 wt% and was predicted to be likely acid generating. This will require further confirmation.

4. The leach test results indicated that the waste rock may be prone to leaching of a number of major metals and trace metals under moderately acidic conditions, if this condition were to occur.

5. The waste rock samples were capable of neutralizing acidity (under extreme conditions of the SPLP test), although long-term acid neutralizing capacities are expected to be low.

Overburden and Ballast

1. Ballast elemental compositions were generally consistent with the predicted mineralogy.

2. The ABA test results indicate that overburden and ballast samples are considered to be non-acid generating due to low sulphide content and readily reactive carbonate NP.

3. The leach test results indicated that the overburden and ballast samples may be prone to leaching of a number of major metals and trace metals under moderately acidic conditions, if this condition were to occur.

Recommendations

Recommendations arising out of this review of the initial phase I test work results are:

1. Further TCLP testing of samples may be discontinued, as the results were comparable to the SPLP results. This depends on the pending results from the recently submitted samples.

2. Depending on the results of the additional test work (results pending), additional testing of waste rock units, and in particular hangingwall samples may be required to confirm acid generating and metal leaching capacities.

3. Selected samples should be submitted for modified SPLP testing using deionized water and a 3:1 water to solid ratio (by wt.) because:

   i. this will give a better indication of potential metal leaching due to precipitation, and

   ii. the standard SPLP test is carried out using a 20:1 liquid to solid ratio (by wt.) which can mask metal leaching through dilution (note that the modified leach test is recommended by Price).

4. Additional ballast samples should be tested to confirm the materials environmental reactivity.

5. Based on the predicted waste rock tonnage, the number of samples required for phase I testing should be reviewed with respect to sample size requirements set out in Price, 1997.

6. Samples of ore and low-grade ore have been selected for testing to assess potential metal leaching from temporary ore stockpiles. Results are pending.

7. Based on the results of the phase I static test work program, further laboratory testing and kinetic on-site testing is scheduled for the 2007 field program.

8. As the geochemical characterization program proceeds, the requirement to model potential water quality impacts arising from ARD / ML from the waste rock dumps should be reviewed.

Additional sampling of waste rock and ore samples to further assess ARD and metal leaching properties is scheduled to be completed during the 2007 field season. The new sampling program will encompass all lithologies within the Deposit No. 1 area. This additional sampling will in part focus on characterizing waste rock units located within the expected bench height, as composite sampling across bench height gives an indication of how the materials will behave geochemically when placed in the waste rock dumps. The area of sampling will also be increased to include all areas of the deposit spatially so that a representative model can be attained (the 2006 sampling sites were concentrated generally at the ends of the North and South Limbs of the deposit (Figure 2)).

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Yours very truly,
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Attachments:

Table 1 – Acid-Base Accounting Results for Waste Rock Samples
Table 2 – Acid-Base Accounting Results for Overburden and Ballast Samples
Table 3 – Whole Rock Analysis Results for Waste Rock Samples
Table 4 – Whole Rock Analysis Results for Overburden and Ballast Samples
Table 5 – Total Elements Results for Waste Rock Samples
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Table 7 – X-Ray Diffraction Results for Waste Rock Samples
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Table 9 – SPLP 1312 Results for Waste Rock Samples
Table 10 – SPLP 1312 Results for Overburden and Ballast Samples
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Table 12 – TCLP 1311 Results for Overburden and Ballast Samples

Figure 1 – Deposit No. 1 Bedrock Geology – Plan View
Figure 2 – Waste Characterization – Sample Locations
Figure 3 – Overburden and Ballast – Sample Locations
Figure 4 – ABA Data – Sulphide Sulphur vs. Total Sulphur Waste Rock Samples
Figure 5 – ABA Data – AP vs. Ca-NP Waste Rock Samples
Figure 6 – ABA Data – AP vs. NP Waste Rock Samples
Figure 7 – ABA Data – Sulphide Sulphur vs. Total Sulphur Overburden & Ballast Samples
Figure 8 – ABA Data – AP vs. Ca-NP Overburden & Ballast Samples
Figure 9 – ABA Data – AP vs. NP Overburden & Ballast Samples
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TABLE 1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

ACID-BASE ACCOUNTING RESULTS FOR WASTE ROCK SAMPLES

Parameter	Units	ARD 1 Gneiss	ARD 2 Gneiss	ARD 3 Gneiss	ARD 4 Gneiss	ARD 5 Gneiss	ARD 6 Gneiss	ARD 7 Gneiss	ARD 8 Gneiss	ARD 9 Gneiss	ARD 10 Amphibolite/Tuff	ARD 11 Amphibolite/Tuff	ARD 12 Amphibolite	ARD 13 Greywacke	ARD 14 Amphibolite	ARD 15 Amphibolite	ARD 16 Amphibolite	ARD 17 Amphibolite	ARD 18 Schist	ARD 19 Schist	ARD 20 Tuff	ARD 21 Gneiss	ARD 22 Tuff	ARD 23 Amphibolite	ARD 24 Amphibolite
Sample Depth	m	322.0	334.0	325.0	297.5	292.0	290.5	148.0	168.0	189.0	117.0	188.0	34.0	20.0	60.0	20.5	60.5	99.0	134.5	160.0	33.0	90.0	33.0	38.2	42.0
Paste pH	units	9.78	10.03	10.15	9.93	9.75	9.58	9.67	10.07	9.98	8.33	8.04	8.24	8.3	8.1	9.49	8.65	8.48	8.45	8.49	8.45	9.77	9.43	9.05	8.96
Fizz Rate	---	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1
Sample	weight(g)	1.97	2.03	2	1.98	2	1.97	1.98	2	2.03	2.01	1.97	2.01	1.98	1.97	2.02	1.97	1.97	2.02	1.99	1.95	1.96	1.98	2.05	2
HCl added	mL	20	20	20	20	20	20	20	20	20	20	20	32.5	20	20	20	20	27.9	20	20	25.3	20	20	25.7	20
HCl	Normality	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NaOH	Normality	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NaOH to	pH=8.3 mL	16.2	16.2	16.4	16.25	16.3	16.5	17.5	17.45	17.25	17.7	16.1	21.8	15.5	16.3	10.15	16	21	15.4	14.5	20.4	15.95	15.3	19.35	16.95
Final pH	units	1.34	1.41	1.59	1.32	1.64	1.37	1.26	1.38	1.23	1.33	1.44	1.69	2.04	1.59	1.51	1.48	1.54	1.59	1.82	1.75	1.82	1.69	1.72	1.44
NP	t CaCO3/1000 t	9.6	9.4	9	9.5	9.2	8.9	6.3	6.4	6.8	5.7	9.9	26.6	11.4	9.4	24.4	10.2	17.5	11.4	13.8	12.6	10.3	11.9	15.5	7.6
AP	t CaCO3/1000 t	< 0.31	0.94	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	1.2	< 0.31	2.8	1.2	< 0.31	< 0.31	< 0.31	< 0.31	1.2	< 0.31	0.94	45.3	< 0.31	0.62	< 0.31	< 0.31	< 0.31
Net NP	t CaCO3/1000 t	9.3	8.4	8.7	9.2	8.9	8.6	6	5.2	6.5	2.9	8.7	26.3	11.1	9.1	24.1	9	17.2	10.4	-31.5	12.3	9.7	11.6	15.2	7.3
NP/AP	ratio	31.1	9.96	29	30.5	29.6	28.7	20.4	5.31	21.8	2.04	8.25	85.9	36.7	30.1	78	8.46	56.5	12.1	0.3	40.5	16.5	38.3	50	24.6
Total Sulphur	%	0.006	< 0.005	0.042	< 0.005	0.008	< 0.005	< 0.005	0.035	< 0.005	0.11	0.072	0.007	0.035	0.014	0.054	0.12	0.009	0.3	1.47	0.048	0.05	0.03	0.019	0.014
Sulphate	%	0.016	< 0.01	0.042	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.017	0.032	0.057	0.035	< 0.01	0.044	0.084	0.039	0.271	0.024	0.048	0.03	0.03	0.049	0.014
Sulphide	%	< 0.01	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04	< 0.01	0.09	0.04	< 0.01	< 0.01	0.01	0.01	0.04	< 0.01	0.03	1.45	< 0.01	0.02	< 0.01	< 0.01	< 0.01
C	%	0.012	0.011	0.01	0.016	0.01	0.015	0.01	0.01	0.013	0.011	0.01	0.016	0.028	0.019	0.22	0.015	0.014	0.022	0.014	0.023	0.012	0.027	0.014	0.009
Carbonate	%	< 0.005	0.015	0.015	0.025	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.015	< 0.005	< 0.005	0.849	< 0.005	< 0.005	< 0.005	0.02	0.025	0.015	0.04	0.015	< 0.005
Ca-NP	t CaCO3/1000 t	1.00	0.92	0.83	1.33	0.83	1.25	0.83	0.83	1.08	0.92	0.83	1.33	2.33	1.58	18.33	1.25	1.17	1.83	1.17	1.92	1.00	2.25	1.17	0.75
Ca-NP/NP	%	10.41	9.75	9.26	14.03	9.05	14.04	13.22	13.02	15.93	16.08	8.41	5.01	20.45	16.84	75.11	12.25	6.66	16.08	8.45	15.21	9.70	18.90	7.52	9.86

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]ABA Table 1
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. Total sulphur "S" and carbon "C" values may be slightly higher than their compounds as the elemental values were determined with a separate sample and may not contain exactly the same amount. The elemental analysis is also slightly more accurate than their compound analysis, accounting for a potentially higher value.
3. If the sulphide content used in calculating the Acid Potential (AP) was less than the detection limit of 0.31 t CaCO3/1000 t, the detection limit (< 0.31 t CaCO3/1000 t) was used to indicate the uncertainty of the result.
4. Ca-NP (Carbonate Neutralization Potential) was calculated using the formula from Price, 1997: Ca-NP (as t CaCO3/1000 t) = (%C)*(100.09/12.01)*(10)

TABLE 2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

ACID-BASE ACCOUNTING RESULTS FOR OVERBURDEN AND BALLAST SAMPLES

Parameter	Units	SA1	SC2	SC4	SC27	SC28	SC50	SC51	BC1	BC8	BC9	BC10	BC11	BC12
Paste pH	units	8.83	8.93	9.1	9.2	9.05	9.51	9.36	10.02	9.19	9.05	9.5	9.98	9.69
Fizz Rate	---	1	1	1	4	4	4	4	1	1	1	1	1	1
Sample	weight(g)	1.97	2.02	2	2.01	2	2.02	2.02	1.95	1.96	2.02	2.01	2.02	1.98
HCl added	mL	20	20	20	168.75	196.6	134.1	106.5	20	20	20	20	20	20
HCl	Normality	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NaOH	Normality	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NaOH to	pH=8.3 mL	18	18.5	16.5	41.6	51.35	44.3	36.9	16.3	16.6	14.2	16.7	16.8	16.7
Final pH	units	1.09	1.08	1.12	1.7	1.61	1.53	1.48	1.13	0.98	1.76	0.93	0.96	0.96
NP	t CaCO3/1000t	5.1	3.7	8.8	316	363	222	172	9.5	8.7	14	8.2	7.9	8.3
AP	t CaCO3/1000 t	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31
Net NP	t CaCO3/1000 t	4.8	3.4	8.5	316	363	222	172	9.2	8.4	13.7	7.9	7.6	8
NP/AP	ratio	16.4	11.9	28.4	1020	1170	716	555	30.6	28.1	45.2	26.5	25.5	26.8
Total Sulphur	%	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.014	0.015	0.026	0.007	< 0.005	0.028
Sulphate	%	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.03	0.01	< 0.01	0.03
Sulphide	%	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C	%	0.019	0.035	0.096	3.82	4.55	2.62	2.11	0.11	0.11	0.18	0.058	0.087	0.08
Carbonate	%	0.02	0.055	0.25	16.2	19	11.8	9.25	0.14	0.015	0.1	0.08	0.05	0.05
Ca-NP	t CaCO3/1000 t	1.58	2.92	8.00	318.21	379.02	218.25	175.76	9.16	9.16	14.99	4.83	7.25	6.66
Ca-NP/NP	%	31.03	78.80	90.87	100.70	104.41	98.31	102.19	96.45	105.32	107.10	58.92	91.74	80.29

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]ABA Results 2
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. Total sulphur "S" and carbon "C" values may be slightly higher than their compounds as the elemental values were determined with a separate sample and may not contain exactly the same amount. The elemental analysis is also slightly more accurate than their compound analysis, accounting for a potentially higher value.
3. If the sulphide content used in calculating the Acid Potential (AP) was less than the detection limit of 0.31 t CaCO3/1000 t, the detection limit (< 0.31 t CaCO3/1000 t) was used to indicate the uncertainty of the result.
4. Ca-NP (Carbonate Neutralization Potential) was calculated using the formula from Price, 1997: Ca-NP (as t CaCO3/1000 t) = (%C)*(100.09/12.01)*(10)

