APPENDIX K

GEOCHEMISTRY

NOTE TO READER
APPENDIX K

In April 2015, Treasury Metals submitted an Environmental Impact Statement (EIS) for the proposed Goliath Gold Project (the Project) to the Canadian Environmental Assessment Agency (the Agency) for consideration under the Canadian Environmental Assessment Act (CEAA), 2012. The Agency reviewed the submission and informed Treasury Metals that the requirements of the EIS Guidelines for the Project were met and that the Agency would begin its technical review of the submission. In June 2015, the Agency issued a series of information requests to Treasury Metals regarding the EIS and supporting appendices (referred to herein as the Round 1 information requests). The Round 1 information requests included questions from the Agency, other federal and provincial reviewers, and members of Indigenous communities, as well as interested stakeholders. As part of the Round 1 information request process, the Agency requested that Treasury Metals consolidate the responses to the information requests into a revised EIS for the Project.

Appendix K to the revised EIS (Geochemistry) presents the results of testing on mined materials for potential acid generation. The information provided in this appendix was used to describe existing geological conditions in Section 5.4 of the revised EIS, and were relied on in describing the geochemistry effects likely over the Project life (Section 6.3 of the revised EIS). No changes have been made to this appendix from the original EIS issued in April 2015.

However, minor changes were made with respect to the kinetic rates developed in Appendix K, in that they were superseded by rates developed and applied in water quality estimates for the Water Report (Appendix JJ, Section 5).

As part of the process to revise the EIS, Treasury Metals has undertaken a review of the status for the various appendices. The status of each appendix to the revised EIS has been classified as one of the following:

- **Unchanged**: The appendix remains unchanged from the original EIS, and has been re-issued as part revised EIS.
- **Minor Changes:** The appendix remains relatively unchanged from the original EIS, and has been re-issued with relevant clarification.
- **Major Revisions**: The appendix has been substantially changed from the original EIS. A re-written appendix has been issued as part of the revised EIS.
- **Superseded:** The appendix is no longer required to support the EIS. The information in the original appendix has been replaced by information provided in a new appendix prepared to support the revised EIS.
- **New**: This is a new appendix prepared to support the revised EIS.

The following table provides a listing of the appendices to the revised EIS, along with a listing of the status of each appendix and their description.

List of Appendices to the Revised EIS		
Appendix	Status	Description
Appendix A	Major Revisions	Table of Concordance
Appendix B	Unchanged	Optimization Study
Appendix C	Unchanged	Mining Study
Appendix D	Major Revisions	Tailings Storage Facility
Appendix E	Minor Changes	Traffic Study
Appendix F	Major Revisions	Water Management Plan
Appendix G	Superseded	Environmental Baseline
Appendix H	Minor Changes	Acoustic Environment Study
Appendix I	Unchanged	Light Environment Study
Appendix J	Minor Changes	Air Quality Study
Appendix K	Minor Changes	Geochemistry
Appendix L	Superseded	Geochemical Modelling
Appendix M	Minor Changes	Hydrogeology
Appendix N	Unchanged	Surface Hydrology
Appendix O	Superseded	Hydrologic Modeling
Appendix P	Unchanged	Aquatics DST
Appendix Q	Major Revisions	Fisheries and Habitat
Appendix R	Major Revisions	Terrestrial
Appendix S	Major Revisions	Wetlands
Appendix T	Unchanged	Socio-Economic
Appendix U	Minor Changes	Heritage Resources
Appendix V	Major Revisions	Public Engagement
Appendix W	Unchanged	Screening Level Risk Assessment
Appendix X	Major Revisions	Alternatives Assessment Matrix
Appendix Y	Unchanged	EIS Guidelines
Appendix Z	Unchanged	TML Corporate Policies
Appendix AA	Major Revisions	List of Mineral Claims
Appendix BB	Unchanged	Preliminary Economic Assessment
Appendix CC	Unchanged	Mining, Dynamic And Dependable For Ontario's Future
Appendix DD	Major Revisions	Indigenous Engagement Report
Appendix EE	Unchanged	Country Foods Assessment
Appendix FF	Unchanged	Photo Record Of The Goliath Gold Project
Appendix GG	Minor Changes	TSF Failure Modelling
Appendix HH	Unchanged	Failure Modes And Effects Analysis
Appendix II	Major Revisions	Draft Fisheries Compensation Strategy and Plans

List of Appendices to the Revised EIS		
Appendix	Status	Description
Appendix JJ	New	Water Report
Appendix KK	New	Conceptual Closure Plan
Appendix LL	New	Impact Footprints and Effects

GEOCHEMICAL EVALUATION OF MINE MATERIALS AT THE GOLIATH GOLD PROJECT

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September 2014

GEOCHEMICAL EVALUATION OF MINE MATERIALS AT THE GOLIATH GOLD PROJECT

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Project Principal and Reviewer

CERTIFICATION OF METAL LEACHING AND ACID ROCK DRAINAGE SAMPLING AND CHARACTERIZATION REQUIREMENTS

I, Michael Venhuis, hereby certify that the sampling and characterization program for Treasury Metals Incorporated Goliath Gold Project to determine the potential for metal leaching (ML) or acid rock drainage (ARD) is designed in accordance with the requirements set out in the Mining Act, Part VII and Ontario Regulation 240/00 as described in the document "Geochemical Evaluation of Mine Materials at the Goliath Gold Project". I also certify that:

- I am a professional geoscientist licensed in the province of Ontario having geochemical experience.
- I have no direct or indirect interest, current or expected, in Treasury Metals Incorporated or any of its affiliates.
- I have personally examined the project and other applicable sources of information as referenced in the above listed document before making this certificate.

ORIGINAL SIGNED AND STAMPED BY 23 September 2014

________________________________ __________________

Michael Venhuis, M.Sc., P.Geo. Date

Associate, Environmental Geochemist
EcoMetrix Incorporated
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EXECUTIVE SUMMARY

Treasury Metals Incorporated (Treasury) is proposing to develop the Goliath Gold project near Dryden, Ontario. The Project includes the development of open pit and underground mining operations with an on-site milling facility. Approximately 46 million tonnes of mine rock, defined as rock that has been excavated from active mining areas but does not have sufficient ore grades to process for mineral extraction, will be excavated. It is estimated that 26 million tonnes will be permanently stored in a purposefully built waste rock storage area (WRSA). The WRSA will be located immediately north of the open pit, with an estimated footprint of approximately 625,000 m^2 and height of 20 m. The remaining 20 million tonnes will be placed into the adjacent mined-out pit bottom during operation. The tailings will be managed in a Tailings Storage Facility (TSF), which is expected to hold approximately 10 million m^3 of material with a footprint of 600,000 m^2. The TSF will include polishing and seepage collection ponds with applicable pumping and water treatment facilities.

A preliminary geochemical assessment was completed in 2011 as part of the baseline studies for the site and involved the characterization of 54 drill core samples. An additional 112 drill core samples representing potential mine rock material were selected and characterized in June 2012. The rock materials tested included representative samples from the four dominant mine rock types, Biotite Muscovite Schist (BMS), Biotite Schist (BS), Muscovite Sericite Schist (MSS), and Meta- Sediment (MSED). A sample of the tailings material, produced in metallurgical tests completed by ALS-Kamloops was also characterized in August 2012. The mine rock and tailings samples were assessed in a manner consistent with the prediction guidelines by Price (2009).

Static testing on the mine rock samples and one composite tailings sample consisted of metals analysis, acid base accounting (ABA), and shake flask extraction (SFE) tests. Kinetic testing, included humidity cell tests (HCT) and field-scale barrel tests with representative samples of the BMS, BS, MSS, MSED rock types as well as a humidity cell test on a composite tailings sample. Subsequently, loading rates were calculated for constituents of potential concern (COPC). The metals that exceeded the ten-times the average crustal abundance screening values in mine rock samples included antimony, arsenic, cadmium, cobalt, lead, molybdenum, selenium, silver, and zinc. The majority of samples from the four mine rock types were classified as potentially acid generating (PAG) with neutralization potential (NP) to acid potential (AP) ratios (NP/AP) that were less than one. The PAG classification results from the lack of substantial Sobek-NP in the rock samples selected for this investigation. Similarly, antimony, arsenic, cadmium, lead, silver, and zinc exceeded screening values in the composite tailings sample, which was also classified as PAG.

Three HCTs with different sulphur contents were completed for each of the BSS, MSS, and BS materials. Drill core samples were selected to create composite samples representing humidity cell samples with sulphur ranges of less than 0.25 %S, between 0.25 %S and 1.00 %S, and greater than 1.00 %S for each of the three rock types. Two HCTs were completed on MSED material, one with less than 0.60 %S and one greater than 0.60 %S.

The pH values in HCT leachates decreased from approximately 8.0 to 6.0 over the initial 20 weeks, increased slightly between weeks 20 and 50, and then decreased to below 5.0 at termination on week 85. Sulphate concentrations exhibited initially elevated values, which decreased rapidly between approximately weeks 1 to 5. Similarly, several dissolved metals demonstrated initially elevated concentrations followed by substantial decreases over the first 5 to 18 weeks. Some COPCs exhibited increasing concentrations between weeks 60 and 85 as pH values also declined. Seven of the HCTs were terminated at week 63 after stabilization of COPC concentrations in the leachate and the remaining four at week 85, prior to the establishment of stable conditions.

Duplicate humidity cell tests were initiated for the tailings composite sample. Measured pH values in the HCT leachate exhibited steady and consistent declines, from approximately 7.8 to 3.7 over 78 weeks. Sulphate concentrations exhibited initially elevated values, which decreased rapidly over approximately weeks 1 to 10 and increased slightly between week 40 and 78. Similarly, a majority of metal constituents demonstrated initial elevated concentrations followed by substantial decreases over the initial 20 weeks. The higher initial concentrations are typically related to an initial flush of tailings, while lower values at later times are representative of a relatively constant, natural, rate of release associated with oxidation or other weathering reactions. In addition to arsenic, the concentrations of the majority of the acid-soluble trace metals began to increase at approximately week 20, including cadmium, cobalt, copper, nickel, lead, and zinc. The original and duplicate tailings HCTs were terminated at weeks 78 and 59, respectively.

The four barrel tests initiated for the BMS, BS, MSS, and MSED mine rock samples had been operating for approximately two years as of this report. The leachate pH values were typically between 4.7 and 6.7 with the exception of values for the MSED field cell which exhibited pH values up to 9.5 in July 2014. Sulphate concentrations in the water collected from the barrels varied between approximately 11 and 90 mg/L. Dissolved arsenic, cadmium, cobalt, lead, nickel, and zinc concentrations were similar among the four mine rock types and appear to be exhibiting a cycling behaviour, with peak values associated with samples collected between March and April. However, dissolved sulphate, cobalt, and nickel concentrations were relatively higher for the BS barrel test, compared to the BMS, MSS, and MSED barrels. The loading rates from the barrel tests will be evaluated when sufficient data are available. Comparisons between the HCT and barrel test results will be used to assist in refining the scaling estimates from laboratory to field conditions.

Loading rates were calculated from the available HCT results for the BMS, BS, MSS, and MSED samples. The evaluation of the HCT results for each mine rock type indicated that loading rates for some COPCs were correlated to either sample sulphide content, solids metal contents, or were related to geochemical equilibrium, possibly exhibiting solubilty controls. A good correlation was observed between sulphate loading rates and sulphide content for BMS, BS, and MSS samples. Correlations with either sulphide or metal contents were observed for the BMS (aluminum, cadmium, lead), BS (iron, lead, uranium, zinc), and MSS (cobalt, iron, lead, nickel, zinc) mine rock samples. Correlations were not determined for MSED as results for only two HCTs were available. Loading rates for tailings HCT results were also calculated. The loading rates from all tests were also scaled to field conditions by accounting for the estimated temperature and particle size differences between the laboratory test conditions and field conditions.

The loading rates from the humidity cells and barrel tests are suitable for incorporation into a water quality model to assess the effects of contact water, with pH values above 5, on downstream water quality or to determine what mitigation may be required for contact waters. If acidic conditions evolve in waste rock stockpiles, the loading rates may be expected to increase for several COPCs and the effects on contact water will need to be re-evaluated.

The conclusions from this ongoing assessment are as follows;

- The majority of the rock samples, including representative samples from all rock types, that were characterized in this investigation can be classified as potentially acid generating (PAG),

- The one tailings sample that was characterized can be classified as potentially acid generating,

- Mitigation strategies will likely be required to manage mine rock and tailings and to prevent acidic drainage and negative effects on downstream water quality at the site post closure and potentially during operation, and;

- Rock from the pit that is intended for construction applications should be tested prior to use to confirm that it is not potentially acid generating or will not exhibit undesirable metal leaching characteristics.

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

1.1 Project Summary

Treasury Metals Incorporated (Treasury) is proposing to develop the Goliath Gold project near Dryden, Ontario. The Project includes the development of open pit and underground mining operations with an on-site milling facility. The Project Description was provided to the Canadian Environmental Assessment Agency and Ontario Ministry of Northern Development and Mines in November 2012.

EcoMetrix Incorporated (EcoMetrix) was retained by Treasury to complete a geochemical evaluation of mine materials, including an assessment of metal leaching and acid rock drainage (ML/ARD) potential for the project. The ML/ARD assessment is intended to continue preliminary geochemical testing in support of a future Feasibility Study and, subsequently, an Environmental Assessment (EA) for the Project. The investigation is intended to meet the requirements for a Closure Plan under Ontario Regulation (O.Reg.) 240/00 of the Mining Act.

Based on the results of the preliminary economic assessment (PEA), Treasury has decided to forgo a Pre-feasibility Study and proceed towards completion of a Feasibility Study.. EcoMetrix understands that this ML/ARD assessment is being completed in support of Environmental Baseline Study investigations.

1.2 Project Overview

The Goliath Gold Project is located about 20 east of Dryden, ON, within the Kenora Mining District (**Figure 1.1**). The Project includes one open pit, approximately 1.5 km long, with three distinct pit bottoms with a maximum depth of about 180 m. The current mine plan indicates that the open pit will be mined over approximately 5 years. In addition, the project will include underground mining through a portal and ramp to a depth of approximately 600 m. Development for underground mining will begin during Year 1 of the operations, with anticipated mining of the underground commencing in Year 3. Ore will be processed (crushed, ground, concentrated) at an on-site mill processing facility. Final concentrate will be transported off-site for further refining and upgrading. The total mineral reserve is estimated to be approximately 1.6 million ounces of gold including an additional 5 million ounce silver by-product (Howe, 2011). During the operations phase of the Project, ore will be fed to the mill at an average rate of 2,500 tonnes/day. The operating life of the mine is estimated to be 10 to 12 years.

Approximately 46 million tonnes of mine rock, defined as rock that has been excavated from active mining areas but does not have sufficient ore grades to process for mineral extraction, will be excavated. It is estimated that 26 million tonnes will be permanently stored in a purposefully built Mine rock Storage Area (WRSA). The WRSA will be located immediately north of the open pit, with an estimated footprint of approximately 625,000 m^2 and height of

20 m. The remaining 20 million tonnes will be placed into the adjacent mined-out pit bottom during operation. Current estimates indicate approximately 1.8M tonnes or 900,000 m^3 of low-grade ore will be temporarily stockpiled near the mill during the operation. Three collection ponds are proposed to collect contact water and seepage from site that will be treated at the processing plant and discharged to the environment.

Tailings will be managed in a Tailings Storage Facility (TSF). Although the final location and design of the TSF is not complete, it is expected to hold approximately 10 million m^3 of material with a footprint of 600,000 m^2, which will likely require the construction of a series of dams. The TSF will include polishing and seepage collection ponds with applicable pumping and water treatment facilities.

1.3 Site History

The site was initially explored by Teck Cominco/Teck Resources Limited (Teck) in the late 1980s and early 1990s. Teck completed 293 drill-holes, totaling approximately 78,500 m, between 1989 and 1998 (Howe, 2011). Four bulk samples from the underground workings were collected by Teck in 1998 through a 250 m ramp that declines to the north and splits off in the east-west direction for approximately 100 to 150 m in either direction. The bulk samples totaled 2,375 tonnes and averaged greater than 3 g gold per tonne (Howe, 2011). The portal was closed according to a closure plan prepared in 1997 by NAR Environmental (NAR, 1997). Little exploration activity was completed between 1999 and 2008. Treasury obtained ownership of the site in 2008 and has since completed additional exploration drilling.

As part of the Closure Plan preparation, five rock samples were collected for Acid Base Accounting (ABA) analyses (NAR, 1997). Based on the preliminary results, an additional 25 samples were submitted for ABA analyses. During Environmental Baseline investigations for the project, 54 drill core samples were selected and analysed for metals content and ABA (KCB, 2012).

1.4 Geology

The description of the geology of the project area is adapted from Section 4.4 of the Goliath Project Description (Treasury, 2012).

1.4.1 Geological Setting

Treasury Metals' Goliath property is situated within the volcano-plutonic Eagle-Wabigoon-Manitou Greenstone belt in the Wabigoon Subprovince, just north of the large-scale regional Wabigoon fault. This Subprovince is part of the Archean Superior Province and located in northwestern Ontario. The greenstone belt is 150 kilometres wide, with an exposed strike length of 700 kilometres. The full extent of the Greenstone belt is unknown because much of it is overlain by Palaeozoic strata at both ends. The Wabigoon fault is a large-scale regional structure that is separated into a northern and southern domain. The northern domain generally consists of southward-facing panels of alternating metavolcanic and metasedimentary rocks. North of the Wabigoon fault, in the Wabigoon/Dryden area, the geology primarily consists of metasedimentary rocks, which seem to be predominant. The southern domain is generally composed of northward-facing volcanic rocks. The Wabigoon fault is observed at surface just north of the village of Wabigoon.

Much of the Project area is underlain by the Thunder Lake Assemblage, an upper greenschist to lower amphibolite metamorphic grade volcanogenic-sedimentary complex of felsic metavolcanic rocks and clastic metasedimentary rocks. The assemblage comprises quartz-porphyritic felsic to intermediate metavolcanic rocks represented by biotite gneiss, mica schist, quartz-porphyritic mica schist, a variety of metasedimentary rocks and minor amphibolites. Compositional layering in metasedimentary rocks strikes ~70° to 90° and dips from 70° to 80° south-southeast. The Thunder River Mafic Metavolcanic rocks underlie the south part of the Property. The mafic rocks are generally massive flows but are pillowed locally and include amphibolite and mafic dykes, which are characterised as chlorite schists. Some rocks have been described as ultramafic in character.

1.4.2 Deposit Geology

The main zones of mineralisation project to surface at approximately 250 to 300 m north of Norman Road. The Main Zone, Footwall Zone (B, C, and D subzones), and Hanging-wall Zone (H and H1 subzones) strike approximately east-west, varying between 090° and 072°, with dips that are consistently 72° to 78° toward the south or southeast. The main area of gold, silver, and sulphide mineralisation and alteration occurs up to a maximum drill-tested depth of approximately 805 m (TL135) below the surface, over a strike-length of approximately 2,300 m within the current defined resource area. The historic drilling of Teck and its various partners confirmed that anomalous gold mineralisation extends over a strike length of at least 3,500 m and work by Treasury has shown this anomalous gold mineralisation and alteration to extend over a strike length of greater than 5,000 m.

The mineralised zones are tabular composite units defined on the basis of anomalous to strongly elevated gold concentrations, increased sulphide content and distinctive altered rock units and are concordant to the local stratigraphic units. Stratigraphically, gold mineralisation is contained in an approximately 100 to 150 m wide central zone composed of intensely altered felsic metavolcanic rocks (quartz-sericite and biotite-muscovite schist) with minor metasedimentary rocks. Overlying hanging-wall rocks consist of altered felsic metavolcanic rocks (sericite schist, biotite-muscovite schist and metasedimentary rocks) with the footwall comprising metasedimentary rocks with minor porphyries, felsic gneiss and schist. Gold within the central unit is concentrated in a pyritic (phyllic) alteration zone, consisting of quartz-sericite schist (MSS), quartz-eye gneiss, and quartz-feldspar gneiss.

From 2008 to 2012, Treasury completed 282 drill holes totaling 94,078 m. The drilling programs primarily targeted the Main Zone, but the Hanging-wall Zone was intersected as was the Footwall Zone by deeper drill holes. Drilling has intersected the Main Zone over a strike length of approximately 2,300 m and a thickness of 5 to 30 m. The Main Zone is composed of well-defined pyritic quartz-sericite schist (MSS) separated by less-altered biotite-feldspar schist (BMS). Sulphide mineralisation and local visible gold occurs mainly within the leucocratic bands but occasionally it is localized in the melanocratic bands enriched with biotite and chlorite. The sulphide (mineral) content of the mineralised zone is generally 3 to 5 % but locally is up to 15 % (by volume). Highest gold and silver values are associated with very strong, pervasive, quartz-sericite alteration. It appears that gold content does not directly correlate with pyrite content but generally an increase in the gold and silver correlates with an increase in the pyrite and, more specifically, the sphalerite content. An increase in chalcopyrite and galena content has a lower correlation to an increase in gold values. Low grade gold-silver mineralisation is pervasive in the Main Zone, Hanging-wall Zone and in the Footwall Zone, whereas high-grade gold mineralisation (greater than 3 g/tonne) is concentrated in several steeply dipping, steep west-plunging shoots with relatively short strike-lengths (up to 50 m) and considerable down-plunge continuity. These higher-grade shoots are separated by rock containing lower grade gold mineralisation.

The high-grade shoots are interpreted to be the result of tight folding of the mineralised horizon (gold concentrated in fold noses) and appear to occur at regular intervals (Corona, 1998). Very rare flakes of aquamarine green mica (fuchsite: Cr muscovite) occur in the strongly altered sericite alteration with high-grade gold. Usually, mineralised intervals are narrow (up to 0.5 m) zones enriched with 3 to 10 % visible sulphides (pyrite, sphalerite, galena, chalcopyrite ± arsenopyrite, ± dark grey needles of stibnite) within a wider quartz-sericite or biotite-feldspar sections with fine-grained disseminated pyrite located in the foliation planes.

2.0 MATERIALS AND METHODS

2.1 Review of Available Data

The Goliath Gold site was initially explored by Teck in the late 1980s and early 1990s, and exploration included completion of 293 drill holes totaling about 78,500 m and collection of four bulk samples from the underground workings (Howe, 2011). Geochemical testing completed as part of the Closure Plan for the bulk sample collection included 30 samples of rock material submitted for ABA analysis (NAR, 1998). Five samples were initially sent for analysis, with four samples originating from drill hole TL-170, the first exploration borehole to identify significant gold reserves, and one sample of fly rock from the exploration trenching (KCB, 2012). Based on the preliminary ABA results, 25 additional rock samples were subsequently analyzed. The results of these analyses indicated that sulphide-sulphur ranged from 0.1 to 1.2 %S, with a geometric mean value of about 0.5 %S. Little to no Neutralization Potential (NP) was present in the samples. The ratio of NP to Acid Generating Potential (AP) ranged from 0.1 to 14.5, with a geometric mean value of approximately 0.8. These results suggested that, overall; some of the rock in the Goliath deposit is potentially acid generating based on criteria established by Price (1997; 2009).

No exploration work was completed at the site after completion of the Teck's investigations and bulk sample collection in 1999. Since acquisition of the property in 2008, Treasury completed additional drilling between 2008 and 2011, totaling approximately 78,000 m. A preliminary geochemical assessment was completed as part of the baseline studies for the site (KCB, 2012) that consisted of metals analyses and ABA characterization of 54 drill core samples. No leachability or kinetic testing was completed. The results of that investigation confirmed the previous results, indicating the low NP and potential for acid generation for the Muscovite Sericite Schist and Biotite Muscovite Schist rock types. Key constituents of potential concern (COPC) that exceeded screening values included arsenic, antimony, cadmium, lead, molybdenum selenium, silver, and zinc.

2.2 Sample Collection

Drill core samples of potential mine rock material were collected by EcoMetrix staff in June, 2012. Various rock types in the geological complex include: Biotite Muscovite Schist (BMS), Biotite Schist (BS), Muscovite Sericite Schist (MSS), and Meta-Sediment (MSED). The composition, expected amount in the mine rock, and relative percentage of the total anticipated mine rock for each rock type is summarized in **Table 2.1**. The selection of additional samples was based on the estimated distribution of major rock units and included a total of 112 samples analyzed, of which 52 were BMS, 16 were BS, 35 were MSS and 9 were MSED. The samples were selected to represent potential mine rock only and no ore containing samples were included. Samples were based on distribution of area, depth, and sulphide content and the number of each rock type was based on estimated amounts within the deposit.

A sample of the tailings material expected to be produced during the mill process was provided to EcoMetrix by Treasury. The tailings sample represented material produced in metallurgical tests completed in August 2012 by ALS-Metallurgy in Kamloops, BC (ALS, 2012)

2.3 Static Testing

The mine rock and tailings samples were analysed for solids metals content and acid base accounting at SGS in Lakefield, ON. Rock samples were prepared by crushing them to a size range of 1.00 to 1.25 inches and sub-samples were taken for each of the requested analyses. The tailings sample was submitted and analyzed in triplicate, with no additional physical preparation required.

2.3.1 Metals Content

Sub-samples of the tailings and mine rock samples were subjected to an *aqua-regia* digest followed by a full metal scan by inductively coupled plasma mass spectrometry (ICP-MS) analyses.

Although no regulatory criteria exists for constituent contents in mine rock or tailings solids, values were compared to average crustal abundances, as recommended by Price (1997, 2009). This comparison is meant only as a guide at this stage of the geochemical characterization and it should be noted that, as expected for mining properties, some metal concentrations will be elevated relative to average crustal abundances. Elevated concentrations of metals in the solid phase do not necessarily increase the potential for impacts, but rather identifies parameters for further consideration. Therefore, for screening purposes, results of the mine rock and tailings bulk analysis were compared to 10 times (10X) the average crustal abundances from Faure (1998) to identify constituents that may require additional investigation or scrutiny.

2.3.2 Acid Base Accounting

The evaluation for the potential of acid generation is based on the ratio of NP to AP (Neutralization Potential Ratio; NPR), and is typically compared to guideline values. Ontario Regulation (O.Reg.) 240/00 of the Mining Act refers to guidelines presented by Price (1997) that are now conventionally superseded by Price (2009). The 2009 guidelines suggest that NPR values above 2 indicate no potential for acid generation when the NP is effective while NPR values less than 1 indicate that materials are potentially acid generating. The NP is considered to be effective if it is based on calcium and magnesium carbonates and is commonly referred to as carbonate NP (Carb-NP). Ratios between 1 and 2 suggest some uncertainty of acid generation with further evaluation required. In addition, although ABA testing can indicate the potential for acid generation within the material it does not provide any information regarding the rates at which acid generation or neutralization will proceed and does not address the interpretation of potential metal leaching (ML). The rates of reaction and metal leaching are addressed with kinetic testing, as discussed in more detail below.

ABA testing included paste pH, total sulphur, sulphate-sulphur, sulphide-sulphur, Modified Sobek NP, total carbon, total organic carbon, and total carbonate analyses. The results from these analyses were utilized to calculate the carbonate NP (Carb-NP), acid generating potential (AP), net neutralization potential (NNP), and Sobek NPR and Carbonate NPR (Carb-NPR).

2.3.3 Shake Flask Extractions

Short-term leach tests are used to determine the concentrations of readily soluble constituents in the samples. Thus, the results of leach tests can be used to develop preliminary knowledge of metal leaching behaviour of specific sample types. The tests do not consider on-going sulphide oxidation and, therefore; the results of these short-term shake flask extractions (SFE) do not directly measure expected effluent quality of the mine rock materials under ambient conditions. Variables, such as sample size, sample volume, test duration, and the area of the reaction surface or the water-solid interface, are project and material specific and may not reflect actual field conditions. Therefore; the SFE results on fresh materials are used to qualitatively identify constituents that require additional consideration with respect to overall site water quality.

The soluble masses of constituents in the tailings and mine rock were assessed by SFE tests. The testing followed the guidelines in Price (2009), as required in the Mining Act Regulations for Ontario. The test involved leaching of the mine rock samples with distilled water using a 3:1 water:solid ratio. The use of the 3:1 ratio allows for dissolution of soluble constituents without the effect of solubility limitations. The samples were constantly agitated for approximately 24 hours prior to sampling the leachate. The guidelines (Price, 2009) also suggest utilizing a weak-acid leach test to evaluate constituent release under low-pH conditions that could result from acidic drainage.

Although no regulatory criteria exist for constituent concentrations in SFE, values were compared to the Provincial Water Quality Objectives (PWQO; MOEE, 1994). This comparison is meant only as a guide. Elevated concentrations of dissolved metals in SFEs do not necessarily mean those constituents will be elevated at the field level, instead it identifies parameters for further consideration. Therefore, for screening purposes, results of SFE were compared to 100 times (100X) the PWQO guidelines in order to identify aqueous constituents that may require additional investigation. The 100X screening level was chosen to represent the natural dilution contact water would undergo as it enters the surface water.

Shake flask extractions were conducted on 28 mine rock samples selected to represent the range of observed sulphur contents associated with the deposit. Of the 28 samples, 17 were treated with deionized (DI) water and 11 were treated with a weak-acid (0.1 M HCl) solution. Six SFE tests were conducted on the tailings composite sample, which included three replicates using DI water and three using the weak-acid solution. The tailings composite was dried at room temperature for approximately 24 hrs prior to testing. A known mass of rock or tailings sample was placed in a clean plastic bottle with the leach solution (DI or weak-acid solution) in a 3:1 (water:solids) ratio (approximately 750 mL of water to 250 g of material). All flasks were intermittently agitated over a 24 hour period. For all samples, the leachate was decanted from the bottle to remove a majority of crushed mine rock, syringe filtered using a 0.45 μm membrane, and acidified with nitric acid. The pH and conductivity were measured for all samples prior to preservation with acid. Samples were analysed for metals content at ALS Environmental (ALS) in Mississauga, ON. Four duplicates were included for quality assurance and quality control (QA/QC).

2.4 Kinetic Testing

Static testing provides an indication of the total and soluble constituent concentrations in the mine rock materials at a particular time, but does not provide an indication of potential changes with time during mining operations or after mine closure. Kinetic testing is used to provide information on the relative rates of acid generation, neutralization, the approximate timing for the onset of acid generation, if it is predicted to occur, as well as potential loadings from the mine materials as a result of metal leaching in the presence or absence of acidic drainage. The loading rates are then used to estimate water quality in drainage or downstream waters affected by contact with the mine materials.

2.4.1 Humidity Cell Tests

Kinetic testing was completed on composite rock samples for each of the four main geological units present at the property (BSS, MSS, BS and MSED; **Table 2.1**). Humidity cells were conducted using the American Society for Testing and Standards (ASTM) standard test method D5744-96, Option B. Three humidity cell tests (HCT) with different sulphur content ranges were initiated for each of the BSS, MSS, and BS materials, respectively. Drill core samples were selected to create composite samples representing humidity cell samples with sulphur ranges of less than 0.25 %S, 0.25 %S to 1.00 %S, and greater than 1.00 %S for each of the three rock types (**Table 2.2**). For the MSED material, two columns were initiated, less than 0.60 %S and greater than 0.60 %S (**Table 2.2**). These ranges allow for appropriate evaluation of potential metal leaching from mine rock material and were designed to be suitable for water quality modeling required as part of a feasibility study and Environmental Assessment. Additionally, two duplicate HCTs were setup using the prepared composite tailings sample.

Each HCT contained approximately 1.0 kg of the material and was flushed weekly with approximately 1.0 L of distilled water. Weekly rinsing, leachate collection, and analysis for COPCs was undertaken up to week 20. Beyond week 20, rinsing and leachate collection was conducted weekly; however, submission of leachate for analysis occurred every two weeks until week 24 and then extended to every three weeks and eventually every four weeks. At week 63, the BMS, BS, and MSS, -A and –B,MSED-A, and duplicate tailings (week

59) HCTs were discontinued. The remaining HCTs (BMS-C, BS-C, MSS-C, and MSED-B, and tailings) continued to have rinsing and leachate collection conducted but every two weeks with 2L of water. Submission of leachate for analysis then occurred every four weeks until these remaining cells were discontinued at week 85. The tailings HCT was discontinued at week 78 and the duplicate was discontinued at week 59.

All samples were analysed by ALS Mississauga. Humidity cell leachate samples were collected approximately two hours after initial inundation, filtered using a 0.45 µm membrane, and preserved accordingly. Each sample was submitted for quantification of total alkalinity (as $CaCO_3$) and an ICP-MS metals scan.

2.4.2 Barrel Tests

A barrel test is a type of kinetic test that is scaled up from the more common laboratory humidity cell test, which is typically performed on finely crushed drill core samples for mine rock. Barrel tests are intended to better represent the site conditions, in regards to the mine rock particle size and the amount and rate of precipitation. The objective of the barrel test is to determine the mass of a constituent released per mass of mine rock material for materials with a larger particle size than is typical for humidity cell tests. These tests also help to characterize the influence that frequency and quantity of precipitation have on the leaching properties of the mine waste materials and their relative weathering rates. The barrel tests results are assessed in parallel with the laboratory humidity cell results to verify the appropriateness of the scaling factors used to scale laboratory conditions to field conditions.

Four barrel tests were initiated in September 2012 at the Goliath Gold site. The barrels were constructed using one-half of a clean 170 L plastic barrel. Selected drill core segments (50 cm to 100 cm long), including both half cores and full cores, were placed in each barrel to represent mine rock material from each of the four material types. Approximately 78, 87, 90, and 88 kg of core samples were placed in the BMS, BS, MSS, and MSED barrels, respectively. The top of each barrel remained open so that mine rock samples were exposed to air and to precipitation falling as rain or snow. Each barrel has a bottom drain spout connected with tubing to pails where water collects between sampling events.

Samples of the leachate are collected periodically from the collection pails, by Treasury personnel, on a schedule that depends on available sample volume. As of the date of this report, the barrels had been sampled on eight separate occasions; 12 November 2012, 11 January 2013, 27 March 2013, 27 May 2013, 18 June 2013, 30 July 2013, 11 April 2014, and 16 July 2014. These sample dates represent 9, 18, 29, 37, 41, 47, 83, and 96 weeks since commencement of the barrel tests. During each sampling event, approximately 2 L of the leachate was placed in a clean plastic bottle and the pH, conductivity, and temperature were measured on a sub-sample by Treasury personnel. The remaining sample was transferred, with appropriate volumes, to laboratory supplied bottles for general chemistry (pH, hardness, conductivity, total dissolved solids, alkalinity, acidity, chloride, sulphate, phosphorus, nitrate/nitrate, and ammonium), cyanide (total, weak acid dissociable (WAD), and free), and total and dissolved trace metals. After week 47, samples were only submitted for ` \pH, conductivity, alkalinity, sulphate, and dissolved trace metals. Samples for dissolved metals are first filtered using a 0.45 µm membrane and both total and dissolved metals are preserved with acid provided by the laboratory. All samples are submitted by Treasury to ALS in Mississauga, ON, for laboratory analysis, except for the July 2013 samples which were sent to AGAT laboratories in Mississauga, ON.

2.4.3 Loading Rates

The HCT results provide data to calculate loading rates for all mine rock COPCs. The calculated loading rates for each COPC were compared to the sulphide contents and initial COPC solid phase contents in each of the 11 HCT samples. Comparisons for each mine rock type were made by assessing the statistical relationship and correlation coefficients for each COPC. The measured correlations were then assessed and compared to average sulphide and COPC contents for each of the mine rock types. When no correlations were observed between COPC loading rates and sulphide or COPC contents, the steady-state geomean loading rates applied.

Loading rates derived from the HCTs were transformed into field loading rates by considering the differences between the laboratory and field settings. In general, the specific surface area, as represented by the particle size distribution, of mine rock and tailings particles, temperature, and freezing conditions were considered for adjusting the loading rates observed in laboratory HCTs to those expected in the field. Therefore, the HCT results were adjusted to account for temperature and grain-size distribution (or surface area).

A temperature correction factor for the mine rock and tailings HCT results is required because the testing was completed at room temperature (20 to 25 ºC) while temperatures under field conditions for the stockpile will be approximately equal to the average air temperature at the site. The average temperature at the Goliath site was estimated to be about 2 ºC based on data from Environment Canada for the Dryden airport. Oxidation of sulphide minerals such as pyrite, are temperature dependent, as described by the Arrhenius equation:

$$\ln(\frac{k_1}{k_2}) = \frac{E_a\left(T_1 - T_2\right)}{RT_1T_2}$$

where k_1 and k_2 are reaction rates at temperatures T_1 and T_2 in Kelvins, E_a is the activation energy of the reaction (J/mol), and R is the universal gas constant (8.314 J/mol/K). The values of E_a for pyrite oxidation reactions, that are likely responsible for releasing metals, have been shown to be about 80 kJ/mol (Nicholson et al., 1988). Therefore, a temperature difference from laboratory temperature (20 ºC) to field temperatures, where field temperatures were assumed to be approximately 2 ºC, would result in a difference factor of about 9 in the reaction rate. Estimated metal loads from the stockpile (field loads), therefore, include an adjustment factor of 0.12 (or about 1/9) applied to the calculated laboratory loading rate.

The second correction factor applied to the loadings estimates accounts for the fine-grain size of the mine rock samples used in the HCTs. This correction was not applied to the tailings HCT results as it was assumed that the material produced during mining will be similar to that tested. Based on a unit-mass basis, the fine-grained component of the mine rock should effectively contribute all of the leached constituents, due to the relatively large surface area of the fine particles. It was assumed that approximately 5 % of the material comprising the expected Goliath mine rock material will be of similar size to the material tested in the humidity cells (less than 1 inch to silt/clay size). As such, a scaling factor of 0.05 was applied to the calculated laboratory loading rates. This scaling factor was not applied to the tailings HCT results.

2.4.4 Sulphur Block Model

A statistical analysis of the geochemical characteristics of mine wastes was completed by Treasury in order to develop an understanding of the distribution of sulphur within the deposit. All available data from exploration drilling between 2008 and 2014 were used in the sulphur block model. The model will allow for evaluation of rock volumes with various sulphur contents for use in assessment of mine rock cut-off criteria and water quality assessment, and to refine mine rock management options.