Knight Piésold
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TABLE 3

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

WHOLE ROCK ANALYSIS RESULTS FOR WASTE ROCK SAMPLES

Parameter	Units	ARD 1	ARD 2	ARD 3	ARD 4	ARD 5	ARD 6	ARD 7	ARD 8	ARD 9	ARD 10	ARD 11	ARD 12
		Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Amphibolite/Tuff	Amphibolite/Tuff	Amphibolite
SiO2	%	67.1	64.8	70.7	66.8	67.4	69	71.1	72.9	71.5	47.8	54.5	30.6
Al2O3	%	16	16.7	15	15.5	15	14.7	14.6	13.8	14	18	13.7	17.5
Fe2O3	%	6.99	5.89	5.19	5.5	6.15	5.86	4.7	4.26	4.5	20.6	11.9	16.3
MgO	%	2.8	2.35	1.91	2.77	2.78	2.7	1.69	1.74	2.02	6.75	12	19.6
CaO	%	0.26	2.57	0.21	0.42	0.31	0.26	0.13	0.14	0.13	0.03	0.03	0.21
Na2O	%	0.07	2.8	< 0.05	0.14	0.14	0.09	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
K2O	%	4.13	3.28	4.02	5.23	4.39	4.08	3.97	4.62	4.58	0.64	0.36	0.49
TiO2	%	0.79	0.57	0.65	0.83	0.81	0.77	0.51	0.47	0.44	1.05	0.98	1.23
P2O5	%	0.2	0.09	0.17	0.19	0.19	0.2	0.11	0.11	0.1	0.01	0.03	0.09
MnO	%	0.1	0.11	0.04	0.08	0.09	0.07	0.05	0.05	0.07	0.1	0.1	0.48
Cr2O3	%	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.09	0.07	0.05
V2O5	%	< 0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.06	0.05	0.06
LOI	%	1.93	1.09	1.72	2.1	2.84	2.3	2.76	2.1	2.2	5.37	6.19	13.2
Sum	%	100.3	100.3	99.7	99.6	100.1	100	99.6	100.1	99.5	100.5	99.9	99.7

Parameter	Units	ARD 13	ARD 14	ARD 15	ARD 16	ARD 17	ARD 18	ARD 19	ARD 20	ARD 21	ARD 22	ARD 23	ARD 24
		Greywacke	Amphibolite	Amphibolite	Amphibolite	Amphibolite	Schist	Schist	Tuff	Gneiss	Tuff	Amphibolite	Amphibolite
SiO2	%	63.9	65.9	57.4	52	30.3	30.3	31.7	29.7	57.6	48.6	62.9	65.6
Al2O3	%	11.6	12.5	15.9	15	23.4	16.9	20.6	16.6	21.3	15.8	14.4	16.1
Fe2O3	%	10.8	7.62	7.14	20.6	14.7	17	16.9	29.5	10.5	13.4	6.92	9.06
MgO	%	6.08	5.83	3	6.22	17	22.3	15.7	13.4	4.43	9.85	7.95	2.86
CaO	%	0.11	0.17	10.1	1.37	0.24	0.2	0.23	0.31	0.28	5.65	0.12	0.08
Na2O	%	< 0.05	< 0.05	3.04	0.43	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.6	< 0.05	< 0.05
K2O	%	1.92	2.17	0.64	0.26	0.73	0.14	2.11	0.03	2.23	1.1	2.73	3.37
TiO2	%	0.51	0.52	0.91	1.17	1.57	0.73	0.95	0.91	1.59	0.95	0.16	0.17
P2O5	%	0.1	0.11	0.07	0.09	0.1	0.09	0.13	0.22	0.2	0.08	0.04	0.06
MnO	%	0.28	0.16	0.3	0.9	0.31	1.14	0.87	0.43	0.18	0.29	0.13	0.06
Cr2O3	%	0.02	0.16	0.05	0.03	0.07	0.22	0.29	0.08	0.05	0.03	< 0.01	< 0.01
V2O5	%	0.02	0.01	0.03	0.06	0.09	0.03	0.04	0.04	0.08	0.06	< 0.01	0.01
LOI	%	4.56	4.46	1.05	2.17	11.4	10.6	9.67	9.07	1.2	2.64	4.53	3.22
Sum	%	99.8	99.6	99.6	100.3	99.8	99.7	99.2	100.2	99.8	100	99.8	100.6

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]Whole Rock Table 3
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the percentage of a species is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.

Knight Piésold
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TABLE 4

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

WHOLE ROCK ANALYSIS RESULTS FOR OVERBURDEN AND BALLAST SAMPLES

Parameter	Units	SA1	SC2	SC4	SC27	SC28	SC50	SC51	BC1	BC8	BC9	BC10	BC11	BC12
SiO2	%	70.7	90.9	94.5	60	52.6	67.3	69.3	72.8	63.1	48.9	72.7	71.8	70.2
Al2O3	%	14.1	3.02	1.75	3.49	3.97	5.45	6.47	13.6	16.7	16.8	14.1	15	14.5
Fe2O3	%	2.33	1.38	0.83	1.67	3.4	1.01	1.55	1.95	6.15	13.5	1.55	2.13	2.75
MgO	%	0.6	0.38	0.39	4.49	6.49	3.13	2.07	0.35	3.91	4.46	0.38	0.68	0.78
CaO	%	1.45	0.44	0.4	12.8	13.2	8.95	7.88	1.54	0.19	9.93	1.77	2.6	1.74
Na2O	%	3.36	0.79	0.1	0.29	0.47	0.67	0.99	4.05	< .05	2.23	3.93	4.77	3.36
K2O	%	5.12	0.89	0.62	1.5	1.28	2.66	2.87	3.61	6.17	1.2	3.27	1.96	5.06
TiO2	%	0.26	0.07	0.03	0.08	0.13	0.07	0.13	0.14	0.6	1.59	0.12	0.17	0.24
P2O5	%	0.08	0.03	0.02	0.02	0.04	0.04	0.05	0.04	0.13	0.14	0.02	0.04	0.13
MnO	%	0.03	0.01	< .01	< .01	0.02	0.01	0.02	0.05	0.07	0.19	0.03	0.04	0.03
Cr2O3	%	0.02	0.06	0.06	0.04	0.03	0.04	0.03	< .01	< .01	< .01	< .01	0.02	< .01
V2O5	%	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01	0.06	< .01	< .01	< .01
LOI	%	0.55	0.26	0.35	14.6	17.2	9.97	8.15	0.53	2.2	1.12	0.39	0.48	0.52
Sum	%	98.6	98.2	99.1	99	98.9	99.3	99.5	98.6	99.2	100.1	98.2	99.7	99.4

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]Whole Rock Results 4
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.

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Revision 0
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TABLE 5

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

TOTAL ELEMENTS ANALYSIS RESULTS FOR WASTE ROCK SAMPLES

Parameter	Units	ARD 1 Gneiss	ARD 2 Gneiss	ARD 3 Gneiss	ARD 4 Gneiss	ARD 5 Gneiss	ARD 6 Gneiss	ARD 7 Gneiss	ARD 8 Gneiss	ARD 9 Gneiss	ARD 10 Amphibolite/Tuff	ARD 11 Amphibolite/Tuff	ARD 12 Amphibolite
Ag	µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Al	µg/g	120000	85000	58000	76000	74000	50000	57000	71000	72000	80000	73000	92000
As	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Ba	µg/g	2200	490	1700	1700	1500	1200	1400	2000	2100	30	12	200
Be	µg/g	5.2	1	4.9	0.48	0.56	0.52	1.1	0.9	1	0.77	19	5.1
Bi	µg/g	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Ca	µg/g	1700	15000	1400	2600	1900	1300	720	930	860	270	250	1300
Cd	µg/g	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	1.1	0.5	1
Co	µg/g	7.1	12	6.4	8.3	9.6	8.8	5.5	6	5	56	43	51
Cr	µg/g	12	8	12	12	12	12	8	10	9	360	250	370
Cu	µg/g	22	6.3	37	5.5	14	10	2.8	15	21	62	16	41
Fe	µg/g	89000	44000	34000	42000	48000	43000	35000	29000	31000	120000	55000	110000
K	µg/g	65000	25000	31000	45000	36000	33000	32000	35000	34000	6100	3500	4900
Li	µg/g	5	10	< 3	11	5	4	< 3	< 3	< 3	130	27	30
Mg	µg/g	14000	12000	10000	14000	14000	12000	8400	10000	12000	42000	74000	120000
Mn	µg/g	440	780	260	550	610	370	350	420	560	680	680	3400
Mo	µg/g	5	4	8	< 2	2	3	4	4	43	< 2	4	< 2
Ni	µg/g	7	22	9	9	15	11	6	7	7	290	130	210
Pb	µg/g	34	25	26	22	17	14	15	16	20	18	14	11
Sb	µg/g	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
Se	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sn	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr	µg/g	13	170	15	31	21	13	15	23	16	5.2	1.7	4.5
Ti	µg/g	2700	3100	2800	3200	2100	1900	1300	2500	2200	780	1000	1300
Tl	µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
U	µg/g	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75
V	µg/g	47	76	31	57	54	50	28	26	27	200	83	330
Y	µg/g	10	6.3	8.4	16	12	10	6.5	9.6	10	1.9	10	5.5
Zn	µg/g	16	53	14	61	66	29	38	37	41	109	90	95

Parameter	Units	ARD 13 Greywacke	ARD 14 Amphibolite	ARD 15 Amphibolite	ARD 16 Amphibolite	ARD 17 Amphibolite	ARD 18 Schist	ARD 19 Schist	ARD 20 Tuff	ARD 21 Gneiss	ARD 22 Tuff	ARD 23 Amphibolite	ARD 24 Amphibolite
Ag	µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Al	µg/g	69000	63000	93000	76000	130000	90000	110000	87000	68000	87000	72000	72000
As	µg/g	7	78	30	< 6	< 6	< 6	11	< 6	< 6	< 6	< 6	< 6
Ba	µg/g	340	250	170	31	30	15	340	5	200	90	590	300
Be	µg/g	1.6	1.3	0.12	0.099	2.1	3.9	3.1	0.5	0.34	0.1	2.6	1.3
Bi	µg/g	< 3	< 3	< 3	< 3	< 3	< 3	< 3	3	< 3	< 3	< 3	< 3
Ca	µg/g	750	1200	65000	7900	1500	1300	1500	1900	1800	37000	750	570
Cd	µg/g	0.8	2	4.9	1.4	1	1	1.1	2.1	0.7	1.1	0.5	0.4
Co	µg/g	21	49	59	49	85	37	45	48	56	55	4.4	8.2
Cr	µg/g	54	950	260	170	350	1300	1700	440	200	230	13	8
Cu	µg/g	12	180	96	130	120	8.7	130	170	90	120	4.1	1.6
Fe	µg/g	74000	52000	49000	130000	100000	120000	120000	200000	65000	91000	47000	56000
K	µg/g	14000	16000	7000	2700	7900	1400	15000	200	16000	7800	21000	25000
Li	µg/g	< 3	12	< 3	7	33	< 3	6	6	17	18	13	8
Mg	µg/g	37000	35000	18000	36000	110000	140000	96000	82000	27000	61000	48000	17000
Mn	µg/g	2000	1100	2200	6400	2300	8500	6700	3000	1100	2000	860	420
Mo	µg/g	2	29	< 2	7	3	< 2	2	< 2	3	3	2	9
Ni	µg/g	48	370	180	130	240	140	180	170	210	140	13	12
Pb	µg/g	29	230	68	9	12	16	25	12	8	10	25	17
Sb	µg/g	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
Se	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sn	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr	µg/g	12	5.2	140	10	5.8	4.5	9.9	8.6	16	74	35	28
Ti	µg/g	2000	2400	5300	4500	1300	2000	2300	520	4200	3200	900	900
Tl	µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
U	µg/g	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75
V	µg/g	57	69	270	320	460	150	190	250	370	300	15	13
Y	µg/g	9.8	6.4	17	31	4	11	9.1	13	3.2	17	1.8	1.1
Zn	µg/g	60	260	490	120	100	180	190	180	41	150	39	15

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]Bulk Metal Table 5
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. Dash indicates there were no available results.
3. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.

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TABLE 6

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

TOTAL ELEMENTS ANALYSIS RESULTS FOR OVERBURDEN AND BALLAST SAMPLES

Parameter	Units	SA1	SC2	SC4	SC27	SC28	SC50	SC51	BC1	BC8	BC9	BC10	BC11	BC12
Ag	µg/g	0.7	0.7	< 0.6	1.1	0.7	0.9	1.3	< 5	< 5	4	< 5	< 5	< 5
Al	µg/g	70000	16000	8800	18000	20000	27000	32000	69000	72000	83000	68000	78000	76000
As	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Ba	µg/g	950	190	120	220	150	470	500	880	1200	93	570	750	890
Be	µg/g	1.5	0.36	0.18	0.38	0.4	0.48	0.58	1.6	0.88	0.3	0.78	0.86	1.3
Bi	µg/g	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 3	< 3	< 2	< 3	< 3	< 3
Ca	µg/g	8900	3000	2700	84000	88000	58000	51000	10000	1200	56000	9700	15000	11000
Cd	µg/g	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.6	< 0.1	< 0.1	< 0.1
Co	µg/g	4.4	3	1.5	2.4	3.9	1.5	2.2	2.3	7.9	34	1.9	3.2	3.8
Cr	µg/g	89	160	160	190	190	130	170	42	9	39	12	18	13
Cu	µg/g	7.8	5.7	5.1	7.2	5.6	6.6	6.7	690	62	300	74	41	13
Fe	µg/g	16000	8800	5500	11000	21000	6400	9600	13000	44000	90000	11000	15000	20000
K	µg/g	40000	6500	5200	11000	8600	19000	21000	27000	39000	12000	24000	19000	38000
Li	µg/g	5	< 3	< 3	7	5	< 3	< 3	25	10	5	5	6	7
Mg	µg/g	3900	2400	1700	27000	39000	18000	12000	2300	22000	23000	1900	4000	4500
Mn	µg/g	180	110	67	140	240	110	150	350	440	1100	160	240	250
Mo	µg/g	< 2	< 2	2	< 2	< 2	< 2	< 2	28	15	2	3	4	6
Na	µg/g	-	-	-	-	-	-	-	-	-	-	-	-	-
Ni	µg/g	8	19	11	12	13	8	8	19	8	43	4	8	8
Pb	µg/g	30	8	6	9	9	15	18	76	35	10	29	25	36
Sb	µg/g	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2	3	< 2	< 2	< 2
Se	µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 6	< 6	< 5	< 6	< 6	< 6
Sn	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	19	7	< 6	< 6	< 6	< 6
Sr	µg/g	230	61	34	93	91	120	140	250	21	210	200	320	280
Ti	µg/g	900	310	170	390	550	300	520	720	2900	5500	570	970	1290
Tl	µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
U	µg/g	< 40	< 40	< 40	< 40	< 40	< 40	< 40	< 55	< 42	< 50	< 58	< 58	< 42
V	µg/g	24	13	6	14	30	8.3	14	9.3	29	280	11	16	26
Y	µg/g	9.3	2.7	2	3.4	4.3	3.2	3.9	5.6	12	22	3	1.5	9.2
Zn	µg/g	27	12	7	10	17	11	16	210	190	100	33	39	34

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]Bulk Metal Results 6
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. Dash indicates no available results for that element.

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TABLE 7

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

X-RAY DIFFRACTION RESULTS FOR WASTE ROCK SAMPLES

Sample I.D.	Crystalline Mineral Assemblage (relative proportions based on peak height)			
	Major	Moderate	Minor	Trace
ARD 1 Gneiss	quartz mica		chlorite	* hematite
ARD 2 Gneiss	quartz mica	plagioclase		*maghemite * chlorite, * magnetite
ARD 3 Gneiss	quartz mica			* chlorite, * hematite * potassium-feldspar
ARD 4 Gneiss	quartz mica			* chlorite, * maghetite * potassium-feldspar
ARD 5 Gneiss	quartz	mica, chlorite		* potassium-feldspar
ARD 6 Gneiss	quartz	mica, chlorite		* potassium-feldspar
ARD 7 Gneiss	quartz	mica, chlorite		* potassium - feldspar
ARD 8 Gneiss	quartz	mica		* chlorite * potassium-feldspar
ARD 9 Gneiss	quartz	mica		
ARD 10 Amphibolite/Tuff		chlorite quartz		* amphibole, * potassium-feldspar
ARD 11 Amphibolite/Tuff	chlorite, quartz			* mica, * hematite * goethite, * magnetite
ARD 12 Amphibolite	chlorite		mica, rutile	
ARD 13 Greywacke	quartz	chlorite, mica		
ARD 14 Amphibolite	quartz	mica, chlorite		* ilmenite * maghemite
ARD 15 Amphibolite		plagioclase amphibole, quartz		* mica, * pyroxene
ARD 16 Amphibolite	quartz, chlorite		garnet, plagioclase	* pyroxene
ARD 17 Amphibolite	chlorite		mica	
ARD 18 Schist	chlorite			
ARD 19 Schist	chlorite	mica		* pyrite
ARD 20 Tuff	chlorite		quartz	* garnet
ARD 21 Gneiss	quartz	mica, cordierite, andalusite	chlorite	
ARD 22 Tuff	amphibole	chlorite, plagioclase	quartz, mica	
ARD 23 Amphibolite	quartz	mica	chlorite	
ARD 24 Amphibolite	quartz	mica	chlorite	

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]XRD Results Table 7
16-Mar-07

Notes:

1. Laboratory results provided by SGS Mineral Services in Lakefield, ON.
2. * Tentative identification due to low concentrations, diffraction line overlap or poor crystallinity.
3. Mineral proportions are based on relative peak heights and may be strongly influenced by crystallinity, structural group or preferred

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TABLE 8

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

X-RAY DIFFRACTION RESULTS FOR OVERBURDEN AND BALLAST SAMPLES

Sample I.D.	Crystalline Mineral Assemblage (relative proportions based on peak height)			
	Major	Moderate	Minor	Trace
SA1	quartz	plagioclase, potassium-feldspar, chlorite	mica, amphibole	* pyroxene
SC2	quartz		plagioclase, potassium-feldspar	* amphibole
SC4	quartz		plagioclase, potassium-feldspar	* dolomite * mica, * amphibole
SC27	quartz		plagioclase, potassium-feldspar dolomite, calcite	* amphibole
SC28	dolomite	quartz	potassium-feldspar plagioclase,	* calcite
SC50	quartz	potassium-feldspar	dolomite, calcite plagioclase,	* mica, * chlorite * amphibole
SC51	quartz	potassium-feldspar	dolomite, calcite plagioclase,	* mica, * chlorite * amphibole
BC1	quartz	plagioclase, potassium-feldspar	mica	* chlorite
BC8	mica, quartz		chlorite	
BC9	anorthite	pyroxene, quartz	chlorite, mica, amphibole, magnetite, potassium-feldspar	* goethite, * ilmenite
BC10	quartz, albite	potassium-feldspar	pyroxene, mica	
BC11	albite, quartz		mica, chlorite, potassium-feldspar	
BC12		albite, quartz, potassium-feldspar	pyroxene, mica	* chlorite, * magnetite

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]XRD Results Table 8
16-Mar-07

Notes:
1. Laboratory results provided by SGS Mineral Services in Lakefield, ON.
2. * Tentative identification due to low concentrations, diffraction line overlap or poor crystallinity.
3. Mineral proportions are based on relative peak heights and may be strongly influenced by crystallinity, structural group or preferred orientations.

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TABLE 9

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

SPLP 1312 RESULTS FOR WASTE ROCK SAMPLES

Parameter	Units	ARD 1 Gneiss	ARD 2 Gneiss	ARD 3 Gneiss	ARD 4 Gneiss	ARD 5 Gneiss	ARD 6 Gneiss	ARD 7 Gneiss	ARD 8 Gneiss	ARD 9 Gneiss	ARD 10 Amphibolite/Tuff	ARD 11 Amphibolite/Tuff	ARD 12 Amphibolite
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100
Ext Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1
Ext/volume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Final pH	units	8.54	8.52	7.61	8.75	8.17	7.8	7.6	7.17	7.39	8.3	8.49	8.6
Al	mg/L	9.04	8.03	8.16	9.03	5.41	7.2	6.64	7.79	7.34	7.43	1.89	13.2
As	mg/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Ag	mg/L	0.0001	0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	1.43	1.28	1.37	1.44	1.21	1.51	1.35	1.64	1.45	0.952	0.809	1.3
Be	mg/L	0.0005	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0007	0.0006
B	mg/L	0.672	0.635	0.709	0.67	0.588	0.795	0.834	0.845	0.763	0.693	0.598	1.1
Bi	mg/L	0.00036	0.00013	0.00012	0.00007	0.00007	0.00005	0.0001	0.00006	0.00003	0.00003	< 0.00002	< 0.00002
Ca	mg/L	1.06	2.08	1.62	1.71	1.25	1.27	0.9	0.96	0.94	1.23	1.01	1.7
Cd	mg/L	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006
Co	mg/L	0.0018	0.00269	0.00161	0.00151	0.00141	0.00172	0.00144	0.00177	0.00126	0.00285	0.000585	0.00479
Cr	mg/L	0.0036	0.0015	0.0017	0.0017	0.0015	0.0016	0.0016	0.0015	0.0018	0.0074	0.004	0.0153
Cu	mg/L	0.0021	0.0014	0.0035	0.0012	0.0098	0.0044	0.0021	0.0041	0.0038	0.0029	0.0009	0.0099
Fe	mg/L	8.21	7.46	6.18	5.9	5.62	6.94	6.1	5.83	5.67	3.47	0.65	14.3
K	mg/L	5.67	5.18	5.37	5.58	2.86	4.45	2.76	5.44	4.5	1.27	0.56	0.96
Li	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	< 0.002	< 0.002
Mg	mg/L	3.2	2.78	2.36	3.08	2.64	3.13	2.22	2.38	2.69	3.59	1.98	18.1
Mn	mg/L	0.0654	0.137	0.0354	0.0517	0.0563	0.0659	0.0662	0.0823	0.0959	0.041	0.0101	0.35
Mo	mg/L	0.00079	0.00047	0.00034	0.00037	0.0003	0.00106	0.00049	0.00068	0.00049	0.00035	0.00066	0.00018
Na	mg/L	11.2	10.7	10.6	11	9.79	11.1	11.1	11.5	11.2	11	8.78	15.4
Ni	mg/L	0.002	0.0042	0.0013	0.0013	0.0012	0.0025	0.0014	0.0014	0.0012	0.0102	0.0008	0.0114
P	mg/L	0.1	0.04	0.07	0.04	0.03	0.05	0.04	0.06	0.05	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.0038	0.0031	0.00403	0.00238	0.00143	0.00173	0.00165	0.00301	0.00461	0.00072	0.00114	0.00119
Sb	mg/L	0.0008	0.0006	0.0005	0.0003	0.0024	0.0021	0.0013	0.0012	0.0013	0.0017	0.0007	0.0006
Se	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Sn	mg/L	0.0051	0.0034	0.0025	0.0019	0.0013	0.0013	0.0009	0.0009	0.0008	0.0007	0.0008	0.0007
Sr	mg/L	0.0107	0.0176	0.0109	0.013	0.011	0.0118	0.0095	0.011	0.0099	0.0112	0.009	0.0136
Ti	mg/L	0.324	0.635	0.313	0.284	0.111	0.177	0.0751	0.28	0.241	0.0209	0.0217	0.0327
Tl	mg/L	0.0004	0.0003	0.0002	0.0002	< 0.0001	0.0001	< 0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	0.00112	0.00053	0.00111	0.00056	0.00034	0.00083	0.00073	0.00131	0.00215	0.00006	0.00006	0.00004
V	mg/L	0.006	0.0136	0.00398	0.00589	0.0045	0.00529	0.00264	0.00285	0.00268	0.00278	0.00126	0.014
W	mg/L	0.00021	0.00139	0.00103	0.00074	0.00044	0.00041	0.00031	0.00028	0.00028	0.00019	0.00014	< 0.00007
Y	mg/L	0.0015	0.00187	0.00155	0.00277	0.00183	0.00266	0.000959	0.00353	0.0044	0.000194	0.000929	0.000547
Zn	mg/L	0.326	0.358	0.323	0.347	0.273	0.447	0.446	0.474	0.397	0.316	0.279	0.603