2.5 QA/QC

2.5.1 Static Tests

The quality control/quality assurance (QA/QC) conducted on metal contents and ABA analyses for mine rock, tailings, and field barrel mine rock samples were conducted by ALS as part of their regular laboratory protocols. No additional duplicates or blanks were collected from the core samples. The Analysis Reports, including internal laboratory QA/QC results, are provided for the static tests conducted on the mine rock (**Appendix A**), tailings (**Appendix E**), and field barrel mine rock (**Appendix D**) sample. Evaluation of the laboratory duplicate samples was completed by ALS-Vancouver and results are provided in the respective Certificates of Analyses and indicate that the data have acceptable precision.

For the mine rock SFE, a single replicate sample was conducted (TL 11-150) and four duplicates were collected for dissolved metals by EcoMetrix laboratory personnel during sampling. The precision of the laboratory replicates and duplicate samples were evaluated by calculating the relative percent difference (RPD) as follows:

$$RPD = \frac{|X_1 - X_2|}{X_{avg}} * 100$$

where: X_1 and X_2 are the duplicate concentrations and X_{avg} is the mean of these two values.

A control limit of 20 percent RPD was used to evaluate differences between the original and replicate water samples when the concentration of one of the samples was greater than five times the detection limit. If the concentration of one of the samples was less than five times the detection limit, the absolute difference (AD) was calculated. The calculated RPD values for field replicate analysis are presented in **Appendix K**. The results of the duplicate sample analysis are provided in **Appendix K**. The Analysis Reports, including internal laboratory QA/QC results conducted by ALS, are provided in **Appendix C**.

For the mine rock duplicate samples, although some lack of precision was noted in the duplicate samples collected, in most cases, the concentrations are low and near laboratory detection limits and the differences in concentrations between original and duplicate samples are generally relatively small. However, the low concentrations result in elevated RPD values. Therefore, the lack of precision in the duplicate samples is not considered to be problematic for interpretation of the SFE data.

For the mine rock replicate sample an acceptable level of precision was not met for dissolved aluminum, arsenic, barium, calcium, chromium, lead, magnesium, manganese, silicon, or sodium (**Appendix K**). However, whole-rock samples can be characterized by considerable sample heterogeneity, which can result in variability in duplicate results. Therefore, despite the large RPD values observed between the replicate samples, the results are not considered problematic for interpretation of the SFE data.

For the tailings SFE, three replicates were conducted for the DI and acid-wash tests on the single tailings sample. The relative difference between the two sets of replicates was evaluated by examination of the relative standard deviation (RSD, %). Similar to the RPD, a control limit of 20 % RSD was used to evaluate differences between the replicate water samples when the concentration of one of the samples was greater than five times the detection limit. The calculated RSD values for field replicate analysis are presented in **Appendix K**. The Analysis Reports, including internal laboratory QA/QC results conducted by ALS, are provided in **Appendix E**.

Although some lack of precision was noted for total aluminum, uranium, zinc, and dissolved uranium and zinc, the differences in concentrations between replicate samples are generally relatively small. However, the low concentrations result in elevated RSD values. Therefore, the lack of precision in the replicate samples is not considered to be problematic for interpretation of the SFE data.

2.5.2 Kinetic Tests

For the 11 mine rock humidity cells, five duplicate samples were collected for dissolved metals and a single duplicate was collected for the two tailings humidity cells. The precision of the laboratory duplicate samples were evaluated by calculating using RPD. The calculated RSD values for field replicate analysis are presented in **Appendix K** for the mine rock and tailings HCTs. The Analysis Reports, including internal laboratory QA/QC results conducted by ALS, are provided in **Appendix F** for the mine rock HCTs and **Appendix G** for the tailings HCTs.

For the mine rock duplicate samples, although some lack of precision was noted for barium, lead, sodium, and zinc in two of the duplicate samples collected, in most cases, the concentrations are low and near laboratory detection limits and the differences in concentrations between original and duplicate samples are generally relatively small. However, the low concentrations result in elevated RPD values. Therefore, the lack of precision in the duplicate samples is not considered to be problematic for interpretation of the humidity cell data.

3.0 RESULTS

3.1 Static Tests

3.1.1 Mine Rock

The whole rock and ABA results for the 54 samples previously analyzed (KCB, 2012) and the 112 samples analyzed for this study are presented in **Appendix A**. The two datasets were compared in order to validate the assumption that they could be combined. The comparison considered the average concentrations and 95% confidence intervals for all analyzed parameters for each of the four mine rock types, from both datasets. The comparison results suggested that there was no significant difference between the two datasets overall (**Appendix A**). Therefore, for the purposes of the current study the results, the 166 samples were combined and treated as a single dataset.

3.1.1.1 Metals Content

The metal contents of the mine rock samples are summarized in **Table 3.1** and a statistical summary of the data is presented in **Appendix B**. Antimony, arsenic, cadmium, cobalt, lead, molybdenum, selenium, silver, and zinc concentrations were elevated (i.e. exceeded the 10X crustal abundance screening values) in at least one sample. Therefore, for the purposes of this study these metals have been classified as COPCs. The general trends for selected COPCs were observed as follows:

- Antimony concentrations were elevated in 11 of 166 samples and average values exceeded the screening value for the MSED and MSS rock types;
- Arsenic concentrations were elevated in 73 of 166 samples and the screening value was exceeded by the average concentrations for all four rock types;
- Cadmium concentrations were elevated in 11 of 166 samples; however, the average values calculated for each rock type did not exceed the screening value;
- Cobalt concentrations were elevated in 3 of 166 samples, which all occurred amongst the BMS samples;
- Lead concentrations were elevated in 21 of 166 samples and the screening value was exceeded for the average calculated values for the MSS samples;
- Molybdenum concentrations were elevated in 1 of 166 samples, which was a MSS sample;
- Selenium concentrations were elevated in 38 of 166 samples, while the majority of samples for all rock types were measured below method detection limits;

- Silver concentrations were elevated in 24 of 166 samples and the screening value was only exceeded for the average value of the MSS rock type, and

- Zinc concentrations were elevated in 7 of 166 samples, which only occurred for samples amongst the BMS and MSS rock type.

Although some constituents did not exceed the screening values, they should be included as they have regulatory water quality limits that must be met (e.g. aluminum, nickel, uranium, etc…). Furthermore, there will be other COPCs related to mining and milling operations, such as cyanide and nitrogen species, that are not directly related to the mine rock and tailings weathering.

3.1.1.2 Acid Base Accounting

The ABA results are summarized by rock type in **Table 3.2**, the complete dataset is presented and a statistical summary of the data is presented in **Appendix B**. The main components of ABA are the AP, determined from the sulphide-sulphur content, and the NP, which represents the ability of the solids to consume acid.

Paste pH and Sulphur Speciation

Sulphide content can be used as screening tools to assess the potential for acid generation. The total-sulphur contents, measured as percent sulphur (%S), ranged from 0.06 to 9.52 %S with geomean values for BMS, BS, MSS, and MSED samples of 0.60, 0.53, 0.61, and 0.68 %S (**Table 3.2**). In general, the total-sulphur content of the four rock types was similar; the MSED rock type had a slightly higher geomean value of 0.68 %S, while a MSS sample had the highest sulphur content.

The average sulphide-sulphur contents amongst all the samples ranged between 0.01 and 8.58 %S, whereas the average sulphate-sulphur contents ranged between 0.01 and 1.00 %S. The geomean sulphide-sulfur contents of BMS, BS, MSS, and MSED were 0.0.44, 0.40, 0.78, and 0.52 %S, while sulphate-sulphur values were 0.24, 0.22, 0.23, and 0.16 %S, respectively (**Table 3.2**). For all four mine rock types, the high sulphide-sulphur content standard deviation (0.43, 0.38, 1.24 and 0.53 %S) relative to the geomean values demonstrates the broad range of sulphide contents. This broad range of sulphide-sulphur contents is evident in that all mine rock types are characterized by values that range over two orders of magnitude.

The relationship amongst sulphide-sulphur and sulphate-sulphur with total-sulphur for the samples are shown in **Figure 3.1**. The sample plots indicate a strong correlation exists between sulphide-sulphur and total sulphur, while there is practically no correlation between sulphate-sulphur and total sulphur. The plots suggested that the majority of the sulphur is in sulphide form (86%), and that total sulphur may be a suitable for determining the sulphide-sulphur content of the BMS, BS, MSS, or MSED mine rock materials for management purposes.

Acid Generation Potentials (AP)

Acid potential values were comparable among all mine rock types, with values ranging from 0.31 to 268 kg $CaCO_3$/t. Average geomean AP values for BMS, BS, MSS, and MSED samples were 10.3, 7.24, 11.4 and 9.86 kg $CaCO_3$/t based on the sulphide-sulphur content. The MSED samples had both the highest geomean value and the largest range in AP values, with a standard deviation of 38.6 kg $CaCO_3$/t (**Table 3.2**).

Carbon Speciation

The Sobek method for measuring NP is very aggressive and is known to over-estimate the available NP in many samples (Price, 2009). A more conservative estimate of the neutralization potential is based on the carbonate neutralization potential (Carb-NP), as it only considers the neutralizing capacity provided by carbonate minerals that maintain pH values above 5, and not the aluminosilicate and silicate minerals that may neutralize acid but may not maintain pH values above 5. In addition, carbonate minerals typically react at higher rates than do silicate minerals and, therefore; they will be more available for neutralization reactions. The Carb-NP can be calculated from the reported carbonate content, which also provides an indication of the amount of carbonate minerals that may be present, including siderite and other iron carbonate minerals.

The total carbonate values for all four rock types, measured as percent carbon (%C), ranged between 0.01 and 0.71 %C (**Table 3.2**). Total carbonate values were higher in BS and MSED samples with geomean values of 0.09 and 0.08 %C. Conversely, BMS and MSS samples both had geomean values of 0.03 %C. Total carbonate was not provided for ABA data presented in KCB (2012).

Neutralization Potentials (NP)

The measured Sobek-NP values were relatively low, ranging from 2.10 to 20.8 kg $CaCO_3$/t with geomeans of 7.19, 8.57, 5.69, and 8.90 kg $CaCO_3$/t for BMS, BS, MSS, and MSED, respectively (**Table 3.2**). Typically, Carb-NP values were lower than and only represent less than one-half of the Sobek-NP values, ranging from 0.08 to 16.7 kg $CaCO_3$/t with geomean values for BMS, BS, MSS, and MSED of 0.74, 1.37, 0.72, and 1.87 kg $CaCO_3$/t, respectively (**Table 3.2**).

The relationship between Carb-NP and Sobek-NP values is shown in **Figure 3.2.** On average, only 42 % of the Sobek-NP is represented by the Carb-NP, suggesting that there is NP from non-carbonate sources that may not be available for acid neutralization. The Carb-NP is generally considered to be the effective and available NP in mine materials.

All rock types were characterized by carbonate NPR (Carb-NPR) geomean values below 1.0 (**Table 3.2**). Similarly, with the exception of the BS samples, all mine rock samples had geomean values for Sobek-NPR below 1.0. Therefore, as outlined by Price (2009), some material from all mine rock types can be classified as potentially acid generating (PAG).

The Sobek-NPR and Carb-NPR values were plotted against sulphide contents to illustrate the division between the PAG and non-potentially acid generating (non-PAG) mine rock samples (**Figure 3.3**). Samples with NPR values less than 1.0 are considered PAG, while samples with values greater than 2.0 are considered to be non-PAG. Generally, the four mine rock types exhibited similar relationships between NPR ratios and sulphide-contents. The plot of Sobek-NPR versus sulphide content indicates that generally mine rock samples with sulphide contents less than 0.1 %S most samples have NPR values greater than 2.0. The percentage of samples and therefore, the percentage of potential rock volumes from the mine with values above 2 are small. For the Carb-NPR values, 93 % (n = 154) of the 166 samples tested plotted as PAG, while slightly more than 3 % (n = 6) plotted as non-PAG and the remaining 4% were in the uncertain category with Carb-NPR values between 1 and 2. Because of variations between samples there is no practical sulphur cut-off below which Carb-NPR values will be greater than 2 (**Figure 3.3**).

These results suggest that a large majority of the rock should be considered as PAG, assuming that these 166 samples are representative of the mine rock. However, approximately 7 % of the mine rock in this study could potentially be considered non-PAG. Assuming that a suitable mining method could be developed to adequately separate out this rock from the PAG material, it may be suitable for construction purposes. Any materials that are intended for construction or are not stored in the WRSF should be tested to confirm that they are non-PAG or metal leaching.

3.1.1.3 Shake Flask Extractions

The modified synthetic precipitation leaching procedure was used to conduct SFEs on the rock material. A summary of the SFE results, for both DI and acidic solution extractions, are presented in **Table 3.3**. The results were compared to 100X the PWQO values. This comparison provides insights (at a screening level) regarding constituents that may require further consideration; however, these comparisons are meant only for qualitative purposes. The SFE data are compiled and included in **Appendix C**. Average values were found to be representative of the soluble concentrations.

As expected, higher soluble concentrations were generally observed in samples for all four mine rock types in the acid extractions compared to those in the DI extractions. Deionized water extraction values exceeded acid-wash values for antimony and sulphate for the BMS samples; cadmium, zinc, and sulphate for the MSS sample; and sulphate for the MSED samples (**Table 3.3**). The 100X PWQO screening values were exceeded for aluminum (BS, MSED), copper (MSED), and lead (BMS, BS, MSED) in the acid-wash SFEs (**Table 3.3**). Conversely, no screening values were exceeded for any of the DI-water SFE for all four mine rock types.

3.1.2 Barrel Tests

3.1.2.1 Metal Content

A summary of the metal contents for the field barrel test composite samples is summarized in **Table 3.4** and the full dataset is presented in **Appendix D**. Concentrations of arsenic in the BMS, MSED, and MSS composite samples and silver in the BMS sample exceeded the screening value of 10X crustal abundance. Similar to the mine rock core sample results (**Table 3.2**), the BMS, BS, MSS, and MSED barrel test samples were characterized by ABA results that indicated they were potentially acid generating (**Table 3.4**). Although, the majority of calculated Sobek and Carb-NPR values were lower for the barrel test samples then the average values calculated for the mine rock core samples.

3.1.2.2 Acid Base Accounting

The ABA results for the field barrel test composite samples are summarized in **Table 3.4** and the full dataset is presented in **Appendix D**. The total-sulphur contents for the composite BMS, BS, MSED, and MSS samples were 0.50, 1.08, 0.83, and 0.76 %S, respectively (**Table 3.4**). The values for the BS and MSS samples were higher than the geomean values calculated from all core samples as shown in Table 3.2, while the BMS and MSED values were similar to the respective geomean values. The sulphide-sulphur content for the four composites varied between 0.42 and 0.79 %S, which was higher than the geomean values determined for the four mine rock types. Conversely, the sulphate-sulphur contents for the BMS, MSS, and MSED barrel samples were similar to the geomean values for their corresponding core samples, while the BS value was higher than the geomean value shown in **Table 3.2**.

The calculated AP values for the composite BMS, BS, MSS, and MSED barrel test samples were nearly double the geomean values calculated for the core samples (**Table 3.4**). Conversely, calculated Sobek-NP and Carb-NP values were nearly identical to the geomean values listed in **Table 3.2**. These values resulted in mine rock Sobek-NPR and Carb-NPR ratios below 1.0 in all barrel samples. The NPR ratios in the BS, MSS, and MSED were less than one and were also lower than the calculated geomean values in **Table 3.4**. Therefore, the rock in all four barrels can be classified as potentially acid generating.

3.1.3 Tailings

3.1.3.1 Metal Content

The results of the constituent content analyses conducted on the composite tailings sample is summarized **Table 3.5,** and are compared to average crustal abundances, as recommended by Price (1997, 2009). The constituent content of the tailings sample were initially compared to a screening value of 10X the average crustal abundances (Faure, 1998). Complete results are presented in **Appendix E**.

The majority of constituents did not exceed the screening values (10X crustal abundance); however, average antimony, arsenic, cadmium, lead, silver, and zinc concentrations were elevated (**Table 3.5**). Elevated concentrations would be expected in tailings, as the material is associated with mineralization and ore.

3.1.3.2 Acid Base Accounting

The tailings sample ABA testing results are summarized in **Table 3.5** and the results of the complete analysis is presented in **Appendix E**. The paste pH value was 8.0. The average total-sulphur content was 1.53 %S, and was primarily in the form of sulphide-sulphur content at 1.23 %S. The resulting average AP value was 38.4 kg $CaCO_3$/t.

All carbon in the sample is in the form of carbonate at a concentration of 0.02 %C. The calculated Sobek-NP value was 5.1 kg-$CaCO_3$/t with a Carb-NP value of 0.3 kg-$CaCO_3$/t, which represents only 6% of the Sobek-NP (**Table 3.5**). Similar to the mine rock samples, the differences between NP values suggests that there is NP from non-carbonate sources that may not be available for acid neutralization. The tailings sample had a Sobek-NPR and Carb-NPR values well below 1.0, therefore, as outlined by Price (2009), the tailings can be classified as potentially acid generating if stored in a typical on land impoundment with exposed beaches.

3.1.3.3 Shake Flask Extractions

The modified synthetic precipitation leaching procedure was used to conduct SFEs on the tailings sample. A summary of the SFE results, for both DI and acidic solution extractions, are presented in **Table 3.6** and compared to 100X the PWQO values (for screening purposes). The full tailings SFE dataset is presented in **Appendix E**.

Higher soluble concentrations were observed for all constituents, with the exception of sulphate, for the acid-wash extractions compared to the DI extractions (**Table 3.6**), as expected. The 100X PWQO values were only exceeded for average aluminum, cadmium, chromium, cooper, iron, lead, and zinc in the acid-wash SFEs (**Table 3.6**). For the DI extractions, no constituents exceeded the 100X PWQO values.

3.2 Kinetic Tests

3.2.1 Humidity Cells

3.2.1.1 Mine Rock

The 11 mine rock HCTs, initiated for the BMS, BS, MSS, and MSED mine rock samples were run for between 63 and 85 weeks. The solids metal content and ABA characteristics for each of the HCTs are summarized in **Table 3.7**. Similar to the average metal contents observed for the mine rock core samples (**Table 3.1**), the 10X crustal abundance values were exceeded for arsenic, cadmium, lead, silver, and zinc by solid samples for some HCTs (**Table**

3.7). Similarly, calculated Carb-NPR values were substantially lower than Sobek-NPR values for solid samples from the HCTs. Additionally, as expected, both Carb-NPR and Sobek-NPR decreased with increased sulphide content (**Table 3.7**).

The HCT results for selected COPC concentrations are illustrated graphically in **Figure 3.4**. The complete dataset for each HCT is presented in **Appendix F**. The COPCs for the HCTs, as determined from static test result screening, included pH, sulphate, aluminum, arsenic, cadmium, chromium, cobalt, copper, iron, lead, nickel, silver, thallium, uranium, vanadium, and zinc.

Generally for all mine rock HCTs, pH values decreased from approximately 8.0 to 6.0 over the initial 20 weeks, increased slightly between weeks 20 and 50, and then decreased to below 5.0 at termination on week 85. Sulphate concentrations exhibited initially elevated values, which decreased rapidly between approximately weeks 1 to 5. Similarly, several dissolved metals demonstrated initial elevated concentrations followed by substantial decreases over the first 5 to 18 weeks. Concentrations for selected dissolved metals exhibited increases after week 60, in a majority of the HCTs still running. Higher initial concentrations are related to an initial flush of the crushed mine rock samples, while lower values at later times are representative of a relatively constant, natural, rate of release associated with oxidation or other weathering reactions. Increasing concentrations at later times likely resulted from acidic mineral dissolution, which is associated with the observed decline in pH values in the HCTs.

The key observations related to the humidity cell tests on each mine rock type are summarized below. It is noted that the all HCTs are expected to generate acidic leachate values in the future and many cells exhibited decreasing pH and increasing COPC concentration trends that are consistent with on-going sulphide oxidation. The HCTs were on-going and updated results will be provided in the final report.

<u>BMS Mine rock</u>

- Measured pH values exhibited gradual declines, from approximately 8.0 at the onset of testing to a low of 4.6 after 85 weeks;

- Dissolved arsenic, cobalt, copper, iron, and nickel concentrations generally decreased from peak values within the initial 10 weeks;

- Dissolved cadmium, cobalt, copper, iron, lead, nickel and zinc exhibited increasing concentrations after approximately week 60, and

- Dissolved aluminum, arsenic, chromium, and silver appear to have reached steady-state conditions as of week 45 for all three HCTs.

<u>BS Mine rock</u>

- Measured pH values exhibited gradually declined, from approximately 8.3 to 6.5, for all three HCTS until approximately week 18 where values remained relatively constant until week 60 when the pH again decreased to a minimum of 4.6 at week 85;

- Dissolved arsenic, copper, lead, and nickel concentrations generally decreased from peak values within the initial 10 weeks;

- Dissolved cadmium, cobalt, nickel and zinc exhibited slightly increasing concentrations after approximately week 18, and

- Dissolved aluminum, arsenic, chromium, cobalt (for HCT-B and -C), copper, iron, lead, nickel, silver, and zinc appear to have reached steady-state conditions as of week 45 for all three HCTs.

<u>MSS Mine rock</u>

- Measured pH values exhibited gradually declined, from approximately 7.7 to 6.5, for all three HCTS until approximately week 18 where values remained relatively constant between 6.5 and 7 until week 48 when the pH decreased to a minimum of 4.5 at week 85;

- Dissolved aluminum, arsenic, copper, iron, and nickel concentrations generally decreased from peak values within the initial 10 weeks;

- Dissolved cadmium, lead, nickel and zinc exhibited increasing concentrations after approximately week 18, and

- Dissolved aluminum, arsenic, chromium, cobalt, copper, iron, and silver appear to have reached steady-state conditions as of week 45 for all three HCTs.

<u>MSED Mine rock</u>

- Measured pH values gradually declined from 9.0 to 6.9 for HCT-A and from 7.4 to 6.6 for HCT-B between weeks 0 and 20 and then increased slightly to approximately 7.2 for both HCTs between weeks 20 and 45 before exhibiting a decrease to approximately 5.4 at week 78;

- Dissolved aluminum, arsenic, cobalt, iron, nickel, and zinc concentrations generally decreased from peak values within the initial 10 weeks;

- All COPCs for both HCT-A and HCT-B appear to have reached steady-state conditions as of week 45.

3.2.1.2 Tailings

The tailings and duplicate tailings HCTs were run for 78 and 59 weeks, respectively. Selected COPC concentrations as a function of time are illustrated in **Figure 3.5** and the complete dataset is presented in **Appendix G**.

Measured pH values exhibited steady and consistent declines, from approximately 7.80 to 3.70 over 78 weeks. Sulphate concentrations exhibited initially elevated values, which decreased rapidly over approximately weeks 1 to 10 and increased slightly between week 40 and 78. Similarly, a majority of metal constituents demonstrated initial elevated concentrations followed by substantial decreases over the initial 20 weeks. Higher initial concentrations are related to an initial flush of tailings, while lower values at later times are representative of a relatively constant, natural, rate of release associated with oxidation or other weathering reactions. In addition to arsenic, a majority of the acid soluble trace metal concentrations began to increase at approximately week 20, including cadmium, cobalt, copper, nickel, lead, and zinc (**Figure 3.5**).

The results from the earlier, initial flush period (weeks 1 to 10) and later, steady-state (weeks 20 to 78), time periods were analysed separately to assess the long-term loadings associated with each COPC from the tailings. As was conducted for the mine rock HCT results, the tailings results were analysed to provide relationships that allow estimates of loadings from materials over a wide range of sulphide contents and concentrations of COPCs in the tailings. These relationships can then be used to estimate loadings for mine rock types representative of the materials in stockpiles and in pits and to compare those estimates to average measured values. The actual measured values of water collected each week were used to calculate the actual loading rates.

3.2.2 Barrel Tests

The four barrel tests initiated for the BMS, BS, MSS, and MSED mine rock samples have been running for approximately one year. A total of six samples have been collected, at the time of this report, from each of the barrel tests on weeks 8, 17, 27, 36, 39 and 45. The COPC for the barrel tests, as determined from static test result screening, include pH, sulphate, aluminum, arsenic, cadmium, chromium, cobalt, copper, iron, lead, nickel, silver, thallium, uranium, vanadium, and zinc. Selected COPC concentration plots for each mine rock type are presented in **Figure 3.6**. The complete leachate chemistry results for all four barrel tests are presented in **Appendix H**.

The leachate pH values were typically between 4.7 and 6.7 with the exception of values for the MSED field cell, which exhibited pH values up to 9.5 in July 2014. Sulphate concentrations varied between approximately 11.6 and 90 mg/L for all four barrels. Dissolved arsenic, cadmium, cobalt, lead, nickel, and zinc concentrations were similar among the four mine rock types and appear to be exhibiting a cycling behaviour, with peak values associated with samples collected between March and April (**Figure 3.6**). However, dissolved sulphate, cobalt, and nickel concentrations were relatively higher for the BS barrel test, compared to the BMS, MSS, and MSED barrels (**Figure 3.6**).

3.3 Loading Rates

3.3.1 Mine Rock

The HCTs were initiated on materials representative of the four main mine rock types and the sulphide content range expected to represent the Goliath Gold project mine rock stockpiles. However, the mine rock samples selected for analyses in the HCTs were not intended to be representative of the final mix of mine rock types or the sulphide content. The relationships between COPC loading rates and other master variables, such as sulphide content, metal content, and solution pH, were investigated for each mine rock type.

The loading rates for the humidity cells is readily evaluated because the 1 kg of rock in each cell was rinsed with 1 L of water each week so that the concentration of a COPC in the leachate expressed in mg/L is equivalent to a loading rate in mg/kg/wk. The initial flush loading rates were assumed to occur within between weeks 1 and 5 (**Table 3.8**). The average loading rates were calculated between weeks 18 and 85 (**Table 3.9**). The full datasets for the initial and equilibrium loading rates are presented in **Appendix I**.

The majority of the leachate concentrations used to calculate the average loading rates for chromium, iron, silver, thallium, uranium, and vanadium were below method detection limits, for all four mine rock samples. Loading rates calculated from these values are denoted by less than (<) values. Additionally, one or more of the BS, BMS, and MSS HCTs did not reach steady-state for one or more COPCs prior to concluding the experiments. The scaling factors determined in Section 2.3.4 were applied to the average loading rates for each COPC and a scaled loading rate was calculated.

Evaluation of the HCT results for each mine rock type indicated that some average scaled COPC loading rates were correlated to either sample sulphide content, solids metal content, or by geochemical equilibrium. The geomean sulphide and solids metal contents were used to calculate the average scaled COPC loading rate for each mine rock type (**Table 3.7**). The MSED loading rate correlations were not calculated as there were only two HCTs undertaken and equilibrium rates were applied instead. These correlations are summarized for the BMS, BS, MSS, and MSED samples in **Table 3.10** to **Table 3.13**, respectively.

The scaled loading rates for each COPC are summarized below:

<u>Sulphate</u>

A strong correlation was observed between sulphate loading rates and sulphide content for the BMS, BS, and MSS samples. The relationships between sulphate loading rate and sulphide contents are expected because sulphate is a product of sulphide mineral oxidation and the reaction rates are dependent on the sulphur concentration in the solids among other variables. With this relationship, the loading rate of sulphate can be estimated for mine rock samples with known sulphide contents.

Aluminum

A good correlation was calculated between aluminum loading rates and sulphide content for the BMS samples. However, no correlation between the aluminum or sulphide content was calculated for the BS and MSS samples. The calculated loading rate for the BMS samples and the steady-state rates for the BS and MSS samples were very similar. Dissolved aluminum concentrations will likely to be pH controlled; therefore, a constant loading rate can be applied and is represented by the geomean loading rate calculated for each material type.

Arsenic

There were no observed correlations for the BMS, BS, or MSS samples, which were characterized by steady-state loading rates predominantly with concentrations in leachate below method detection limits. Therefore, a constant loading rate can be applied, which is represented by the geomean loading rate calculated for each material type.

Cadmium

Strong correlations were observed between calculated cadmium loading rates and sulphide content for BMS samples and with whole-rock cadmium content for MSS samples (**Table 3.11** and **Table 3.12**). There were no observed correlations for the BMS loading rates, which were characterized by steady-state loading rates predominantly associated with concentrations in leachate below method detection limits. Therefore, a constant loading rate can be applied, which is represented by the geomean loading rate calculated for each material type.

Chromium

The calculated chromium loading rates for all HCTs for each mine rock sample were below method detection limits. Therefore, no correlations were made with either sulphide content or whole-rock chromium content. A constant loading rate can be applied for BMS, BS, and MSS samples, which are represented by the geomean loading rates calculated for each material type.

Cobalt

A strong correlation was observed between cobalt loading rates and sulphide content for the MSS samples. There were no observed correlations for the BMS or BS samples, which were characterized by steady-state loading rates. Therefore, a constant loading rate can be applied, which is represented by the geomean cobalt loading rate calculated for each material type.

Copper

Strong correlations were observed between calculated copper loading rates and sulphide content for BMS samples and with whole-rock cadmium content for MSS samples (**Table 3.11** and **Table 3.12**). There were no observed correlations for the BMS loading rates, which were characterized by steady-state loading rates predominantly associated with concentrations in leachate below method detection limits. Therefore, a constant loading rate can be applied, which is represented by the geomean loading rate calculated for each material type.

Iron

The calculated chromium loading rates for all HCTs for each mine rock sample were below method detection limits. Therefore, no correlations were made with either sulphide content or whole-rock chromium content. A constant loading rate can be applied for BMS, BS, and MSS samples, which are represented by the geomean loading rates calculated for each material type.

Lead

A strong exponential correlation exists between calculated loading rates and solid-phase sulphide contents for BMS, BS, and MSS samples.

Nickel

A strong correlation was observed between nickel loading rates and sulphide content for the MSS samples. There were no observed correlations for the BMS or BS samples, which were characterized by steady-state loading rates. Therefore, a constant loading rate can be applied, which is represented by the geomean nickel loading rate calculated for each material type.

Silver

There were no observed correlations for the BMS, BS, or MSS samples, which were characterized by steady-state loading rates, predominantly, associated with concentrations in leachate below method detection limits. Therefore, a constant loading rate can be applied, which is represented by the geomean silver loading rate calculated for each material type.

Thallium

There were no observed correlations for the BMS, BS, or MSS samples, which were characterized by steady-state loading rates, predominantly, associated with concentrations in leachate below method detection limits. Therefore, a constant loading rate can be applied, which is represented by the geomean thallium loading rate calculated for each material type.

Uranium

A strong correlation between uranium loading rates and sulphide content was calculated for the BS samples and with uranium content for the BMS samples. There were no observed correlations for the MSS samples; therefore, a constant loading rate can be applied, which is represented by the geomean uranium loading rate calculated for each material type.

Vanadium

There were no observed correlations for the BMS, BS, MSS, or MSED samples, which were characterized by steady-state loading rates, predominantly, associated with concentrations in leachate below method detection limits. Therefore, a constant loading rate can be applied, which is represented by the geomean vanadium loading rate calculated for each material type.

Zinc

Strong correlations were observed between calculated zinc loading rates, sulphide content, and whole-rock zinc content for BS and MSS samples; however, the correlation with whole-rock zinc content was stronger for both mine rock types (**Table 3.11** and **Table 3.12**). Therefore, the zinc loading rates for BS and MSS were calculated using the geomean zinc content for each mine rock sample. There were no observed correlations for the BMS or MSED loading rates. Therefore, a constant loading rate can be applied, which is represented by the geomean loading rate calculated for each material type.

3.3.2 Barrel Tests

Loading rates were not calculated for the Barrel Tests as equilibrium values had not yet been reached for each of the four mine rock types, at the time of this report.

3.3.3 Tailings

For COPCs that have reached steady-state conditions, the average initial loading rates were calculated between weeks 1 and 10 and are summarized for selected COPCs in **Table 3.14**. The equilibrium loading rates were calculated between weeks 20 and 78 and are summarized in **Table 3.14**. The full initial and equilibrium loading rate results are presented in **Appendix J**.

The leachate concentrations used to calculate the average loading rates for chromium, silver, and vanadium were below method detection limits. Those loading rates are denoted by less than values. Additionally, some of the COPCs did not reach equilibrium as of week 78; therefore, calculated loading rates should only be used as estimates and not final values. As only one composite tailings sample was available for testing the calculated loading rates could not be correlated to sulphur or whole-rock metal contents.

The tailings loading rates were scaled to account for the temperature difference between the laboratory setting and field conditions, it was assumed the grain-size was representative of field conditions. The scaled equilibrium loading rates for selected COPCs are summarized in **Table 3.14** and the full dataset is presented in **Appendix J**.

4.0 IMPLICATIONS FOR MINE MATERIAL MANAGEMENT

4.1 Sulphur Cutoff Value for Mine Rock and Tailings

The selection of a sulphur cut-off content provides a means of managing rock during operation of the mine. The sulphur content of the rock can be assayed during mining and material that has a sulphur content below the cut-off value can be stored safely in typical on-land stockpiles while materials with sulphur contents greater.

The ABA results considered in this study indicated that, generally, mine rock samples with sulphur contents less than 0.1 %S have Sobek-NPR values greater than 2.0. According to the sulphur block model results, a majority (approximately 70 wt%) of mine rock is characterized by sulphur grades between 0.2 and 1.2 S% . This is well correlated with the geomean %S for BMS, BS, MSS, and MSED mine rock types, which were 0.60, 0.53, 0.61, and 0.68 %S, respectively. Overall, less than 1 wt% of the total defined mine rock had a sulphur grade less than 0.2 S% based on the sulphur block model provided by Treasury. Therefore, a practical sulphur content cutoff value cannot be clearly determined from the results of this investigation. As indicated in Section 3.1.1.2, only 7% of the rock tested in this investigation could potentially be classified as non-PAG. Therefore, if non-PAG mine rock material is to be used for construction purposes, a mining method will need to be developed to segregate the non-PAG material that does not rely on a sulphur content cutoff. Any rock intended for construction should be tested beforehand to verify that it is non-PAG or metal leaching.

The tailings had a sulphur content of 1.53 %S and a Carb-NPR of well less than 1.0. Therefore, assuming the tailings composite provided for this study is representative of the tailings produced during mine operations, all tailings should be considered PAG and appropriate mitigation measures will be required for tailings post-closure.

4.2 Time for Onset of Acidic Conditions

A range of times to onset of acid conditions in waste rock stockpiled on surface can be estimated from the HCT results and calculated loading rates.

The BMS, BS, MSS, and MSED rock samples, used for the HCTs, reached acidic conditions (pH values less than 5.5) after approximately 60 weeks. These HCT results can be considered as conservative estimates for the onset of acidic conditions, as they incorporate smaller grain size distributions, higher average temperatures, and higher precipitation infiltration rates than those anticipated for mine rock during mining operations. Therefore the higher rates of oxidation in the HCT tests than those expected in the WRSF will result in shorter times to the onset of acid drainage. Acidic drainage in the WRSF is expected to be delayed to a greater extent than was observed in the HCTs.

An upper bound for the time to acidity can be estimated from the geomean carbonate content and the field scaled sulphate loading rates (Section 3.3). For this calculation it was assumed that sulphate is produced solely by pyrite oxidation and that the sulphate loading rate controls the carbonate depletion rate. These calculations suggest that the field-scaled time to acid onset is potentially many tens of years.

It is conservatively estimated that the time to acid onset for the PAG rock, based on the samples examined in this investigation, will potentially range between a few tens of years to many tens of years. However, the low Carb-NP values, relative to the calculated AP values, observed for a large majority of the mine rock samples selected for this investigation suggest that any mine rock management methods take a conservative approach to the onset of acid production. If segregation of PAG and non-PAG mine rock is completed, any material used for construction purposes should be evaluated for acid generation potential and metal leaching prior to use.

The time to onset of acid drainage in tailings in the HCT tests was about 40 weeks. Although the oxidation rates on tailings beaches will be slower as a result of lower temperatures in the TSF, the times to acid drainage onset may be only a few years on beaches that remain exposed with no deposition of new material in those areas. Onset of acid conditions in operating TSFs is not typically problematic because ongoing deposition of fresh tailings generally covers previously deposited material and prevents extended exposure on the beaches during operations. The onset of acid conditions for tailings beaches should be considered in closure planning.

4.3 Mine Material Mitigation Strategies

The mine rock can be stored temporarily on the ground surface. All drainage from the temporary stockpiles will report to one of three collection ponds and treated at the processing plant before being discharged to the environment. The loading rates for COPCs from the mine rock were estimated and are listed in **Table 3.9**. At the end of the mine operation, the current plan is for all mine rock will be relocated and stored in either the main pit or adjacent WRSA.

At the end of mine operations, all PAG mine rock should be relocated to the pit and covered by water and isolated from the atmosphere to prevent further oxidation and associated acid generation. Mine rock stored in the WRSA, if classified as PAG, will also require mitigation, possible with construction of an engineered cover to minimize the ingress of water and/or oxygen and the subsequent oxidation and acid generation.

The tailings will report to the TSF during mine operations and all contact water will be collected and treated before being released to the environment. Mitigation strategies should be considered for water quality management associated with tailings storage post closure. Examples of mitigation strategies include; 1) sulphide removal and segregation during milling with separate storage of the smaller volume of high sulphur tailings, 2) long-term under water management or 3) high-efficiency covers for long-term protection.

5.0 CONCLUSIONS

The mine materials at the proposed Treasury Metals Goliath gold mine contain sulphide minerals and were assessed to evaluate the potential for acid generation and metal leaching. A laboratory test program was completed to assess the characteristics of mine rock and tailings as well as to quantify loadings of COPCs from those mine components. Based on the current understanding of the site geology, mineral deposit and the samples selected and tested to date, the preliminary conclusions related to the geochemical characteristics of the mine rock are as follows:

- The majority of the BMS, BS, and MSS, and MSED mine rock materials related to the deposit should be considered as PAG unless confirmed otherwise by ABA testing;
- A small proportion could potentially be classified as non-PAG and used for construction purposes assuming a mining method is developed to segregate the non-PAG rock from PAG materials;
- Segregated non-PAG mine rock should undergo further geochemical characterization and evaluation, before it is used, to ensure that it is suitable for construction purposes;
- The tailings material should be considered as PAG if stored in a conventional tailings basin with beaches;
- Loading rates for COPCs originating from the BMS, BS, MSS, and MSED mine rock types and tailings sample have been quantified to provide a basis for estimating water quality concentrations at the mine when the water balance is available for the operation and overall site; and
- Mitigation strategies for management of mine rock and tailings will be required to prevent negative water quality effects in the long term and also possibly during operations.