Parameter	Units	ARD 13 Greywacke	ARD 14 Amphibolite	ARD 15 Amphibolite	ARD 16 Amphibolite	ARD 17 Amphibolite	ARD 18 Schist	ARD 19 Schist	ARD 20 Tuff	ARD 21 Gneiss	ARD 22 Tuff	ARD 23 Amphibolite	ARD 24 Amphibolite
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100
Ext Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1
Ext/volume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Final pH	units	8.06	8.35	9.77	7.53	8.55	8.49	8.44	8.46	8.88	9.62	9.28	8.81
Al	mg/L	4.29	3.69	2.26	0.44	7.5	3.12	1.29	3.67	8.16	2.92	2.79	4.74
As	mg/L	< 0.005	< 0.005	0.007	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	0.978	0.964	0.723	0.531	0.975	0.551	0.519	0.875	1.32	0.691	0.779	1.01
Be	mg/L	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
B	mg/L	0.833	0.726	0.473	0.468	0.807	0.383	0.442	0.726	0.526	0.332	0.393	0.472
Bi	mg/L	< 0.00002	0.00011	0.00008	0.00029	0.00012	< 0.00002	< 0.00002	0.00008	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Ca	mg/L	1.25	1.56	9.48	3.45	2.48	2.22	3.14	1.08	1.02	5.79	1.27	0.8
Cd	mg/L	< 0.00006	0.0001	0.00027	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006
Co	mg/L	0.00232	0.00248	0.00125	0.000728	0.00272	0.00112	0.00045	0.00267	0.00834	0.00096	0.00036	0.00117
Cr	mg/L	0.0046	0.0032	0.0055	0.001	0.0072	0.0447	0.0176	0.0152	0.031	0.0048	0.001	0.0012
Cu	mg/L	0.0037	0.0195	0.0044	0.0034	0.0069	0.0013	0.0016	0.0131	0.0107	0.0035	0.001	0.0008
Fe	mg/L	7.7	2.25	1.22	0.32	5.82	3.45	1.4	8.74	10.7	1.84	2.71	5.97
K	mg/L	1.21	1.6	0.59	0.8	0.78	0.3	0.42	0.57	3.96	0.79	1.45	1.88
Li	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L	5.3	3.17	0.981	2.61	8.61	8.54	3.47	4.66	4.19	1.74	3.75	2.19
Mn	mg/L	0.599	0.0457	0.0406	0.0106	0.178	0.199	0.0851	0.134	0.0843	0.0223	0.0437	0.0471
Mo	mg/L	0.00103	0.00458	0.00062	0.00387	0.00067	0.00793	0.00132	0.00107	0.00042	0.00012	0.00032	0.00062
Na	mg/L	12.9	11.6	9.31	8.62	13.2	6.5	6.44	11.4	8.06	7.64	7.22	8.22
Ni	mg/L	0.0047	0.0148	0.0082	0.0039	0.0059	0.0059	0.0034	0.0082	0.0342	0.0026	0.0009	0.0018
P	mg/L	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01	0.06	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.00185	0.0113	0.0158	0.00094	0.00073	0.0012	0.0008	0.0007	0.0034	0.0019	0.0035	0.0019
Sb	mg/L	0.0008	0.0027	0.0046	0.0004	0.0003	0.0014	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Se	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Sn	mg/L	0.0007	0.0006	0.0007	0.0047	0.0033	0.0003	< 0.0003	0.0026	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Sr	mg/L	0.0108	0.012	0.0176	0.0106	0.0155	0.0177	0.024	0.0102	0.0121	0.0133	0.0106	0.0098
Ti	mg/L	0.0663	0.049	0.065	0.0178	0.009	0.0098	0.0063	0.0109	0.345	0.0582	0.0256	0.0592
Tl	mg/L	< 0.0001	< 0.0001	< 0.0001	0.0003	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	0.00017	0.00011	0.00002	0.00021	0.00007	0.00011	0.00004	0.00004	< 0.00002	< 0.00002	< 0.00002	< 0.00002
V	mg/L	0.00329	0.00221	0.0138	0.00228	0.00799	0.0045	0.0023	0.0056	0.0575	0.0099	0.0023	0.0012
W	mg/L	0.00024	0.00034	0.00123	0.0001	0.00093	< 0.00007	< 0.00007	0.0004	< 0.00007	< 0.00007	< 0.00007	< 0.00007
Y	mg/L	0.000494	0.000327	0.000274	0.000077	0.000203	0.00032	0.00011	0.00023	0.00045	0.00042	0.00009	0.00013
Zn	mg/L	0.308	0.331	0.219	0.22	0.396	0.183	0.213	0.33	0.31	0.14	0.188	0.239

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]SPLP 1312 Table 9
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.

NB102-00181/4
Revision 0
March 16, 2007

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TABLE 10

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

SPLP 1312 RESULTS FOR OVERBURDEN AND BALLAST SAMPLES

Parameter	Units	SA1	SC2	SC4	SC27	SC28	SC50	SC51	BC1	BC8	BC9	BC10	BC11	BC12
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100	100
Ext.Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1	1
ExtVolume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Final pH	units	8.1	7.74	8.88	9.53	9.55	9.7	9.62	9.42	7.72	9.24	9.29	9.25	8.91
Al	mg/L	0.739	0.373	0.39	0.143	0.106	0.143	0.203	6.64	4.05	3.51	2.65	2.94	3.3
As	mg/L	0.0026	0.0012	0.0016	0.0016	0.001	0.0009	0.0006	< 0.005	< 0.005	0.0006	< 0.005	< 0.005	< 0.005
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0003	0.0003	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	0.264	0.251	0.209	0.318	0.364	0.284	0.303	0.434	0.44	0.359	0.313	0.347	0.313
Be	mg/L	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
B	mg/L	0.033	0.049	0.012	0.022	0.027	0.012	0.018	0.051	0.484	0.599	0.42	0.458	0.48
Bi	mg/L	< 0.00002	0.00009	0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00006	0.0012	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Ca	mg/L	0.81	1.11	2.34	8.36	10.4	7.83	8.51	7.2	1.33	5.62	4.5	3.05	2.82
Cd	mg/L	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	0.00017	< 0.0003	< 0.00006	< 0.00006	< 0.00006	< 0.0003
Co	mg/L	0.00038	0.000324	0.00021	0.00006	0.00006	0.000021	0.000072	0.0012	0.00157	0.00382	0.00067	0.00087	0.00079
Cr	mg/L	0.0008	0.0013	0.001	0.0004	< 0.0003	< 0.0003	0.0003	0.0015	0.0033	0.0031	0.0031	0.0042	0.0031
Cu	mg/L	0.0024	0.001	0.0009	0.0004	0.0006	0.0004	0.0008	0.701	0.0517	0.0479	0.0419	0.0338	0.0115
Fe	mg/L	0.79	0.5	0.44	0.09	0.14	< 0.01	0.15	3.17	4.28	5.7	1.51	2.02	1.84
K	mg/L	0.34	0.31	0.28	0.08	0.09	0.02	0.1	3.62	3.4	1.4	1.3	1.54	2.26
Li	mg/L	0.0009	< 0.0007	< 0.0007	< 0.0007	0.001	< 0.0007	< 0.0007	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L	0.575	0.705	1.35	1.28	2.78	1.3	1.35	1.51	2.68	1.87	0.698	1.47	1.28
Mn	mg/L	0.0123	0.0107	0.00792	0.00167	0.00253	0.00014	0.00379	0.188	0.0485	0.0771	0.0349	0.0569	0.0595
Mo	mg/L	0.00043	0.00008	0.00007	0.00005	0.00009	0.00007	0.00007	0.00435	0.00905	0.00226	0.00081	0.00115	0.00502
Na	mg/L	1.45	1.02	0.65	0.72	1.1	0.87	1.03	5.85	21.1	23.2	20.3	21.1	24.2
Ni	mg/L	< 0.0007	0.0015	0.0011	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.002	0.0011	0.0029	< 0.0007	0.0017	0.0021
P	mg/L	0.05	0.11	0.09	0.03	0.02	0.01	0.04	0.05	0.1	0.11	0.04	0.04	0.07
Pb	mg/L	0.00104	0.00051	0.00051	0.00005	< 0.00002	< 0.00002	0.0005	0.0596	0.0117	0.00035	0.002	0.0011	0.0051
Sb	mg/L	0.001	0.0003	0.0004	0.0007	0.0005	0.0003	0.0004	0.0003	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Se	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Sn	mg/L	0.0003	0.0003	0.0005	0.0004	0.0007	< 0.0003	0.0003	0.0105	0.0011	0.0009	0.001	0.001	0.0007
Sr	mg/L	0.0064	0.0028	0.0027	0.0076	0.0088	0.0086	0.006	0.107	0.016	0.0295	0.0193	0.02	0.0239
Ti	mg/L	0.0424	0.0137	0.0136	0.0029	0.0042	0.0003	0.0048	0.267	0.203	0.0558	0.135	0.222	0.193
Tl	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	0.00021	0.00013	0.00007	0.00003	0.00005	0.00004	0.00008	0.00305	0.00089	0.00003	0.00021	0.00007	0.00084
V	mg/L	0.00156	0.00166	0.00159	0.00097	0.00109	0.00078	0.00127	0.0022	0.0023	0.00593	0.0024	0.003	0.0037
W	mg/L	0.00007	0.00011	0.0001	0.00007	< 0.00007	< 0.00007	< 0.00007	0.00023	0.00026	< 0.00007	< 0.00007	< 0.00007	0.00015
Y	mg/L	0.000774	0.00036	0.000318	0.000057	0.000065	0.000009	0.000125	0.00162	0.00493	0.00113	0.00077	0.0003	0.00104
Zn	mg/L	0.0235	0.0324	0.0045	0.0074	0.0117	0.0018	0.0036	0.36	0.205	0.175	0.169	0.203	0.15

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]SPLP 1312 Results 10
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Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.

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Revision 0
March 16, 2007

TABLE 11

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

TCLP 1311 RESULTS FOR WASTE ROCK SAMPLES

Parameter	Units	ARD 1 Gneiss	ARD 2 Gneiss	ARD 3 Gneiss	ARD 4 Gneiss	ARD 5 Gneiss	ARD 6 Gneiss	ARD 7 Gneiss	ARD 8 Gneiss	ARD 9 Gneiss	ARD 10 Amphibolite/Tuff	ARD 11 Amphibolite/Tuff	ARD 12 Amphibolite
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100
Ext Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1
Ext Volume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
pH	units	4.94	4.9	4.91	4.93	4.93	4.93	4.93	4.93	4.94	4.94	4.91	4.96
Al	mg/L	0.238	0.214	0.213	0.396	0.473	0.332	0.517	0.286	0.223	0.42	0.337	0.07
As	mg/L	0.0015	0.0007	0.0012	0.001	0.0011	0.0012	0.0016	0.0013	0.0032	0.0121	0.0043	0.0012
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	3.03	2.84	3.3	3.07	3.07	2.61	2.73	3.09	3.01	2.71	2.67	2.97
Be	mg/L	0.0007	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0004	< 0.0004	< 0.0004	< 0.0004	0.0004	0.0057	< 0.0004
B	mg/L	0.842	0.759	0.629	0.855	0.784	0.813	0.784	0.806	0.89	0.88	0.865	0.755
Bi	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Ca	mg/L	2.39	4.52	2.17	5.46	3.27	2.69	1.29	1.48	1.76	5.21	3.52	9.1
Cd	mg/L	0.00009	< 0.00006	0.00021	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	0.0012	< 0.00006	< 0.00006
Co	mg/L	0.000951	0.000917	0.00122	0.00104	0.00107	0.00154	0.00258	0.0054	0.00128	0.00446	0.00512	0.000647
Cr	mg/L	0.0045	0.0031	0.0032	0.0031	0.0035	0.0034	0.0047	0.0062	0.0027	0.0051	0.0057	0.0014
Cu	mg/L	0.0004	0.0005	0.0002	0.0003	0.001	0.0001	0.0008	0.0004	0.0001	0.001	0.0007	0.0006
Fe	mg/L	3.24	2.47	2.05	2.56	3.36	2.82	2.73	2.23	1.95	2.49	1.53	0.17
K	mg/L	20.7	21.9	19.9	19.3	13.5	17.1	10.5	19.2	18.4	13	6.9	13.3
Li	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.01	< 0.002	< 0.002
Mg	mg/L	1.71	1.13	0.966	2.07	2.35	1.84	1.67	1.14	1.34	9.41	6.07	44.4
Mn	mg/L	0.0705	0.0746	0.029	0.0626	0.083	0.0583	0.0886	0.104	0.0717	0.195	0.145	0.348
Mo	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0011	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Na	mg/L	1100	1100	1170	1070	1140	1030	1100	1100	1110	1030	1060	980
Ni	mg/L	0.0049	0.0032	0.0031	0.004	0.0039	0.0062	0.0077	0.0117	0.0038	0.0133	0.008	0.0045
P	mg/L	0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.00401	0.00255	0.00424	0.00138	0.00078	0.00131	0.00111	0.00324	0.00656	0.0475	0.00648	0.00006
Sb	mg/L	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Se	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Sn	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Sr	mg/L	0.0233	0.0315	0.0196	0.031	0.027	0.0201	0.015	0.0172	0.0169	0.0606	0.0252	0.0728
Ti	mg/L	0.0004	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0002	< 0.0002	< 0.0002	0.0005	< 0.0002
Tl	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0002	< 0.0001	< 0.0001
U	mg/L	0.00543	0.00346	0.00558	0.00349	0.00172	0.00379	0.00566	0.00345	0.00524	0.00023	0.0215	0.00038
V	mg/L	0.0008	0.00225	0.00091	0.00115	0.00074	0.00101	0.00074	0.00101	0.00111	0.00052	0.00074	0.00056
W	mg/L	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0011	0.0007	0.0003
Y	mg/L	0.00118	0.00131	0.00077	0.00467	0.00642	0.00256	0.00154	0.0031	0.00228	0.000991	0.0054	0.000731
Zn	mg/L	1.66	1.63	1.72	1.66	1.54	1.68	1.67	1.58	1.84	1.96	1.85	1.56

Parameter	Units	ARD 13 Greywacke	ARD 14 Amphibolite	ARD 15 Amphibolite	ARD 16 Amphibolite	ARD 17 Amphibolite	ARD 18 Schist	ARD 19 Schist	ARD 20 Tuff	ARD 21 Gneiss	ARD 22 Tuff	ARD 23 Amphibolite	ARD 24 Amphibolite
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100
Ext Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1
Ext Volume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
pH	units	4.94	4.93	5.14	4.88	4.92	4.91	4.91	4.93	4.9	4.92	4.91	4.9
Al	mg/L	0.149	0.0802	0.304	0.603	0.3	0.613	0.627	0.403	0.611	0.938	0.529	0.807
As	mg/L	0.0031	0.0127	0.0502	0.0016	0.0009	0.0009	0.001	0.0008	0.001	0.0019	0.0022	0.001
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	2.68	3.19	2.91	1.68	2.66	2.71	1.94	2.87	3.09	3.46	2.83	3.28
Be	mg/L	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0004	0.0008	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0006	0.0004
B	mg/L	0.875	0.88	0.664	0.936	0.811	1.04	0.935	0.875	0.929	1.06	0.922	0.927
Bi	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Ca	mg/L	5.19	8.08	211	7.72	16.4	12.9	12.3	6.66	3.71	18.5	4.26	2.99
Cd	mg/L	0.00041	0.00338	0.00223	< 0.00006	< 0.00006	0.00007	< 0.00006	< 0.00006	< 0.00006	0.00018	< 0.00006	< 0.00006
Co	mg/L	0.01186	0.05152	0.00398	0.0771	0.0016	0.0313	0.0207	0.00624	0.00547	0.00835	0.00158	0.00517
Cr	mg/L	0.0028	0.007	0.0044	0.005	0.0036	0.0237	0.032	0.0062	0.0098	0.0099	0.008	0.0063
Cu	mg/L	0.0007	0.0181	0.0028	0.0449	0.0083	0.0454	0.0687	0.0246	0.0067	0.0134	0.001	0.0002
Fe	mg/L	1.16	0.46	3.13	2.97	0.91	3.86	2.67	3.97	5.4	3.96	4.99	7.67
K	mg/L	18.6	25.4	6.92	9.51	8.26	7.95	9.08	8.01	39.3	12.8	22.6	27.3
Li	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L	19.9	19.1	2.28	5.76	19.3	15.7	11.1	28.9	3.61	4.76	14.6	5.44
Mn	mg/L	1.84	0.76	1.92	0.238	0.103	0.496	0.461	0.935	0.11	0.238	0.298	0.146
Mo	mg/L	< 0.0005	< 0.0005	0.001	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Na	mg/L	1120	1070	1170	1190	1170	1160	1170	1110	1200	1180	1140	1170
Ni	mg/L	0.0142	0.0051	0.0358	0.183	0.0066	0.0183	0.0299	0.0235	0.0256	0.0152	0.0078	0.0186
P	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.00207	0.13	0.124	0.00063	0.00038	0.0704	0.0101	0.00024	0.00134	0.241	0.00703	0.00499
Sb	mg/L	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Se	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.004	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Sn	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Sr	mg/L	0.0545	0.0647	0.0681	0.0347	0.0783	0.143	0.126	0.0584	0.0441	0.0378	0.0385	0.0332
Ti	mg/L	< 0.0002	0.0003	0.0004	0.0005	0.0002	0.0003	< 0.0002	0.0004	0.0007	0.0003	< 0.0002	0.0004
Tl	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	0.00073	0.0006	0.00006	0.00017	0.00007	0.00277	0.00276	0.00018	0.00003	0.00007	0.00021	0.00013
V	mg/L	0.00059	0.00062	0.00282	0.00106	0.00066	0.001	0.00028	0.00056	0.00365	0.00134	0.00061	0.00098
W	mg/L	0.0004	< 0.0003	0.0004	0.0004	0.0004	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Y	mg/L	0.000697	0.000316	0.00378	0.00122	0.00156	0.00147	0.00229	0.00112	0.000431	0.00157	0.000567	0.000363
Zn	mg/L	1.79	1.97	1.76	2.07	1.68	4.97	2.01	1.77	1.97	2.15	1.79	1.94

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]TCLP 1311 Table 11
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.
3. Zinc and Lead levels are possibly overrepresented as they are more readily extractable with the acetic acid solution than most other elements.

Knight Piésold
CONSULTING

TABLE 12

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

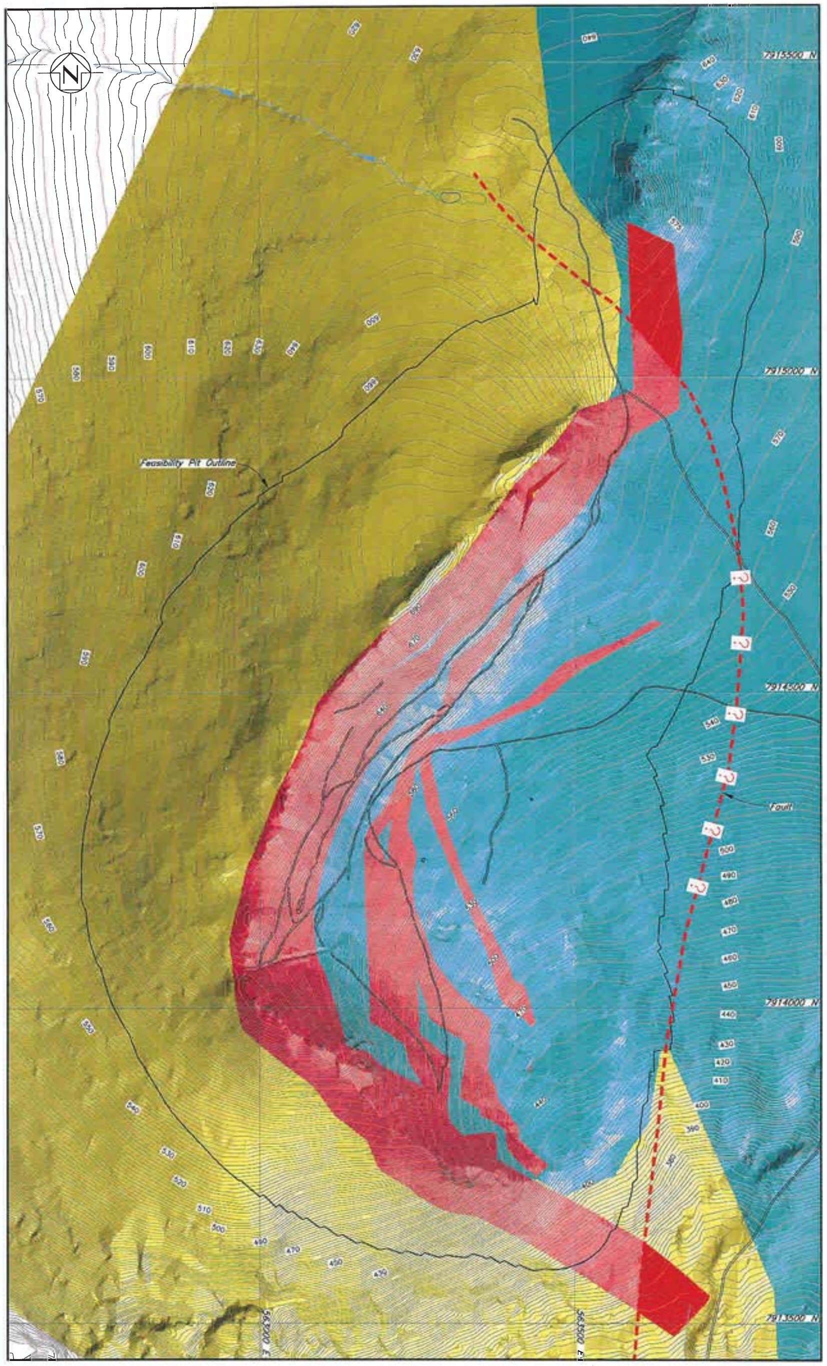
TCLP 1311 RESULTS FOR OVERBURDEN AND BALLAST SAMPLES

Parameter	Units	SA1	SC2	SC4	SC27	SC28	SC50	SC51	BC1	BC8	BC9	BC10	BC11	BC12
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100	100
Ext.Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1	1
ExtVolume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Final pH	units	4.87	4.86	4.98	6.22	5.97	6.19	5.81	5.05	4.89	5	4.97	4.93	4.91
Al	mg/L	0.27	0.89	0.14	0.07	0.08	0.06	0.08	0.93	0.23	0.35	0.26	0.3	0.37
As	mg/L	0.0014	0.0017	0.0012	0.0017	0.0013	0.0009	0.0007	0.0008	0.001	0.0024	< 0.0005	0.0007	0.0007
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	2.43	2.34	2.71	2.62	1.53	2.68	1.89	1.11	1.06	1.03	0.925	1.06	1.15
Be	mg/L	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
B	mg/L	1.01	1.14	0.888	0.573	0.548	0.41	0.603	0.126	0.152	0.61	0.132	0.139	0.183
Bi	mg/L	< 0.00002	0.00003	< 0.00002	0.00002	0.00002	0.00003	0.00003	< 0.00008	< 0.00008	< 0.00002	< 0.00008	< 0.00008	< 0.00008
Ca	mg/L	4.23	6.48	55.2	758	566	742	634	77.7	7.19	46	44.5	16.5	14.8
Cd	mg/L	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	7	< 0.00006	0.00178	0.00058	0.00007	0.00006	< 0.00006	< 0.00006
Co	mg/L	0.0023	0.00216	0.00293	0.000994	0.00163	0.00323	0.00226	0.01139	0.0137	0.0383	0.00717	0.00309	0.00338
Cr	mg/L	0.0019	0.0047	0.0026	0.0014	0.0011	0.0012	0.0013	0.136	0.0301	0.0496	0.0198	0.0613	0.031
Cu	mg/L	0.0042	0.0025	0.0029	0.0013	0.0012	0.0015	0.0014	16	0.487	0.767	1.26	0.488	0.094
Fe	mg/L	0.27	0.81	0.34	< 0.01	0.02	< 0.01	0.01	21	6.21	19.4	4.29	11.4	4.21
K	mg/L	8.6	6.81	5.07	6.2	5.62	5.25	5.73	11.8	13.1	8.7	6.33	9.15	8.78
Li	mg/L	< 0.002	< 0.002	0.002	0.004	0.003	0.004	0.004	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	5.89	3.48	6.65	1.56	3.3	2.02
Mn	mg/L	0.847	2.16	32.6	26.4	117	21.9	36.2	2.78	0.863	2.62	0.896	1.72	1.24
Mo	mg/L	0.052	0.097	0.26	0.265	0.518	0.344	0.343	0.153	0.012	0.0039	0.0035	0.0195	0.0075
Na	mg/L	1370	1370	1280	1280	1370	1280	1420	1290	750	778	750	760	720
Ni	mg/L	0.0012	0.0095	0.0067	0.0033	0.004	0.0043	0.0037	0.0206	0.0126	0.0291	0.0091	0.0143	0.0374
P	mg/L	0.05	0.43	0.16	0.05	0.05	0.05	0.05	0.02	0.04	0.03	0.02	0.02	0.02
Pb	mg/L	0.0025	0.00143	0.00123	0.00016	0.00009	0.00031	0.00025	0.602	0.0173	0.00048	0.0023	0.0016	0.0059
Sb	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.006	< 0.006	0.0003	< 0.006	< 0.006	< 0.006
Se	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.011	0.012	0.008	0.008	0.009
Sn	mg/L	< 0.0003	0.0004	0.0004	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.002	< 0.002	< 0.0003	< 0.002	< 0.002	< 0.002
Sr	mg/L	0.0454	0.0235	0.0398	0.626	0.247	0.449	0.301	0.384	0.0804	0.146	0.0829	0.057	0.112
Ti	mg/L	0.0008	0.0353	0.0005	0.0009	0.0009	0.0005	0.0006	0.0014	0.0025	0.002	0.0014	0.0016	0.003
Tl	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0002	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	0.00143	0.0003	0.00019	0.0006	0.00028	0.00103	0.00158	0.0051	0.001	0.0002	0.0004	0.0003	0.0028
V	mg/L	0.00064	0.00301	0.00173	0.0018	0.00168	0.0016	0.00137	< 0.00006	0.0019	0.00158	0.00202	0.00184	0.00182
W	mg/L	0.00008	0.00012	< 0.00007	0.0001	0.00012	0.0001	0.00011	0.0082	< 0.0003	< 0.00007	< 0.0003	< 0.0003	< 0.0003
Y	mg/L	0.00692	0.00123	0.00332	0.000827	0.000541	0.00233	0.00096	0.00572	0.00264	0.00376	0.0023	0.00053	0.00188
Zn	mg/L	1.2	1.42	1.13	0.745	0.695	0.513	0.745	5.2	0.69	0.89	0.74	0.61	0.57

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]TCLP 1311 Results 12
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.
3. Zinc and Lead levels are possibly overrepresented as they are more readily extractable with the acetic acid solution than most other elements.

NB102-00181/4
Revision 0
March 16, 2007



GEOLOGY LEGEND:

- Footwall (Gneiss)
- Ore Zone (High Grade Hematite, High Grade Magnetite, Banded Iron Formation, Mixed High Grade)
- Hangingwall (Schist, Amphibolite, Mafic Tuff)

LEGEND:

- Stream
- Road
- Inferred Fault Zone

NOTES:

1. Contours are in metres. Contour interval for topography is 2 metres. Contour interval for feasibility pit is 10 metres.
2. Coordinate grid is shown in UTM (NAD 83) Zone 17 and is in metres.