6.0 REFERENCES

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TABLES

Table 2.1 – Estimate of total amounts of BMS, BS, MSS, and MSED mine rock.

Rock Type	Abbreviation	Estimated Amount	Percent of Mine Rock
		(tonnes)	(%)
Biotite-Muscovite-Schist	BMS	value req.	value req.
Biotite-Schist	BS	value req.	value req.
Muscovite-Sericite-Schist	MSS	value req.	value req.
Meta-Sediment	MSED	value req.	value req.

Table 2.2 – List of core samples used for mine rock humidity cell test samples.

BMS			BS		
BMS - A	**BMS - B**	**BMS - C**	**BS - A**	**BS - B**	**BS - C**
<0.25% S	**0.25 - 1% S**	**>1% S**	**<0.25% S**	**0.25 - 1% S**	**>1% S**
TL 08-13 (25.5-26.0)	TL 08-04 (19.5-20.0)	TL 08-05 (129.0-129.5)	TL 11-127 (15.8-16.2)	TL 08-36A (72.5-73.0)	TL 08-09 (113.0-113.5)
TL 08-30 (61.5-62.0)	TL 08-08 (84.5-85.0)	TL 08-14 (100.5-101.0)	TL 11-127 (41.0 -41.5)	TL 08-36A (73.5-74.0)	TL 08-09 (114.5-115.0)
TL 09-80 (6.6-6.7)	TL 08-17 (120.5-121.0)	TL 08-36 (84.0-84.5)	TL 11-141 (33.0-33.4)	TL 08-36A (73.0-73.5)	TL 08-09 (114.0-114.5)
TL 10-113 (75.0-75.5)	TL 08-45 (84.0-84.5)	TL 09-85 (61.0-61.5)	TL 11-164 (66.0-66.5)	TL 08-36A (74.5-75.0)	TL 08-09 (115.0-115.5)
	TL 09-76 (20.0-20.5)	TL 11-132 (21.5-22.0)	TL 11-164 (75.0-75.5)	TL 08-36A (75.0-75.5)	TL 08-09 (116.0-117.0)
	TL 09-80 (31.2-31.7)	TL 11-187 (106.0-109.5)		TL 11-141 (6.0-6.5)	
	TL 10-116 (39.0-39.5)				
	TL 11-151 (17.0-17.5)				
	TL 11-153 (70.1-70.6)				
	TL 11-153 (94.5-95.0)				
	TL 11-165 (141.0-141.5)				
	TL 11-187 (18.5-19.0)				
	TL 11-187 (33.0-33.7)				

MSS			Msed		
MSS - A	**MSS - B**	**MSS - C**	**MSed - A**	**MSed - B**	
<0.25% S	**0.25 - 1% S**	**>1% S**	**<0.6% S**	**>0.6% S**	
TL 08-45 (155.0-155.5)	TL 08-08 (149.0-149.5)	TL 08-13 (40.0-40.5)	TL 09-75 (32.0-32.5)	TL 08-43 (53.0-53.5)	
TL 09-83 (45.8-46.3)	TL 08-44 (72.0-72.5)	TL 08-16 (57.0-57.5)	TL 10-97 (21.5-22.0)	TL 09-86 (81.0-81.5)	
TL 09-85 (27.5-28.0)	TL 08-48 (30.0-30.5)	TL 09-75 (23.0-23.5)	TL 10-97 (52.5-53.0)	TL 09-86 (96.5-97.0)	
TL 09-85 (28.3-29.0)	TL 09-80 (36.0-36.5)	TL 09-75 (45.0-45.5)		TL 10-100 (28.5-29.0)	
TL 11-150 (21.5-22.0)	TL 09-81 (35.0-35.5)	TL 09-76 (47.5-48.0)		TL 10-100 (31.5-32.0)	
TL 11-151 (39.5-40.0)	TL 09-82 (25.5-26.0)	TL 09-86 (27.5-28.0)			
TL 11-151 (40.2-40.7)	TL 10-113 (122.5-123.0)	TL 10-113 (86.0-86.5)			
TL 11-153 (85.5-86.0)	TL 11-165 (70.6-71.1)	TL 10-116 (65.5-66.0)			
TL 11-187 (27.5-28.0)	TL 11-187 (147.0-147.5)	TL 11-153 (137.3-137.8)			
TL 11-204a (216.0-216.5)	TL 11-187 (24.5-25.0)				
	TL 11-202 (86.4-87.0)				

***Core segment lab ID refers to borehole location**

****Values in brackets denote the depth interval (in metres) of core segment**

Table 3.1 – Statistical summary of mine rock COPC contents.

Parameter	Units	10X Average Crustal Abundance[1]	BMS (n = 67)				BS (n = 20)				MSS (n = 59)				MSED (n = 15)			
			Geomean	Average	Minimum	Maximum	Geomean	Average	Minimum	Maximum	Geomean	Average	Minimum	Maximum	Geomean	Average	Minimum	Maximum
Aluminum (Al)	mg/kg	840,000	12,302	14,873	2,200	37,900	20,485	22,160	9,400	36,000	8,409	12,690	1,900	45,800	14,492	15,987	9,000	35,100
Arsenic (As)	mg/kg	10	5.93	11.1	0.50	78.0	8.76	14.7	1.40	77.0	12.1	23.5	0.50	150	7.27	17.0	0.80	101
Cadmium (Cd)	mg/kg	1.0	0.14	0.82	0.02	28.0	0.11	0.24	0.04	2.50	0.15	0.95	0.01	19.4	0.11	0.18	0.02	0.60
Chromium (Cr)	mg/kg	1,850	12.3	27.4	0.90	110	51.1	84.2	5.60	173	13.1	30.1	0.50	102	49.4	62.1	4.00	160
Cobalt (Co)	mg/kg	290	61.0	134	3.50	380	68.0	114	6.60	210	28.9	93.2	2.40	290	14.2	32.9	4.20	190
Copper (Cu)	mg/kg	750	13.7	20.5	0.50	83.00	34.3	37.9	11.0	75.0	12.4	39.4	0.25	813	15.6	27.4	1.70	72.0
Iron (Fe)	mg/kg	710,000	15,136	16,815	4,800	39,600	28,977	30,965	14,000	42,200	11,124	15,063	1,400	79,000	20,959	22,820	9,900	38,000
Lead (Pb)	mg/kg	80	16.7	75.9	1.10	2,900	17.9	46.7	3.80	500	27.8	163	1.30	2,120	11.9	29.2	1.00	99.0
Nickel (Ni)	mg/kg	1,050	9.07	14.1	2.20	69.0	30.1	41.6	6.20	75.2	8.16	12.5	2.10	64.0	17.8	29.03	4.90	78.5
Silver (Ag)	mg/kg	0.8	0.20	0.61	0.01	16.0	0.11	0.20	0.01	0.72	0.36	1.36	0.01	29.0	0.33	0.67	0.01	3.60
Thallium (Tl)	mg/kg	3.6	0.25	0.29	0.04	0.66	0.40	0.42	0.08	0.62	0.15	0.21	0.02	0.56	0.25	0.28	0.11	0.68
Uranium (U)	mg/kg	9.1	0.48	0.66	0.10	2.83	1.25	1.82	0.19	3.60	0.42	0.53	0.15	2.30	0.82	1.37	0.27	4.20
Vanadium (V)	mg/kg	2,300	12.2	16.6	1.00	51.0	42.8	48.2	11.0	84.0	4.96	8.59	0.50	48.0	19.4	24.0	3.00	64.0
Zinc (Zn)	mg/kg	800	98.4	337	25.00	12,000	85.5	93.3	61.0	330	86.0	365	5.00	6,480	83.2	97.5	40.0	286

1. From Faure, Gunter. 1998. Principles and Applications of Geochemistry. Prentice Hall. New Jersey.

2. Higlighted cells indicate exceedances for 10x Average Crustal Abundance.

Table 3.2 – Statistical summary of mine rock ABA results.

Parameter	Units	BMS				BS				MSS				MSED			
		Geomean	Average	Minimum	Maximum	Geomean	Average	Minimum	Maximum	Geomean	Average	Minimum	Maximum	Geomean	Average	Minimum	Maximum
Paste pH	-	9.22	9.25	7.32	10.13	9.58	9.59	8.31	10.09	8.91	8.96	6.15	10.15	9.01	9.06	7.34	10.14
Total Carbon	%C	0.02	0.03	0.01	0.13	0.04	0.05	0.01	0.19	0.02	0.02	0.01	0.17	0.04	0.06	0.01	0.20
Carbonate (CO_3)	%C	0.03	0.05	0.01	0.19	0.09	0.17	0.02	0.71	0.03	0.05	0.01	0.48	0.08	0.12	0.02	0.26
Total Sulphur	%S	0.60	0.73	0.17	3.94	0.53	0.70	0.13	1.64	0.61	1.04	0.06	9.52	0.68	0.85	0.25	2.43
Sulphide Sulphur	%S	0.33	0.44	0.06	2.94	0.23	0.40	0.03	1.26	0.36	0.78	0.01	8.58	0.32	0.52	0.02	2.03
Sulphate Sulphur	%S	0.12	0.24	0.01	1.00	0.09	0.22	0.01	0.64	0.06	0.16	0.01	0.93	0.09	0.23	0.01	0.89
Neutralization Potential (Sobek-NP)[1]	kg $CaCO_3$/t	7.19	7.57	3.2	13.50	8.57	8.80	5.9	14.00	5.69	6.28	2.1	18.00	8.90	9.91	4.2	20.80
Carbonate Neutralization Potental (Carb-NP)[2]	kg $CaCO_3$/t	0.74	1.33	0.1	10.80	1.37	2.47	0.3	11.79	0.72	1.16	0.1	7.96	1.87	3.12	0.3	16.70
Acid Generation Potential (AP)[3]	kg $CaCO_3$/t	10.3	13.84	2.0	91.9	7.2	12.56	0.9	39.20	11.4	24.31	0.3	268.00	9.86	16.21	0.6	63.40
Sobek NPR (NP:AP)[4]	-	0.70	0.95	0.06	4.01	**1.18**	2.29	0.3	10.00	0.50	**1.47**	0.0	18.75	0.90	**1.95**	0.1	11.50
Carb-NPR (Carb-NP:AP)[4]	-	0.07	0.16	0.002	**1.61**	0.19	0.84	0.01	4.29	0.06	0.36	0.001	10.50	0.19	0.54	0.01	2.65

1. Analyzed by SGS Lakefield using the Sobek method.

2. Carb-NP = %CO_3(carbonate)*((100.09 g $CaCO_3$/mol)/(12.011 g C/mol))*1000 kg/t.

3. AP values were calculated from the sulphide sulphur content.

4. Bolded cells represent 1≤NP/AP≤2 and highlighted cells represent NP/AP<1.

Table 3.3 – Summary of average soluble concentrations for mine rock SFE results.

Parameter	Units	100X PWQO(1-8)	BMS		BS		MSS		MSED	
			DI water	Acid	DI water	Acid	DI water	Acid	DI water	Acid
			(n = 13)	*(n = 5)*	*(n = 4)*	*(n = 2)*	*(n = 8)*	*(n = 3)*	*(n = 3)*	*(n = 1)*
pH		6.5 - 8.5	7.78	2.41	8.34	2.49	7.74	2.20	6.09	2.35
Conductivity	µS/cm	-	39.8	9510	45.3	7930	42.3	9237	149.2	8830
SO_4	mg/L	-	7.85	3.46	11.0	5.61	12.1	1.51	56.6	99.3
Al	mg/L	7.5	2.25	4.81	0.42	28.3	0.39	3.52	0.48	9.87
Sb	mg/L	2.0	0.0014	0.0012	0.0013	0.0032	0.0029	0.0039	0.0006	0.0044
As	mg/L	0.5	0.0032	0.0155	0.0030	0.0307	0.0057	0.0411	0.0027	0.0651
Ba	mg/L	-	0.0028	0.0522	0.0052	0.1459	0.0042	0.0419	0.0101	0.1250
Be	mg/L	1.1	0.0011	0.0008	<0.00010	0.0104	<0.00010	0.0012	0.0007	0.0123
Bi	mg/L	-	<0.00050	0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0000
B	mg/L	20	0.0130	0.0118	<0.010	0.0240	0.0105	0.0165	0.0115	0.0260
Cd	mg/L	0.01	0.00007	0.00032	<0.000010	0.00055	0.00083	0.00009	0.00020	0.00073
Ca	mg/L	-	6.98	50.5	3.93	99.8	2.90	105	13.0	106
Cr	mg/L	0.10	0.0009	0.0074	0.0002	0.0089	0.0002	0.0029	0.0003	0.0111
Co	mg/L	0.090	0.0017	0.0150	0.0002	0.0103	0.0013	0.0133	0.0106	0.0180
Cu	mg/L	0.10	0.0018	0.0221	0.0006	0.0362	0.0007	0.0164	0.0083	0.1820
Fe	mg/L	30	0.31	12.04	0.08	10.3	0.44	1.14	0.19	17.6
Pb	mg/L	0.10	0.0044	0.3673	0.0009	0.4055	0.0013	0.0970	0.0060	0.6520
Li	mg/L	-	0.0015	0.0031	0.0011	0.0050	0.0014	0.0022	0.0028	0.0116
Mg	mg/L	-	0.67	2.58	0.54	4.57	0.47	3.23	3.53	18.6
Mn	mg/L	-	0.0255	0.72	0.0094	0.71	0.0206	1.11	0.2986	3.21
Mo	mg/L	4.0	0.0004	0.0003	0.0002	0.0004	0.0001	0.0004	0.0024	0.0016
Ni	mg/L	2.5	0.0063	0.0407	0.0014	0.0682	0.0052	0.0265	0.2214	1.21
P	mg/L	-	12.60	10.35	<0.30	11.6	<0.30	9.58	<0.30	6.65
K	mg/L	-	2.62	3.56	2.78	8.36	2.45	2.50	5.84	7.83
Se	mg/L	10	<0.00010	0.00014	0.0004	<0.00010	<0.00010	<0.00010	0.0002	0.00019
Si	mg/L	-	2.63	4.35	1.16	26.6	1.02	3.79	1.96	8.79
Ag	mg/L	0.01	0.00028	0.00029	0.00001	0.00018	0.00002	0.00028	0.00007	0.00172
Na	mg/L	-	1.97	1.00	1.71	21.4	1.20	0.98	1.78	3.25
Sr	mg/L	-	0.0260	0.0641	0.0105	0.1218	0.0112	0.1079	0.0628	0.5040
S	mg/L	-	2.62	1.15	3.68	1.87	6.13	0.51	18.9	33.1
Tl	mg/L	0.03	0.00007	0.00049	0.00001	<0.000010	0.00006	0.00010	0.00037	0.00280
Sn	mg/L	-	<0.00010	0.00018	<0.00010	0.00036	<0.00010	<0.00010	<0.00010	0.00000
Ti	mg/L	-	0.0270	0.0588	0.0200	0.0825	<0.010	0.0155	<0.010	0.0100
U	mg/L	0.50	0.0007	0.0073	0.0003	0.0212	0.0003	0.0044	0.0011	0.0292
V	mg/L	0.60	0.0014	0.0082	0.0021	0.0114	0.0020	0.0025	0.0016	0.0144
Zn	mg/L	2.0	0.0106	0.1497	0.0038	0.1065	0.0842	0.0449	0.0633	0.4190

(1) MOEE [Ontario Ministry of Environment and Energy], 1994. Policies Guidelines Provincial Water Quality Objectives. Reprinted 1999.

(2) PWQO for P is based on a value to prevent excessive algae growth.

(3) PWQO for Al depends on pH as follows: pH = 4.5−5.5, PWQO = 0.015 mg/L; pH >5.5−6.5, PWQO = 10% of background concentration; pH >6.5−9.0, PWQO = 0.075 mg/L.

(4) PWQO for Be depends on hardness as follows: hardness <75 mg/L as CaCO3, PWQO = 0.011 mg/L; hardness >75 mg/L as CaCO3, PWQO = 1.1 mg/L.

(5) PWQO for Cd depends on hardness as follows: hardness 0−100 mg/L as CaCO3, PWQO = 0.0001 mg/L; hardness >100 mg/L as CaCO3, PWQO = 0.0005 mg/L.

(6) PWQO for Cr(VI) (0.001 mg/L) was assumed to apply, and thus all the Cr is assumed to occur as Cr(VI).

(7) PWQO for Cu depends on hardness as follows: hardness 0−20 mg/L as CaCO3, PWQO = 0.001 mg/L; hardness >20 mg/L as CaCO3, PWQO = 0.005 mg/L.

(8) PWQO for Pb depends on hardness as follows: hardness <30 mg/L as CaCO3, PWQO = 0.001 mg/L; hardness = 30−80 mg/L as CaCO3, PWQO = 0.003 mg/L; hardness >80 mg/L as CaCO3, PWQO = 0.005 mg/L.

Table 3.4 – Field barrel test mine rock solid metal contents and ABA results.

Parameter	Units	10X Average Crustal Abundance[1]	Field Barrel Tests[2]			
			BMS	BS	MSS	MSED
Aluminum (Al)	mg/kg	840,000	12,000	20,000	4,700	13,000
Arsenic (As)	mg/kg	10	15	6.1	24	20
Cadmium (Cd)	mg/kg	1.0	0.65	< 0.02	0.09	< 0.02
Chromium (Cr)	mg/kg	1,850	62	120	30	48
Cobalt (Co)	mg/kg	290	8.6	19	4.1	13
Copper (Cu)	mg/kg	750	62	51	16	21
Iron (Fe)	mg/kg	710,000	11,000	40,000	8,000	21,000
Lead (Pb)	mg/kg	80	56	16	33	24
Nickel (Ni)	mg/kg	1,050	7.4	64	6.2	20
Silver (Ag)	mg/kg	0.8	0.86	0.44	0.43	0.39
Thallium (Tl)	mg/kg	3.6	0.18	0.60	0.12	0.28
Uranium (U)	mg/kg	9.1	0.61	2.4	0.32	1.7
Vanadium (V)	mg/kg	2,300	7	53	2	22
Zinc (Zn)	mg/kg	800	250	87	51	64
Paste pH	-	-	9.36	8.83	9.42	9.05
Total Carbon	%C	-	0.030	0.028	0.044	0.038
Carbonate (CO_3)	%C	-	0.080	0.030	0.115	0.080
Total Sulphur	%S	-	0.50	1.08	0.76	0.83
Sulphide Sulphur	%S	-	0.42	0.73	0.65	0.79
Sulphate Sulphur	%S	-	0.08	0.34	0.11	0.04
Neutralization Potential (Sobek-NP)[3]	kg $CaCO_3$/t	-	9.6	8.7	7.5	8.4
Carbonate Neutralization Potental (Carb-NP)[4]	kg $CaCO_3$/t	-	6.7	2.5	9.6	6.7
Acid Generation Potential (AP)[5]	kg $CaCO_3$/t	-	13.1	22.8	20.3	24.7
Sobek-NPR (NP:AP)[6]	-	-	0.73	0.38	0.37	0.34
Carb-NPR (Carb-NP:AP)[7]	-	-	0.51	0.11	0.47	0.27

1. From Faure, Gunter. 1998. Principles and Applications of Geochemistry. Prentice Hall. New Jersey.
2. Higlighted cells indicate exceedances for 10x Average Crustal Abundance.
3. Analyzed by SGS Lakefield using the Sobek method.
4. Carb-NP = $\%CO_3*((100.09\ g\ CaCO_3/mol)/(12.011\ g\ C/mol))*1000$ kg/t.
5. AP values were calculated from the sulphide sulphur content.
6. Bolded cells represent 1≤NP/AP≤2 and highlighted cells represent NP/AP<1.

Table 3.5 – Tailings sample solid metal contents and ABA results.

Parameter	Units	10X Average Crustal	Tailings Composite
Aluminum (Al)	mg/kg	840,000	5,000
Antimony (Sb)	mg/kg	2.0	11
Arsenic (As)	mg/kg	10	46
Cadmium (Cd)	mg/kg	1.0	5.3
Chromium (Cr)	mg/kg	290	9.6
Cobalt (Co)	mg/kg	1,850	11
Copper (Cu)	mg/kg	750	81
Iron (Fe)	mg/kg	710,000	19,000
Lead (Pb)	mg/kg	80	870
Nickel (Ni)	mg/kg	1,050	14
Silver (Ag)	mg/kg	0.8	3.4
Thallium (Tl)	mg/kg	3.6	0.17
Uranium (U)	mg/kg	9.1	0.46
Vanadium (V)	mg/kg	2,300	6.0
Zinc (Zn)	mg/kg	800	2,000
Paste pH	-	-	8.00
Total Carbon	%C	-	0.02
Total Carbonate	%C	-	0.02
Total Sulphur	%S	-	1.53
Sulphide Sulphur	%S	-	1.23
Sulphate Sulphur	%S	-	0.3
Neutralization Potential (Sobek-NP)[1]	kg $CaCO_3$/t	-	5.1
Carbonate Neutralization Potental (Carb-NP)[2]	kg $CaCO_3$/t	-	0.3
Acid Generation Potential (AP)[3]	kg $CaCO_3$/t	-	38.4
Sobek-NPR (NP:AP)[4]	-	-	0.13
Carb-NPR (Carb-NP:AP)[4]	-	-	0.01

1. Analyzed by SGS Lakefield using the Sobek method.

2. Carb-NP = $\%CO_3$*((100.09 g $CaCO_3$/mol)/(12.011 g C/mol))*1000 kg/t.

3. AP values were calculated from the sulphide sulphur content.

4. Bolded cells represent 1≤NP/AP≤2 and highlighted cells represent NP/AP<1.

Table 3.6 – Summary of average soluble concentrations in tailings SFE.

Parameter	Units	100X PWQO(1-8)	DI water (n = 3)	Acid (n = 3)
pH	pH units	6.5 - 8.5	7.17	1.37
Conductivity	µS/cm	-	287.0	26,230
SO_4	mg/L	-	112.9	100.5
Al	mg/L	7.5	0.0091	73.0
Sb	mg/L	2.0	0.00680	0.0753
As	mg/L	0.5	0.00023	0.1011
Ba	mg/L	-	0.00704	0.309
Be	mg/L	1.1	<0.00010	0.0033
Bi	mg/L	-	<0.00050	0.0103
B	mg/L	20	<0.010	<0.10
Cd	mg/L	0.01	0.0016	0.119
Ca	mg/L	-	43.0	214
Cr	mg/L	0.10	0.00013	0.345
Co	mg/L	0.090	0.00173	0.0456
Cu	mg/L	0.10	0.00050	0.736
Fe	mg/L	30	<0.010	257
Pb	mg/L	0.10	0.0191	74.8
Li	mg/L	-	0.00188	0.0344
Mg	mg/L	-	1.42	33.2
Mn	mg/L	-	0.274	5.85
Mo	mg/L	4.0	0.000725	0.00362
Ni	mg/L	2.5	0.00088	0.292
P	mg/L	-	<0.30	23.5
K	mg/L	-	5.22	40.5
Se	mg/L	10	0.00030	<0.0010
Si	mg/L	-	1.06	75.8
Ag	mg/L	0.01	<0.000010	0.00625
Na	mg/L	-	4.42	9.9
Sr	mg/L	-	0.0822	0.350
S	mg/L	-	37.6	33.5
Tl	mg/L	0.03	0.000089	0.00211
Sn	mg/L	-	<0.00010	0.0027
Ti	mg/L	-	<0.010	0.42
U	mg/L	0.50	0.000159	0.0435
V	mg/L	0.60	<0.0010	0.063
Zn	mg/L	2.0	0.129	37.8

(1) MOEE [Ontario Ministry of Environment and Energy], 1994. Policies Guidelines Provincial Water Quality Objectives. Reprinted 1999.
(2) PWQO for P is based on a value to prevent excessive algae growth.
(3) PWQO for Al depends on pH as follows: pH = 4.5−5.5, PWQO = 0.015 mg/L; pH >5.5−6.5, PWQO = 10% of background concentration; pH >6.5−9.0, PWQO = 0.075 mg/L.
(4) PWQO for Be depends on hardness as follows: hardness <75 mg/L as CaCO3, PWQO = 0.011 mg/L; hardness >75 mg/L as CaCO3, PWQO = 1.1 mg/L.
(5) PWQO for Cd depends on hardness as follows: hardness 0−100 mg/L as CaCO3, PWQO = 0.0001 mg/L; hardness >100 mg/L as CaCO3, PWQO = 0.0005 mg/L.
(6) PWQO for Cr(VI) (0.001 mg/L) was assumed to apply, and thus all the Cr is assumed to occur as Cr(VI).
(7) PWQO for Cu depends on hardness as follows: hardness 0−20 mg/L as CaCO3, PWQO = 0.001 mg/L; hardness >20 mg/L as CaCO3, PWQO = 0.005 mg/L.
(8) PWQO for Pb depends on hardness as follows: hardness <30 mg/L as CaCO3, PWQO = 0.001 mg/L; hardness = 30−80 mg/L as CaCO3, PWQO = 0.003 mg/L; hardness >80 mg/L as CaCO3, PWQO = 0.005 mg/L.

Table 3.7 – Solid metal contents and ABA results for HCT mine rock samples.

Parameter	Units	10X Average Crustal Abundance[1]	BMS-A	BMS-B	BMS-C	BS-A	BS-B	BS-C	MSS-A	MSS-B	MSS-C	MSED-1	MSED-2
Aluminum (Al)	mg/kg	840,000	8,800	11,000	12,000	23,000	14,000	28,000	4,300	7,500	4,900	9,700	12,000
Arsenic (As)	mg/kg	10	5.6	7.5	18	8.9	9.9	27	6.6	16	39	10	13
Cadmium (Cd)	mg/kg	1.0	0.61	0.11	0.81	0.07	0.11	0.41	0.14	1.10	2.20	0.04	0.31
Chromium (Cr)	mg/kg	1,850	28	32	37	120	56	95	23	37	22	27	51
Cobalt (Co)	mg/kg	290	3.9	5.7	8.0	17	8	16	8.8	7.0	3.8	6.0	11
Copper (Cu)	mg/kg	750	46	17	29	45	31	41	12	52	21	18	44
Iron (Fe)	mg/kg	710,000	8,800	15,000	19,000	40,000	22,000	37,000	6,300	16,000	14,000	17,000	24,000
Lead (Pb)	mg/kg	80	14	19	51	6	36	40	7	160	390	7	31
Nickel (Ni)	mg/kg	1,050	8.9	12.0	23.0	58	18	56	16.0	19.0	7.4	9.5	32
Silver (Ag)	mg/kg	0.8	0.25	0.30	2.70	0.09	0.15	0.45	0.18	0.77	3.00	0.33	3.40
Thallium (Tl)	mg/kg	3.6	0.21	0.26	0.27	0.55	0.44	0.53	0.17	0.15	0.14	0.32	0.27
Uranium (U)	mg/kg	9.1	0.43	0.44	0.85	2.2	0.8	2.6	0.30	0.73	0.35	0.29	1.7
Vanadium (V)	mg/kg	2,300	6	17	16	68	35	49	8	12	3	24	24
Zinc (Zn)	mg/kg	800	170	70	290	67	85	110	68	420	800	64	130
Paste pH	-	-	9.16	9.01	8.51	9.72	9.38	9.25	9.70	9.03	8.09	9.79	8.25
Total Carbon	%C	-	0.016	0.026	0.033	0.112	0.048	0.023	0.017	0.024	0.023	0.059	0.056
Carbonate (CO_3)	%C	-	0.025	0.060	0.065	0.485	0.135	0.030	0.030	0.045	0.020	0.195	0.150
Total Sulphur	%S	-	0.21	0.47	1.55	0.21	0.44	1.14	0.35	1.61	1.73	0.70	0.97
Sulphide Sulphur	%S	-	0.13	0.33	1.57	0.12	0.28	0.90	0.27	1.50	1.58	0.67	0.91
Sulphate Sulphur	%S	-	0.08	0.14	< 0.01	0.09	0.16	0.24	0.08	0.11	0.15	0.03	0.06
Neutralization Potential (Sobek-NP)[3]	kg $CaCO_3$/t	-	5.2	6.3	6.9	6.8	8.0	8.1	4.3	4.5	5.3	9.6	9.9
Carbonate Neutralization Potental (Carb-NP)[4]	kg $CaCO_3$/t	-	0.4	1.0	1.1	8.1	2.3	0.5	0.5	0.8	0.3	3.3	2.5
Acid Generation Potential (AP)[5]	kg $CaCO_3$/t	-	4.1	10.3	49.1	3.8	8.8	28.1	8.4	46.9	49.4	20.9	28.4
Sobek-NPR (NP:AP)[6]	-	-	**1.28**	0.61	0.14	**1.81**	0.91	0.29	0.51	0.10	0.11	0.46	0.35
Carb-NPR (Carb-NP:AP)[7]	-	-	0.10	0.10	0.02	2.16	0.26	0.02	0.06	0.02	0.01	0.16	0.09

1. From Faure, Gunter. 1998. Principles and Applications of Geochemistry. Prentice Hall. New Jersey.
2. Higlighted cells indicate exceedances for 10x Average Crustal Abundance.
3. Analyzed by SGS Lakefield using the Sobek method.
4. Carb-NP = %CO_3*((100.09 g $CaCO_3$/mol)/(12.011 g C/mol))*1000 kg/t.
5. AP values were calculated from the sulphide sulphur content.
6. Bolded cells represent 1≤NP/AP≤2 and highlighted cells represent NP/AP<1.

Table 3.8 – Scaled initial flush (weeks 1 to 5) loading rates for selected mine rock COPCs.

COPC	Units	BMS			BS			MSS			MSED	
		BMS-A	BMS-B	BMS-C	BS-A	BS-B	BS-C	MSS-A	MSS-B	MSS-C	MSED-A	MSED-B
pH	pH Units	7.49	7.76	7.53	7.58	7.63	7.79	7.73	7.54	7.54	8.30	7.31
Sulphate (SO_4)	$mg\ kg^{-1}\ wk^{-1}$	4.96E-02	3.31E-02	6.06E-02	4.88E-02	4.24E-02	3.69E-02	1.64E-02	4.11E-02	3.39E-02	1.80E-02	1.30E-01
Aluminum (Al)	$mg\ kg^{-1}\ wk^{-1}$	1.26E-04	2.12E-04	1.51E-04	1.45E-04	2.09E-04	2.84E-04	2.01E-04	2.47E-04	1.36E-04	3.07E-04	1.17E-04
Arsenic (As)	$mg\ kg^{-1}\ wk^{-1}$	2.58E-06	1.09E-05	1.75E-06	3.16E-06	1.01E-06	2.01E-05	3.03E-05	3.00E-06	5.81E-06	8.52E-06	<7.46E-07
Cadmium (Cd)	$mg\ kg^{-1}\ wk^{-1}$	7.49E-08	<5.57E-08	5.66E-08	<2.00E-07	<5.69E-08	<5.69E-08	<8.50E-08	<5.68E-08	1.13E-07	<5.68E-08	6.55E-08
Chromium (Cr)	$mg\ kg^{-1}\ wk^{-1}$	<5.72E-07	5.69E-07	5.66E-07	<5.70E-07	<5.69E-07	6.46E-07	5.64E-07	5.68E-07	5.68E-07	5.79E-07	<6.19E-07
Cobalt (Co)	$mg\ kg^{-1}\ wk^{-1}$	4.75E-06	5.57E-07	7.43E-07	9.82E-06	9.85E-07	<5.69E-07	3.77E-06	6.87E-07	5.68E-07	<5.68E-07	2.86E-06
Copper (Cu)	$mg\ kg^{-1}\ wk^{-1}$	3.09E-06	1.99E-06	1.55E-06	<1.17E-06	1.68E-06	2.85E-06	1.60E-06	1.45E-06	1.97E-06	1.26E-06	1.22E-06
Iron (Fe)	$mg\ kg^{-1}\ wk^{-1}$	5.72E-05	5.69E-05	5.66E-05	5.70E-05	5.69E-05	6.52E-05	<5.64E-05	5.68E-05	5.68E-05	<5.68E-05	7.32E-05
Lead (Pb)	$mg\ kg^{-1}\ wk^{-1}$	8.00E-07	9.45E-07	1.24E-06	<4.75E-06	8.57E-07	2.44E-06	5.97E-07	2.62E-06	5.45E-06	<9.03E-07	3.52E-07
Nickel (Ni)	$mg\ kg^{-1}\ wk^{-1}$	2.38E-05	4.39E-06	2.42E-05	7.38E-05	8.58E-06	8.63E-06	1.85E-05	4.96E-06	3.76E-06	3.12E-06	4.92E-05
Silver (Ag)	$mg\ kg^{-1}\ wk^{-1}$	3.47E-05	2.96E-07	7.72E-07	<4.77E-05	<5.34E-07	1.04E-07	2.39E-06	1.60E-07	7.78E-07	2.39E-07	<8.34E-08
Thallium (Tl)	$mg\ kg^{-1}\ wk^{-1}$	5.84E-08	<5.57E-08	5.66E-08	<5.80E-08	<5.69E-08	7.65E-08	5.64E-08	<5.68E-08	<5.68E-08	<5.68E-08	5.98E-08
Uranium (U)	$mg\ kg^{-1}\ wk^{-1}$	1.59E-06	2.73E-06	1.64E-06	1.91E-06	2.64E-06	2.63E-05	2.03E-06	2.51E-06	5.55E-07	6.27E-06	1.57E-06
Vanadium (V)	$mg\ kg^{-1}\ wk^{-1}$	<5.72E-06	<5.57E-06	<5.66E-06	<5.70E-06	<5.69E-06	<5.69E-06	<5.64E-06	<5.68E-06	<5.68E-06	<5.68E-06	<5.63E-06
Zinc (Zn)	$mg\ kg^{-1}\ wk^{-1}$	2.05E-05	<1.33E-05	1.37E-05	<1.63E-05	1.77E-05	<9.12E-06	8.38E-06	1.23E-05	2.39E-05	<1.61E-05	2.67E-05

Table 3.9 – Scaled equilibrium (weeks 18 to 85) loading rates for selected mine rock COPCs.

COPC	Units	BMS			BS			MSS			MSED	
		BMS-A	BMS-B	BMS-C	BS-A	BS-B	BS-C	MSS-A	MSS-B	MSS-C	MSED-A	MSED-B
pH	pH Units	6.17	6.75	6.60	6.61	6.74	6.59	6.73	6.77	6.43	7.04	6.83
Sulphate (SO_4)	mg kg^{-1} wk^{-1}	1.63E-02	1.34E-02	2.93E-02	2.12E-02	2.00E-02	2.42E-02	1.10E-02	1.99E-02	1.66E-02	1.12E-02	4.72E-02
Aluminum (Al)	mg kg^{-1} wk^{-1}	1.24E-05	3.93E-05	1.11E-04	5.47E-05	1.00E-04	9.78E-05	1.10E-04	1.19E-04	4.66E-05	1.62E-04	9.58E-05
Arsenic (As)	mg kg^{-1} wk^{-1}	<5.97E-07	1.66E-06	<1.12E-06	3.28E-06	<7.01E-07	4.86E-06	1.25E-05	1.50E-06	1.98E-06	4.06E-06	<6.54E-07
Cadmium (Cd)	mg kg^{-1} wk^{-1}	2.78E-07	<5.83E-08	2.60E-07	8.99E-08	6.93E-08	8.20E-08	6.65E-08	9.88E-08	3.61E-07	<5.70E-08	7.31E-08
Chromium (Cr)	mg kg^{-1} wk^{-1}	<5.76E-07	<5.62E-07	<6.43E-07	<5.80E-07	<5.94E-07	<6.37E-07	<6.89E-07	<6.19E-07	<6.03E-07	<5.72E-07	<6.57E-07
Cobalt (Co)	mg kg^{-1} wk^{-1}	5.90E-06	<6.25E-07	<8.09E-07	8.72E-06	<8.68E-07	<8.41E-07	8.16E-06	1.29E-06	<6.08E-07	<5.70E-07	1.38E-06
Copper (Cu)	mg kg^{-1} wk^{-1}	3.14E-06	<2.47E-06	<2.05E-06	<2.07E-06	<1.76E-06	<2.36E-06	<1.76E-06	<4.08E-06	2.12E-06	<1.89E-06	2.11E-06
Iron (Fe)	mg kg^{-1} wk^{-1}	<1.29E-04	<6.04E-05	<7.09E-05	<5.96E-05	<6.59E-05	<7.15E-05	<8.40E-05	<7.55E-05	<6.11E-05	<6.10E-05	<9.79E-05
Lead (Pb)	mg kg^{-1} wk^{-1}	1.74E-06	5.70E-07	4.62E-06	1.39E-06	1.46E-06	1.68E-06	6.73E-07	6.48E-06	4.11E-05	5.33E-07	1.50E-06
Nickel (Ni)	mg kg^{-1} wk^{-1}	1.53E-05	<3.04E-06	1.28E-05	5.01E-05	<4.20E-06	1.91E-05	2.28E-05	5.61E-06	<3.43E-06	<2.89E-06	1.78E-05
Silver (Ag)	mg kg^{-1} wk^{-1}	<7.28E-07	<1.13E-07	<1.72E-07	<7.50E-06	<3.03E-07	<5.09E-06	<5.15E-07	<7.99E-06	<2.00E-07	<2.11E-07	1.32E-07
Thallium (Tl)	mg kg^{-1} wk^{-1}	<6.01E-08	<5.62E-08	<5.92E-08	<5.80E-08	<5.73E-08	<5.95E-08	<5.70E-08	<5.91E-08	<5.82E-08	<5.72E-08	<5.72E-08
Uranium (U)	mg kg^{-1} wk^{-1}	3.13E-07	4.04E-07	5.94E-07	1.08E-06	1.41E-06	5.45E-06	6.43E-07	1.05E-06	2.12E-07	2.70E-06	9.22E-07
Vanadium (V)	mg kg^{-1} wk^{-1}	<5.76E-06	<5.62E-06	<5.70E-06	<5.75E-06	<5.73E-06	<5.69E-06	5.70E-06	5.75E-06	5.82E-06	<5.70E-06	<5.67E-06
Zinc (Zn)	mg kg^{-1} wk^{-1}	1.13E-04	1.47E-05	5.66E-05	<9.96E-06	1.28E-05	1.51E-05	1.15E-05	3.27E-05	1.11E-04	1.01E-05	2.49E-05

Table 3.10 – Summary of loading rate correlations for BMS mine rock COPCs.

BMS Summary			
COPC	**Function**	**Correlation Summary**	**Calculated Loading Rate**
Sulphate (SO_4)	y = 0.016x + 0.012	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 0.73)	0.02
Aluminum (Al)	y = 2E-4x - 1.0E-5	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 0.99)	5.61E-05
Arsenic (As)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BMS humidity cells	1.04E-06
Cadmium (Cd)	y = 3E-7x + 4E-8	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 0.88)	1.39E-07
Chromium (Cr)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BMS humidity cells	<5.92E-07
Cobalt (Co)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BMS humidity cells	1.44E-06
Copper (Cu)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BS humidity cells	<1.44E-06
Iron (Fe)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BMS humidity cells	<8.20E-05
Lead (Pb)	y = 7E-6x - 1E-7	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 0.80)	2.21E-06
Nickel (Ni)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BMS humidity cells	8.40E-06
Silver (Ag)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BMS humidity cells	<2.42E-07
Thallium (Tl)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BMS humidity cells	<5.85E-08
Uranium (U)	y = 6E-7x + 1E-7	Function derived from all humidity cell samples using the geomean uranium content (R^2 = 0.91)	2.51E-06
Vanadium (V)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BMS humidity cells	<5.69E-06
Zinc (Zn)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BMS humidity cells	4.54E-05

Notes:

1 - When analytical data is reported as less than detection, the detection limit was used in the average calculation

Table 3.11 – Summary of loading rate correlations for BS mine rock COPCs.

BS Summary			
COPC	**Function**	**Correlation Summary**	**Average Loading Rate**
Sulphate (SO_4)	y = 4E-3x + 2E-2	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 0.82)	0.02
Aluminum (Al)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BS humidity cells	8.12E-05
Arsenic (As)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BS humidity cells	2.24E-06
Cadmium (Cd)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BS humidity cells	8.00E-08
Chromium (Cr)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BS humidity cells	<6.03E-07
Cobalt (Co)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BS humidity cells	<1.85E-06
Copper (Cu)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BS humidity cells	1.85E-06
Iron (Fe)	y = 6E-8 + 6E-7	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 1.0)	<6.55E-05
Lead (Pb)	y = 3E-7 + 1E-6	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 0.99)	1.07E-06
Nickel (Ni)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BS humidity cells	1.59E-05
Silver (Ag)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BS humidity cells	<2.26E-06
Thallium (Tl)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BS humidity cells	<5.82E-08
Uranium (U)	y = 5E-6+ 3E-7	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 0.99)	1.46E-06
Vanadium (V)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BS humidity cells	<5.72E-06
Zinc (Zn)	y = 5E-6 + 1E-5	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 0.84)	1.12E-05

Notes:

1 - When analytical data is reported as less than detection, the detection limit was used in the average calculation

Table 3.12 – Summary of loading rate correlations for MSS mine rock COPCs.

MSS Summary			
COPC	**Function**	**Comments**	**Average Loading Rate**
Sulphate (SO_4)	y = 1E-2x + 1E-2	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 0.98)	0.01
Aluminum (Al)	Constant Loading	Loading rate based on geomean of loading rates from the 3 MSS humidity cells	8.47E-05
Arsenic (As)	Constant Loading	Loading rate based on geomean of loading rates from the 3 MSS humidity cells	3.34E-06
Cadmium (Cd)	$y = 5E\text{-}8e^{0.83x}$	Function derived from all humidity cell samples using the geomean cadmium content (R^2 = 0.98)	5.66E-08
Chromium (Cr)	Constant Loading	Loading rate based on geomean of loading rates from the 3 MSS humidity cells	<6.36E-07
Cobalt (Co)	y = -4E-6ln(x) - 6E-7	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 1.0)	3.49E-06
Copper (Cu)	Constant Loading	Loading rate based on geomean of loading rates from the 3 BS humidity cells	<2.48E-06
Iron (Fe)	y = -3E-5x + 9E-5	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 0.80)	7.92E-05
Lead (Pb)	$y = 3E\text{-}7e^{5.92x}$	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 0.94)	2.53E-06
Nickel (Ni)	y = -1E-5ln(x) - 6E-7	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 1.00)	9.62E-06
Silver (Ag)	Constant Loading	Loading rate based on geomean of loading rates from the 3 MSS humidity cells	<9.36E-07
Thallium (Tl)	Constant Loading	Loading rate based on geomean of loading rates from the 3 MSS humidity cells	<5.81E-08
Uranium (U)	Constant Loading	Loading rate based on geomean of loading rates from the 3 MSS humidity cells	<5.23E-07
Vanadium (V)	Constant Loading	Loading rate based on geomean of loading rates from the 3 MSS humidity cells	<5.76E-06
Zinc (Zn)	y = 7E-6e3.16x	Function derived from all humidity cell samples using the geomean sulphide content (R^2 = 0.88)	2.18E-05

Notes:

1 - When analytical data is reported as less than detection, the detection limit was used in the average calculation

Table 3.13 – Summary of loading rate correlations for MSED mine rock COPCs.

MSED Summary			
COPC	**Function**	**Comments**	**Average Loading Rate**
Sulphate (SO_4)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	0.02
Aluminum (Al)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	1.24E-04
Arsenic (As)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	1.63E-06
Cadmium (Cd)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	6.45E-08
Chromium (Cr)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	<6.13E-07
Cobalt (Co)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	8.87E-07
Copper (Cu)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	2.00E-06
Iron (Fe)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	<7.72E-05
Lead (Pb)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	8.95E-07
Nickel (Ni)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	7.18E-06
Silver (Ag)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	<1.67E-07
Thallium (Tl)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	<5.72E-08
Uranium (U)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	1.58E-06
Vanadium (V)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	<5.69E-06
Zinc (Zn)	Constant Loading	Loading rate based on geomean of loading rates from the 2 MSED humidity cells	1.59E-05

Notes:

1 - When analytical data is reported as less than detection, the detection limit was used in the average calculation

Table 3.14 – Initial, equilibrium, and scaled equilibrium loading rates for selected tailings COPCs.

COPC	Units	Initial Scaled Loading Rates		Equilibrium Scaled Loading Rates	
		Tailings	Duplicate Tailings	Tailings	Duplicate Tailings
pH	pH Units	6.32	6.31	6.45	6.46
Sulphate (SO_4)	mg kg^{-1} wk^{-1}	3.3	3.4	1.3	1.3
Aluminum (Al)	mg kg^{-1} wk^{-1}	5.02E-03	4.33E-03	1.13E-02	1.79E-03
Arsenic (As)	mg kg^{-1} wk^{-1}	5.88E-05	5.75E-05	6.26E-05	4.19E-05
Cadmium (Cd)	mg kg^{-1} wk^{-1}	1.04E-05	1.08E-05	1.49E-03	1.65E-03
Chromium (Cr)	mg kg^{-1} wk^{-1}	<1.13E-05	<1.12E-05	<1.05E-05	<1.22E-05
Cobalt (Co)	mg kg^{-1} wk^{-1}	4.15E-05	3.01E-05	4.04E-04	3.85E-04
Copper (Cu)	mg kg^{-1} wk^{-1}	<2.81E-05	<2.36E-05	2.65E-03	<4.64E-04
Iron (Fe)	mg kg^{-1} wk^{-1}	1.81E-03	1.13E-03	1.40E-02	2.23E-03
Lead (Pb)	mg kg^{-1} wk^{-1}	5.20E-04	7.08E-04	3.37E-01	2.30E-01
Nickel (Ni)	mg kg^{-1} wk^{-1}	5.70E-05	5.34E-05	9.19E-04	7.28E-04
Silver (Ag)	mg kg^{-1} wk^{-1}	<1.85E-06	<2.68E-06	<1.31E-06	<2.08E-06
Thallium (Tl)	mg kg^{-1} wk^{-1}	<3.79E-06	<3.78E-06	<1.19E-05	<1.32E-05
Uranium (U)	mg kg^{-1} wk^{-1}	3.89E-05	3.85E-05	5.05E-05	1.09E-05
Vanadium (V)	mg kg^{-1} wk^{-1}	<1.08E-04	<1.07E-04	<1.04E-04	<1.16E-04
Zinc (Zn)	mg kg^{-1} wk^{-1}	1.70E-03	1.69E-03	4.97E-01	4.84E-01

Notes:

1 - When analytical data is reported as less than detection, the detection limit was used
the average calculation

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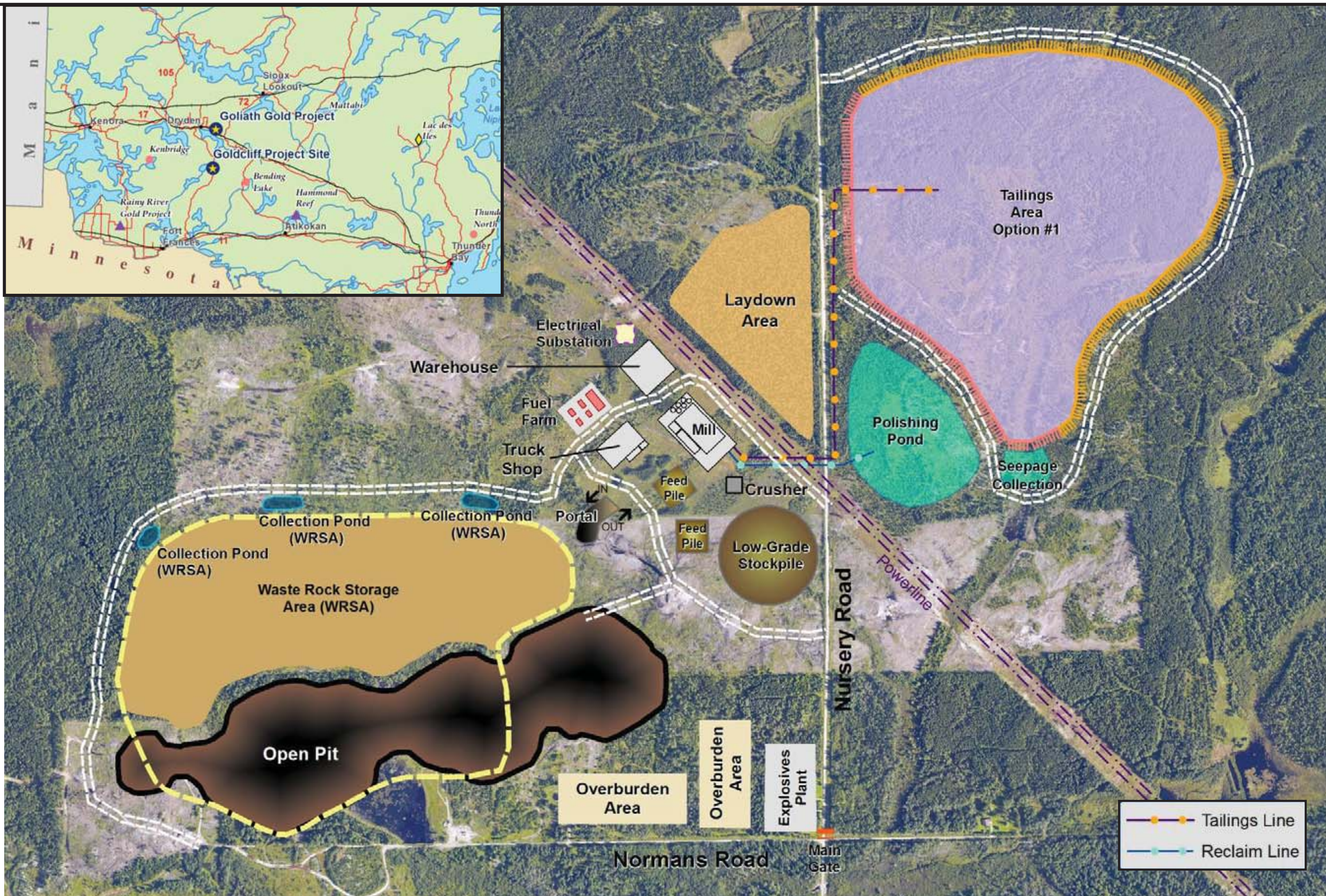
FIGURES



0 200 400 600

Meters

1:13,000 November, 2012

Dam (Primary)	Waste Rock Before Backfill
Dam (Secondary)	Waste Rock After Backfill
Proposed Access Road	Waste Rock Collection Pond
Local Road	

Treasury Metals Incorporated

Goliath Gold mine Location Map

EcoMetrix INCORPORATED

Figure 1.1

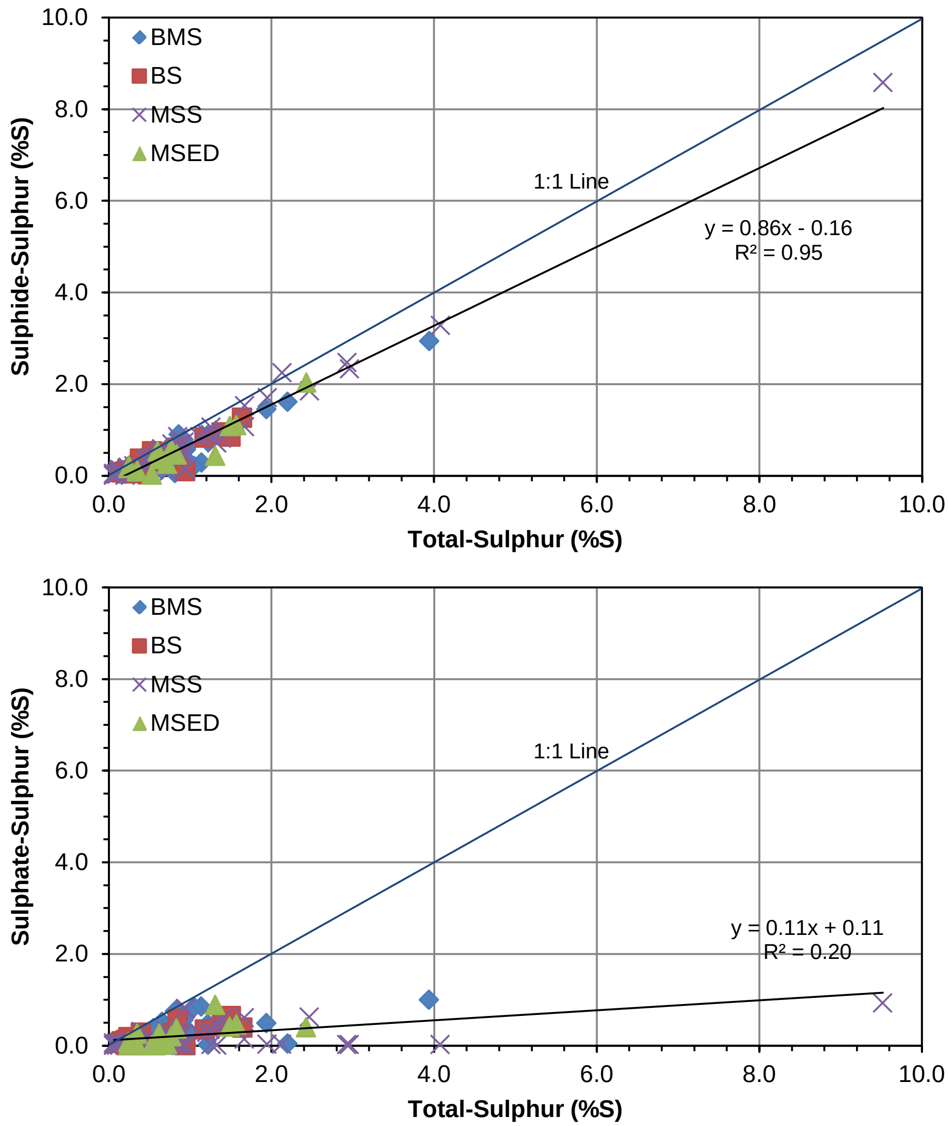


Figure 3.1 – Relationship between mine rock sulphide-sulphur, sulphate-sulphur, and total-sulphur contents.

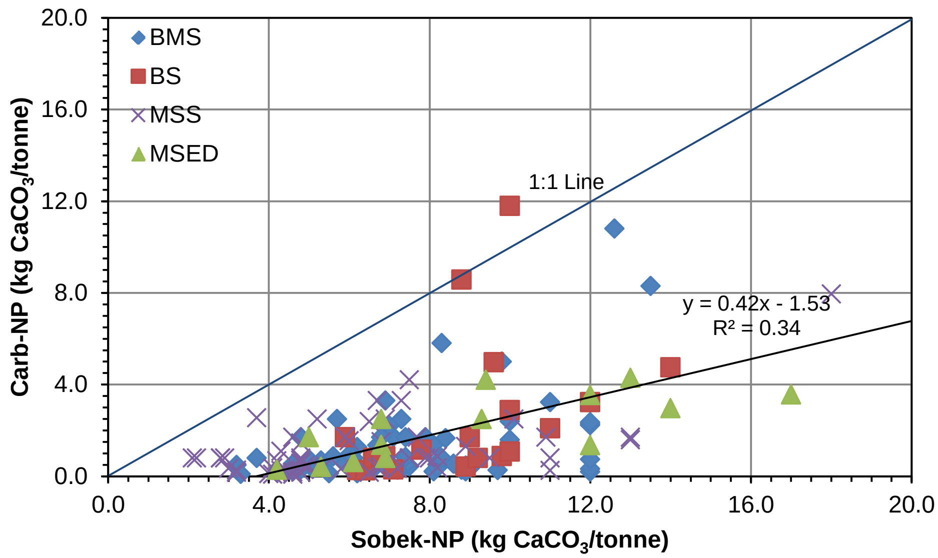


Figure 3.2 – Relationship between mine rock Sobek-NP and Carb-NP values.

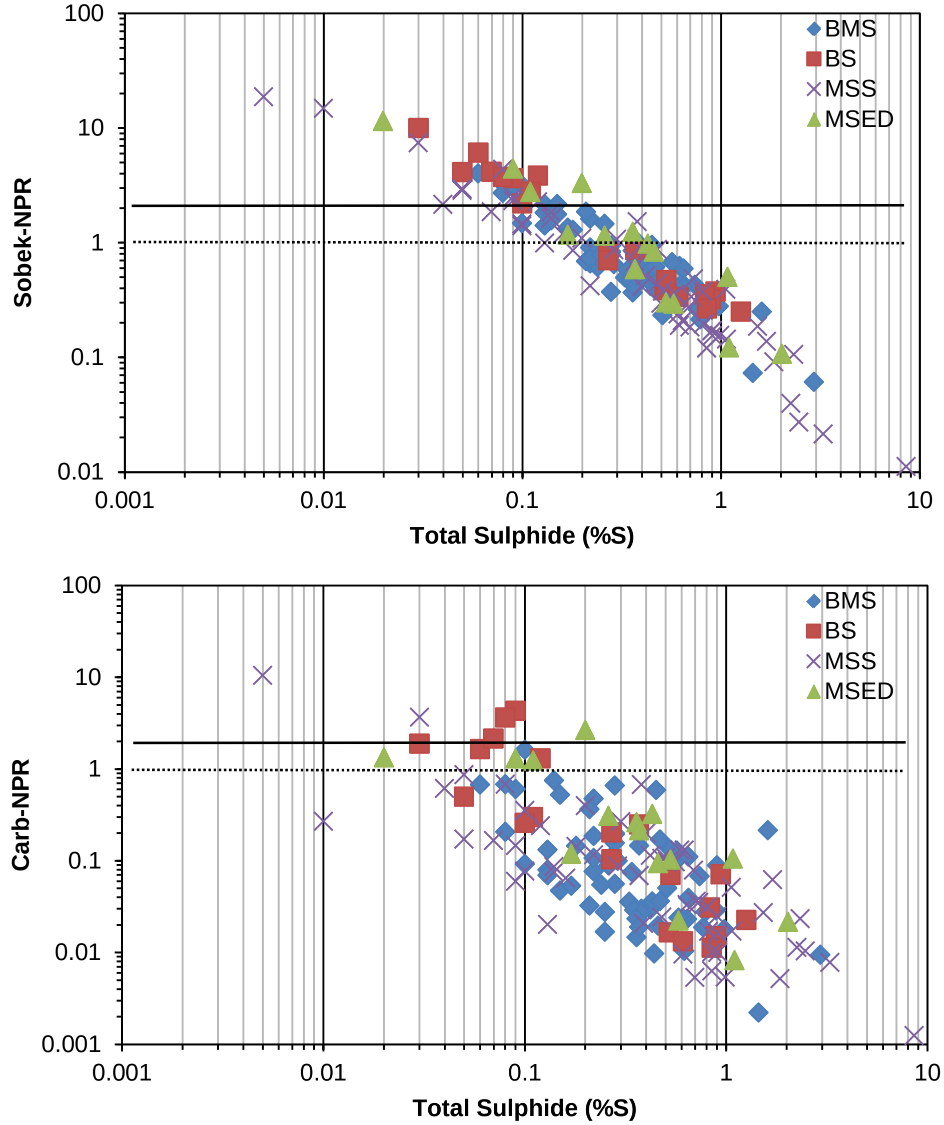


Figure 3.3 – Relationship between mine rock total-sulphide contents, Sobek-NPR, and Carb-NPR values.

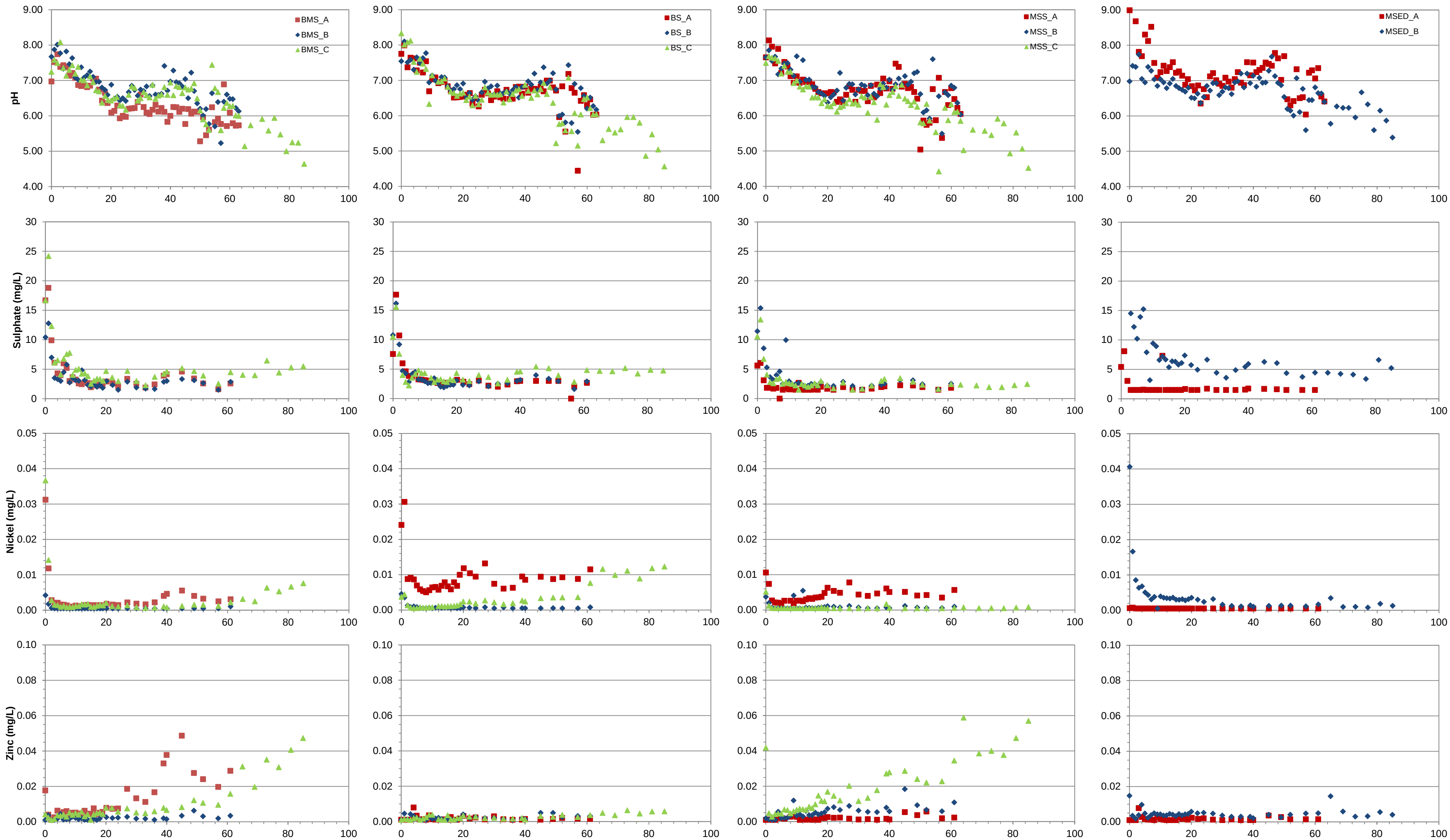


Figure 3.4 – Selected concentration profiles for BMS, BS, MSS, and MSED humidity cells.

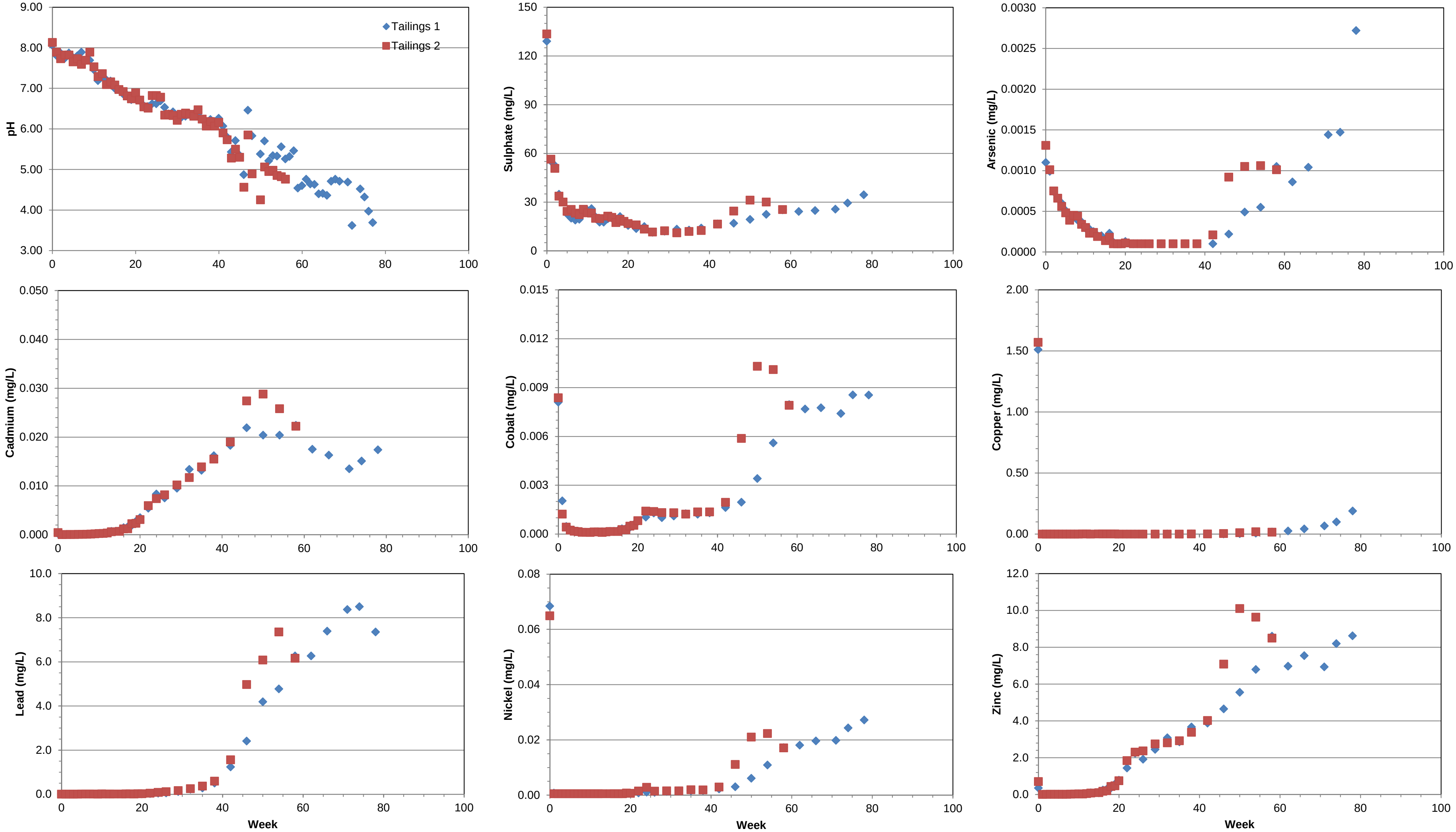


Figure 3.5 – Selected concentration profiles for tailings humidity cells.

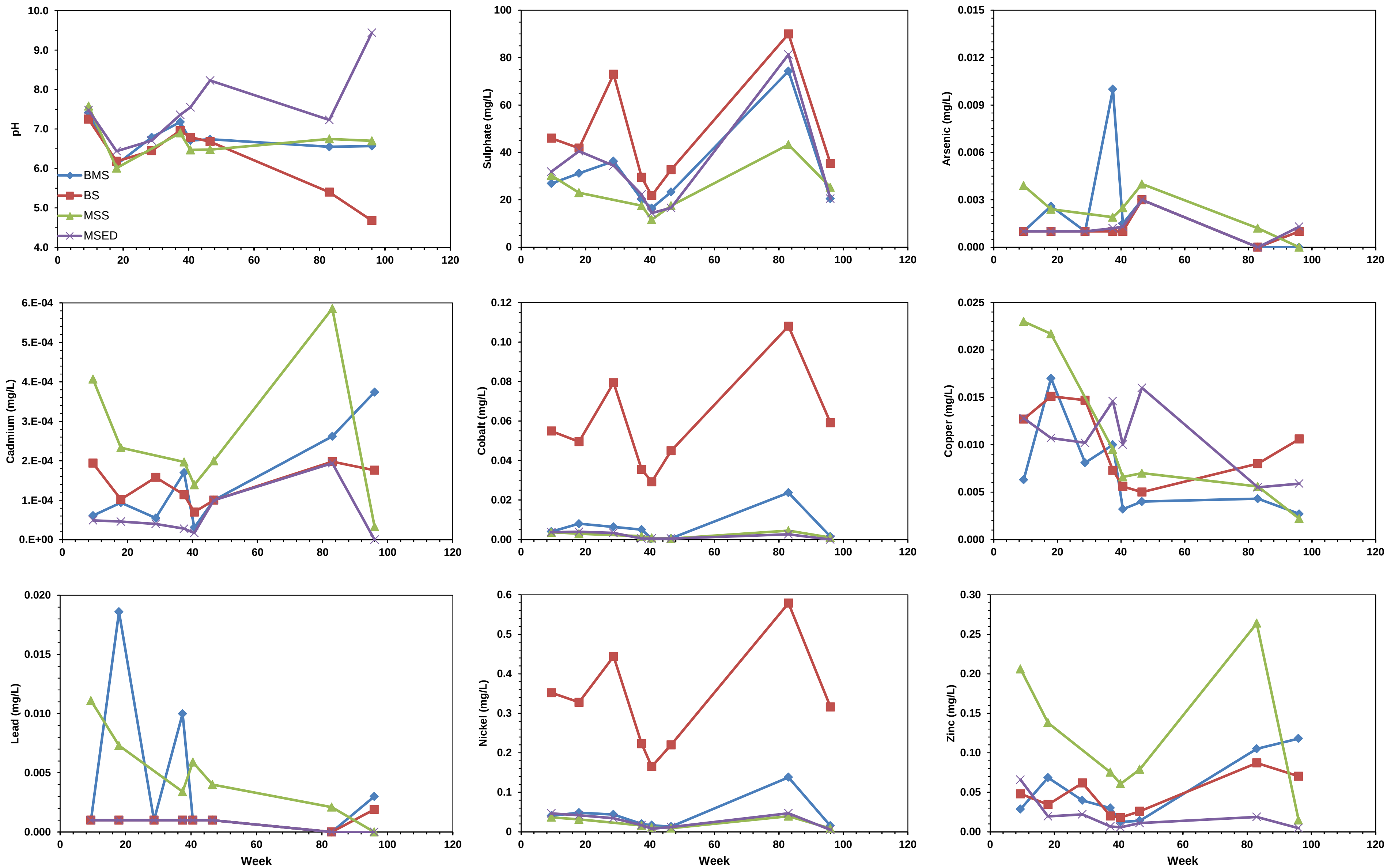


Figure 3.6 – Selected concentration profiles for BMS, BS, MSS, and MSED field barrel tests

Appendix A KCB and EcoMetrix Mine Rock Static Tests Datasets

Table A1 - KCB (2012) mine rock metal content results

Sample Type	BMS															BS			
Borehole ID	TL0816	TL0817	TL0980	TL0849	TL0806	TL0823	TL0975	TL0823	TL0842	TL0823	TL10117	TL1091	TL0805	TL0833	TL0840	TL0835	TL11127	TL0824	TL0821
Sample Depth (m)	81-82	61-62	79.5-80.5	286-287	175-176	351-352	144.5-145.5	50-51	245-246	315-316	239.39-240	374.5-375.5	127-128	144-144.5	259-259.5	86-87	39.5-40.5	224.5-225.5	234-235
Units	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})
Aluminum (Al)	16800	20100	34600	7700	31000	33300	20000	37900	11000	12400	9400	14300	30600	28700	9400	9400	25400	27000	29900
Antimony (Sb)	0.23	0.85	1.62	0.18	0.18	0.11	0.32	0.25	0.16	0.12	0.06	0.025	0.29	0.63	0.13	0.18	0.09	0.05	0.025
Arsenic (As)	5	2	29	9	16	11	15	31	18	4	3	1	29	28	3	8	11	3	2
Barium (Ba)	80	48	37	44	81	56	38	35	51	118	100	149	66	71	109	27	312	186	141
Berylium (Be)	0.2	0.6	0.7	<0.1	0.3	0.5	0.4	1	<0.1	<0.1	<0.1	<0.1	0.6	0.5	<0.1	<0.1	0.2	0.2	0.3
Bismuth (Bi)	0.11	0.06	0.1	0.09	<0.02	0.16	0.09	0.03	0.15	<0.02	0.18	0.1	0.26	0.11	0.03	0.08	0.28	0.22	0.26
Boron (B)	40	40	30	30	20	30	20	50	30	50	30	30	20	30	30	20	10	20	50
Cadmium (Cd)	0.16	0.71	0.69	0.32	0.08	1.34	0.17	0.04	0.04	0.05	0.06	0.04	1.06	0.17	0.02	0.08	0.06	0.12	0.08
Calcium (Ca)	2000	5600	18400	1600	16200	16600	10600	19900	1700	4900	1900	2700	11100	13200	2500	2000	2300	4600	8100
Cerium (Ce)	17.8	24.8	41.2	28.5	41.9	33.3	33.7	35.2	32.4	33.4	33.4	33.7	52.7	34.2	31.8	17.5	36	59.6	67.7
Cesium (Cs)	6.24	6.53	6.01	5.65	5.04	15.2	4.95	5.29	5.29	3.98	3.96	6.28	9.86	7.69	5.01	1.94	4.6	7.16	11.9
Chromium (Cr)	53	45	60	51	29	41	53	50	36	49	59	81	106	47	33	37	172	173	145
Cobalt (Co)	5.1	4.9	7.1	4.6	7.3	7.4	7.4	6.4	7.2	7	8.4	10.3	22.6	6.9	5.2	6.6	23.3	22.9	21
Copper (Cu)	11.9	36.6	34.1	19.6	3.1	12.3	12.7	6.5	16.4	13.4	11	19.5	46.5	15.2	10.1	13.6	53	51.4	51.6
Gallium (Ga)	6	5.7	8.4	3.9	9.3	8	4.8	9.6	4.6	5.7	4.7	7	7.3	7.7	5	4.9	11.7	10.3	9.6
Germanium (Ge)	<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	0.2	0.2	0.1
Hafnium (Hf)	0.32	0.37	0.38	0.49	0.35	0.18	0.33	0.36	0.72	0.34	0.61	0.34	0.65	0.26	0.32	0.34	0.6	0.61	0.6
Indium (In)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	0.02	0.02
Iron (Fe)	14200	13900	18900	11800	19200	16800	17600	19300	18500	24100	24100	24300	39600	18500	16100	16800	42200	40400	41900
Lanthanum (La)	8.9	12.4	22.4	14	22.2	16.1	17.6	16.5	17.4	15.1	17.9	16.8	29.2	18.5	15.4	8.4	20.1	32.4	34.9
Lead (Pb)	10.5	51.1	198	29.3	6	30.1	28.6	17	11.6	1.7	2.5	10.3	25.8	32.1	1.1	4.7	6	8.3	13.4
Lithium (Li)	23	23	11	6	12	7	6	9	9	13	13	17	12	7	11	12	27	29	21
Lutetium (Lu)	0.01	0.01	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.05	0.05	0.11	0.01	0.03	0.03	0.09	0.1	0.12
Magnesium (Mg)	14900	16800	11200	6100	10400	8900	6000	11600	9000	7900	5200	9000	17400	10400	6400	8800	15700	15900	14900
Manganese (Mn)	597	770	830	336	646	548	405	612	489	503	463	426	620	721	488	445	437	536	589
Mercury Hg	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	0.08	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
Molybdenum (Mo)	0.2	0.19	0.82	0.54	0.53	0.25	0.24	0.42	0.63	0.32	0.37	0.6	1.46	0.38	0.18	0.28	2.13	1.86	1.59
Nickel (Ni)	5.1	4.3	12.8	6.7	7.1	7.9	9.2	8.6	12.2	8.7	20.9	22.8	66.7	9.3	6.2	10.7	73.2	75.2	71.7
Niobium (Nb)	0.17	0.09	0.16	0.025	0.12	0.12	0.09	0.13	0.08	0.25	0.39	0.41	0.18	0.17	0.14	0.07	0.81	0.6	0.32
Phosphorus (P)	360	350	550	500	610	550	560	570	590	540	490	520	560	440	540	440	610	610	580
Potassium (K)	10500	8100	8300	4800	10200	8300	5400	8300	8300	7700	7500	10800	13900	9600	7500	2400	16100	17800	15400
Rubidium (Rb)	40.3	34.3	37.5	23.3	45.5	39.8	23.7	40.4	34.3	29.3	32.4	45.5	60.9	48.4	29.9	9.6	69.1	77.1	79
Scandium (Sc)	0.9	0.7	1.3	0.8	2	1.1	0.8	1.4	1.1	2.6	2.2	4.2	4	1.1	1.5	1.1	10.7	9	7.5
Selenium (Se)	<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
Silver (Ag)	0.1	0.26	0.56	0.4	0.22	0.28	1.23	0.21	1.62	0.11	0.12	0.16	0.48	0.9	0.12	0.32	0.09	0.31	0.43
Sodium (Na)	500	400	2500	400	2700	3000	1800	2400	300	500	500	600	2100	2600	500	300	500	1100	1600
Strontium (Sr)	7.7	14.9	47.5	5.3	35.4	66.1	27.8	45.2	3.6	11.2	6.1	7.5	30.2	50.8	6.2	3.4	6.7	18.3	29.2
Sulphur (S)	3400	3400	13500	4700	7600	8900	10800	9300	9500	3100	9000	3000	24400	9000	4000	5800	2500	5300	9700
Tantalum (Ta)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tellurium (Te)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.34	0.06	0.1
Terbium (Tb)	0.07	0.09	0.23	0.17	0.21	0.2	0.2	0.19	0.22	0.21	0.26	0.25	0.42	0.2	0.18	0.14	0.34	0.48	0.51
Thallium (Tl)	0.3	0.31	0.34	0.25	0.38	0.41	0.23	0.34	0.35	0.36	0.29	0.36	0.5	0.53	0.39	0.08	0.48	0.53	0.52
Thorium (Th)	2.5	2.4	4.4	2.5	2.8	2.3	2.3	2.2	3.3	1.8	3.3	4.2	10.9	3	1.7	3.5	10.1	12	11.7
Tin (Sn)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.6	0.3	<0.3	<0.3	<0.3	0.9	0.8	0.5
Titanium (Ti)	900	500	800	400	1200	700	300	800	600	1300	1100	1600	1200	900	1000	600	2600	2300	1900
Tungsten (W)	<0.1	0.2	<0.1	0.1	0.1	0.2	0.3	0.4	<0.1	0.1	0.1	0.2	0.2	<0.1	<0.1	<0.1	0.4	0.4	0.3
Uranium (U)	0.28	0.36	1.05	0.54	0.48	0.36	0.46	0.45	1.08	0.27	0.53	0.9	2.83	0.54	0.2	0.79	2.71	3.18	2.82
Vanadium (V)	9	5	12	8	21	11	5	15	10	33	20	36	31	11	17	11	84	71	64
Ytterbium (Yb)	<0.1	<0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.7	<0.1	0.2	0.2	0.6	0.7	0.9
Yttrium (Y)	1.46	1.42	3.61	2.86	3.25	3.46	3.5	3.53	4.04	4.37	5.17	4.88	8.79	2.62	3.25	3.1	7.76	9.68	11.5
Zinc (Zn)	92	260	233	115	68	498	98	53	78	64	71	67	300	130	44	67	77	88	83
Zirconium (Zr)	10.1	12.6	13.8	19.9	13.7	7.2	12	11.6	28	11.1	30.9	15.1	26.9	9.7	13.5	15.4	25	26.8	23.7

Table A1 - KCB (2012) mine rock metal content results cont.