Scale 60 30 0 60 120 180 240 300 Metres

Baffinland

MARY RIVER PROJECT

DEPOSIT No. 1
BEDROCK GEOLOGY
PLAN VIEW

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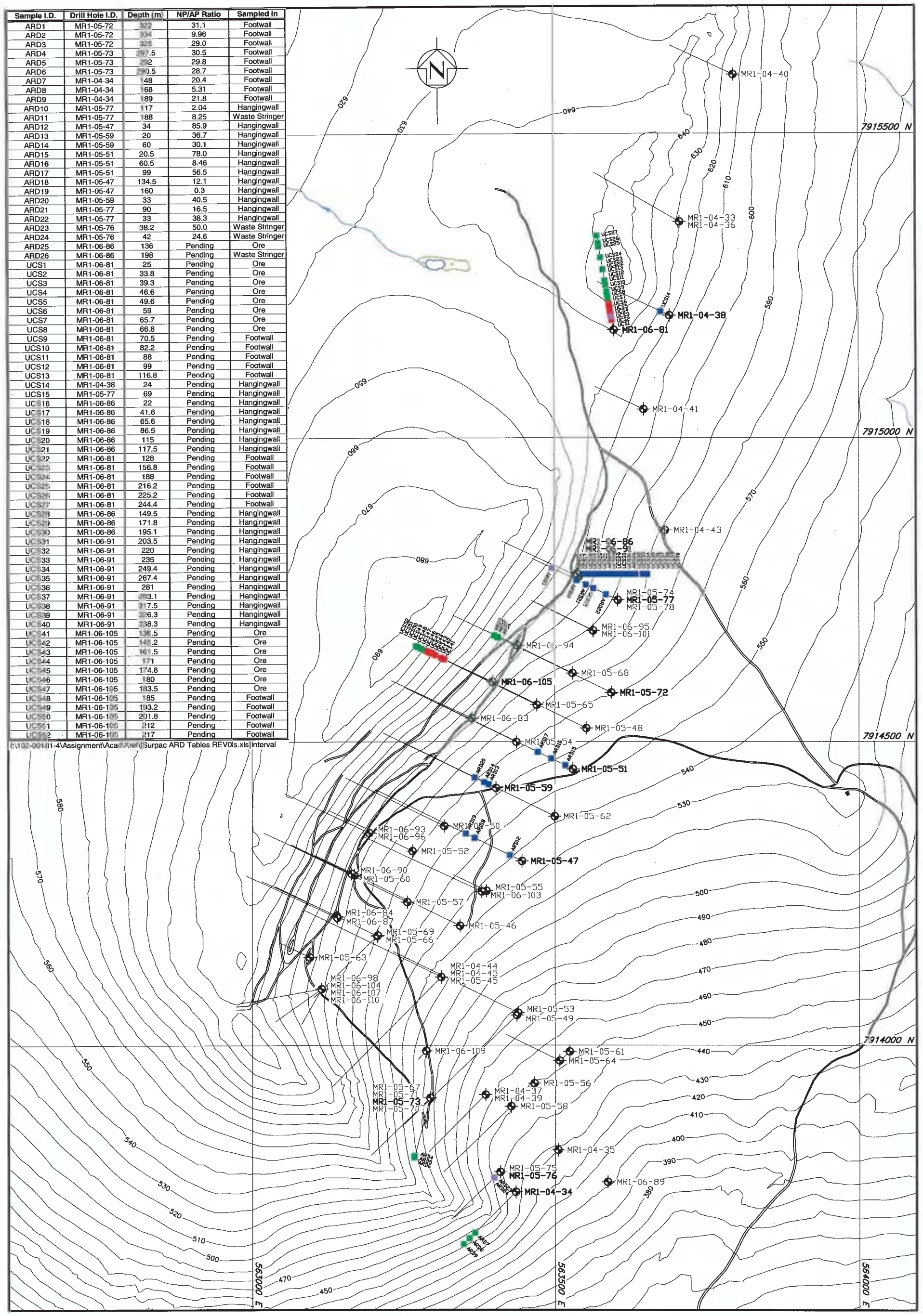
P/A NO.	REF.	REV.
NB102-00181/4	NB07-00232	0

FIGURE 1

XREF FILE(S): TOPO_PIT; DH_ALL_FROM_RQD_DATABASE; WASTE_CHARACTERIZATION IMAGE FILE(S): Baffinland logo-big corp Baffinland logo-big corp

Sample I.D.	Drill Hole I.D.	Depth (m)	NP/AP Ratio	Sampled In
ARD1	MR1-05-72	322	31.1	Footwall
ARD2	MR1-05-72	334	9.96	Footwall
ARD3	MR1-05-72	325	29.0	Footwall
ARD4	MR1-05-73	297.5	30.5	Footwall
ARD5	MR1-05-73	292	29.8	Footwall
ARD6	MR1-05-73	290.5	28.7	Footwall
ARD7	MR1-04-34	148	20.4	Footwall
ARD8	MR1-04-34	168	5.31	Footwall
ARD9	MR1-04-34	189	21.8	Footwall
ARD10	MR1-05-77	117	2.04	Hangingwall
ARD11	MR1-05-77	188	8.25	Waste Stringer
ARD12	MR1-05-47	34	85.9	Hangingwall
ARD13	MR1-05-59	20	36.7	Hangingwall
ARD14	MR1-05-59	60	30.1	Hangingwall
ARD15	MR1-05-51	20.5	78.0	Hangingwall
ARD16	MR1-05-51	60.5	8.46	Hangingwall
ARD17	MR1-05-51	99	56.5	Hangingwall
ARD18	MR1-05-47	134.5	12.1	Hangingwall
ARD19	MR1-05-47	160	0.3	Hangingwall
ARD20	MR1-05-59	33	40.5	Hangingwall
ARD21	MR1-05-77	90	16.5	Hangingwall
ARD22	MR1-05-77	33	38.3	Hangingwall
ARD23	MR1-05-76	38.2	50.0	Waste Stringer
ARD24	MR1-05-76	42	24.6	Waste Stringer
ARD25	MR1-06-86	136	Pending	Ore
ARD26	MR1-06-86	198	Pending	Waste Stringer
UCS1	MR1-06-81	25	Pending	Ore
UCS2	MR1-06-81	33.8	Pending	Ore
UCS3	MR1-06-81	39.3	Pending	Ore
UCS4	MR1-06-81	46.6	Pending	Ore
UCS5	MR1-06-81	49.6	Pending	Ore
UCS6	MR1-06-81	59	Pending	Ore
UCS7	MR1-06-81	65.7	Pending	Ore
UCS8	MR1-06-81	66.8	Pending	Ore
UCS9	MR1-06-81	70.5	Pending	Footwall
UCS10	MR1-06-81	82.2	Pending	Footwall
UCS11	MR1-06-81	88	Pending	Footwall
UCS12	MR1-06-81	99	Pending	Footwall
UCS13	MR1-06-81	116.8	Pending	Footwall
UCS14	MR1-04-38	24	Pending	Hangingwall
UCS15	MR1-05-77	69	Pending	Hangingwall
UCS16	MR1-06-86	22	Pending	Hangingwall
UCS17	MR1-06-86	41.6	Pending	Hangingwall
UCS18	MR1-06-86	65.6	Pending	Hangingwall
UCS19	MR1-06-86	86.5	Pending	Hangingwall
UCS20	MR1-06-86	115	Pending	Hangingwall
UCS21	MR1-06-86	117.5	Pending	Hangingwall
UCS22	MR1-06-81	128	Pending	Footwall
UCS23	MR1-06-81	156.8	Pending	Footwall
UCS24	MR1-06-81	188	Pending	Footwall
UCS25	MR1-06-81	216.2	Pending	Footwall
UCS26	MR1-06-81	225.2	Pending	Footwall
UCS27	MR1-06-81	244.4	Pending	Footwall
UCS28	MR1-06-86	149.5	Pending	Hangingwall
UCS29	MR1-06-86	171.8	Pending	Hangingwall
UCS30	MR1-06-86	195.1	Pending	Hangingwall
UCS31	MR1-06-91	203.5	Pending	Hangingwall
UCS32	MR1-06-91	220	Pending	Hangingwall
UCS33	MR1-06-91	235	Pending	Hangingwall
UCS34	MR1-06-91	249.4	Pending	Hangingwall
UCS35	MR1-06-91	267.4	Pending	Hangingwall
UCS36	MR1-06-91	281	Pending	Hangingwall
UCS37	MR1-06-91	293.1	Pending	Hangingwall
UCS38	MR1-06-91	317.5	Pending	Hangingwall
UCS39	MR1-06-91	326.3	Pending	Hangingwall
UCS40	MR1-06-91	338.3	Pending	Hangingwall
UCS41	MR1-06-105	136.5	Pending	Ore
UCS42	MR1-06-105	146.2	Pending	Ore
UCS43	MR1-06-105	161.5	Pending	Ore
UCS44	MR1-06-105	171	Pending	Ore
UCS45	MR1-06-105	174.8	Pending	Ore
UCS46	MR1-06-105	180	Pending	Ore
UCS47	MR1-06-105	183.5	Pending	Ore
UCS48	MR1-06-105	185	Pending	Footwall
UCS49	MR1-06-105	193.2	Pending	Footwall
UCS50	MR1-06-105	201.8	Pending	Footwall
UCS51	MR1-06-105	212	Pending	Footwall
UCS52	MR1-06-105	217	Pending	Footwall

[illegible]\102-00181-4\Assignment\Acad\Xref\[Surpac ARD Tables REV0ls.xls]Interval



LEGEND:

- Stream
- Drillhole
- Sampled in Hangingwall (Schist)
- Sampled in Ore
- Sampled in Waste Stringer (Schist)
- Sampled in Footwall (Gneiss)

NOTES:

1. Coordinate grid is shown in UTM (NAD 83) Zone 17 and is in metres.
2. Contours are in metres. Contour interval for topography is 10 metres.
3. MR1-05-67: MR1 represents Mary River Deposit No.1; 05 represents the year the hole was drilled; 67 represents the number of the drillhole.

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MARY RIVER PROJECT

WASTE CHARACTERIZATION SAMPLE LOCATIONS

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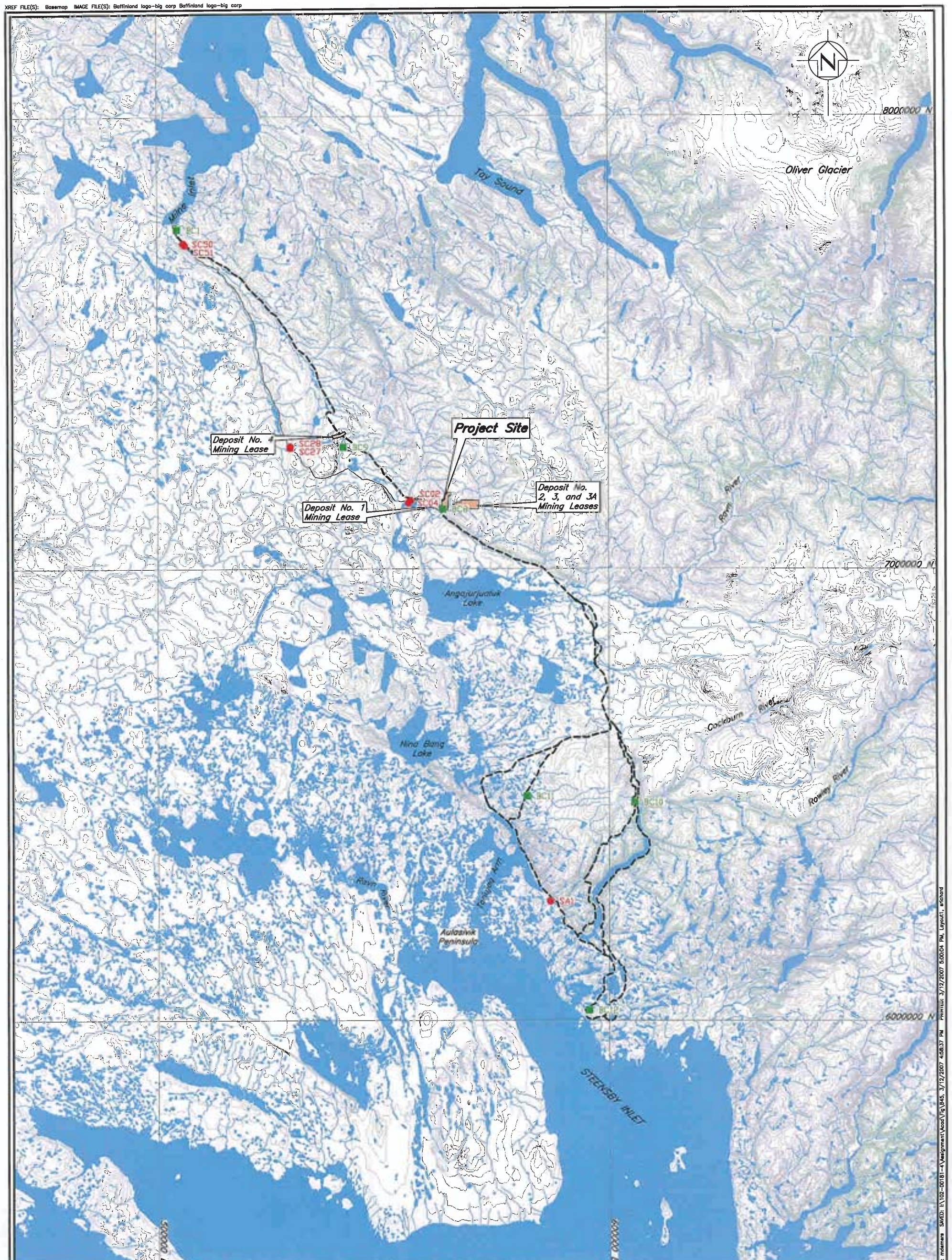
FIGURE 2

NORTH BAY ON. CREATED BY: erichard SAVED: I:\102-00181-4\Assignment\Acad\Fig\B44, 3/12/2007 4:55:35 PM PRINTED: 3/12/2007 4:55:52 PM, Layout1, erichard



LEGEND:

- Water
- River
- Proposed Transportation Routes
- Overburden Sample Site
- Ballast Sample Site

NOTES:

1. Mapping is from Natural Resources Canada National Topographic Data Base 1:250000. Proposed Access Routes and mapping were provided by Baffinland Iron Mines Corporation.
2. Coordinate grid is shown in UTM (NAD 83) Zone 17 and is in metres.