Sample Type	MSS													
Borehole ID	TL0829	TL0853	TL0852	TL0803	TL0819	TL0829	TL0803	TL0806	TL0829	TL0844	TL0837	TL0829	TL0834	TL0808
Sample Depth (m)	226.15-226.6	234-235	297-298	120.5-121	86.5-87	325-326	16-17	104-105	284.5-285	78-79	174-175	366-367	135-135.5	140.5-141
Units	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})
Aluminum (Al)	2400	25200	8400	18200	18500	7600	4700	9100	4500	12900	18000	11100	45800	45500
Antimony (Sb)	0.06	0.13	0.09	0.11	0.12	0.025	0.15	0.77	0.38	0.12	0.06	0.6	0.17	0.48
Arsenic (As)	3	17	2	23	28	0.5	19	13	47	10	1	9	13	27
Barium (Ba)	23	16	40	19	19	65	48	53	33	42	37	37	61	44
Berylium (Be)	<0.1	0.5	0.2	0.3	0.3	<0.1	<0.1	<0.1	<0.1	0.3	0.1	0.2	0.4	0.8
Bismuth (Bi)	<0.02	0.06	0.04	0.06	0.06	0.04	0.16	0.06	0.07	0.17	<0.02	0.1	0.03	0.03
Boron (B)	50	30	40	30	30	30	30	30	10	30	30	20	20	30
Cadmium (Cd)	0.02	0.03	0.3	0.08	0.09	0.02	0.1	0.18	0.19	0.04	<0.01	0.43	0.03	0.48
Calcium (Ca)	1200	13100	2700	8900	9000	2700	1400	2000	1300	6700	7600	2400	23400	24000
Cerium (Ce)	19	26	17.4	26.8	29	20.7	29.8	33.5	24.7	32.8	28.2	19.1	31.7	43.3
Cesium (Cs)	0.23	3.92	1.65	2.61	2.69	3.58	2.04	5.41	1.81	3.16	4.17	2.57	7.66	5.48
Chromium (Cr)	47	38	51	32	36	40	37	49	56	63	36	46	46	49
Cobalt (Co)	2.4	4.2	3	3.7	4.4	3.6	5.3	5.5	8.1	4.7	3.8	6.1	7	7.2
Copper (Cu)	2.7	4.5	4.7	2.8	3.7	2.2	6.1	22.6	2.6	12.6	0.25	14.6	14.7	3.9
Gallium (Ga)	1	5.8	2.8	4.1	4.2	3.2	1.8	3.9	1.9	3.4	6.1	5.9	12.4	11.1
Germanium (Ge)	<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
Hafnium (Hf)	0.39	0.22	0.43	0.24	0.22	0.32	0.5	0.43	0.47	0.29	0.35	0.42	0.17	0.34
Indium (In)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Iron (Fe)	1400	9400	8100	10900	10600	9700	22100	17200	40100	9200	13800	20300	19600	19200
Lanthanum (La)	9.4	12.9	9.6	13.2	14.7	10	15.7	17.9	12.6	17.4	14.1	9.3	15.2	22.1
Lead (Pb)	6.3	7.9	16.4	6.2	7.1	1.3	12	39.7	17	20.5	1.4	67.5	8.7	53.6
Lithium (Li)	<1.0	4	7	3	4	7	4	5	3	4	9	14	14	10
Lutetium (Lu)	<0.01	0.01	<0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03
Magnesium (Mg)	200	6700	5600	4700	4800	4000	3200	7400	3000	5000	6800	9900	13600	11900
Manganese (Mn)	23	454	225	328	337	132	123	450	93	360	371	526	712	558
Mercury Hg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.08	<0.01	<0.01	0.03	<0.01	0.03
Molybdenum (Mo)	0.36	0.34	0.19	0.15	0.17	0.16	0.42	0.77	0.67	0.26	0.17	0.26	0.19	0.42
Nickel (Ni)	2.1	4.7	3	4.3	4.7	4.1	9.1	8.7	17.4	6.5	4.4	10.1	6.8	7
Niobium (Nb)	0.15	0.09	0.06	0.13	0.11	0.28	0.16	0.13	0.16	0.11	0.17	0.1	0.12	0.1
Phosphorus (P)	320	420	270	390	390	320	440	420	110	570	420	420	520	630
Potassium (K)	1500	6300	2500	4900	5100	5100	3200	6200	2500	4300	7700	3700	11700	10300
Rubidium (Rb)	3.6	28.3	8.3	19.4	20	18.3	12.4	29.9	10	18.1	36.5	15.4	49.2	45.7
Scandium (Sc)	0.3	0.6	0.4	0.5	0.5	0.7	0.3	1	0.5	0.6	1.2	1.4	2.4	1.5
Selenium (Se)	<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
Silver (Ag)	0.19	0.65	0.27	0.32	0.32	0.05	0.19	1.14	0.29	0.39	0.19	0.32	0.22	0.17
Sodium (Na)	300	2000	400	1700	1800	500	300	500	300	1300	1700	400	3600	3700
Strontium (Sr)	3.4	32.1	7.3	25.6	25.9	14.4	4.4	4.9	3.5	29.3	22	3.6	121	62.8
Sulphur (S)	500	5000	3300	7800	7200	1200	25300	10300	47400	4300	2200	6900	5800	13600
Tantalum (Ta)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tellurium (Te)	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Terbium (Tb)	0.09	0.14	0.09	0.14	0.15	0.12	0.14	0.17	0.12	0.16	0.16	0.15	0.21	0.23
Thallium (Tl)	0.04	0.27	0.09	0.19	0.2	0.16	0.31	0.33	0.43	0.2	0.31	0.15	0.56	0.41
Thorium (Th)	1.6	2.1	1.1	2.2	2.3	1.3	2.5	3.1	2.6	2.3	2.3	3	1.7	2.7
Tin (Sn)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Titanium (Ti)	200	400	200	200	300	600	100	500	200	400	900	900	1200	900
Tungsten (W)	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	0.2	<0.1	<0.1	<0.1	<0.1
Uranium (U)	0.22	0.45	0.27	0.48	0.5	0.27	0.54	0.62	0.8	0.48	0.49	0.67	0.22	0.54
Vanadium (V)	2	4	3	3	3	7	0.5	9	0.5	4	12	14	21	12
Ytterbium (Yb)	<0.1	<0.1	<0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Yttrium (Y)	1.29	1.96	1.4	1.97	2.07	1.78	2.15	2.62	1.72	2.55	2.66	2.96	3.95	3.63
Zinc (Zn)	12	42	119	52	53	42	87	103	96	48	32	228	58	175
Zirconium (Zr)	15.1	8.2	14	7.8	8	10	16.7	16.6	18.2	10.6	12.6	16.5	7	13.3

Sample Type	MSS										MSED					
Borehole ID	TL0821	TL0809	TL0821	TL0820	TL0821	TL0820	TL0833	TL0854	TL0801	TL0807	TL0842	TL10115	TL0823	TL0835	TL0807	TL0960
Sample Depth (m)	65-66	109.75-110.8	130-131	194-195	24-24.5	198-199	162.5-163	276.3-277.3	68-69	164.5-165.1	19-20	279.16-280	497-498	429-429.5	222-222.85	89.5-90.5
Units	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})
Aluminum (Al)	25200	44400	37000	33800	8100	40600	10000	28500	4300	19900	19000	10400	11400	10300	35100	30000
Antimony (Sb)	0.14	0.2	0.71	0.17	0.48	0.06	0.53	0.78	39.4	8.66	0.11	0.08	0.07	0.81	0.07	0.2
Arsenic (As)	11	21	41	5	29	3	12	25		86	26	6	2	12	5	101
Barium (Ba)	40	59	38	43	59	46	21	59	28	31	20	23	145	33	44	108
Berylium (Be)	0.5	0.9	0.9	1	<0.1	1.2	0.2	0.7	0.2	0.5	0.3	0.1	<0.1	0.1	0.7	0.4
Bismuth (Bi)	0.03	<0.02	0.03	0.08	0.16	0.09	0.03	0.21	0.08	0.06	0.06	0.02	0.06	0.1	0.09	0.48
Boron (B)	60	50	30	50	20	50	30	50	50	60	20	30	20	30	30	10
Cadmium (Cd)	0.05	0.25	1.11	0.34	0.09	0.25	<0.01	0.18	8.94	19.4	0.09	0.02	0.03	0.57	0.11	0.46
Calcium (Ca)	11500	23900	18100	18100	3900	23000	6300	10900	1200	10900	9400	6300	8200	2400	20400	4900
Cerium (Ce)	50.9	49.2	35.4	33.4	36.8	38.4	54.7	55.5	14.1	37.1	27.1	32.1	34.2	16.5	33.2	53.6
Cesium (Cs)	3.84	5.12	7.1	10.2	2.44	9.39	0.86	6.5	0.98	3.86	2.67	3.6	2.04	2.32	8.84	8.43
Chromium (Cr)	61	46	43	54	59	47	44	102	69	101	34	57	37	42	58	120
Cobalt (Co)	5.8	6.5	7.3	6.6	8	6.9	13.4	16.8	7.5	9.6	4.2	6.3	7.4	6.8	6.1	23.8
Copper (Cu)	17.8	17.8	24.5	18.7	73.4	59.5	6.3	71.2	813	269	2.8	1.7	8.6	14.3	4.5	63.3
Gallium (Ga)	6.3	12.7	8.9	9.4	3.9	9.5	4.5	7.7	1.4	5.2	4.3	4.6	5.4	5.6	9.6	8.9
Germanium (Ge)	<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
Hafnium (Hf)	0.36	0.39	0.3	0.37	0.39	0.29	0.5	0.6	0.27	0.47	0.22	0.21	0.18	0.36	0.17	0.55
Indium (In)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02
Iron (Fe)	13300	17400	16400	16200	26600	20400	7400	32700	27800	32000	10700	14800	18800	19900	17200	37000
Lanthanum (La)	24.1	23.7	18.5	15.4	19.6	17.5	28.9	28	6.7	17.6	13.2	16.8	17.6	8.1	16.4	29.2
Lead (Pb)	15.4	19.1	102	53.7	16.9	46.5	9.2	185	2120	1010	6.8	3.6	2.9	88.1	60.2	55.5
Lithium (Li)	8	13	8	10	5	8	12	12	2	5	4	13	10	13	13	24
Lutetium (Lu)	0.02	0.03	0.03	0.03	0.02	0.02	0.03	0.07	0.01	0.06	0.01	0.02	0.02	0.02	0.02	0.08
Magnesium (Mg)	8600	12100	10100	10500	5000	10000	7700	14000	1800	6400	4900	8300	8000	9200	11200	18300
Manganese (Mn)	316	587	566	527	378	617	334	727	107	377	346	231	363	493	733	445
Mercury Hg	<0.01	0.03	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	2	3.69	<0.01	<0.01	<0.01	0.04	<0.01	<0.01
Molybdenum (Mo)	1.11	0.42	1.08	0.31	0.52	0.42	0.26	1.57	16.2	4.28	0.16	0.23	0.33	0.22	0.29	1.76
Nickel (Ni)	6.6	5.9	9.3	8	15.7	10.6	19.9	58.8	13.1	33.3	4.9	10.3	8.4	10.2	7.9	78.5
Niobium (Nb)	0.1	0.12	0.12	0.11	0.13	0.11	0.13	0.21	0.11	0.23	0.1	0.2	0.13	0.08	0.12	0.43
Phosphorus (P)	680	680	540	540	500	490	480	550	280	410	400	560	580	420	530	570
Potassium (K)	6900	10400	9100	8000	4100	9000	1500	10900	2400	5500	5100	4600	7500	3200	6700	16300
Rubidium (Rb)	28.4	51.6	43.2	42.1	18.3	44.1	5.6	51.9	8.3	28.4	19.8	24.1	21.9	13.6	32.3	69.3
Scandium (Sc)	0.9	2	1.1	1.4	1.3	1	1.1	4.1	0.3	1.9	0.5	1.2	1.4	1.3	1.6	6.1
Selenium (Se)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver (Ag)	1.32	0.26	0.59	0.27	1.39	0.48	0.53	1.89	>10	5.85	0.32	0.13	0.1	0.37	0.45	1.4
Sodium (Na)	2300	3700	3500	2600	500	2600	300	1800	300	1600	1800	600	500	400	2200	1300
Strontium (Sr)	54.6	73.8	41.1	44.6	5.5	44.6	7	28.8	5.1	42.4	26.6	12	16	3.5	52.9	16.1
Sulphur (S)	5800	10500	9700	7400	20500	7800	2400	14000	30200	31400	7200	3600	2800	7200	8400	6000
Tantalum (Ta)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tellurium (Te)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	0.15	0.35	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Terbium (Tb)	0.18	0.21	0.23	0.17	0.17	0.21	0.38	0.39	0.07	0.23	0.14	0.17	0.21	0.13	0.18	0.42
Thallium (Tl)	0.27	0.38	0.38	0.33	0.54	0.35	0.12	0.43	0.13	0.24	0.2	0.17	0.18	0.14	0.32	0.51
Thorium (Th)	2.7	2.7	2.3	2.1	2.9	2.2	2.8	8.6	2	6.2	2.2	2.2	2	2.9	2.1	11.3
Tin (Sn)	<0.3	<0.3	<0.3	<0.3	0.4	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.5
Titanium (Ti)	500	900	800	700	400	700	400	1100	<100.0	400	300	1000	1200	800	800	1700
Tungsten (W)	0.2	0.2	0.2	0.3	0.4	7.2	0.1	<0.1	<0.1	0.2	<0.1	0.6	<0.1	<0.1	0.2	0.2
Uranium (U)	0.46	0.55	0.51	0.46	0.59	0.5	0.71	2.24	0.43	1.54	0.48	0.42	0.29	0.63	0.32	2.94
Vanadium (V)	9	18	10	13	12	11	9	38	3	16	3	18	24	13	17	46
Ytterbium (Yb)	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.1	0.5	0.1	0.1	0.2	0.2	0.2	0.6
Yttrium (Y)	2.9	3.67	4.12	3.51	2.65	3.55	3.64	8.63	1.53	5.27	2.05	2.33	2.96	2.75	2.7	7.77
Zinc (Zn)	41	113	380	158	79	158	5	144	3730	6480	52	41	74	286	66	108
Zirconium (Zr)	13.9	13.8	11.2	12.1	14.8	9.6	16.6	23.3	9.7	16.4	8.4	7.4	7.9	14.7	6.7	26.1

Table A2 - KCB (2012) mine rock ABA results

Sample Type	Units	BMS															BS			
Borehole ID		TL0816	TL0817	TL0980	TL0849	TL0806	TL0823	TL0975	TL0823	TL0842	TL0823	TL10117	TL1091	TL0805	TL0833	TL0840	TL0835	TL11127	TL0824	TL0821
Sample Depth (m)		81-82	61-62	79.5-80.5	286-287	175-176	351-352	144.5-145.5	50-51	245-246	315-316	239.39-240	374.5-375.5	127-128	144-144.5	259-259.5	86-87	39.5-40.5	224.5-225.5	234-235
Paste pH		8.85	8.22	9.22	9.64	9.49	9.09	9.1	8.29	8.27	8.79	9.57	9.72	8.14	9.1	9.06	9.01	9.39	9.34	8.31
Neutralization Potential (Sobek)	kg $CaCO_3$/t	7.4	8.3	9.2	4.8	13.5	7.9	6.1	8.3	3.7	9.8	5.7	6.8	12.6	7.3	6.9	5.9	6.6	9	6.8
Neutralization Potential (Carb)	kg $CaCO_3$/t	1.7	5.8	<0.8	1.7	8.3	1.7	<0.8	<0.8	<0.8	5	2.5	1.7	10.8	2.5	3.3	1.7	<0.8	1.7	<0.8
Acid Generating Potential	kg $CaCO_3$/t	8.8	8.8	27.8	11.6	14.1	17.5	10.6	20.3	15.9	3.1	14.7	2.5	50.3	28.1	4.4	8.4	1.6	0.9	3.1
Net Neutralization Potential	kg $CaCO_3$/t	-1.4	-0.4	-18.6	-6.8	-0.6	-9.6	-4.5	-12	-12.2	6.7	-9	4.3	-37.7	-20.8	2.5	-2.5	5	8.1	3.7
Sobek-NPR		0.84	0.94	0.33	0.41	0.96	0.45	0.58	0.41	0.23	3.16	0.39	2.72	0.25	0.26	1.57	0.70	4.13	10.00	2.19
Carb-NPR		0.19	0.66	0.03	0.15	0.59	0.10	0.08	0.04	0.05	1.61	0.17	0.68	0.21	0.09	0.75	0.20	0.50	1.89	0.26
Total Sulphur (Leco)	%S	0.33	0.32	1.22	0.42	0.69	0.79	0.96	0.83	0.81	0.29	0.78	0.28	2.2	0.86	0.36	0.55	0.22	0.48	0.94
Sulphate Sulphur	%S	<0.01	0.01	0.02	<0.01	0.02	0.02	0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.04	0.02	0.01	<0.01	<0.01	<0.01	0.01
Sulphide Sulphur	%S	0.28	0.28	0.89	0.37	0.45	0.56	0.34	0.65	0.51	0.1	0.47	0.08	1.61	0.9	0.14	0.27	0.05	0.03	0.1
Insoluble Sulphur	%S	0.05	0.03	0.31	0.05	0.22	0.21	0.61	0.18	0.29	0.19	0.31	0.2	0.55	<0.01	0.21	0.28	0.17	0.45	0.83
Total Carbon	%C	0.02	0.07	<0.01	0.02	0.1	0.02	<0.01	<0.01	<0.01	0.06	0.03	0.02	0.13	0.03	0.04	0.02	<0.01	0.02	<0.01

Sample Type	Units	MSS																							
Borehole ID		TL0829	TL0853	TL0852	TL0803	TL0819	TL0829	TL0803	TL0806	TL0829	TL0844	TL0837	TL0829	TL0834	TL0808	TL0821	TL0809	TL0821	TL0820	TL0821	TL0820	TL0833	TL0854	TL0801	TL0807
Sample Depth (m)		226.15-226.6	234-235	297-298	120.5-121	86.5-87	325-326	16-17	104-105	284.5-285	78-79	174-175	366-367	135-135.5	140.5-141	65-66	109.75-110.8	130-131	194-195	24-24.5	198-199	162.5-163	276.3-277.3	68-69	164.5-165.1
Paste pH		9.45	9.36	8.72	8.83	8.86	9.66	6.8	8.27	6.94	9.01	9.71	8.43	9.33	9.21	8.86	9.39	8.95	8.88	7.83	9.45	8.06	8.33	6.15	8.05
Neutralization Potential (Sobek)	kg $CaCO_3$/t	2.8	7.1	2.9	5.9	5.9	6.7	2.8	4.6	2.2	6.9	7.5	5.2	10.1	13	7.9	11	9.5	8	7.3	10.9	4.8	7.5	2.1	7.7
Neutralization Potential (Carb)	kg $CaCO_3$/t	<0.8	<0.8	<0.8	1.7	1.7	3.3	0.8	1.7	<0.8	2.5	4.2	2.5	2.5	1.7	0.8	0.8	0.8	<0.8	3.3	1.7	0.8	<0.8	<0.8	1.7
Acid Generating Potential	kg $CaCO_3$/t	1.3	11.6	6.9	21.6	17.5	0.9	70.3	15.6	102.5	6.3	<0.4	12.5	9.4	33.1	9.1	22.8	25.3	11.6	53.1	2.5	5.6	22.2	77.2	72.8
Net Neutralization Potential	kg $CaCO_3$/t	1.5	-4.5	-4	-15.7	-11.6	5.8	-67.5	-11	-100.3	0.7	7.5	-7.3	0.7	-20.1	-1.1	-11.8	-15.8	-3.5	-45.8	8.4	-0.8	-14.6	-75.1	-65.1
Sobek-NPR		2.15	0.61	0.42	0.27	0.34	7.44	0.04	0.29	0.02	1.10	18.75	0.42	1.07	0.39	0.87	0.48	0.38	0.69	0.14	4.36	0.86	0.34	0.03	0.11
Carb-NPR		0.62	0.07	0.12	0.08	0.10	3.67	0.01	0.11	0.01	0.40	10.50	0.20	0.27	0.05	0.09	0.04	0.03	0.07	0.06	0.68	0.14	0.04	0.01	0.02
Total Sulphur (Leco)	%S	0.06	0.47	0.31	0.78	0.64	0.1	2.13	0.93	4.08	0.44	0.2	0.6	0.48	1.26	0.54	0.93	0.87	0.7	1.95	0.73	0.24	1.33	2.93	2.96
Sulphate Sulphur	%S	<0.01	0.01	<0.01	0.01	0.01	<0.01	0.03	0.02	0.02	<0.01	<0.01	0.02	0.02	0.02	<0.01	<0.01	0.02	<0.01	0.03	<0.01	0.02	<0.01	0.02	0.02
Sulphide Sulphur	%S	0.04	0.37	0.22	0.69	0.56	0.03	2.25	0.5	3.28	0.2	0.005	0.4	0.3	1.06	0.29	0.73	0.81	0.37	1.7	0.08	0.18	0.71	2.47	2.33
Insoluble Sulphur	%S	0.02	0.09	0.09	0.08	0.07	0.07	0.005	0.41	0.78	0.24	0.2	0.18	0.16	0.18	0.25	0.2	0.04	0.33	0.22	0.65	0.04	0.62	0.44	0.61
Total Carbon	%C	<0.01	<0.01	<0.01	0.02	0.02	0.04	0.01	0.02	<0.01	0.03	0.05	0.03	0.03	0.02	0.01	0.01	0.01	<0.01	0.04	0.02	0.01	<0.01	<0.01	0.02

Sample Type	Units	MSED					
Borehole ID		TL0842	TL10115	TL0823	TL0835	TL0807	TL0960
Sample Depth (m)		19-20	279.16-280	497-498	429-429.5	222-222.85	89.5-90.5
Paste pH		9	9.4	9.52	8.37	8.3	9.3
Neutralization Potential (Sobek)	kg $CaCO_3$/t	5	9.4	20.8	6.8	9.3	6.9
Neutralization Potential (Carb)	kg $CaCO_3$/t	1.7	4.2	16.7	2.5	2.5	<0.8
Acid Generating Potential	kg $CaCO_3$/t	16.6	3.4	6.3	11.6	8.1	0.6
Net Neutralization Potential	kg $CaCO_3$/t	-11.6	6	14.6	-4.8	1.2	6.3
Sobek-NPR		0.30	2.76	3.30	0.59	1.15	11.50
Carb-NPR		0.10	1.24	2.65	0.22	0.31	1.33
Total Sulphur (Leco)	%S	0.6	0.35	0.25	0.65	0.72	0.53
Sulphate Sulphur	%S	0.01	<0.01	<0.01	0.02	0.03	<0.01
Sulphide Sulphur	%S	0.53	0.11	0.2	0.37	0.26	0.02
Insoluble Sulphur	%S	0.06	0.24	0.05	0.26	0.43	0.51
Total Carbon	%C	0.02	0.05	0.2	0.03	0.03	<0.01

Table A3 - EcoMetrix BMS mine rock metal content results

Sample Type	BMS																									
Borehole ID	TL 08-04	TL 08-05	TL 08-07	TL 08-08	TL 08-09	TL 08-13	TL 08-14	TL 08-16	TL 08-17	TL 08-18	TL 08-26	TL 08-30	TL 08-36	TL 08-43	TL 08-44	TL 08-45	TL 08-45	TL 08-47	TL 09-76	TL 09-76	TL 09-79	TL 09-80	TL 09-80	TL 09-81	TL 09-83	TL 09-85
Sample Depth (m)	19.5-20	129-129.5	20.5-71	84.5-85	50-50.5	25.5-26	100.5-101	67.5-68	120.5-121	62-62.5	17.5-18	61.5-62	84-84.5	130-130.5	155-155.5	163.5-164	84-84.5	79.5-80	39-39.65	20-20.5	5.5-6	6.6-6.7	31.16-31.7	16.5-17	73-73.5	40-40.5
Units	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})
Aluminum (Al)	9500	11000	8800	2200	19000	3600	7600	12000	27000	35000	13000	25000	5700	7900	4600	10000	11000	18000	12000	9700	4300	6100	6900	5600	15000	12000
Antimony (Sb)	<2	<2	<2	<2	<2	<2	17	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic (As)	2.3	4.1	21	0.7	2.3	3.8	78	2.8	2.3	1.4	1.2	1.7	11	8.0	9.6	8.7	4.0	3.3	4.5	1.4	1.8	1.8	8.7	6.3	23	13
Barium (Ba)	57	28	30	19	44	18	27	55	120	120	100	21	37	27	30	27	30	27	88	61	42	24	54	28	50	110
Berylium (Be)	0.05	0.30	0.22	0.04	0.14	0.09	0.19	0.19	0.19	0.42	0.10	0.52	0.04	0.09	0.05	0.21	0.23	0.26	0.05	0.04	0.09	0.04	0.05	0.07	0.19	0.04
Bismuth (Bi)	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	0.44	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	1.1	<0.09	<0.09	<0.09	<0.09	0.10	0.21	<0.09	<0.09	<0.09	<0.09	<0.09
Cadmium (Cd)	0.10	0.33	0.07	3.7	0.02	2.6	28	0.17	<0.02	1.2	0.04	0.03	0.04	0.08	0.52	<0.02	0.07	<0.02	0.08	0.05	0.21	0.23	0.06	0.28	2.9	0.03
Calcium (Ca)	4400	4700	3900	780	6100	1400	3700	3300	9000	12000	1800	12000	1500	2900	1100	1200	3100	7900	2800	1900	3500	1700	1700	3300	2800	1900
Chromium (Cr)	5.2	20	2.1	3.6	4.0	1.8	1.1	2.0	6.2	2.6	7.7	2.7	3.0	6.5	1.2	2.4	1.7	4.5	5.1	21	12	37	39	53	40	34
Cobalt (Co)	170	380	210	350	140	290	150	220	150	160	130	190	170	210	250	140	210	220	160	170	220	4.9	3.7	3.5	7.0	4.1
Copper (Cu)	29	31	9.3	16	7.9	43	83	9.5	4.3	19	14	2.9	6.2	60	60	0.5	13	1.3	7.1	17	21	4.6	6.3	8.4	3.1	13
Iron (Fe)	13000	21000	12000	8100	13000	4800	28000	9700	18000	17000	25000	10000	13000	12000	6800	6500	9800	13000	14000	18000	13000	7200	11000	7700	12000	15000
Lead (Pb)	7.8	17	24	17	3.0	11	2900	38	5.1	38	3.0	11	4.8	24	100	5.0	20	5.5	19	5.5	11	5.3	10	54	360	14
Lithium (Li)	12	4	9	<2	9	5	3	14	18	19	19	8	6	8	5	14	22	16	11	12	4	6	5	5	14	17
Magnesium (Mg)	6400	6100	5800	1100	12000	3000	3200	11000	14000	22000	9400	8800	4100	5900	3500	11000	11000	10000	10000	6000	1700	4600	4600	3300	14000	10000
Manganese (Mn)	370	190	320	70	550	190	270	520	320	710	580	410	260	380	280	370	440	230	540	270	110	260	350	280	510	400
Molybdenum (Mo)	<0.1	0.4	0.1	0.3	<0.1	<0.1	<0.1	0.2	<0.1	0.1	0.4	<0.1	0.2	0.3	<0.1	<0.1	0.4	<0.1	<0.1	0.6	8.6	8.7	0.7	0.6	0.4	0.3
Nickel (Ni)	6.4	39	2.7	11	4.5	12	4.1	4.0	6.6	3.3	24	2.7	6.0	10	2.4	4.6	3.9	6.2	6.4	16	17	11	3.4	5.5	4.6	6.9
Potassium (K)	7900	5300	2900	1700	11000	1200	3900	5900	13000	17000	12000	7800	4800	3300	3200	7500	2400	2700	8400	8000	2200	4300	5500	1600	8100	10000
Selenium (Se)	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	1.5	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Silver (Ag)	<0.01	0.36	<0.01	1.1	0.16	0.19	16	<0.01	<0.01	0.12	0.01	0.26	<0.01	0.54	0.83	<0.01	<0.01	<0.01	<0.01	<0.01	0.23	0.25	0.12	0.27	0.55	0.19
Strontium (Sr)	8.5	16	11	1.7	16	3.4	15	8.5	25	32	4.2	32	3.9	5.2	3.0	2.8	5.9	32	4.7	4.8	6.2	4.2	3.1	4.8	12	3.8
Sulphur (S)	2800	10000	7900	4200	2000	2400	35000	2600	2700	5400	5400	1800	9800	3700	4100	3100	2600	1100	3800	3200	6300	2500	4500	3700	7100	5800
Thallium (Tl)	0.24	0.17	0.11	0.05	0.38	0.04	0.14	0.17	0.32	0.40	0.58	0.28	0.21	0.13	0.13	0.27	0.10	0.06	0.31	0.51	0.17	0.34	0.20	0.05	0.27	0.35
Tin (Sn)	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Titanium (Ti)	770	330	240	78	710	92	120	360	1000	630	1300	520	390	580	250	340	470	550	690	960	250	310	420	180	300	720
Uranium (U)	0.20	1.2	0.42	0.55	0.52	0.24	0.42	0.24	0.33	0.22	0.12	0.38	0.19	0.39	0.39	0.43	0.24	0.30	0.65	0.90	1.7	0.63	0.41	0.47	0.37	0.46
Vanadium (V)	18	11	5	2	13	3	2	6	22	12	36	7	8	17	7	9	8	15	12	24	9	6	6	4	9	18
Yttrium (Y)	1.8	4.1	1.7	1.6	2.2	1.3	2.2	1.3	3.0	1.1	2.2	2.1	2.1	3.6	1.8	1.5	1.3	2.6	2.0	3.5	4.3	1.8	1.9	1.5	1.7	2.0
Zinc (Zn)	71	100	36	800	40	710	12000	87	53	350	84	30	28	52	190	25	38	32	77	56	95	92	37	100	1400	54

Sample Type	BMS																									
Borehole ID	TL 09-85	TL 10-113	TL 10-113	TL 10-115	TL 10-116	TL 10-118	TL 10-118	TL 11-151	TL 11-153	TL 11-165	TL 11-187	TL 11-202	TL 11-204a	TL 10-116	TL 11-187	TL 11-187	TL 11-132	TL 11-150	TL 11-151	TL 11-132	TL 11-153	TL 11-165	TL 11-165	TL 11-165	TL 11-165	TL 11-165
Sample Depth (m)	61-61.5	38.2-38.7	75-75.5	63-63.5	39-39.5	26.5-27	114-114.5	33-33.5	70.1-70.6	74.5-75	33-33.7	147.3-147.9	204-204.5	96-96.5	18.5-19	106-109.5	21.5-22	24-24.5	17-17.5	22.75-34	94.5-95	108.5-109	114-114.5	110-110.5	94-94.5	141-141.5
Units	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})
Aluminum (Al)	3000	18000	13000	24000	12000	15000	35000	16000	14000	25000	9500	9400	8200	7300	11000	20000	9400	7900	6800	20000	14000	33000	5000	6300	17000	17000
Antimony (Sb)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic (As)	61	3.5	5.2	17	11	0.6	5.3	1.2	5.1	1.3	18	15	10	28	20	35	25	1.0	4.4	<0.5	10	2.2	5.9	14	6.2	5.4
Barium (Ba)	28	34	41	43	35	88	140	140	160	54	45	40	78	28	36	63	61	63	49	150	79	180	79	36	150	30
Berylium (Be)	0.08	0.39	0.11	0.52	0.23	0.12	0.26	0.09	0.06	0.43	0.03	0.03	0.05	0.04	0.11	0.26	0.06	0.04	<0.02	0.13	0.09	0.44	0.09	0.03	0.11	0.17
Bismuth (Bi)	0.25	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	0.10	<0.09	0.21	<0.09	<0.09	<0.09	<0.09	<0.09	0.25	<0.09	<0.09	<0.09	0.16	<0.09	<0.09	0.19	<0.09	0.19	<0.09
Cadmium (Cd)	0.15	0.54	0.04	0.02	0.17	0.03	<0.02	0.06	0.07	0.09	0.70	0.11	0.04	0.22	0.92	0.12	3.5	0.05	0.16	0.12	0.02	0.12	1.4	0.14	0.05	0.20
Calcium (Ca)	550	4900	3400	12000	5400	5200	16000	1700	2600	9400	1900	1700	1600	1200	4900	4000	3400	1300	2900	3500	4000	12000	2800	1400	3600	3600
Chromium (Cr)	30	0.9	1.7	1.6	1.7	17	5.6	62	9.0	62	6.6	3.2	3.0	7.5	9.3	76	9.6	4.7	53	110	4.6	83	5.0	2.7	72	85
Cobalt (Co)	5.8	180	200	190	230	160	160	300	180	190	190	210	170	180	220	200	200	210	5.8	18	170	190	210	170	220	160
Copper (Cu)	14	5.6	5.0	9.4	14	14	3.3	36	16	37	15	27	16	38	26	40	61	7.9	31	49	2.8	51	4.7	5.6	48	40
Iron (Fe)	17000	7800	12000	15000	13000	14000	7600	30000	25000	29000	13000	15000	13000	14000	18000	31000	19000	15000	11000	36000	17000	37000	6700	10000	31000	34000
Lead (Pb)	18	22	16	6.3	24	6.5	5.6	5.1	2.9	27	77	28	5.4	39	25	13	240	13	25	7.9	10	20	200	22	9.6	48
Lithium (Li)	<2	10	8	11	4	10	20	12	19	13	9	11	10	5	12	19	8	13	7	15	13	15	4	5	17	18
Magnesium (Mg)	150	12000	8400	9000	3800	6600	15000	10000	9300	13000	8400	8000	6200	5900	8100	15000	7400	5900	5100	13000	8500	15000	2900	4600	9700	15000
Manganese (Mn)	7.3	380	670	470	190	300	230	280	620	500	590	670	420	250	630	430	580	440	370	380	400	890	130	370	380	760
Molybdenum (Mo)	1.0	<0.1	<0.1	<0.1	<0.1	0.4	0.2	0.7	<0.1	1.3	0.2	<0.1	<0.1	0.2	<0.1	1.7	0.2	<0.1	0.6	1.3	<0.1	1.0	0.1	<0.1	0.7	0.7
Nickel (Ni)	9.8	2.2	2.9	5.4	7.2	16	6.1	47	8.0	51	8.8	5.2	3.5	8.2	10.0	56	10.0	5.3	16	48	5.7	69	4.7	8.4	44	56
Potassium (K)	2300	9700	7000	7900	4300	8700	12000	11000	12000	11000	8300	8400	7000	5800	6100	12000	7400	7000	6000	13000	10000	17000	1900	4300	12000	3700
Selenium (Se)	0.9	0.8	<0.7	<0.7	0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.7	<0.7	1.2	0.7	0.9	0.8	<0.7	<0.7	<0.7	0.9	0.8	0.7	0.8
Silver (Ag)	1.4	0.40	0.22	0.12	0.25	0.17	0.38	0.76	0.29	0.63	1.4	0.18	0.12	1.1	0.34	0.65	0.49	0.33	0.25	0.48	0.09	0.52	0.62	0.17	0.44	0.90
Strontium (Sr)	2.4	23	9.7	34	26	37	85	8.3	5.5	23	4.6	3.2	3.6	1.7	10	12	7.9	4.0	5.4	18	25	35	4.4	2.6	14	4.6
Sulphur (S)	18000	3400	2600	8000	7000	3200	4600	7800	8200	11000	7100	8400	5600	9200	8800	16000	12000	5000	2700	9900	7200	8400	4100	4900	9700	4200
Thallium (Tl)	0.04	0.46	0.23	0.26	0.20	0.27	0.51	0.63	0.40	0.45	0.37	0.30	0.24	0.23	0.22	0.42	0.25	0.34	0.22	0.57	0.28	0.66	0.05	0.16	0.43	0.12
Tin (Sn)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Titanium (Ti)	31	260	700	660	250	890	710	1200	1300	780	610	700	620	330	780	800	710	520	570	1300	990	1700	96	310	1400	850
Uranium (U)	0.47	0.21	0.44	0.49	0.24	0.65	0.29	1.6	0.41	2.2	0.27	0.50	0.44	0.52	0.27	2.4	0.23	0.097	0.18	2.2	0.21	2.2	0.50	0.52	2.1	2.2
Vanadium (V)	<1	3	15	10	6	21	28	38	34	37	19	17	13	9	24	36	23	13	14	45	20	51	3	6	39	51
Yttrium (Y)	1.3	0.90	2.1	2.7	2.9	3.3	1.1	4.9	4.0	7.3	1.9	2.0	1.9	1.9	2.1	5.1	2.0	2.0	1.5	5.8	3.0	8.7	2.0	1.9	6.3	6.1
Zinc (Zn)	69	170	38	28	78	42	27	67	82	63	240	68	41	100	170	110	1300	52	100	98	51	130	400	56	63	100

Table A4 - EcoMetrix BS mine rock metal content results

Sample Type	BS															
Borehole ID	TL 08-09	TL 08-09	TL 08-09	TL 08-09	TL 08-09	TL 08-36A	TL 08-36A	TL 08-36A	TL 08-36A	TL 08-36A	TL 11-127	TL 11-127	TL 11-141	TL 11-141	TL 11-164	TL 11-164
Sample Depth (m)	113-113.5	114-114.5	115-115.5	116-117	114.5-115	72.5-73	73-73.5	73.5-74	74.5-75	75-75.5	15.75-16.25	41.41-5	33-33.4	6-6.5	66-66.5	75-75.5
Units	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})
Aluminum (Al)	30000	32000	35000	36000	25000	15000	14000	13000	9500	11000	22000	24000	20000	21000	27000	17000
Antimony (Sb)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic (As)	29	25	23	25	25	11	77	5.1	6.1	14	2.6	12	6.1	1.4	6.3	2.1
Barium (Ba)	92	100	130	84	96	56	42	60	55	54	440	190	210	370	320	370
Berylium (Be)	1.1	0.50	0.45	0.97	0.73	0.11	0.46	0.08	0.04	0.05	0.09	0.13	0.08	0.08	0.08	0.10
Bismuth (Bi)	0.19	0.22	0.18	0.20	0.25	<0.09	0.10	<0.09	<0.09	0.26	0.20	0.27	0.16	0.34	0.25	0.18
Cadmium (Cd)	2.5	0.06	0.09	0.13	0.47	0.13	0.06	0.13	0.09	0.22	0.08	0.13	0.06	0.09	0.04	0.08
Calcium (Ca)	7000	8700	8700	9200	4700	2900	4600	4000	2400	2100	3200	2100	2000	3600	1500	2100
Chromium (Cr)	70	84	87	71	77	6.6	6.3	6.7	7.0	5.6	140	130	96	160	110	100
Cobalt (Co)	190	210	160	180	200	180	160	160	180	190	15	17	15	17	130	200
Copper (Cu)	51	33	35	43	57	11	21	18	29	75	35	37	36	44	29	35
Iron (Fe)	34000	33000	40000	37000	35000	18000	17000	17000	14000	16000	36000	41000	33000	37000	41000	29000
Lead (Pb)	68	28	31	43	32	55	50	28	29	500	5.2	6.2	5.4	9.9	3.8	6.3
Lithium (Li)	20	24	25	19	19	17	15	17	14	14	25	23	21	24	29	19
Magnesium (Mg)	18000	17000	20000	20000	16000	12000	10000	11000	7400	8700	13000	16000	12000	13000	15000	11000
Manganese (Mn)	430	450	510	490	390	760	720	750	410	580	400	370	340	290	330	180
Molybdenum (Mo)	0.7	1.1	0.9	0.7	0.9	<0.1	0.2	<0.1	0.3	<0.1	1.5	1.2	1.2	1.3	1.3	0.9
Nickel (Ni)	51	55	53	55	54	6.6	7.7	6.3	6.2	6.8	49	54	46	49	58	44
Potassium (K)	17000	16000	20000	18000	15000	11000	9700	11000	8000	9300	17000	16000	17000	16000	21000	11000
Selenium (Se)	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Silver (Ag)	0.38	0.14	0.27	0.16	0.57	<0.01	<0.01	<0.01	<0.01	0.72	0.09	0.11	0.09	0.13	0.10	0.09
Strontium (Sr)	19	27	33	37	17	13	18	7.9	5.2	5.8	5.5	4.3	4.0	5.3	3.4	5.8
Sulphur (S)	12000	13000	11000	15000	14000	6800	6700	4600	3600	7200	2400	1600	2000	3600	1300	2100
Thallium (Tl)	0.48	0.43	0.57	0.62	0.43	0.38	0.37	0.38	0.28	0.36	0.42	0.41	0.42	0.42	0.57	0.33
Tin (Sn)	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	1	<1	<1	<1	<1
Titanium (Ti)	1300	1200	1600	1300	1300	980	840	1000	850	850	1900	2000	1800	1700	2100	1300
Uranium (U)	2.6	2.6	2.4	1.9	2.5	0.20	0.24	0.23	0.19	0.24	2.4	2.3	1.8	3.6	1.6	2.1
Vanadium (V)	43	46	57	48	47	24	20	27	24	23	64	71	43	64	71	62
Yttrium (Y)	5.0	5.0	5.0	4.9	5.5	1.5	2.1	2.1	1.8	1.9	6.0	5.6	5.6	4.5	3.1	4.4
Zinc (Zn)	330	62	77	96	110	82	90	98	62	110	75	72	61	75	80	71

Table A5 - EcoMetrix MSS mine rock metal content results

Sample Type	MSS											
Borehole ID	TL 08-02	TL 08-08	TL 08-13	TL 08-16	TL 08-44	TL 08-45	TL 08-48	TL 09-75	TL 09-75	TL 09-76	TL 09-80	TL 09-80
Sample Depth (m)	61.5-62	149-149.5	40-40.5	57-57.5	72-72.5	155-155.5	30-30.5	23-23.5	45-45.5	47.5-48	44-44.5	36-36.5
Units	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})
Aluminum (Al)	3800	26000	11000	3100	1900	6900	3400	6600	2800	3900	6800	8500
Antimony (Sb)	<2	<2	<2	<2	<2	<2	2.9	5.0	<2	<2	<2	2.4
Arsenic (As)	80	3.3	20	20	4.8	6.6	9.4	69	28	45	20	29
Barium (Ba)	32	100	32	22	21	28	31	26	27	28	42	33
Berylium (Be)	0.04	0.32	0.06	0.08	0.09	0.04	0.08	0.21	0.05	0.06	0.05	0.12
Bismuth (Bi)	0.42	0.13	0.23	<0.09	<0.09	<0.09	<0.09	1.1	<0.09	<0.09	<0.09	<0.09
Cadmium (Cd)	0.16	0.06	0.03	0.09	<0.02	0.02	0.32	1.2	0.28	1.9	0.74	0.63
Calcium (Ca)	830	8700	1100	920	1300	1000	1700	2800	1300	1500	1300	3300
Chromium (Cr)	1.3	70	5.6	1.2	2.8	1.4	<0.5	2.0	0.7	0.7	36	33
Cobalt (Co)	180	180	180	280	220	160	170	210	180	190	4.2	4.2
Copper (Cu)	15	43	4.4	2.2	12	1.1	19	21	1.8	32	3.1	48
Iron (Fe)	79000	31000	16000	11000	8500	3700	6900	15000	9300	15000	9500	12000
Lead (Pb)	30	23	7.3	87	29	3.8	530	440	49	160	50	50
Lithium (Li)	3	12	11	2	<2	8	<2	4	<2	3	5	5
Magnesium (Mg)	2800	12000	12000	2300	600	6500	1400	2800	900	2200	5200	5300
Manganese (Mn)	110	490	550	110	27	290	50	130	51	110	350	200
Molybdenum (Mo)	0.4	1.0	0.2	<0.1	0.7	<0.1	<0.1	0.2	0.1	<0.1	0.4	0.4
Nickel (Ni)	12	45	8.4	3.6	5.9	3.3	3.6	11	4.9	6.0	3.2	3.1
Potassium (K)	3200	14000	9900	2300	900	5700	1900	2800	1700	2400	5800	4200
Selenium (Se)	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.8	<0.7	0.8	<0.7	<0.7
Silver (Ag)	0.46	0.26	0.36	0.29	<0.01	<0.01	0.54	8.8	<0.01	0.45	0.17	0.31
Strontium (Sr)	4.1	24	2.0	2.2	3.5	2.0	2.8	9.3	1.9	2.3	2.4	7.7
Sulphur (S)	89000	8300	11000	10000	7100	1400	7300	14000	9600	15000	7300	9600
Thallium (Tl)	0.47	0.45	0.35	0.08	0.04	0.22	0.05	0.12	0.04	0.11	0.23	0.30
Tin (Sn)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Titanium (Ti)	150	1300	500	77	30	220	41	130	33	65	310	130
Uranium (U)	0.38	2.1	0.31	0.26	0.26	0.48	0.26	0.39	0.34	0.37	0.45	0.47
Vanadium (V)	3	44	9	1	1	4	1	4	2	2	4	3
Yttrium (Y)	1.5	8.1	1.7	1.1	1.7	1.4	1.3	2.9	1.8	2.2	1.5	1.7
Zinc (Zn)	76	61	54	40	7.0	28	200	480	100	650	280	240

Sample Type	MSS													
Borehole ID	TL 09-81	TL 09-82	TL 09-83	TL 09-83	TL 09-85	TL 09-85	TL 09-86	TL 10-113	TL 10-116	TL 10-118	TL 11-153	TL 11-165	TL 11-202	TL 11-204a
Sample Depth (m)	35-35.5	25.5-26	22.4-23	45.8-46.3	27.5-28	28.3-29	27.5-28	86-86.5	65.5-66	18-18.5	85.5-86	70.6-71.1	86.4-87	216-216.5
Units	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})
Aluminum (Al)	3200	15000	11000	11000	2800	2900	9800	13000	3300	3300	3600	3900	11000	9900
Antimony (Sb)	<2	<2	<2	<2	<2	<2	155	<2	2.8	<2	<2	<2	<2	<2
Arsenic (As)	28	7.0	26	4.8	5.8	6.0	150	86	36	25	5.9	31	1.4	29
Barium (Ba)	28	20	35	130	25	27	30	81	20	38	27	23	62	27
Berylium (Be)	0.05	0.19	0.31	0.06	0.03	0.04	0.42	0.16	0.09	0.03	0.02	0.14	0.09	0.27
Bismuth (Bi)	<0.09	0.13	<0.09	<0.09	<0.09	<0.09	0.32	<0.09	<0.09	<0.09	0.10	<0.09	0.23	<0.09
Cadmium (Cd)	0.14	0.04	0.07	0.07	0.03	0.19	2.8	0.20	4.4	0.76	0.06	0.20	0.07	0.02
Calcium (Ca)	1100	11000	4300	3100	1400	1600	4700	6500	1400	370	1500	2300	2200	3300
Chromium (Cr)	29	100	33	26	40	36	5.5	2.4	0.6	1.0	2.8	1.3	35	2.8
Cobalt (Co)	3.1	19	3.4	6.4	6.9	5.3	180	210	230	200	200	150	120	200
Copper (Cu)	21	37	31	9.9	2.4	5.0	217	16	25	26	3.3	20	50	1.2
Iron (Fe)	8700	34000	9600	12000	2600	2000	20000	19000	12000	8600	3600	5400	28000	5900
Lead (Pb)	73	4.1	23	21	8.6	12	1800	57	520	46	6.0	48	12	6.9
Lithium (Li)	<2	18	11	11	<2	2	3	4	<2	2	5	4	9	18
Magnesium (Mg)	150	9400	7900	7400	990	1300	2000	5400	900	1300	2300	1700	6900	10000
Manganese (Mn)	15	550	350	370	81	100	130	290	52	60	73	78	390	400
Molybdenum (Mo)	0.4	1.2	0.5	0.2	1.0	0.9	0.8	<0.1	<0.1	0.3	0.2	<0.1	1.1	<0.1
Nickel (Ni)	2.8	47	3.4	12	6.1	4.7	26	4.2	2.2	14	5.5	3.3	64	16
Potassium (K)	2500	1800	5000	9000	1300	1500	2300	5600	2000	2400	2700	2000	5300	3900
Selenium (Se)	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	1.0	<0.7	1.4	0.8	<0.7	0.8	<0.7	<0.7
Silver (Ag)	0.29	0.49	0.29	0.22	0.28	0.27	29	0.22	1.9	0.69	0.17	0.17	0.80	0.08
Strontium (Sr)	2.4	8.6	10	7.2	4.5	3.5	21	17	4.0	2.9	4.6	3.8	7.9	4.6
Sulphur (S)	9200	6700	6500	2000	1800	1000	14000	18000	13000	9300	2700	5300	9400	1600
Thallium (Tl)	0.03	0.06	0.27	0.40	0.04	0.04	0.16	0.25	0.04	0.08	0.13	0.05	0.25	0.16
Tin (Sn)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Titanium (Ti)	41	910	160	730	180	160	38	270	46	81	210	58	640	340
Uranium (U)	0.37	1.6	0.22	0.73	0.17	0.17	0.52	0.39	0.32	0.36	0.33	0.27	2.3	0.64
Vanadium (V)	<1	48	2	22	3	3	3	8	1	2	7	1	18	7
Yttrium (Y)	2.6	5.7	0.89	3.6	0.63	0.80	2.8	2.0	1.7	0.66	1.5	1.4	8.2	1.8
Zinc (Zn)	54	23	67	110	13	59	430	69	1500	250	27	67	70	25

Sample Type	MSS								
Borehole ID	TL 10-113	TL 11-151	TL 11-151	TL 11-187	TL 11-187	TL 11-150	TL 11-150	TL 11-187	TL 11-153
Sample Depth (m)	122.5-123	39.5-40	40.2-40.7	27.5-28	24.5-25	21.5-22	21.5-22	147-147.5	137.3-137.8
Units	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})	(mg kg^{-1})
Aluminum (Al)	7400	2700	2500	2600	14000	2400	7600	34000	3400
Antimony (Sb)	<2	<2	<2	<2	<2	<2	<2	<2	12
Arsenic (As)	17	2.0	1.1	7.4	13	0.6	1.0	6.9	54
Barium (Ba)	12	29	27	31	36	26	130	96	24
Berylium (Be)	0.31	<0.02	<0.02	0.03	0.23	0.02	0.03	0.33	0.06
Bismuth (Bi)	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
Cadmium (Cd)	0.02	0.04	0.06	0.09	0.64	0.03	0.07	0.15	7.6
Calcium (Ca)	2400	600	650	480	8200	900	1200	13000	960
Chromium (Cr)	2.9	5.7	4.8	2.8	4.9	6.6	19	3.5	2.0
Cobalt (Co)	210	150	180	160	290	190	210	210	250
Copper (Cu)	3.0	17	20	3.4	50	15	24	36	21
Iron (Fe)	8000	2700	2300	1900	12000	1700	15000	14000	21000
Lead (Pb)	8.7	1.9	2.1	11	210	4.5	5.1	22	1400
Lithium (Li)	7	<2	<2	2	13	<2	11	16	2
Magnesium (Mg)	5500	790	380	1200	9500	460	5100	17000	2000
Manganese (Mn)	180	37	23	52	450	27	260	590	150
Molybdenum (Mo)	<0.1	0.3	0.3	1.5	<0.1	0.3	0.3	<0.1	0.5
Nickel (Ni)	2.5	25	48	5.3	6.7	19	23	4.5	7.1
Potassium (K)	2100	1400	1400	1400	3500	1600	6500	15000	2700
Selenium (Se)	<0.7	<0.7	0.8	<0.7	<0.7	0.8	0.8	<0.7	1.3
Silver (Ag)	0.53	0.17	0.15	0.27	1.1	0.09	0.20	0.38	12
Strontium (Sr)	6.3	4.8	4.7	2.5	32	4.0	4.7	40	3.4
Sulphur (S)	5500	1400	1000	1600	6200	670	4000	4800	23000
Thallium (Tl)	0.07	0.04	0.03	0.02	0.13	0.03	0.28	0.40	0.09
Tin (Sn)	<1	<1	<1	<1	<1	<1	<1	<1	<1
Titanium (Ti)	120	47	44	93	340	55	610	890	110
Uranium (U)	0.35	0.17	0.18	0.15	0.19	0.16	0.41	0.32	0.31
Vanadium (V)	3	6	4	3	10	4	21	16	2
Yttrium (Y)	1.4	1.1	1.4	0.61	2.9	2.2	2.4	1.4	1.4
Zinc (Zn)	16	16	18	30	220	13	53	67	3700

Table A6 - EcoMetrix MSED mine rock metal content results

Sample Type	**MSED**								
Borehole ID	**TL 08-43**	**TL 08-43**	**TL 09-75**	**TL 09-86**	**TL 09-86**	**TL 10-100**	**TL 10-100**	**TL 10-97**	**TL 10-97**
Sample Depth (m)	**53-53.5**	**59-59.5**	**32-32.5**	**81-81.5**	**96.5-97**	**31.5-32**	**28.5-29**	**21.5-22**	**52.5-53**
Units	**(mg kg^{-1})**	**(mg kg^{-1})**	**(mg kg^{-1})**	**(mg kg^{-1})**	**(mg kg^{-1})**	**(mg kg^{-1})**	**(mg kg^{-1})**	**(mg kg^{-1})**	**(mg kg^{-1})**
Aluminum (Al)	9600	19000	9000	18000	13000	11000	11000	10000	23000
Antimony (Sb)	22	4.2	<2	<2	<2	<2	<2	<2	<2
Arsenic (As)	35	40	7.4	4.7	2.4	6.6	3.4	2.1	0.8
Barium (Ba)	62	100	51	54	40	110	99	140	420
Berylium (Be)	0.48	0.65	0.03	0.33	0.17	0.07	0.06	0.04	0.07
Bismuth (Bi)	0.54	0.26	<0.09	0.24	0.14	<0.09	<0.09	<0.09	0.30
Cadmium (Cd)	0.14	0.19	0.04	0.60	0.09	0.12	0.14	0.03	0.09
Calcium (Ca)	3000	5600	1700	2800	7600	6000	4700	4400	2600
Chromium (Cr)	52	65	4.0	97	82	37	44	43	160
Cobalt (Co)	13	160	190	17	19	10	6.6	6.6	17
Copper (Cu)	36	72	5.0	59	53	16	7.3	22	45
Iron (Fe)	18000	35000	9900	28000	36000	24000	17000	18000	38000
Lead (Pb)	57	99	12	30	8.9	2.4	1.8	1.0	8.8
Lithium (Li)	8	19	10	20	10	10	10	9	24
Magnesium (Mg)	5800	14000	7500	13000	8300	9000	7700	7200	14000
Manganese (Mn)	320	830	490	470	340	620	520	380	320
Molybdenum (Mo)	1.6	1.4	0.2	1.7	1.5	0.5	0.5	0.5	1.3
Nickel (Ni)	39	64	7.2	57	74	10	6.7	8.4	49
Potassium (K)	3600	7800	7600	8600	3600	9500	8300	9000	17000
Selenium (Se)	<0.7	<0.7	<0.7	0.8	0.9	0.9	0.8	<0.7	<0.7
Silver (Ag)	3.6	1.2	<0.01	0.90	0.46	0.22	0.27	0.46	0.13
Strontium (Sr)	16	21	3.2	5.1	14	21	27	13	4.5
Sulphur (S)	14000	25000	2500	8500	13000	15000	7800	5700	3300
Thallium (Tl)	0.11	0.68	0.33	0.30	0.11	0.27	0.28	0.22	0.45
Tin (Sn)	<1	<1	<1	<1	<1	<1	<1	<1	<1
Titanium (Ti)	180	750	600	700	710	970	770	1100	1800
Uranium (U)	4.2	2.2	0.48	2.5	2.4	0.27	0.28	0.27	2.9
Vanadium (V)	7	33	13	26	26	25	20	25	64
Yttrium (Y)	4.2	5.9	1.9	5.9	8.8	1.5	1.9	1.5	4.2
Zinc (Zn)	71	110	40	190	45	120	110	72	77

Table A7 - EcoMetrix BMS mine rock ABA results

Sample Type	Units	BMS																									
Borehole ID		**TL 08-04**	**TL 08-05**	**TL 08-07**	**TL 08-08**	**TL 08-09**	**TL 08-13**	**TL 08-14**	**TL 08-16**	**TL 08-17**	**TL 08-18**	**TL 08-26**	**TL 08-30**	**TL 08-36**	**TL 08-43**	**TL 08-44**	**TL 08-45**	**TL 08-45**	**TL 08-47**	**TL 09-76**	**TL 09-76**	**TL 09-79**	**TL 09-80**	**TL 09-80**	**TL 09-81**	**TL 09-83**	**TL 09-85**
Sample Depth (m)		**19.5-20**	**129-129.5**	**20.5-71**	**84.5-85**	**50-50.5**	**25.5-26**	**100.5-101**	**67.5-68**	**120.5-121**	**62-62.5**	**17.5-18**	**61.5-62**	**84-84.5**	**130-130.5**	**155-155.5**	**163.5-164**	**84-84.5**	**79.5-80**	**39-39.65**	**20-20.5**	**5.5-6**	**6.6-6.7**	**31.16-31.7**	**16.5-17**	**73-73.5**	**40-40.5**
Paste pH		10.05	8.65	9.39	9.09	10.07	8.71	9.36	9.08	10.04	8.95	9.55	9.72	9.47	9.68	9.57	10.13	8.97	9.34	9.96	10.07	9.63	9.77	9.71	9.33	9.57	10.08
Neutralization Potential (Sobek)	kg $CaCO_3$/t	11	6.0	5.3	3.2	7.3	4.6	5.6	6.2	8.8	9.0	6.2	8.2	4.6	5.1	4.2	4.7	5.5	8.1	7.1	5.9	6.7	4.8	5.1	5.0	7.0	6.6
Neutralization Potential (Carb)	kg $CaCO_3$/t	3.2	0.9	0.7	0.5	0.3	0.5	0.9	1.3	0.3	0.4	0.1	0.5	0.2	0.4	0.2	0.4	0.1	1.4	1.7	0.6	1.4	0.3	0.3	0.7	2.2	0.3
Acid Generating Potential	kg $CaCO_3$/t	6.80	9.21	24.7	8.62	3.99	6.98	91.9	6.84	4.08	11.7	13.7	2.50	6.69	10.3	11.4	7.65	7.95	2.02	8.60	4.17	8.64	3.26	10.9	6.88	16.7	10.9
Net Neutralization Potential	kg $CaCO_3$/t	3.90	-3.21	-19.4	-5.42	3.31	-2.38	-86.3	-0.64	4.72	-2.72	-7.51	5.70	-2.09	-5.21	-7.19	-2.95	-2.45	6.08	-1.50	1.73	-1.94	1.54	-5.84	-1.88	-9.70	-4.33
Sobek-NPR		1.62	0.65	0.21	0.37	1.83	0.66	0.06	0.91	2.16	0.77	0.45	3.28	0.69	0.50	0.37	0.61	0.69	4.01	0.83	1.41	0.78	1.47	0.47	0.73	0.42	0.61
Carb-NPR		0.48	0.10	0.03	0.06	0.08	0.08	0.01	0.19	0.07	0.03	0.01	0.21	0.03	0.04	0.01	0.05	0.02	0.68	0.20	0.13	0.16	0.09	0.03	0.11	0.13	0.03
Total Sulphur (Leco)	%S	0.402	1.14	0.921	0.560	0.261	0.253	3.94	0.261	0.304	0.683	0.607	0.167	1.05	0.412	0.823	0.288	0.314	0.814	0.376	0.656	0.763	0.220	0.429	0.334	0.747	0.588
Sulphate Sulphur	%S	0.18	0.85	0.13	0.28	0.13	0.03	1.00	0.04	0.17	0.31	0.17	0.09	0.84	0.08	0.46	0.04	0.06	0.75	0.10	0.52	0.49	0.12	0.08	0.11	0.21	0.24
Sulphide Sulphur	%S	0.22	0.29	0.79	0.28	0.13	0.22	2.94	0.22	0.13	0.38	0.44	0.08	0.21	0.33	0.36	0.24	0.25	0.06	0.28	0.13	0.28	0.10	0.35	0.22	0.53	0.35
Insoluble Sulphur	%S																										
Total Carbon	%C	0.084	0.041	0.024	0.043	0.018	0.044	0.039	0.036	0.020	0.021	0.027	0.018	0.012	0.014	0.024	0.020	0.016	0.031	0.028	0.046	0.012	0.012	0.012	0.020	0.040	0.017
Carbonate (CO_3)	%C	0.194	0.055	0.041	0.029	0.019	0.032	0.052	0.076	0.017	0.021	0.008	0.031	0.013	0.022	0.010	0.025	0.008	0.082	0.103	0.033	0.081	0.018	0.019	0.044	0.132	0.019
Total Organic Carbon	%C	0.015	0.030	0.012	0.018	0.009	0.019	0.010	<0.005	0.031	0.018	0.018	0.021	0.015	0.010	0.015	0.013	0.007	0.015	<0.005	0.016	0.013	0.009	<0.005	0.006	<0.005	<0.005

Sample Type	Units	BMS																									
Borehole ID		**TL 09-85**	**TL 10-113**	**TL 10-113**	**TL 10-115**	**TL 10-116**	**TL 10-118**	**TL 10-118**	**TL 11-151**	**TL 11-153**	**TL 11-165**	**TL 11-187**	**TL 11-202**	**TL 11-204a**	**TL 10-116**	**TL 11-187**	**TL 11-187**	**TL 11-132**	**TL 11-150**	**TL 11-151**	**TL 11-132**	**TL 11-153**	**TL 11-165**	**TL 11-165**	**TL 11-165**	**TL 11-165**	**TL 11-165**
Sample Depth (m)		**61-61.5**	**38.2-38.7**	**75-75.5**	**63-63.5**	**39-39.5**	**26.5-27**	**114-114.5**	**33-33.5**	**70.1-70.6**	**74.5-75**	**33-33.7**	**147.3-147.9**	**204-204.5**	**96-96.5**	**18.5-19**	**106-109.5**	**21.5-22**	**24-24.5**	**17-17.5**	**22.75-34**	**94.5-95**	**108.5-109**	**114-114.5**	**110-110.5**	**94-94.5**	**141-141.5**
Paste pH		8.23	9.02	8.04	7.32	9.40	9.08	8.35	7.78	8.07	8.14	9.85	9.32	10.04	9.70	9.54	8.96	9.71	9.96	9.61	8.23	10.07	9.83	9.74	9.85	9.83	9.52
Neutralization Potential (Sobek)	kg $CaCO_3$/t	3.3	6.0	8.1	12	8.2	8.4	12	7.0	8.9	12	7.4	7.5	7.4	6.2	12	8.6	10	7.2	10	9.7	9.0	12	7.4	6.2	8.9	12
Neutralization Potential (Carb)	kg $CaCO_3$/t	0.1	0.9	0.2	0.2	0.4	1.7	0.3	0.3	0.5	2.3	0.5	0.4	0.5	0.5	2.2	0.6	1.6	0.3	2.4	0.3	0.5	0.7	0.8	0.2	0.2	2.4
Acid Generating Potential	kg $CaCO_3$/t	45.3	8.32	4.58	19.2	13.0	2.73	11.8	14.5	20.1	17.8	19.1	18.2	13.4	23.9	20.2	30.8	23.3	5.34	4.60	11.4	14.7	8.22	5.73	7.87	11.4	6.47
Net Neutralization Potential	kg $CaCO_3$/t	-42.0	-2.32	3.52	-7.72	-4.81	5.67	0.04	-7.47	-11.2	-5.76	-11.7	-10.7	-6.05	-17.7	-8.72	-22.2	-12.8	1.86	5.90	-1.65	-5.69	4.08	1.67	-1.67	-2.53	5.63
Sobek-NPR		0.07	0.72	1.77	0.63	0.63	3.08	1.02	0.48	0.44	0.67	0.39	0.41	0.55	0.26	0.59	0.28	0.43	1.35	2.17	0.85	0.61	1.46	1.29	0.79	0.78	1.85
Carb-NPR		0.00	0.11	0.05	0.01	0.03	0.60	0.03	0.02	0.02	0.13	0.02	0.02	0.04	0.02	0.11	0.02	0.07	0.05	0.52	0.02	0.04	0.09	0.15	0.03	0.02	0.36
Total Sulphur (Leco)	%S	1.94	0.329	0.231	0.860	0.754	0.307	0.442	0.871	0.939	0.950	0.726	0.935	0.612	0.893	0.971	1.47	1.22	0.553	0.265	0.920	0.855	0.992	0.447	0.545	0.914	0.442
Sulphate Sulphur	%S	0.49	0.06	0.08	0.25	0.34	0.22	0.07	0.41	0.30	0.38	0.11	0.35	0.18	0.13	0.32	0.49	0.47	0.38	0.12	0.56	0.39	0.73	0.26	0.29	0.55	0.24
Sulphide Sulphur	%S	1.45	0.27	0.15	0.62	0.42	0.09	0.38	0.46	0.64	0.57	0.61	0.58	0.43	0.77	0.65	0.98	0.74	0.17	0.15	0.36	0.47	0.26	0.18	0.25	0.37	0.21
Insoluble Sulphur	%S																										
Total Carbon	%C	0.007	0.024	0.016	0.043	0.017	0.016	0.019	0.018	0.022	0.057	0.022	0.020	0.017	0.019	0.054	0.024	0.054	0.021	0.065	0.022	0.033	0.032	0.025	0.013	0.014	0.049
Carbonate (CO_3)	%C	0.006	0.056	0.013	0.012	0.023	0.099	0.019	0.017	0.028	0.137	0.027	0.026	0.029	0.027	0.134	0.033	0.095	0.017	0.144	0.016	0.032	0.044	0.050	0.013	0.013	0.141
Total Organic Carbon	%C	<0.005	0.019	0.007	<0.005	<0.005	0.012	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	0.009	0.008	0.011	<0.005	<0.005

Table A8 - EcoMetrix BS mine rock ABA results

Sample Type	Units	BS															
Borehole ID		**TL 08-09**	**TL 08-09**	**TL 08-09**	**TL 08-09**	**TL 08-09**	**TL 08-36A**	**TL 08-36A**	**TL 08-36A**	**TL 08-36A**	**TL 08-36A**	**TL 11-127**	**TL 11-127**	**TL 11-141**	**TL 11-141**	**TL 11-164**	**TL 11-164**
Sample Depth (m)		**113-113.5**	**114-114.5**	**115-115.5**	**116-117**	**114.5-115**	**72.5-73**	**73-73.5**	**73.5-74**	**74.5-75**	**75-75.5**	**15.75-16.25**	**41.41-5**	**33-33.4**	**6-6.5**	**66-66.5**	**75-75.5**
Paste pH		9.35	9.58	9.68	9.51	9.24	9.97	9.55	9.61	10.02	9.96	10.03	9.56	10.04	10.09	9.90	9.71
Neutralization Potential (Sobek)	kg $CaCO_3$/t	11	8.9	9.2	9.8	7.1	6.2	7.8	10	6.9	6.4	12	9.6	10	14	8.8	10
Neutralization Potential (Carb)	kg $CaCO_3$/t	2.1	0.4	0.8	0.9	0.3	0.3	1.2	2.9	0.9	0.3	3.2	5.0	11.8	4.8	8.6	1.1
Acid Generating Potential	kg $CaCO_3$/t	29.4	27.8	26.0	39.2	26.6	16.1	16.5	11.6	8.37	19.0	1.97	2.31	2.75	3.65	2.35	3.58
Net Neutralization Potential	kg $CaCO_3$/t	-18.1	-18.9	-16.8	-29.4	-19.5	-9.91	-8.74	-1.32	-1.47	-12.6	10.5	7.29	7.65	9.95	6.45	6.72
Sobek-NPR		0.37	0.32	0.35	0.25	0.27	0.39	0.47	0.86	0.82	0.34	6.09	4.16	3.64	3.84	3.74	2.79
Carb-NPR		0.07	0.02	0.03	0.02	0.01	0.02	0.07	0.25	0.10	0.01	1.64	2.15	4.29	1.30	3.65	0.30
Total Sulphur (Leco)	%S	1.39	1.42	1.18	1.64	1.50	0.790	0.535	0.384	0.845	0.832	0.239	0.160	0.209	0.393	0.132	0.226
Sulphate Sulphur	%S	0.45	0.53	0.35	0.39	0.64	0.27	<0.01	0.01	0.58	0.22	0.18	0.09	0.12	0.28	0.06	0.11
Sulphide Sulphur	%S	0.94	0.89	0.83	1.26	0.85	0.52	0.53	0.37	0.27	0.61	0.06	0.07	0.09	0.12	0.08	0.11
Insoluble Sulphur	%S																
Total Carbon	%C	0.073	0.032	0.028	0.039	0.022	0.038	0.074	0.033	0.016	0.022	0.076	0.073	0.188	0.098	0.139	0.032
Carbonate (CO_3)	%C	0.125	0.025	0.048	0.053	0.018	0.016	0.069	0.173	0.052	0.015	0.194	0.298	0.707	0.285	0.514	0.064
Total Organic Carbon	%C	0.023	0.016	0.016	0.021	0.012	0.006	0.022	0.021	0.013	0.011	<0.005	0.050	0.122	0.020	0.104	<0.005

Table A9 - EcoMetrix MSS mine rock ABA results

Sample Type	Units	MSS												
Borehole ID		TL 08-02	TL 08-08	TL 08-13	TL 08-16	TL 08-44	TL 08-45	TL 08-48	TL 09-75	TL 09-75	TL 09-76	TL 09-80	TL 09-80	TL 09-81
Sample Depth (m)		61.5-62	149-149.5	40-40.5	57-57.5	72-72.5	155-155.5	30-30.5	23-23.5	45-45.5	47.5-48	44-44.5	36-36.5	35-35.5
Paste pH		6.45	9.91	9.64	8.93	8.30	10.01	9.42	9.31	9.56	9.06	9.48	9.38	9.10
Neutralization Potential (Sobek)	kg $CaCO_3$/t	3.0	8.2	4.4	3.2	3.7	4.4	4.2	4.9	4.8	4.8	4.6	6.0	3.2
Neutralization Potential (Carb)	kg $CaCO_3$/t	0.3	0.4	0.3	0.3	2.6	0.2	0.7	0.5	0.7	0.6	0.2	1.6	0.2
Acid Generating Potential	kg $CaCO_3$/t	268	4.46	28.5	26.6	19.5	3.02	20.1	28.6	28.2	33.3	19.2	15.9	26.5
Net Neutralization Potential	kg $CaCO_3$/t	-265	3.74	-24.1	-23.4	-15.8	1.38	-15.9	-23.7	-23.4	-28.5	-14.6	-9.86	-23.3
Sobek-NPR		0.01	1.84	0.15	0.12	0.19	1.46	0.21	0.17	0.17	0.14	0.24	0.38	0.12
Carb-NPR		0.00	0.09	0.01	0.01	0.13	0.08	0.03	0.02	0.02	0.02	0.01	0.10	0.01
Total Sulphur (Leco)	%S	9.52	0.937	1.21	1.12	0.840	0.123	0.901	1.34	1.25	1.67	0.841	0.876	0.848
Sulphate Sulphur	%S	0.93	0.79	0.29	0.27	0.22	0.03	0.26	0.42	0.35	0.61	0.23	0.37	<0.01
Sulphide Sulphur	%S	8.58	0.14	0.91	0.85	0.62	0.10	0.64	0.91	0.90	1.07	0.61	0.51	0.85
Insoluble Sulphur	%S													
Total Carbon	%C	0.058	0.023	0.016	0.021	0.022	0.036	0.024	0.013	0.038	0.028	0.013	0.030	0.016
Carbonate (CO_3)	%C	0.020	0.023	0.017	0.016	0.153	0.014	0.040	0.028	0.042	0.034	0.011	0.093	0.010
Total Organic Carbon	%C	0.058	0.016	0.008	0.017	0.018	<0.005	0.016	0.009	0.012	0.019	0.006	<0.005	0.008