Scale 8 4 0 10 20 30 40 Km

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MARY RIVER PROJECT

OVERBURDEN AND BALLAST SAMPLE LOCATIONS

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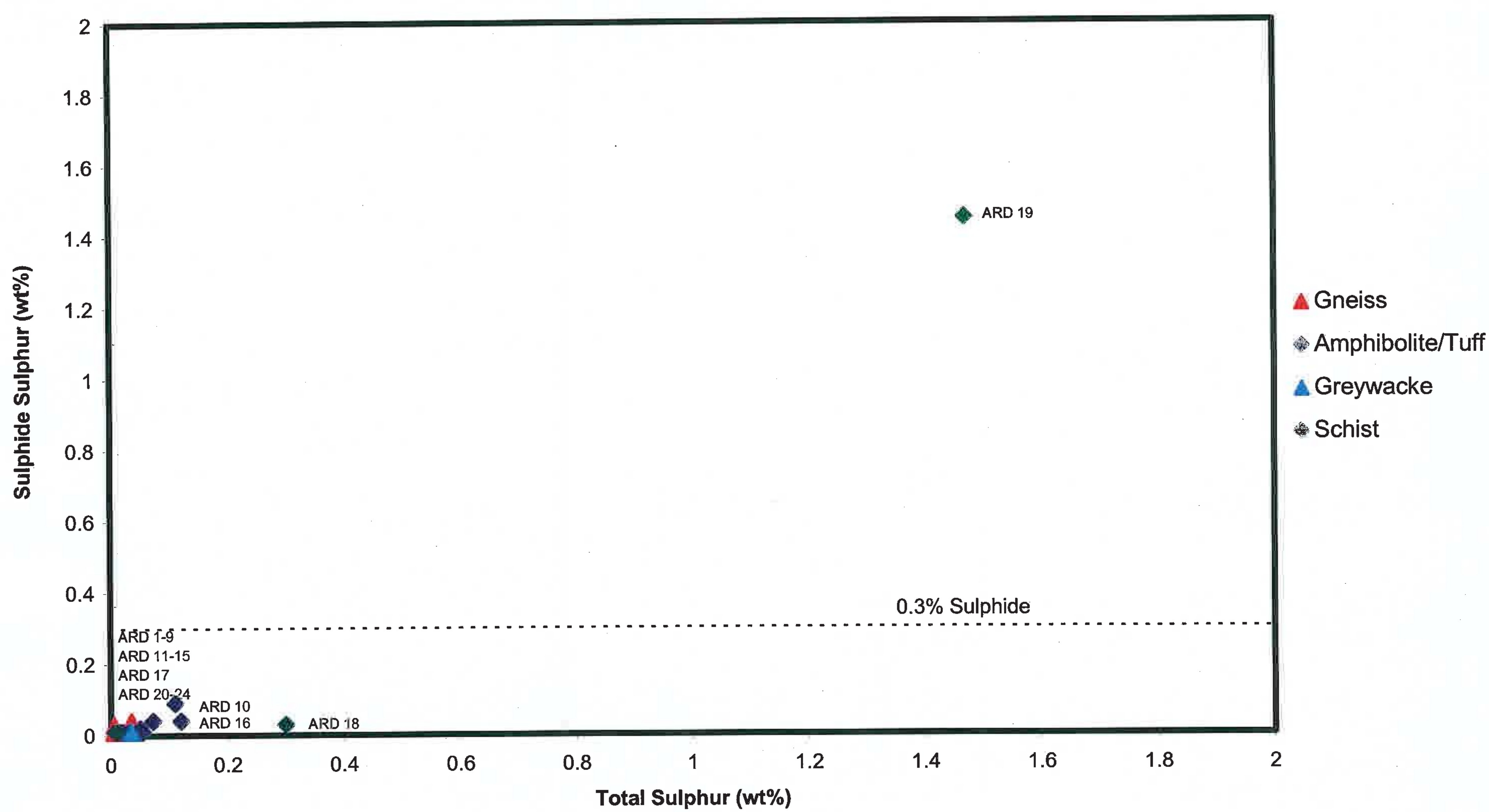
FIGURE 3



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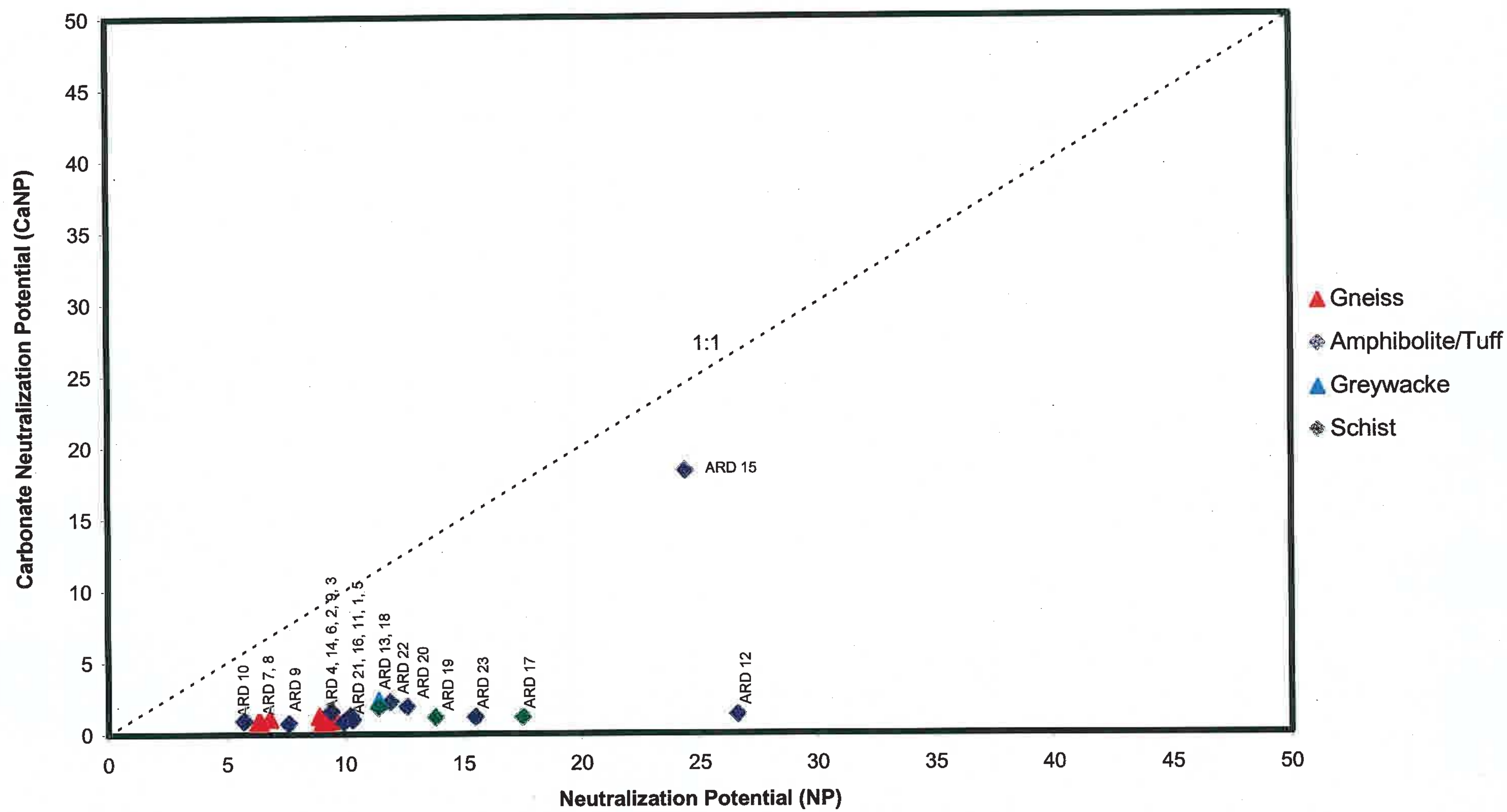
MARY RIVER PROJECT

ABA DATA
SULPHIDE-SULPHUR vs. TOTAL SULPHUR
WASTE ROCK SAMPLES

Knight Piésold CONSULTING	P/A NO. NB102-00181/4	REF. NB07-00232	REV. 0
	FIGURE 4		

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]NP vs CaNP (Lith) Fig 5

Print date: 16-Mar-07



Baffinland Iron Mines Corporation

MARY RIVER PROJECT

ABA DATA
NP vs. Ca-NP
WASTE ROCK SAMPLES

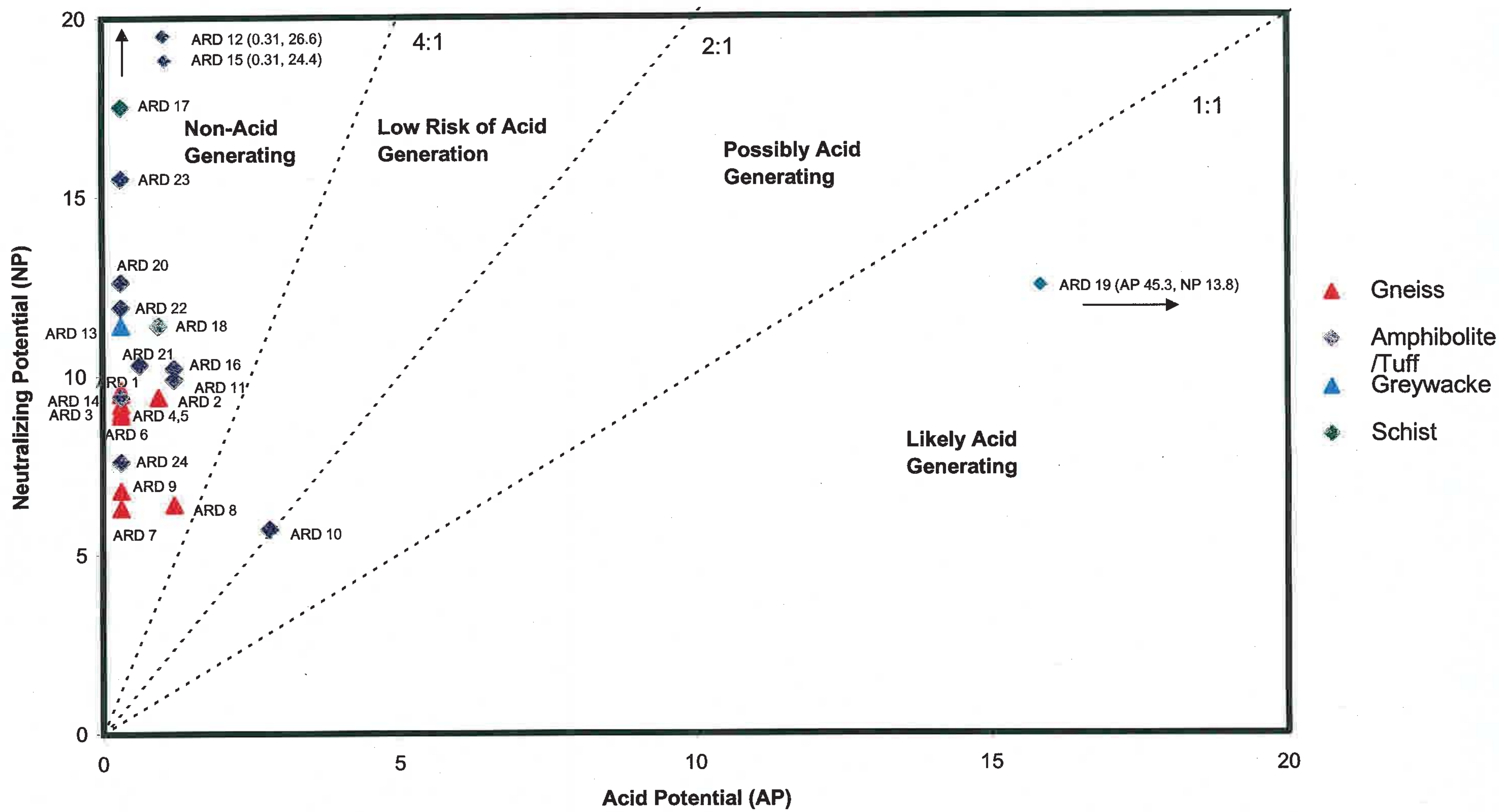
Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/4	NB07-00232	0