Sample Type	Units	MSS												
Borehole ID		TL 09-82	TL 09-83	TL 09-83	TL 09-85	TL 09-85	TL 09-86	TL 10-113	TL 10-116	TL 10-118	TL 11-153	TL 11-165	TL 11-202	TL 11-204a
Sample Depth (m)		25.5-26	22.4-23	45.8-46.3	27.5-28	28.3-29	27.5-28	86-86.5	65.5-66	18-18.5	85.5-86	70.6-71.1	86.4-87	216-216.5
Paste pH		8.92	9.46	9.94	9.98	9.90	7.69	7.44	8.97	8.26	8.49	9.20	9.14	9.67
Neutralization Potential (Sobek)	kg $CaCO_3$/t	18	6.5	6.8	4.3	4.8	5.0	8.9	4.8	4.0	5.8	6.8	7.2	8.2
Neutralization Potential (Carb)	kg $CaCO_3$/t	8.0	2.4	0.4	1.1	1.5	0.4	1.3	0.2	0.1	0.3	1.5	0.3	0.9
Acid Generating Potential	kg $CaCO_3$/t	11.8	18.3	2.73	3.06	1.68	25.5	47.8	30.9	21.8	4.89	13.2	4.42	3.62
Net Neutralization Potential	kg $CaCO_3$/t	6.01	-11.8	4.07	1.24	3.12	-20.5	-38.9	-26.1	-17.8	0.91	-6.36	2.78	4.58
Sobek-NPR		1.53	0.36	2.49	1.41	2.86	0.20	0.19	0.16	0.18	1.19	0.52	1.63	2.27
Carb-NPR		0.67	0.13	0.15	0.35	0.86	0.02	0.03	0.01	0.01	0.06	0.11	0.08	0.24
Total Sulphur (Leco)	%S	0.704	0.652	0.144	0.143	0.063	1.39	1.67	1.42	0.882	0.224	0.540	0.948	0.148
Sulphate Sulphur	%S	0.33	0.07	0.06	0.05	<0.01	0.57	0.14	0.43	0.18	0.07	0.12	0.81	0.03
Sulphide Sulphur	%S	0.38	0.59	0.09	0.10	0.05	0.82	1.53	0.99	0.70	0.16	0.42	0.14	0.12
Insoluble Sulphur	%S													
Total Carbon	%C	0.166	0.046	0.015	0.030	0.034	0.031	0.019	0.016	0.013	0.022	0.032	0.014	0.023
Carbonate (CO_3)	%C	0.477	0.143	0.024	0.065	0.087	0.026	0.078	0.010	0.007	0.019	0.090	0.020	0.052
Total Organic Carbon	%C	0.007	0.007	<0.005	<0.005	<0.005	0.014	0.012	0.022	<0.005	<0.005	<0.005	<0.005	<0.005

Sample Type	Units	MSS								
Borehole ID		TL 10-113	TL 11-151	TL 11-151	TL 11-187	TL 11-187	TL 11-150	TL 11-150	TL 11-187	TL 11-153
Sample Depth (m)		122.5-123	39.5-40	40.2-40.7	27.5-28	24.5-25	21.5-22	21.5-22	147-147.5	137.3-137.8
Paste pH		9.34	9.69	9.57	9.69	9.24	10.04	10.15	9.73	9.18
Neutralization Potential (Sobek)	kg $CaCO_3$/t	6.7	4.1	4.3	4.1	13	4.6	6.5	11	5.3
Neutralization Potential (Carb)	kg $CaCO_3$/t	0.4	0.4	0.3	0.1	1.6	0.1	0.2	0.3	0.3
Acid Generating Potential	kg $CaCO_3$/t	15.1	2.21	1.46	4.12	14.9	0.31	2.80	12.1	57.9
Net Neutralization Potential	kg $CaCO_3$/t	-8.43	1.89	2.84	-0.02	-2.24	4.29	3.70	-1.49	-52.6
Sobek-NPR		0.44	1.86	2.95	1.00	0.87	14.84	2.32	0.91	0.09
Carb-NPR		0.02	0.17	0.17	0.02	0.11	0.27	0.06	0.02	0.01
Total Sulphur (Leco)	%S	0.605	0.134	0.097	0.139	0.698	0.060	0.397	0.510	2.47
Sulphate Sulphur	%S	0.12	0.06	0.05	<0.01	0.22	0.06	0.31	0.12	0.62
Sulphide Sulphur	%S	0.48	0.07	0.05	0.13	0.48	<0.01	0.09	0.39	1.85
Insoluble Sulphur	%S									
Total Carbon	%C	0.016	0.011	0.012	0.013	0.039	0.012	0.018	0.020	0.014
Carbonate (CO_3)	%C	0.022	0.022	0.015	<0.005	0.095	<0.005	0.010	0.015	0.018
Total Organic Carbon	%C	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.015	0.015

Table A10 - EcoMetrix MSED mine rock ABA results

Sample Type	Units	MSED								
Borehole ID		TL 08-43	TL 08-43	TL 09-75	TL 09-86	TL 09-86	TL 10-100	TL 10-100	TL 10-97	TL 10-97
Sample Depth (m)		53-53.5	59-59.5	32-32.5	81-81.5	96.5-97	31.5-32	28.5-29	21.5-22	52.5-53
Paste pH		8.10	7.73	10.14	7.34	9.23	9.30	9.92	10.10	10.08
Neutralization Potential (Sobek)	kg $CaCO_3$/t	4.2	6.8	6.1	5.3	13	17	12	14	12
Neutralization Potential (Carb)	kg $CaCO_3$/t	0.3	1.4	0.6	0.4	4.3	3.6	1.4	3.0	3.5
Acid Generating Potential	kg $CaCO_3$/t	34.5	63.4	5.19	18.0	13.3	33.8	14.4	11.3	2.71
Net Neutralization Potential	kg $CaCO_3$/t	-30.3	-56.6	0.91	-12.7	-0.32	-17.0	-2.65	2.56	9.49
Sobek-NPR		0.12	0.11	1.18	0.29	0.98	0.50	0.83	1.24	4.43
Carb-NPR		0.01	0.02	0.12	0.02	0.32	0.11	0.09	0.26	1.30
Total Sulphur (Leco)	%S	1.57	2.43	0.245	0.771	1.31	1.49	0.836	0.622	0.350
Sulphate Sulphur	%S	0.46	0.40	0.08	0.20	0.89	0.41	0.37	0.26	0.26
Sulphide Sulphur	%S	1.10	2.03	0.17	0.58	0.43	1.08	0.46	0.36	0.09
Insoluble Sulphur	%S									
Total Carbon	%C	0.022	0.038	0.022	0.011	0.112	0.104	0.051	0.075	0.078
Carbonate (CO_3)	%C	0.017	0.082	0.037	0.024	0.257	0.214	0.081	0.178	0.212
Total Organic Carbon	%C	0.020	0.016	0.006	0.025	0.014	<0.005	<0.005	<0.005	0.017

Appendix B Combined Mine Rock Static Test Dataset

Figure B1 - Comparison of KCB (2012) and EcoMetrix mine rock metal content results.

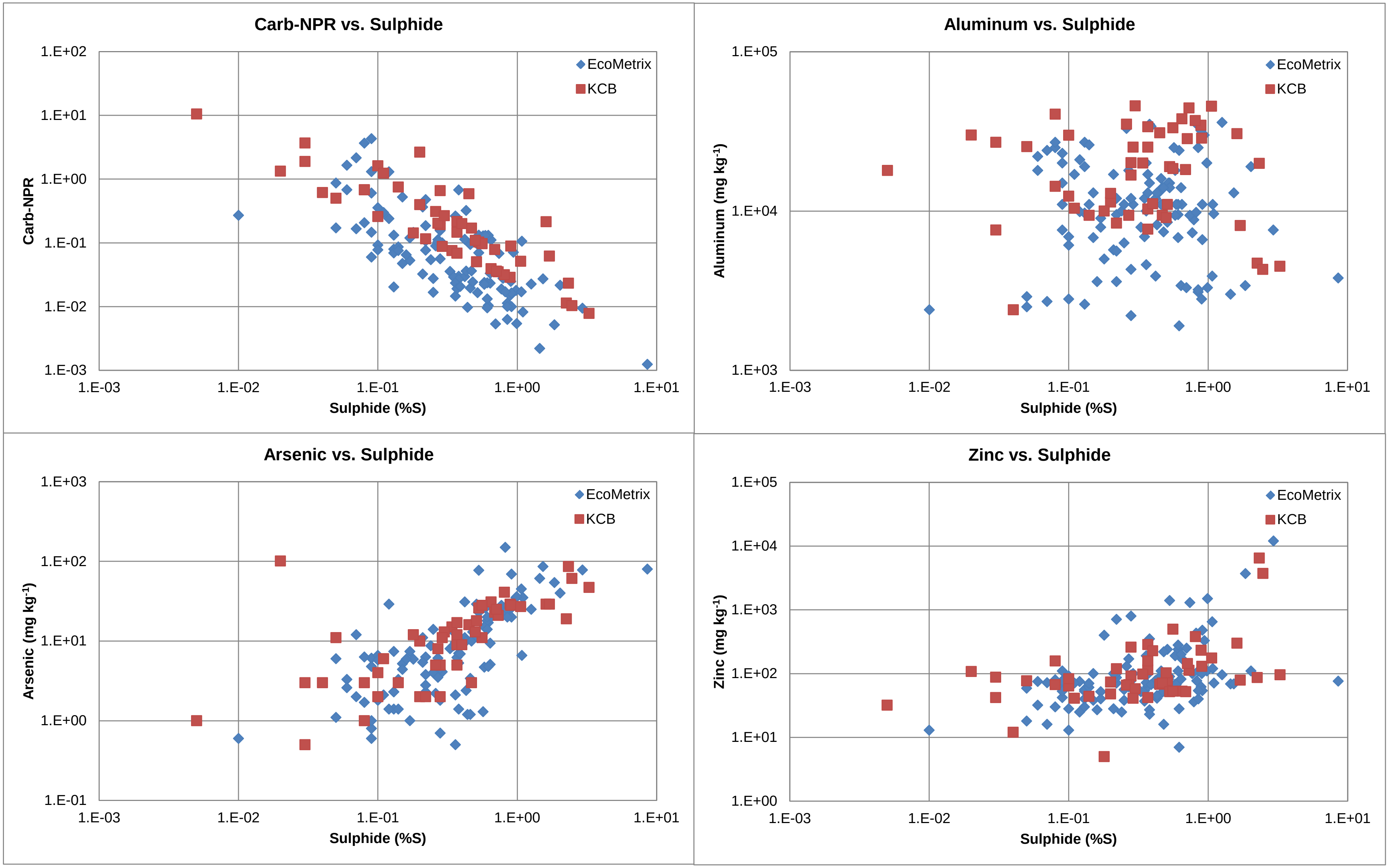


Table B1 – Combined mine rock metal content statistical analyses results

Waste-rock Type	Parameter	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Berylium (Be)	Bismuth (Bi)	Boron (B)	Cadmium (Cd)	Calcium (Ca)	Cerium (Ce)	Cesium (Cs)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Gallium (Ga)	Germanium (Ge)	Hafnium (Hf)	Indium (In)	Iron (Fe)	Lanthanum (La)	Lead (Pb)	Lithium (Li)	Lutetium (Lu)	Magnesium (Mg)	Manganese (Mn)	Mercury Hg
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BMS	Geomean	12,302	1.24	6	54	0.1	0.10	31	0.14	3,592	33.0	6.06	12	61.0	13.7	6.3	0.1	0.38	0.02	15,136	16.8	16.7	10	0.0	7,255	374	0.01
	Average	14,873	1.85	11	64	0.2	0.13	32	0.82	5,138	33.9	6.47	27	134	20.5	6.5	0.1	0.40	0.02	16,815	17.4	75.9	11	0.0	8,651	432	0.02
	50%	12,000	2.00	5	50	0.1	0.09	30	0.11	3,400	33.4	5.65	10	170	14.0	6.0	0.1	0.35	0.02	15,000	16.8	17.0	11	0.0	8,500	410	0.01
	95%	20,000	2.00	15	81	0.3	0.10	40	0.32	5,600	35.2	6.53	50	210	31.0	8.0	0.1	0.49	0.02	19,200	18.5	28.6	14	0.0	11,000	580	0.01
	Minimum	2,200	0.03	1	18	0.0	0.02	20	0.02	550	17.8	3.96	1	3.5	0.5	3.9	0.1	0.18	0.02	4,800	8.9	1.1	2	0.0	150	7	0.01
	Maximum	37,900	17.00	78	180	1.0	1.10	50	28.00	19,900	52.7	15.20	110	380	83.0	9.6	0.1	0.72	0.02	39,600	29.2	2,900	23	0.1	22,000	890	0.08
BS	Geomean	20,485	1.01	9	124	0.2	0.18	21	0.11	3,634	39.9	5.25	51	68.0	34.3	8.7	0.1	0.52	0.02	28,977	20.9	17.9	20	0.1	13,281	446	0.01
	Average	22,160	1.62	15	167	0.3	0.20	25	0.24	4,290	45.2	6.40	84	114	37.9	9.1	0.2	0.54	0.02	30,965	24.0	46.7	21	0.1	13,770	470	0.01
	50%	23,000	2.00	10	115	0.1	0.20	20	0.09	3,400	47.8	5.88	86	160	35.5	10.0	0.2	0.60	0.02	34,500	26.3	20.7	21	0.1	13,950	441	0.01
	95%	29,175	2.00	25	287	0.5	0.26	43	0.13	6,425	65.7	10.72	138	188	51.3	11.4	0.2	0.61	0.03	40,300	34.3	40.3	25	0.1	16,000	569	0.01
	Minimum	9,400	0.03	1	27	0.0	0.08	10	0.04	1,500	17.5	1.94	6	6.6	11.0	4.9	0.1	0.34	0.02	14,000	8.4	3.8	12	0.0	7,400	180	0.01
	Maximum	36,000	2.00	77	440	1.1	0.34	50	2.50	9,200	67.7	11.90	173	210	75.0	11.7	0.2	0.61	0.03	42,200	34.9	500	29	0.1	20,000	760	0.01
MSS	Geomean	8,409	1.03	12	35	0.1	0.08	33	0.15	3,059	30.8	3.12	13	28.9	12.4	4.7	0.1	0.35	0.02	11,124	15.4	27.8	5	0.0	3,608	186	0.02
	Average	12,690	4.96	24	40	0.2	0.12	36	0.95	5,646	32.8	4.05	30	93.2	39.4	5.7	0.1	0.36	0.02	15,063	16.4	162.8	6	0.0	5,535	278	0.26
	50%	8,400	2.00	17	32	0.1	0.09	30	0.10	2,400	32.3	3.71	33	13	16.0	4.9	0.1	0.37	0.02	12,000	15.6	21.0	5	0.0	5,100	290	0.01
	95%	18,000	2.00	29	44	0.3	0.09	50	0.34	8,700	38.1	5.46	47	190.0	26.0	8.6	0.1	0.43	0.02	19,600	19.3	57.0	10	0.0	8,600	450	0.03
	Minimum	1,900	0.03	1	12	0.0	0.02	10	0.01	370	14.1	0.23	1	2.4	0.3	1.0	0.1	0.17	0.02	1,400	6.7	1.3	1	0.0	150	15	0.01
	Maximum	45,800	155.00	150	130	1.2	1.10	60	19.40	24,000	55.5	10.20	102	290	813.0	12.7	0.1	0.60	0.02	79,000	28.9	2,120	18	0.1	17,000	727	3.69
MSED	Geomean	14,492	0.85	7	70	0.2	0.13	22	0.11	4,904	30.9	3.88	49	14.2	15.6	6.1	0.1	0.26	0.02	20,959	15.7	11.9	12	0.0	9,190	435	0.01
	Average	15,987	2.77	17	97	0.2	0.18	23	0.18	6,000	32.8	4.65	62	32.9	27.4	6.4	0.1	0.28	0.02	22,820	16.9	29.2	13	0.0	9,760	460	0.02
	50%	11,400	2.00	6	62	0.1	0.09	25	0.11	4,900	32.7	3.14	52	10.0	16.0	5.5	0.1	0.22	0.02	18,800	16.6	8.9	10	0.0	8,300	445	0.01
	95%	19,000	2.00	26	110	0.4	0.26	30	0.19	7,600	39.1	8.53	82	19.0	53.0	9.1	0.1	0.41	0.02	35,000	20.5	57.0	19	0.0	13,000	520	0.02
	Minimum	9,000	0.07	1	20	0.0	0.02	10	0.02	1,700	16.5	2.04	4	4.2	1.7	4.3	0.1	0.17	0.02	9,900	8.1	1.0	4	0.0	4,900	231	0.01
	Maximum	35,100	22.00	101	420	0.7	0.54	30	0.60	20,400	53.6	8.84	160	190	72.0	9.6	0.1	0.55	0.02	38,000	29.2	99.0	24	0.1	18,300	830	0.04

Waste-rock Type	Parameter	Molybdenum (Mo)	Nickel (Ni)	Niobium (Nb)	Phosphorus (P)	Potassium (K)	Rubidium (Rb)	Scandium (Sc)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Sulphur (S)	Tantalum (Ta)	Tellurium (Te)	Terbium (Tb)	Thallium (Tl)	Thorium (Th)	Tin (Sn)	Titanium (Ti)	Tungsten (W)	Uranium (U)	Vanadium (V)	Ytterbium (Yb)	Yttrium (Y)	Zinc (Zn)	Zirconium (Zr)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BMS	Geomean	0.28	9.1	0.1	509	6,531	36.5	1	0.9	0.20	990	9.7	5,583	0.05	0.05	0.19	0.25	3	0.8	535	0.1	0.48	12	0.2	2.55	98	14.4
	Average	0.62	14.1	0.2	515	7,561	37.7	2	0.9	0.61	1,387	15.6	6,927	0.05	0.05	0.21	0.29	3	0.9	671	0.2	0.66	17	0.2	2.94	337	15.7
	50%	0.24	7.9	0.1	540	7,800	37.5	1	0.8	0.25	600	8.3	5,400	0.05	0.05	0.20	0.28	3	1.0	660	0.1	0.44	13	0.2	2.20	78	13.5
	95%	0.60	12.8	0.2	560	10,000	45.5	2	0.9	0.54	2,500	25.0	9,000	0.05	0.05	0.23	0.38	3	1.0	900	0.2	0.63	22	0.3	3.60	130	19.9
	Minimum	0.10	2.2	0.0	350	1,200	23.3	1	0.7	0.01	300	1.7	1,100	0.05	0.05	0.07	0.04	2	0.3	31	0.1	0.10	1	0.1	0.90	25	7.2
	Maximum	8.70	69.0	0.4	610	17,000	60.9	4	1.5	16.00	3,000	85.0	35,000	0.05	0.05	0.42	0.66	11	3.0	1,700	0.4	2.83	51	0.7	8.79	12,000	30.9
BS	Geomean	0.64	30.1	0.3	555	13,131	44.8	5	1.0	0.11	717	9.8	5,036	0.05	0.10	0.33	0.40	8	0.9	1,370	0.3	1.25	43	0.5	4.16	85	22.2
	Average	0.92	41.6	0.5	560	14,235	58.7	7	1.0	0.20	875	13.4	6,510	0.05	0.14	0.37	0.42	9	1.0	1,471	0.3	1.82	48	0.6	4.80	93	22.7
	50%	0.90	50.0	0.5	595	16,000	73.1	8	1.0	0.12	800	7.3	5,550	0.05	0.08	0.41	0.42	11	1.0	1,300	0.4	2.20	48	0.7	4.95	79	24.4
	95%	1.30	55.0	0.8	610	17,000	78.5	10	1.0	0.32	1,475	18.8	10,675	0.05	0.28	0.50	0.51	12	1.0	1,900	0.4	2.60	64	0.9	5.60	95	26.4
	Minimum	0.10	6.2	0.1	440	2,400	9.6	1	1.0	0.01	300	3.4	1,300	0.05	0.05	0.14	0.08	4	0.3	600	0.1	0.19	11	0.2	1.50	61	15.4
	Maximum	2.13	75.2	0.8	610	21,000	79.0	11	1.0	0.72	1,600	37.0	15,000	0.05	0.34	0.51	0.62	12	2.0	2,600	0.4	3.60	84	0.9	11.50	330	26.8
MSS	Geomean	0.34	8.2	0.1	425	3,736	21.3	1	1.0	0.36	1,070	8.5	6,296	0.05	0.06	0.17	0.15	2	0.6	229	0.2	0.42	5	0.2	2.10	86	12.6
	Average	0.76	12.5	0.1	450	4,754	26.5	1	1.0	1.36	1,571	16.5	10,488	0.05	0.07	0.18	0.21	3	0.7	376	0.4	0.5	8.6	0.2	2.5	365.2	13.2
	50%	0.30	6.7	0.1	430	3,700	24.2	1	0.8	0.29	1,650	5.5	7,300	0.05	0.05	0.17	0.19	2	1.0	220	0.1	0.41	4	0.2	1.97	67	13.6
	95%	0.67	14.0	0.2	540	6,300	42.9	1	1.3	0.55	2,525	25.6	11,000	0.05	0.05	0.21	0.33	3	1.0	610	0.2	0.54	12	0.2	2.90	175	16.5
	Minimum	0.10	2.1	0.1	110	900	3.6	0	0.8	0.01	300	1.9	500	0.05	0.05	0.07	0.02	1	0.3	30	0.1	0.15	1	0.1	0.61	5	7.0
	Maximum	16.20	64.0	0.3	680	15,000	51.9	4	2.0	29.00	3,700	121.0	89,000	0.05	0.35	0.39	0.56	9	1.0	1,300	7.2	2.30	48	0.5	8.63	6,480	23.3
MSED	Geomean	0.58	17.8	0.1	504	7,015	26.1	1	0.9	0.33	923	12.8	7,078	0.05	0.05	0.19	0.25	3	0.6	778	0.2	0.82	19	0.2	3.19	83	10.4
	Average	0.81	29.0	0.2	510	7,893	30.2	2	0.9	0.67	1,133	16.8	8,667	0.05	0.05	0.21	0.28	4	0.7	892	0.2	1.37	24	0.2	3.76	97	11.9
	50%	0.50	10.2	0.1	545	7,600	23.0	1	1.0	0.37	950	16.0	7,200	0.05	0.05	0.18	0.27	2	1.0	800	0.2	0.48	24	0.2	2.75	74	8.2
	95%	1.50	57.0	0.3	573	9,000	41.6	3	1.0	0.90	1,900	21.0	13,000	0.05	0.05	0.26	0.33	5	1.0	1,100	0.3	2.50	26	0.3	5.90	110	17.6
	Minimum	0.16	4.9	0.1	400	3,200	13.6	1	0.8	0.01	400	3.2	2,500	0.05	0.05	0.13	0.11	2	0.3	180	0.1	0.27	3	0.1	1.50	40	6.7
	Maximum	1.76	78.5	0.4	580	17,000	69.3	6	1.0	3.60	2,200	52.9	25,000	0.05	0.05	0.42	0.68	11	1.0	1,800	0.6	4.20	64	0.6	8.80	286	26.1

Table B2 – Combined mine rock ABA statistical analyses results.

Waste-rock Type	Parameter	Paste pH	Sobek-NNP	Carb-NNP	AP	Sobek-NPR	Carb-NPR	Total Sulphur (Leco)	Sulphate Sulphur	Sulphide Sulphur	Insoluble Sulphur	Total Carbon	Carbonate (CO_3)	Total Carbon
			kg $CaCO_3$/t	kg $CaCO_3$/t	kg $CaCO_3$/t			%S	%S	%S	%S	%C	%C	%C
BMS	Geomean	9.22	7.19	0.74	10.35	0.70	0.07	0.60	0.12	0.33	0.15	0.02	0.03	0.01
	Average	9.25	7.57	1.33	13.84	0.95	0.16	0.73	0.24	0.44	0.23	0.03	0.05	0.01
	50%	9.40	7.30	0.68	10.90	0.66	0.07	0.68	0.17	0.35	0.21	0.02	0.03	0.01
	75%	9.72	8.90	1.70	17.50	1.29	0.16	0.91	0.38	0.56	0.31	0.04	0.06	0.01
	Minimum	7.32	3.20	0.10	2.02	0.06	0.00	0.17	0.01	0.06	0.01	0.01	0.01	0.01
	Maximum	10.13	13.50	10.80	91.90	4.01	1.61	3.94	1.00	2.94	0.61	0.13	0.19	0.03
BS	Geomean	9.58	8.57	1.37	7.24	1.18	0.19	0.53	0.09	0.23	0.37	0.04	0.09	0.02
	Average	9.59	8.80	2.47	12.56	2.29	0.84	0.70	0.22	0.40	0.43	0.05	0.17	0.03
	50%	9.60	8.95	1.11	8.39	0.84	0.23	0.54	0.15	0.27	0.37	0.03	0.07	0.02
	75%	9.97	10.00	3.15	24.25	3.81	1.56	1.12	0.38	0.78	0.74	0.07	0.26	0.02
	Minimum	8.31	5.90	0.25	0.90	0.25	0.01	0.13	0.01	0.03	0.17	0.01	0.02	0.01
	Maximum	10.09	14.00	11.79	39.20	10.00	4.29	1.64	0.64	1.26	0.83	0.19	0.71	0.12
MSS	Geomean	8.91	5.69	0.72	11.41	0.50	0.06	0.61	0.06	0.36	0.15	0.02	0.03	0.01
	Average	8.96	6.28	1.16	24.31	1.47	0.36	1.04	0.16	0.78	0.25	0.02	0.05	0.01
	50%	9.20	5.80	0.80	15.10	0.42	0.07	0.73	0.05	0.48	0.19	0.02	0.02	0.01
	75%	9.57	7.50	1.70	26.60	1.46	0.15	1.25	0.26	0.85	0.39	0.03	0.07	0.02
	Minimum	6.15	2.10	0.08	0.31	0.01	0.00	0.06	0.01	0.01	0.01	0.01	0.01	0.01
	Maximum	10.15	18.00	7.96	268.00	18.75	10.50	9.52	0.93	8.58	0.78	0.17	0.48	0.06
MSED	Geomean	9.01	8.90	1.87	9.86	0.90	0.19	0.68	0.09	0.32	0.19	0.04	0.08	0.01
	Average	9.06	9.91	3.12	16.21	1.95	0.54	0.85	0.23	0.52	0.26	0.06	0.12	0.01
	50%	9.30	9.30	2.50	11.60	0.98	0.22	0.65	0.20	0.37	0.25	0.04	0.08	0.01
	75%	9.92	13.00	3.57	18.00	2.76	1.24	1.31	0.40	0.58	0.45	0.08	0.21	0.02
	Minimum	7.34	4.20	0.28	0.60	0.11	0.01	0.25	0.01	0.02	0.05	0.01	0.02	0.01
	Maximum	10.14	20.80	16.70	63.40	11.50	2.65	2.43	0.89	2.03	0.51	0.20	0.26	0.03

Appendix C Mine Rock Shake Flask Extraction Dataset

Table C1 - Mine rock shake flask extraction dataset

Sample Type		BMS																				
Solution Type		DI															Acid					
Sample ID		TL 08-16	TL 09-81	TL 11-165	TL 11-204A	TL 09-83	TL 11-165	TL 08-36	TL 08-14	TL08-30	TL 09-76	TL 08-08	TL 08-08 Duplicate	TL 08-07	TL 11-132	TL 11-132 Duplicate	TL08-30	TL 09-76	TL 08-08	TL 08-07	TL 08-07 Duplicate	TL 11-132
Sample Depth (m)		67.5-68	16.5-17	110-110.5	204-204.5	73-73.5	108.5-109	84-84.5	100.5-101	61.5-62	20-20.5	84.5-85	84.5-85	20.5-21	21.5-22	21.5-22	61.5-62	20-20.5	84.5-85	20.5-21	20.5-21	21.5-22
Solid Added	g	251.71	253.98	251.19	254.35	255.55	254.15	254.76	252.5	250.43	250.72	252.47		250.36	255.87		253.42	250.7	251.38	250.56		257.5
Water Added	mL	751.76	754.63	753.2	783.64	749.54	749.36	751.59	749.89	774.97	748.38	744.45		747.81	752.34		756.02	761.9	742.2	757.49		748.59
pH	pH units	8.07	7.41	7.6	7.16	8.46	7.33	6.41	8.04	8.16	7.87	7.22		7.91	9.53		2.6	2.42	2.29	2.38		2.34
Conductivity	uS/cm	85.2	33.1	23.83	25.79	50.8	17.48	40.4	42	31.3	49.7	52		33.8	31.4		9260	9700	9920	9740		8930
Dissolved Metals																						
Aluminum (Al)	mg/L	0.438	0.813	0.674	0.788	0.838	0.118	0.0124	0.143	25.2	0.0490	0.0155	0.0162	0.0614	0.103	0.100	0.0767	6.38	5.35	5.09	5.05	7.16
Antimony (Sb)	mg/L	0.00252	0.00095	0.00102	0.00090	0.00726	0.00034	<0.00010	0.00054	0.00045	0.00083	0.00017	0.00018	0.00147	0.00054	0.00053	0.00034	0.00108	0.00086	0.00262	0.00247	0.00093
Arsenic (As)	mg/L	0.00459	0.00209	0.00326	0.00264	0.00539	0.00091	0.00042	0.00186	0.0166	0.00061	0.00053	0.00062	0.00077	0.00142	0.00139	0.00173	0.0151	0.0202	0.0235	0.0230	0.0168
Barium (Ba)	mg/L	0.00226	0.00184	0.00295	0.00326	0.000644	0.000496	0.00134	0.000580	0.0200	0.000672	0.000854	0.000782	0.000533	0.000766	0.000780	0.000238	0.0624	0.0420	0.0606	0.0581	0.0956
Beryllium (Be)	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00105	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00043	0.00069	0.00147	0.00135	0.00066
Bismuth (Bi)	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00095	<0.00050	<0.00050	<0.00050
Boron (B)	mg/L	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	0.011	0.015	0.013	0.011
Cadmium (Cd)	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000018	<0.000010	0.000186	<0.000010	0.000013	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	0.000200	0.000230	0.000158	0.000151	0.000692
Calcium (Ca)	mg/L	11.1	2.20	1.07	1.25	5.90	1.55	2.45	3.79	53.1	2.34	1.84	1.78	1.62	2.48	2.49	1.31	49.8	37.6	57.9	51.3	106
Chromium (Cr)	mg/L	<0.00010	<0.00010	0.00014	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	0.00230	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0113	0.00785	0.00311	0.00307	0.00736
Cobalt (Co)	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00056	<0.00010	0.00277	0.00038	0.00317	0.00314	<0.00010	<0.00010	<0.00010	<0.00010	0.0387	0.0149	0.00151	0.00147	0.00470
Copper (Cu)	mg/L	0.00069	0.00036	0.00030	0.00026	0.00032	<0.00020	0.00375	0.00227	0.0104	0.00055	0.00066	0.00068	0.00110	0.00046	0.00047	0.00057	0.0137	0.0318	0.0224	0.0221	0.0418
Iron (Fe)	mg/L	0.015	0.024	0.048	0.035	<0.010	<0.010	<0.010	<0.010	2.18	<0.010	0.124	0.124	0.018	0.011	0.011	<0.010	12.5	21.6	1.96	1.97	12.1
Lead (Pb)	mg/L	0.000611	0.00122	0.000521	0.000145	0.00290	0.000054	0.000218	0.000729	0.0463	0.000155	0.00158	0.00147	0.00147	0.00106	0.000987	0.000158	0.0782	0.589	0.201	0.193	0.968
Lithium (Li)	mg/L	0.00275	0.00125	0.00111	0.00149	0.00165	<0.00050	0.00075	<0.00050	0.00119	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00493	0.00116	0.00221	0.00164	0.00415
Magnesium (Mg)	mg/L	1.72	0.324	0.238	0.196	0.626	0.169	0.657	0.677	3.15	0.206	0.266	0.265	0.274	0.255	0.251	0.210	3.52	1.39	3.38	3.62	4.42
Manganese (Mn)	mg/L	0.0102	0.00309	0.00620	0.00438	0.00227	0.00380	0.0174	0.00747	0.209	0.00998	0.0393	0.0409	0.00794	0.0106	0.0108	0.00185	0.535	0.451	0.434	0.443	2.18
Molybdenum (Mo)	mg/L	0.00166	0.000122	0.000177	0.000390	0.000389	0.000147	0.000084	0.000455	0.000282	0.000163	<0.000050	<0.000050	0.000114	<0.000050	<0.000050	0.000061	0.000296	0.000585	0.000432	0.000393	0.000336
Nickel (Ni)	mg/L	<0.00050	<0.00050	0.00082	<0.00050	<0.00050	<0.00050	0.00272	<0.00050	0.00734	0.00198	0.0188	0.0191	<0.00050	<0.00050	<0.00050	<0.00050	0.0553	0.0750	0.00464	0.00480	0.0280
Phosphorus (P)	mg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	12.6	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	10.2	4.68	15.4	15.4	11.1
Potassium (K)	mg/L	4.98	2.87	3.62	2.92	4.54	0.961	0.834	5.23	3.92	1.30	0.734	0.669	1.06	1.15	1.09	0.554	5.02	2.23	3.01	3.01	6.99
Selenium (Se)	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00014	<0.00010	<0.00010	<0.00010
Silicon (Si)	mg/L	2.04	2.16	1.95	1.63	1.89	0.277	0.193	0.461	22.7	0.214	0.111	0.105	0.239	0.318	0.315	0.286	6.40	4.21	4.87	4.87	5.96
Silver (Ag)	mg/L	<0.000010	<0.000010	0.000017	<0.000010	<0.000010	0.000016	<0.000010	0.00163	0.000227	<0.000010	0.000024	0.000018	0.000011	0.000057	0.000043	<0.000010	0.000046	0.000915	0.000075	0.000069	0.000122
Sodium (Na)	mg/L	1.19	2.48	1.29	1.74	1.38	0.467	1.16	1.27	12.5	0.543	0.615	0.614	0.563	0.455	0.447	1.38	0.830	0.825	1.09	1.09	0.880
Strontium (Sr)	mg/L	0.0308	0.00412	0.00176	0.00337	0.0102	0.00652	0.0240	0.0177	0.215	0.00453	0.00775	0.00774	0.00579	0.00615	0.00624	0.00395	0.0765	0.0358	0.121	0.109	0.0834
Sulfur (S)	mg/L	10.7	2.76	2.21	1.85	5.54	0.92	3.56	0.99	0.76	1.07	1.88	1.86	0.83	0.93	0.93	0.59	1.06	2.36	0.76	0.75	1.00
Thallium (Tl)	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000123	0.000015	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000489	<0.000150	<0.000070	0.000059	<0.00032
Tin (Sn)	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00014	0.00011	<0.00010	0.00028
Titanium (Ti)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.027	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.117	0.021	0.014	0.013	0.083
Uranium (U)	mg/L	0.000043	0.000052	0.000040	0.000047	0.000020	0.000078	0.000095	0.000366	0.00752	0.000395	0.000228	0.000226	0.000199	0.000071	0.000070	0.000173	0.0126	0.0137	0.00691	0.00660	0.00297
Vanadium (V)	mg/L	<0.0010	<0.0010	<0.0010	0.0014	<0.0010	<0.0010	<0.0010	<0.0010	0.0014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0126	0.0029	0.0025	0.0026	0.0148
Zinc (Zn)	mg/L	0.0059	<0.0010	<0.0010	0.0011	0.0023	<0.0010	0.0072	<0.0010	0.0429	0.0075	0.0076	0.0074	<0.0010	<0.0010	<0.0010	<0.0010	0.0827	0.0911	0.0758	0.0756	0.349

Table C1 - Mine rock shake flask extraction dataset cont.