FIGURE 5

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]NP vs AP (Lithology) Fig 6

Print date: 16-Mar-07



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MARY RIVER PROJECT

ABA DATA
AP vs. NP
WASTE ROCK SAMPLES

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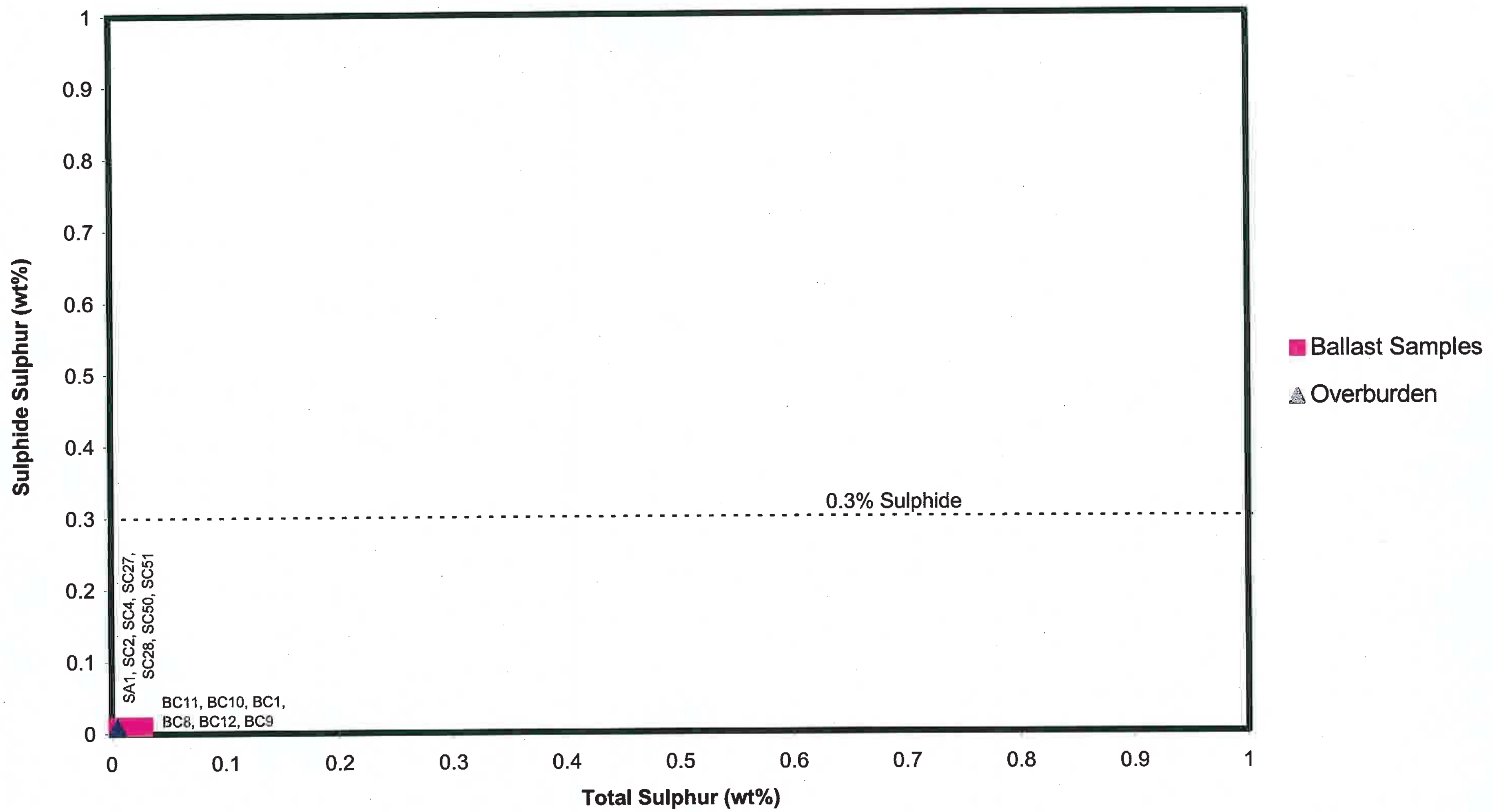
NB102-00181/4	NB07-00232	0

FIGURE 6



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MARY RIVER PROJECT

ABA DATA
SULPHIDE-SULPHUR vs. TOTAL SULPHUR
OVERBURDEN & BALLAST SAMPLES

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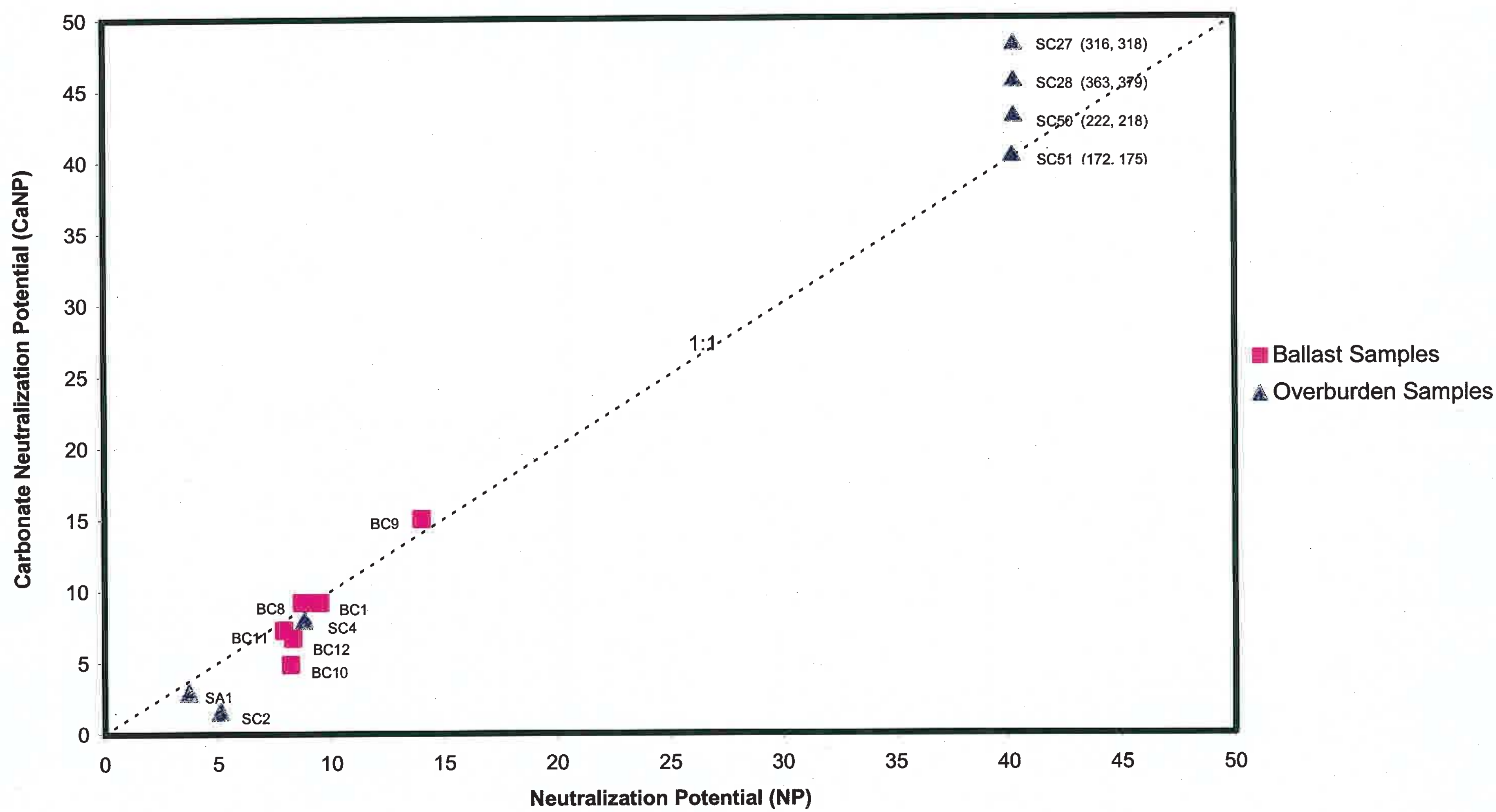
FIGURE 7

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]NP vs CaNP Fig 8

Print date: 16-Mar-07



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MARY RIVER PROJECT

ABA DATA

NP vs. Ca-NP

OVERBURDEN & BALLAST SAMPLES

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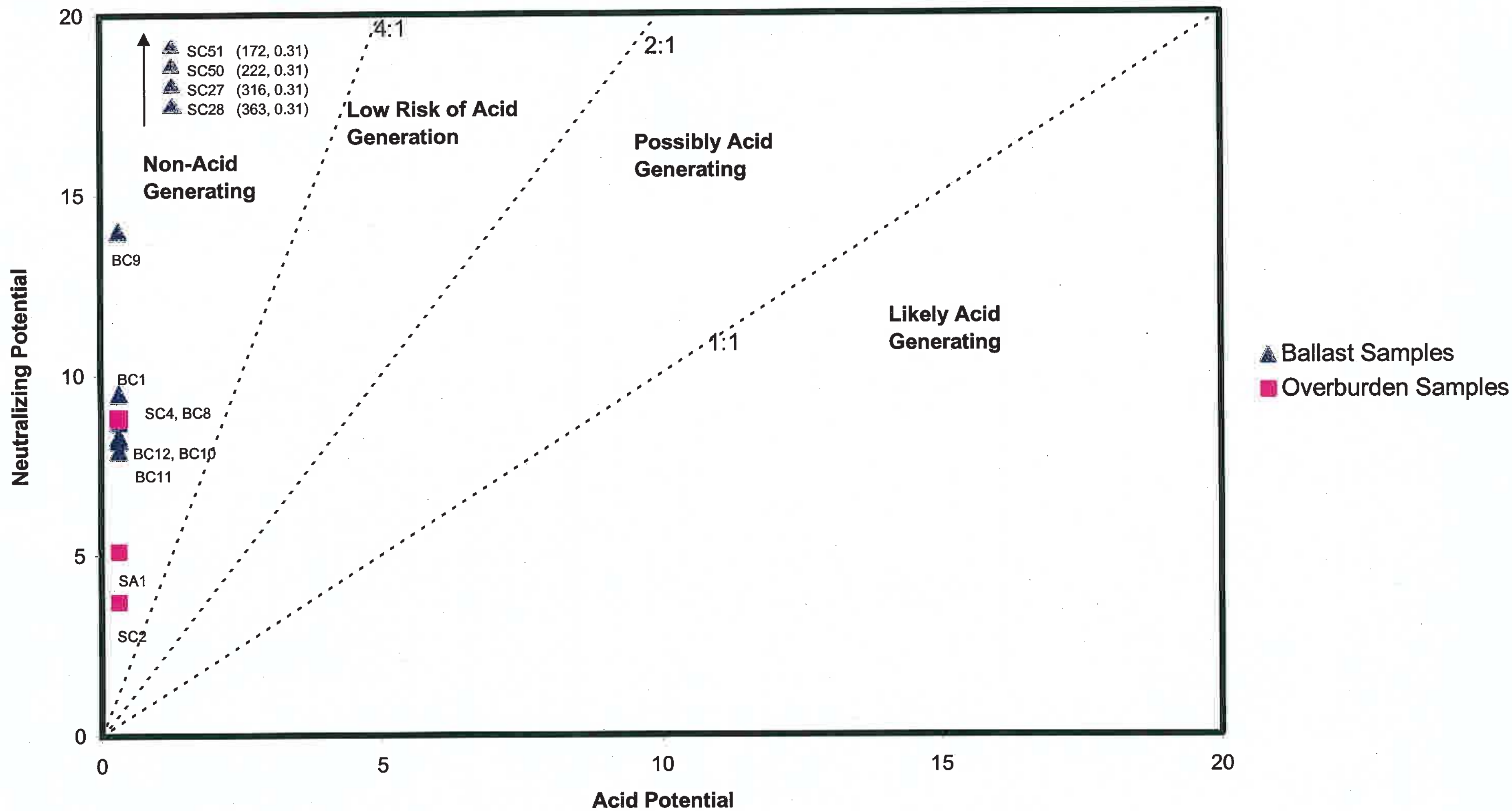
FIGURE 8

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]NP vs AP Fig 9

Print date: 16-Mar-07



Baffinland Iron Mines Corporation

MARY RIVER PROJECT

ABA DATA
AP vs. NP
OVERBURDEN & BALLAST SAMPLES

Knight Piésold CONSULTING	P/A NO.	REF.	REV.
	NB102-00181/4	NB07-00232	0

FIGURE 9