Sample Type		BS						MSS												MSED			
Solution Type		DI				Acid		DI									Acid			DI			Acid
Sample ID		TL 11-127	TL 08-36A	TL 08-36A	TL 08-09	TL 08-36A	TL 08-09	TL 11-150	TL 11-150	TL 08-08	TL 09-08	TL 08-02	TL 11-204A	TL 09-83	TL 09-86	TL 09-86 Duplicate	TL 11-204A	TL 09-83	TL 09-86	TL 09-75	TL 09-86	TL 08-43	TL 08-43
Sample Depth (m)		41-41.5	75-75.5	74.5-75	116-117	74.5-75	116-117	21.5-22	21.5-22	149-149.5	36-36.5	61.5-62	216-216.5	22.4-23	27.5-28	27.5-28	216-216.5	22.4-23	27.5-28	32-32.5	81-81.5	59-59.5	59-59.5
Solid Added	g	250.07	250.4	256.46	251.72	251.62	246.6	250.12	257.78	250.37	250.8	251.37	250.71	252.78	250.09		253.12	255.53	255.03	250.3	254.55	249.02	250.46
Water Added	mL	756.1	767.29	768.73	736.33	756.66	746.4	752.33	748.24	752.67	757.65	755.23	750.41	750.68	751.04		734.51	727.34	740.2	754.58	763.76	761.95	748.65
pH	pH units	8.83	7.24	8.3	8.99	2.4	2.58	7.01	7.48	6.9	8.99	4.43	8.36	9.54	9.21		2.49	1.58	2.54	7.59	4.89	5.79	2.35
Conductivity	uS/cm	68.6	27.96	27.05	57.4	8850	7010	31.4	30.8	30.7	67.9	86.6	24.71	31.4	34.6		9490	8680	9540	31.4	177.8	238.5	8830
Dissolved Metals																							
Aluminum (Al)	mg/L	0.731	0.776	0.0552	0.133	7.77	48.8	0.339	0.883	0.0360	1.05	0.489	0.0870	0.129	0.0968	0.0932	3.33	4.60	2.63	1.11	0.0952	0.239	9.87
Antimony (Sb)	mg/L	0.00022	0.00015	0.00012	0.00469	0.00030	0.00619	0.00046	0.00032	0.00093	0.0111	0.00195	0.00496	0.00141	0.00209	0.00214	0.00712	0.00187	0.00280	0.00094	0.00030	0.00069	0.00443
Arsenic (As)	mg/L	0.00441	0.00061	0.00056	0.00646	0.0111	0.0503	0.00060	0.00133	0.00115	0.0151	0.00435	0.0159	0.00087	0.00640	0.00648	0.0626	0.0133	0.0473	0.00705	0.00060	0.00054	0.0651
Barium (Ba)	mg/L	0.00304	0.00938	0.00802	0.000512	0.220	0.0717	0.000759	0.00279	0.000786	0.000955	0.0275	0.000237	0.000324	0.000507	0.000467	0.0352	0.0394	0.0512	0.00205	0.0125	0.0158	0.125
Beryllium (Be)	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00036	0.0205	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00089	0.00206	0.00056	<0.00010	<0.00010	0.00072	0.0123
Bismuth (Bi)	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	<0.010	<0.010	<0.010	0.010	0.011	<0.010	<0.010	<0.010	<0.010	0.019	0.014	<0.010	<0.010	0.011	0.012	0.026
Cadmium (Cd)	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000351	0.000747	<0.000010	<0.000010	<0.000010	<0.000010	0.000831	<0.000010	<0.000010	<0.000010	<0.000010	0.000083	0.000084	0.000090	<0.000010	0.000328	0.000064	0.000734
Calcium (Ca)	mg/L	6.42	1.63	2.50	5.18	69.5	130	0.131	2.63	1.98	7.27	4.53	1.19	2.41	3.03	2.90	84.8	143	86.8	2.18	16.6	20.2	106
Chromium (Cr)	mg/L	0.00018	0.00017	<0.00010	<0.00010	0.00590	0.0119	0.00022	0.00027	<0.00010	<0.00010	0.00022	<0.00010	<0.00010	<0.00010	<0.00010	0.00192	0.00288	0.00402	<0.00010	<0.00010	0.00034	0.0111
Cobalt (Co)	mg/L	<0.00010	0.00016	<0.00010	<0.00010	0.0129	0.00773	<0.00010	0.00012	0.00018	<0.00010	0.00345	<0.00010	<0.00010	<0.00010	<0.00010	0.0320	0.00096	0.00703	<0.00010	0.0168	0.00442	0.0180
Copper (Cu)	mg/L	0.00026	0.00071	0.00068	0.00090	0.0302	0.0422	0.00031	0.00050	0.00057	0.00068	0.00041	0.00042	0.00114	0.00172	0.00171	0.0123	0.0205	0.0164	0.00057	0.00097	0.0234	0.182
Iron (Fe)	mg/L	0.035	0.230	0.037	0.013	15.2	5.42	<0.010	0.045	0.015	0.014	1.68	<0.010	<0.010	<0.010	<0.010	1.11	1.24	1.07	0.030	0.034	0.494	17.6
Lead (Pb)	mg/L	0.000092	0.00210	0.000980	0.000570	0.476	0.335	0.000177	0.000404	0.000245	0.00109	0.00832	0.000101	0.000097	0.000207	0.000419	0.0348	0.0762	0.180	0.000212	0.00409	0.0137	0.652
Lithium (Li)	mg/L	0.00115	0.00097	<0.00050	<0.00050	0.00534	0.0046	<0.00050	0.00103	<0.00050	0.00059	0.00246	<0.00050	<0.00050	<0.00050	<0.00050	0.00349	0.00183	0.00142	0.00170	0.00325	0.00350	0.0116
Magnesium (Mg)	mg/L	0.902	0.562	0.290	0.425	4.28	4.85	0.0381	0.275	0.194	0.475	2.05	0.171	0.278	0.245	0.240	4.79	3.47	1.44	0.223	4.58	5.78	18.6
Manganese (Mn)	mg/L	0.00130	0.0208	0.0122	0.00349	0.928	0.483	0.000427	0.00234	0.00983	0.00374	0.126	0.00383	0.00568	0.0132	0.0136	0.696	1.38	1.25	0.00275	0.476	0.417	3.21
Molybdenum (Mo)	mg/L	0.000093	0.000085	0.000075	0.000374	0.000346	0.00049	0.000083	0.000112	0.000177	0.000128	<0.000050	0.000265	0.000074	0.000203	0.000202	0.000381	0.000422	0.000545	0.00477	<0.000050	0.000065	0.00157
Nickel (Ni)	mg/L	0.00090	0.00120	0.00129	0.00240	0.0476	0.0888	<0.00050	<0.00050	0.00327	<0.00050	0.0153	0.00083	<0.00050	0.00140	0.00184	0.0464	0.00826	0.0247	0.00117	0.255	0.408	1.21
Phosphorus (P)	mg/L	<0.30	<0.30	<0.30	<0.30	11.0	12.2	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	17.2	7.77	3.77	<0.30	<0.30	<0.30	6.65
Potassium (K)	mg/L	6.03	2.66	0.879	1.56	6.11	10.6	2.80	2.44	1.31	4.71	6.20	0.585	0.961	0.633	0.613	2.43	3.16	1.92	4.29	10.2	3.02	7.83
Selenium (Se)	mg/L	0.00046	0.00027	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00037	0.00011	0.00019
Silicon (Si)	mg/L	1.98	1.92	0.187	0.533	6.58	46.7	1.28	2.07	0.242	2.06	1.62	0.202	0.334	0.335	0.328	4.01	5.16	2.19	2.61	2.80	0.477	8.79
Silver (Ag)	mg/L	0.000012	0.000010	<0.000010	0.000020	0.000203	0.000162	<0.000010	<0.000010	0.000015	0.000018	0.000025	<0.000010	<0.000010	<0.000010	<0.000010	0.000183	0.000248	0.000405	0.000075	<0.000010	0.000063	0.00172
Sodium (Na)	mg/L	1.67	1.51	1.01	2.63	1.34	41.5	1.35	2.13	1.41	1.08	2.15	0.491	0.351	0.600	0.586	1.06	0.765	1.11	1.57	1.72	2.06	3.25
Strontium (Sr)	mg/L	0.0130	0.00819	0.0115	0.00926	0.0705	0.173	0.00030	0.00453	0.00623	0.00504	0.0521	0.00701	0.00838	0.00570	0.00588	0.126	0.137	0.0606	0.00184	0.0635	0.123	0.504
Sulfur (S)	mg/L	8.30	1.99	1.28	3.14	1.33	2.41	0.85	1.25	1.66	14.4	12.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	1.28	28.2	27.1	33.1
Thallium (Tl)	mg/L	<0.000010	0.000011	<0.000010	<0.000010	<0.00030	<0.00040	<0.000010	<0.000010	<0.000010	<0.000010	0.000060	<0.000010	<0.000010	<0.000010	<0.000010	0.000154	0.000045	<0.000070	<0.000010	0.000042	0.000689	0.00280
Tin (Sn)	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00036	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)	mg/L	<0.010	0.020	<0.010	<0.010	0.117	0.048	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	<0.010	0.015	<0.010	<0.010	<0.010	0.010
Uranium (U)	mg/L	0.000113	0.000039	0.000055	0.000966	0.00270	0.0396	<0.000010	0.000113	0.000490	0.000130	0.00140	0.000197	0.000049	0.000063	0.000079	0.00759	0.00289	0.00282	0.000185	0.000349	0.00263	0.0292
Vanadium (V)	mg/L	0.0021	<0.0010	<0.0010	<0.0010	0.0142	0.0086	0.0024	0.0016	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0015	<0.0010	0.0034	0.0016	<0.0010	<0.0010	0.0144
Zinc (Zn)	mg/L	0.0063	0.0039	<0.0010	0.0011	0.111	0.102	<0.0010	0.0033	0.0014	0.0013	0.494	<0.0010	0.0036	0.0014	0.0011	0.0553	0.0498	0.0297	<0.0010	0.0523	0.0743	0.419

Appendix D Mine Rock Field Barrel Test Dataset

Table D1 - Field barrel composite mine rock metal content results

PARAMETER	UNITS	BMS	BS	MSS	MSED
Aluminum (Al)	µg/g	12000	20000	4700	13000
Antimony (Sb)	µg/g	< 0.8	< 0.8	0.9	< 0.8
Arsenic (As)	µg/g	15	6.1	24	20
Barium (Ba)	µg/g	34	120	31	59
Beryllium (Be)	µg/g	0.18	0.15	0.11	0.21
Bismuth (Bi)	µg/g	< 0.09	0.27	0.42	0.16
Calcium (Ca)	µg/g	5400	2000	2400	2900
Cadmium (Cd)	µg/g	0.65	< 0.02	0.09	< 0.02
Cobalt (Co)	µg/g	8.6	19	4.1	13
Chromium (Cr)	µg/g	62	120	30	48
Copper (Cu)	µg/g	62	51	16	21
Iron (Fe)	µg/g	11000	40000	8000	21000
Potassium (K)	µg/g	4900	15000	2900	7100
Lithium (Li)	µg/g	6	24	3	16
Magnesium (Mg)	µg/g	6200	14000	2200	9500
Maganese (Mn)	µg/g	340	480	130	460
Molybdenum (Mo)	µg/g	1.1	1.4	0.5	0.8
Nickel (Ni)	µg/g	7.4	64	6.2	20
Lead (Pb)	µg/g	56	16	33	24
Sulfur (S)	µg/g	4600	10000	6500	7200
Silver (Ag)	µg/g	0.86	0.44	0.43	0.39
Selenium (Se)	µg/g	< 0.7	< 0.7	< 0.7	< 0.7
Tin (Sn)	µg/g	< 0.5	0.6	< 0.5	< 0.5
Strontium (Sr)	µg/g	16	5.5	6.3	12
Titanium (Ti)	µg/g	300	1400	100	700
Thallium (Tl)	µg/g	0.18	0.60	0.12	0.28
Uranium (U)	µg/g	0.61	2.4	0.32	1.7
Vanadium (V)	µg/g	7	53	2	22
Yttrium (Y)	µg/g	1.7	5.9	1.9	3.0
Zinc (Zn)	µg/g	250	87	51	64

Table D2 - Field barrel composite mine rock ABA results

PARAMETER	UNITS	BMS	BS	MSS	MSED
Paste pH	pH Units	9.36	8.83	9.42	9.05
Fizz Rate	-	1	1	1	1
Sample weight	g	2.02	2.04	1.99	2.00
HCl added	mL	20.00	20.00	20.00	20.00
HCl	mol L-1	0.10	0.10	0.10	0.10
NaOH	mol L-1	0.10	0.10	0.10	0.10
Vol NaOH to pH=8.3	mL	16.12	16.44	17.00	16.64
Final pH	pH Units	1.30	1.22	1.09	1.13
Neutralization Potential (NP)	kg $CaCO_3$ t^{-1}	9.6	8.7	7.5	8.4
Acid Potential (AP)	kg $CaCO_3$ t^{-1}	13.1	22.8	20.3	24.7
Net Neutralization Potential (NNP)	kg $CaCO_3$ t^{-1}	-3.5	-14.1	-12.8	-16.3
Neutralization Potential Ratio (NPR)	-	0.73	0.38	0.37	0.34
Sulphur	%S	0.500	1.08	0.762	0.833
Sulphate-Sulphur	%S	0.08	0.34	0.11	0.04
Sulphide-Sulphur	%S	0.42	0.73	0.65	0.79
Carbon	%C	0.030	0.028	0.044	0.038
Carbonate (as CO_3)	%C	0.080	0.030	0.115	0.080
Total Organic Carbon	%C	< 0.005	< 0.005	0.010	0.020

Appendix E Tailings Static Tests Dataset

Table E1 - Composite tailings sample metal content results

Parameter	Units	Tailings Composite
Aluminum (Al)	mg kg^{-1}	5,000
Antimony (Sb)	mg kg^{-1}	11
Arsenic (As)	mg kg^{-1}	46
Barium (Ba)	mg kg^{-1}	19
Berylium (Be)	mg kg^{-1}	0.05
Bismuth (Bi)	mg kg^{-1}	0.44
Cadmium (Cd)	mg kg^{-1}	5.3
Calcium (Ca)	mg kg^{-1}	2,400
Chromium (Cr)	mg kg^{-1}	11
Cobalt (Co)	mg kg^{-1}	9.6
Copper (Cu)	mg kg^{-1}	81
Iron (Fe)	mg kg^{-1}	19,000
Lead (Pb)	mg kg^{-1}	870
Lithium (Li)	mg kg^{-1}	5
Magnesium (Mg)	mg kg^{-1}	4000
Manganese (Mn)	mg kg^{-1}	250
Molybdenum (Mo)	mg kg^{-1}	<1.2
Nickel (Ni)	mg kg^{-1}	14
Potassium (K)	mg kg^{-1}	3,200
Selenium (Se)	mg kg^{-1}	<0.7
Silver (Ag)	mg kg^{-1}	3.4
Strontium (Sr)	mg kg^{-1}	5.2
Sulphur (S)	mg kg^{-1}	16,000
Thallium (Tl)	mg kg^{-1}	0.17
Tin (Sn)	mg kg^{-1}	<0.5
Titanium (Ti)	mg kg^{-1}	240
Uranium (U)	mg kg^{-1}	0.46
Vanadium (V)	mg kg^{-1}	6
Yttrium (Y)	mg kg^{-1}	1.9
Zinc (Zn)	mg kg^{-1}	2,000

Table E2 - Composite tailings sample ABA results

Parameter	Units	Tailings Composite
Paste pH	pH Units	8.00
Neutralization Potential (Sobek-NP)	kg $CaCO_3$ t^{-1}	5.1
Neutralization Potential (Carb-NP)	kg $CaCO_3$ t^{-1}	0.3
Acid Potential (AP)	kg $CaCO_3$ t^{-1}	38.4
Net Neutralization Potential (NNP)	kg $CaCO_3$ t^{-1}	-33.3
Neutralization Potential Ratio (Sobek-NPR)	-	0.13
Neutralization Potential Ratio (Carb-NPR)	-	0.01
Total Sulphur (Leco)	%S	1.53
Sulphate-Sulphur	%S	0.3
Sulphide-Sulphur	%S	1.23
Carbon	%C	0.02
Carbonate (as CO_3)	%C	0.02
Total Organic Carbon	%C	<0.005

Appendix F Mine Rock Humidity Cell Tests Dataset

Table F1 - Mine rock BMS-A HCT results

Humidity Cell ID	Units	BMS-A												
Date Sampled		8/14/12	8/21/12	8/28/12	9/4/12	9/11/12	9/18/12	9/25/12	10/2/12	10/9/12	10/16/12	10/23/12	10/30/12	11/6/12
Day		0	7	14	21	28	35	42	49	56	63	70	77	84
Week		0	1	2	3	4	5	6	7	8	9	10	11	12
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95
Mass Before Adding Water	g	1276.04	1393.08	1353.44	1355.47	1351.14	1341.64	1345.47	1334.14	1327.63	1335.95	1330.79	1332.79	1329.59
Mass After Adding Water	g	2277.46	2393.83	2269.72	2348.47	2337.53	2332.58	2267.82	2256.71	2317.08	2333.35	2340.07	2325.91	2321.54
Volume Water Recovered	mL	877	1033.45	911.51	995.15	994.55	984.4	931.2	924.8	978.1	1000.3	1003.6	992.2	993.1
Mass After Water Recovered	g	1400.46	1360.38	1358.21	1353.32	1342.98	1348.15	1336.66	1331.88	1339	1333.1	1336.44	1333.72	1328.48
pH		6.97	7.52	7.74	7.38	7.43	7.37	7.13	7.21	7.07	6.87	6.84	6.86	6.81
Conductivity	uS cm-1	75.2	69.7	41.9	24.95	24.73	15.52	24.42	23.86	11.59	13.65	12.73	20.9	10.41
Sulphate	mg L^{-1}	16.68	18.78	9.90	6.09	4.29	3.96	6.00	5.22	3.00	3.63	3.24	2.58	2.46
Alkalinity (as $CaCO_3$)	mg L^{-1}	< 10.0	< 10.0	<10.0	<10.0	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Metals														
Aluminum (Al)	mg L^{-1}	0.0232	0.0260	0.0517	0.0214	0.0055	0.0078	0.0270	0.0316	0.0063	0.0049	0.0058	0.0053	0.0013
Antimony (Sb)	mg L^{-1}	0.00043	0.00084	0.00071	0.00055	0.00033	0.00024	0.00037	0.00037	0.00013	0.00015	0.00014	0.00011	<0.00010
Arsenic (As)	mg L^{-1}	0.00051	0.00064	0.00050	0.00052	0.00032	0.00027	0.00048	0.00046	0.00024	0.00020	0.00018	0.00015	<0.00010
Barium (Ba)	mg L^{-1}	0.000947	0.000605	0.000457	0.000374	0.000192	0.000208	0.000303	0.000371	0.000178	0.000201	0.000173	0.000250	0.000154
Beryllium (Be)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)	mg L^{-1}	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)	mg L^{-1}	< 0.01	0.013	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)	mg L^{-1}	0.000052	0.000019	<0.00001	<0.00001	0.000014	0.000012	0.000026	0.000030	0.000019	0.000019	0.000017	0.000013	0.000019
Calcium (Ca)	mg L^{-1}	5.01	5.43	3.11	2.16	1.49	1.21	2.14	2.02	0.844	1.13	0.989	0.744	0.689
Chromium (Cr)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)	mg L^{-1}	0.00721	0.00219	0.00050	0.00047	0.00045	0.00046	0.00056	0.00056	0.00034	0.00043	0.00047	0.00044	0.00041
Copper (Cu)	mg L^{-1}	0.00340	0.00093	0.00084	0.00041	0.00033	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00039
Iron (Fe)	mg L^{-1}	0.095	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (Pb)	mg L^{-1}	0.000122	0.000065	0.000122	<0.00005	0.000413	<0.000050	0.000165	0.000185	<0.000050	<0.000050	<0.000050	0.000160	0.000063
Lithium (Li)	mg L^{-1}	0.00087	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium (Mg)	mg L^{-1}	1.19	1.38	0.698	0.459	0.301	0.229	0.364	0.334	0.144	0.168	0.157	0.116	0.108
Manganese (Mn)	mg L^{-1}	0.0549	0.0432	0.0203	0.0147	0.0117	0.0111	0.0226	0.0238	0.0114	0.0143	0.0128	0.00961	0.0103
Molybdenum (Mo)	mg L^{-1}	0.000433	0.000947	0.000722	0.000365	0.000156	0.000112	0.000146	0.000136	0.000060	0.000052	<0.000050	<0.000050	<0.000050
Nickel (Ni)	mg L^{-1}	0.0312	0.0118	0.00283	0.00212	0.00207	0.00159	0.00155	0.00134	0.00072	0.00101	0.00129	0.00117	0.00106
Phosphorus (P)	mg L^{-1}	< 0.3	< 0.3	<0.3	<0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)	mg L^{-1}	2.78	1.55	0.987	0.669	4.68	0.292	0.667	0.754	0.306	0.347	0.321	0.776	0.242
Selenium (Se)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)	mg L^{-1}	0.291	0.632	0.580	0.473	0.268	0.229	0.512	0.546	0.219	0.247	0.234	0.165	0.145
Silver (Ag)	mg L^{-1}	0.000013	< 0.00001	<0.00001	<0.00001	0.0300	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000074	0.000397
Sodium (Na)	mg L^{-1}	2.02	1.91	0.926	0.567	0.366	0.267	0.380	0.373	0.206	0.211	0.220	0.161	0.221
Strontium (Sr)	mg L^{-1}	0.0182	0.0199	0.0106	0.00715	0.00475	0.00381	0.00641	0.00603	0.00265	0.00348	0.00306	0.00233	0.00228
Sulfur (S)	mg L^{-1}	5.56	6.26	3.30	2.03	1.43	1.32	2.00	1.74	1.00	1.21	1.08	0.86	0.82
Thallium (Tl)	mg L^{-1}	0.000020	0.000011	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)	mg L^{-1}	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)	mg L^{-1}	0.000225	0.000684	0.000368	0.000176	0.000088	0.000063	0.000078	0.000063	0.000025	0.000034	0.000029	0.000024	0.000021
Vanadium (V)	mg L^{-1}	< 0.001	< 0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)	mg L^{-1}	0.0177	0.0040	0.0010	0.0025	0.0063	0.0039	0.0055	0.0060	0.0042	0.0051	0.0052	0.0041	0.0047

Humidity Cell ID	Units	BMS-A												
Date Sampled		11/13/12	11/20/12	11/27/12	12/4/12	12/11/12	12/18/12	12/24/12	1/2/13	1/9/13	1/15/13	1/22/13	1/29/13	2/5/13
Day		91	98	105	112	119	126	132	141	148	155	161	168	175
Week		13	14	15	16	17	18	19	20	21	22	23	24	25
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95
Mass Before Adding Water	g	1325.79	1335.33	1326.222	1331.57	1323.69	1323.87	1325.1	1327.91	1318.14	1331.47	1322.62	1323.69	1335.19
Mass After Adding Water	g	2310.77	2359.21	2326.35	2334.59	2342.39	2323.78	2325.15	2335.94	2320	2334.97	2327.57	2332.05	2343.14
Volume Water Recovered	mL	971.7	1030.5	990.1	1004.7	1014.8	996.7	990.1	1013.9	985.7	1009.3	997.7	993.9	1014.0
Mass After Water Recovered	g	1339.08	1328.7	1336.22	1329.88	1327.56	1327.12	1335.05	1322.02	1334.31	1325.66	1329.84	1338.15	1329.11
pH		6.85	7.05	7.05	6.74	6.43	6.65	6.36	6.09	6.14	6.29	5.93	6	5.97
Conductivity	uS cm-1	11.92	13.93	13	14.41	12.38	13.01	15.3	12.53	9.39	12.68	9.38	9.22	16.05
Sulphate	mg L^{-1}	2.82	2.64	1.95	2.61	2.22	2.52	2.22	2.91		2.61		2.13	
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
Dissolved Metals														
Aluminum (Al)	mg L^{-1}	0.0057	0.0014	0.0016	0.0036	0.0014	0.0013	<0.0010	0.0011		<0.0010		0.0010	
Antimony (Sb)	mg L^{-1}	0.00010	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Arsenic (As)	mg L^{-1}	0.00015	0.00012	0.00015	0.00011	<0.00010	<0.00010	0.00011	<0.00010		<0.00010		<0.00010	
Barium (Ba)	mg L^{-1}	0.000255	0.000201	0.000170	0.000239	0.000355	0.000181	0.000234	0.000266		0.000211		0.000147	
Beryllium (Be)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Bismuth (Bi)	mg L^{-1}	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Boron (B)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010		0.010		0.012	
Cadmium (Cd)	mg L^{-1}	0.000024	0.000022	0.000016	0.000018	0.000013	0.000016	0.000017	0.000022		0.000025		0.000018	
Calcium (Ca)	mg L^{-1}	0.856	0.854	0.696	0.834	0.649	0.750	0.689	0.865		0.818		0.627	
Chromium (Cr)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Cobalt (Co)	mg L^{-1}	0.00055	0.00054	0.00050	0.00053	0.00049	0.00055	0.00052	0.00068		0.00065		0.00056	
Copper (Cu)	mg L^{-1}	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	0.00051	0.00071		0.00093		0.00074	
Iron (Fe)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.01000	
Lead (Pb)	mg L^{-1}	0.000102	0.000063	0.000081	0.000106	0.000098	0.000127	0.000176	0.000200		0.000176		0.000176	
Lithium (Li)	mg L^{-1}	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Magnesium (Mg)	mg L^{-1}	0.123	0.124	0.0988	0.119	0.0923	0.101	0.0881	0.115		0.102		0.0782	
Manganese (Mn)	mg L^{-1}	0.0118	0.0133	0.00943	0.0128	0.00997	0.0119	0.0105	0.0148		0.0152		0.0120	
Molybdenum (Mo)	mg L^{-1}	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050		<0.000050	
Nickel (Ni)	mg L^{-1}	0.00143	0.00149	0.00134	0.00144	0.00126	0.00143	0.00129	0.00180		0.00156		0.00143	
Phosphorus (P)	mg L^{-1}	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30		<0.30	
Potassium (K)	mg L^{-1}	0.400	0.983	0.631	1.46	0.721	0.481	0.954	0.778		0.764		0.283	
Selenium (Se)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Silicon (Si)	mg L^{-1}	0.200	0.202	0.142	0.181	0.140	0.168	0.157	0.294		0.170		0.153	
Silver (Ag)	mg L^{-1}	<0.000010	0.000124	0.000067	0.000297	0.000142	0.000111	0.000605	0.00125		0.000055		<0.000010	
Sodium (Na)	mg L^{-1}	0.167	0.170	0.168	0.179	0.160	0.164	0.196	0.232		0.291		0.231	
Strontium (Sr)	mg L^{-1}	0.00267	0.00278	0.00238	0.00268	0.00232	0.00241	0.00224	0.00281		0.00268		0.00212	
Sulfur (S)	mg L^{-1}	0.94	0.88	0.65	0.87	0.74	0.84	0.74	0.97		0.87		0.71	
Thallium (Tl)	mg L^{-1}	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Tin (Sn)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Titanium (Ti)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.01000	
Uranium (U)	mg L^{-1}	0.000028	0.000024	0.000023	0.000026	0.000024	0.000027	0.000028	0.000030		0.000025		0.000023	
Vanadium (V)	mg L^{-1}	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010		<0.0010	
Zinc (Zn)	mg L^{-1}	0.0062	0.0046	0.0044	0.0076	0.0043	0.0051	0.0056	0.0079		0.0073		0.0075	

Table F1 - Mine rock BMS-A HCT results cont.

Humidity Cell ID	Units	BMS-A												
Date Sampled		2/12/13	2/19/13	2/26/13	3/5/13	3/12/13	3/19/13	3/26/13	4/2/13	4/9/13	4/16/13	4/23/13	4/30/13	5/7/13
Day		182	189	196	203	210	217	224	231	238	245	252	259	266
Week		26	27	28	29	30	31	32	33	34	35	36	37	38
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95		
Mass Before Adding Water	g	1324.31	1327.16	1295.19	1298.15	1318.28	1323.01	1298.05	1305.22	1294.59	1297.66	1317.22	1317.65	1311.05
Mass After Adding Water	g	2326.07	2319.77	2285.96	2304.13	2308.78	2326.15	2298.2	2306.78	2288.41	2303.21	2317.49	2317.24	2312.17
Volume Water Recovered	mL	994.6	1005.3	976.5	971.0	974.8	991.5	984.2	978.8	980.7	971.7	988.7	991.7	985.3
Mass After Water Recovered	g	1331.52	1314.51	1309.45	1333.15	1334.02	1334.63	1314.05	1327.96	1307.7	1331.53	1328.82	1325.5	1326.85
pH		6.2	6.21	6.22	6.39	6.6	6.25	6.09	6.05	6.17	6.31	6.12	6.22	6.11
Conductivity	uS cm-1	11.94	14.39	13.81	9.8	22.51	10.34	7.52	7.77	15.85	13.52	9.79	12.17	11.81
Sulphate	mg L^{-1}		3.36			2.52			1.89			2.43		
Alkalinity (as $CaCO_3$)	mg L^{-1}		<10			<10			<10			<10		
Dissolved Metals														
Aluminum (Al)	mg L^{-1}		0.0050			0.0029			0.0011			<0.0010		
Antimony (Sb)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010		
Arsenic (As)	mg L^{-1}		<0.00010			0.00015			<0.00010			<0.00010		
Barium (Ba)	mg L^{-1}		0.000329			0.000200			0.000167			0.000214		
Beryllium (Be)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010		
Bismuth (Bi)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050		
Boron (B)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010		
Cadmium (Cd)	mg L^{-1}		0.000073			0.000038			0.000029			0.000036		
Calcium (Ca)	mg L^{-1}		1.04			0.731			0.537			0.657		
Chromium (Cr)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010		
Cobalt (Co)	mg L^{-1}		0.00105			0.00077			0.00063			0.00091		
Copper (Cu)	mg L^{-1}		<0.00020			<0.00020			<0.00020			0.00032		
Iron (Fe)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010		
Lead (Pb)	mg L^{-1}		0.000129			0.000143			0.000149			0.000156		
Lithium (Li)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050		
Magnesium (Mg)	mg L^{-1}		0.122			0.0832			0.0611			0.0733		
Manganese (Mn)	mg L^{-1}		0.0252			0.0166			0.0119			0.0161		
Molybdenum (Mo)	mg L^{-1}		<0.000050			<0.000050			<0.000050			<0.000050		
Nickel (Ni)	mg L^{-1}		0.00219			0.00186			0.00165			0.00221		
Phosphorus (P)	mg L^{-1}		<0.30			<0.30			<0.30			<0.30		
Potassium (K)	mg L^{-1}		0.507			0.528			0.147			0.209		
Selenium (Se)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010		
Silicon (Si)	mg L^{-1}		0.310			0.197			0.119			0.182		
Silver (Ag)	mg L^{-1}		0.000013			0.000023			<0.000010			<0.000010		
Sodium (Na)	mg L^{-1}		0.193			0.174			0.151			0.191		
Strontium (Sr)	mg L^{-1}		0.00358			0.00242			0.00180			0.00226		
Sulfur (S)	mg L^{-1}		1.12			0.84			0.63			0.81		
Thallium (Tl)	mg L^{-1}		0.000017			<0.000010			<0.000010			<0.000010		
Tin (Sn)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010		
Titanium (Ti)	mg L^{-1}		<0.01000			<0.01000			<0.01000			<0.01000		
Uranium (U)	mg L^{-1}		0.000041			0.000068			0.000024			0.000050		
Vanadium (V)	mg L^{-1}		<0.0010			<0.0010			<0.0010			<0.0010		
Zinc (Zn)	mg L^{-1}		0.0186			0.0133			0.0112			0.0167		

Humidity Cell ID	Units	BMS-A												
Date Sampled		5/14/13	5/21/13	5/28/13	6/4/13	6/11/13	6/18/13	6/25/13	7/2/13	7/9/13	7/16/13	7/23/13	7/30/13	8/6/13
Day		273	280	287	294	301	308	315	322	329	336	343	350	357
Week		39	40	41	42	43	44	45	46	47	48	49	50	51
Bottle	g													
Mass Before Adding Water	g	1308.81	1298.74	1297.36	1319.83	1308.44	1332.81	1292.66	1286.84	1330.84	1328.25	1293.44	1316.88	1319.37
Mass After Adding Water	g	2300.22	2291.66	2294.4	2320.25	2307.33	2326.2	2287.32	2289.43	2336.8	2327.06	2299.52	2314.2	2322.2
Volume Water Recovered	mL	993.7	987.9	969.9	1001.7	970.3	1007.1	992.0	951.0	1003.3	1014.9	977.3	980.9	1010.0
Mass After Water Recovered	g	1306.55	1303.72	1324.51	1318.59	1336.99	1319.08	1295.29	1338.39	1333.53	1312.19	1322.21	1333.35	1312.24
pH		5.83	6	6.25	6.24	6.11	6.2	5.77	6.19	6.06	6.12	6.11	5.28	5.96
Conductivity	uS cm-1	14.81	15.29	8.47	12.88	9.74	13.06	19.13	11.58	13.47	13.56	12.43	10.83	11.09
Sulphate	mg L^{-1}	3.90	4.14					4.59				3.42		
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10	<10					<10				<10		
Dissolved Metals														
Aluminum (Al)	mg L^{-1}	0.0032	0.0039					0.0031				0.0019		
Antimony (Sb)	mg L^{-1}	<0.00010	<0.00010					<0.00010				<0.00010		
Arsenic (As)	mg L^{-1}	<0.00010	<0.00010					<0.00010				<0.00010		
Barium (Ba)	mg L^{-1}	0.000242	0.000296					0.000397				0.000299		
Beryllium (Be)	mg L^{-1}	<0.00010	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}	<0.00050	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}	<0.010	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}	0.000081	0.000100					0.000110				0.000056		
Calcium (Ca)	mg L^{-1}	1.04	1.21					1.24				0.88		
Chromium (Cr)	mg L^{-1}	<0.00010	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}	0.00171	0.00188					0.00208				0.00143		
Copper (Cu)	mg L^{-1}	0.00049	0.00041					0.00068				0.00042		
Iron (Fe)	mg L^{-1}	0.020	0.035					0.075				0.038		
Lead (Pb)	mg L^{-1}	0.000190	0.000200					0.001560				0.000499		
Lithium (Li)	mg L^{-1}	<0.00050	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	mg L^{-1}	0.119	0.126					0.129				0.083		
Manganese (Mn)	mg L^{-1}	0.0281	0.0301					0.0316				0.0217		
Molybdenum (Mo)	mg L^{-1}	<0.000050	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}	0.00403	0.00461					0.00553				0.00405		
Phosphorus (P)	mg L^{-1}	<0.30	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}	0.325	0.389					0.351				0.211		
Selenium (Se)	mg L^{-1}	<0.00010	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}	0.302	0.388					0.367				0.267		
Silver (Ag)	mg L^{-1}	<0.000010	<0.000010					<0.000010				<0.000010		
Sodium (Na)	mg L^{-1}	0.191	0.289					0.235				0.192		
Strontium (Sr)	mg L^{-1}	0.00350	0.00447					0.00452				0.00323		
Sulfur (S)	mg L^{-1}	1.30	1.38					1.53				1.14		
Thallium (Tl)	mg L^{-1}	<0.000010	<0.000010					<0.000010				<0.000010		
Tin (Sn)	mg L^{-1}	<0.00010	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}	<0.01000	<0.01000					<0.01000				<0.01000		
Uranium (U)	mg L^{-1}	0.000070	0.000084					0.000102				0.000090		
Vanadium (V)	mg L^{-1}	<0.0010	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}	0.0330	0.0378					0.0487				0.0276		

Table F1 - Mine rock BMS-A HCT results cont.

Humidity Cell ID	Units	BMS-A											
Date Sampled		8/13/13	8/20/13	8/27/13	9/3/13	9/10/13	9/17/13	9/24/13	10/1/13	10/8/13	10/15/13	10/22/13	10/29/13
Day		364	371	378	385	392	399	406	413	420	427	434	441
Week		52	53	54	55	56	57	58	59	60	61	62	63
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	
Mass Before Adding Water	g	1304.37	1292.46	1324.39	1293.9	1320.31	1322.08	1305.29	1316.1	1295.76	1312.36	1296.21	1287.21
Mass After Adding Water	g	2301.75	2288.97	2313.45	2293.82	2318.86	2324.82	2310.69	2316.6	2305.41	2302.55	2289.86	2271.42
Volume Water Recovered	mL	1317.3	1314.0	1297.6	1326.0	1326.5	1319.3	1324.5	1311.2	1327.5	1298.1	1309.0	1317.5
Mass After Water Recovered	g	984.4	975.0	1015.9	967.8	992.4	1005.5	986.2	1005.5	977.9	1004.5	980.9	954.0
pH		5.45	5.61	6.24	5.82	5.92	5.77	6.89	5.71	6.09	5.79	5.72	5.73
Conductivity	uS cm-1	10.66	10.66	14.33	10.62	9.21	8.81	18.28	15.22	9.12	11.66	10.29	16.73
Sulphate	mg L^{-1}	2.58					1.59				2.58		
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10					<10				<10		
Dissolved Metals													
Aluminum (Al)	mg L^{-1}	0.0024					0.0015				0.0031		
Antimony (Sb)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Arsenic (As)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Barium (Ba)	mg L^{-1}	0.000253					0.000158				0.000278		
Beryllium (Be)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}	0.000055					0.000041				0.000056		
Calcium (Ca)	mg L^{-1}	0.752					0.536				0.769		
Chromium (Cr)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}	0.00111					0.00084				0.00105		
Copper (Cu)	mg L^{-1}	0.00097					0.00143				0.00033		
Iron (Fe)	mg L^{-1}	0.032					0.024				0.043		
Lead (Pb)	mg L^{-1}	0.000383					0.000258				0.000310		
Lithium (Li)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	mg L^{-1}	0.0837					0.0538				0.0791		
Manganese (Mn)	mg L^{-1}	0.0162					0.0134				0.0173		
Molybdenum (Mo)	mg L^{-1}	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}	0.00326					0.00250				0.00308		
Phosphorus (P)	mg L^{-1}	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}	0.173					0.106				0.233		
Selenium (Se)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}	0.262					0.208				4.55		
Silver (Ag)	mg L^{-1}	0.000028					<0.000010				<0.000010		
Sodium (Na)	mg L^{-1}	0.211					0.116				0.228		
Strontium (Sr)	mg L^{-1}	0.00303					0.00200				0.00294		
Sulfur (S)	mg L^{-1}	0.86					0.53				0.86		
Thallium (Tl)	mg L^{-1}	<0.000010					<0.000010				<0.000010		
Tin (Sn)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}	0.000074					0.000047				0.000087		
Vanadium (V)	mg L^{-1}	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}	0.0241					0.0197				0.0288		

Table F2 - Mine rock BMS-B HCT results

Humidity Cell ID	Units	BMS-B																									
Date Sampled		8/14/12	8/21/12	8/28/12	9/4/12	9/11/12	9/18/12	9/25/12	10/2/12	10/9/12	10/16/12	10/23/12	10/30/12	11/6/12	11/13/12	11/20/12	11/27/12	12/4/12	12/11/12	12/18/12	12/24/12	1/2/13	1/9/13	1/15/13	1/22/13	1/29/13	2/5/13
Day		0	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	132	141	148	155	161	168	175
Week		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	
Mass Before Adding Water	g	1297.31	1390.24	1367.13	1364.35	1368.96	1369.3	1365.53	1352.94	1342.2	1356.44	1345.23	1355.65	1356.01	1379.94	1350.87	1355.84	1356.19	1348.56	1347.96	1349.7	1351.65	1347.52	1362.49	1357.96	1349.72	1349.29
Mass After Adding Water	g	2239.95	2390.5	2282.94	2357.42	2357.5	2359.46	2286.6	2259.83	2321.16	2351.88	2340.6	2344.77	2353.45	2366.44	2350.44	2354.32	2354.48	2364.93	2347.56	2350.69	2353.24	2348.55	2371.41	2357.67	2351	2349.29
Volume Water Recovered	mL	840.11	1013.87	916.98	986.76	985.4	991.4	930.1	913.5	960.5	1003.9	983.1	983.8	969.7	1010.8	990.8	996.0	1002.5	1014.0	995.9	994.0	1002.4	982.5	1010.9	1004.7	998.8	999.0
Mass After Water Recovered	g	1399.84	1376.63	1365.96	1370.66	1372.1	1368.02	1356.49	1346.35	1360.67	1347.95	1357.49	1360.95	1383.79	1355.67	1359.68	1358.31	1351.95	1350.89	1351.66	1356.67	1350.81	1366.08	1360.52	1353	1352.17	1350.32
pH		7.67	7.87	8.01	7.77	7.33	7.82	7.46	7.63	7.08	7.02	7.37	7.08	7.15	7.25	7.1	6.96	6.96	6.8	6.73	6.59	6.88	6.48	6.54	6.43	6.5	6.42
Conductivity	uS cm-1	59	84.8	36.4	18.67	23.96	16.95	27.6	30.1	13.23	16.09	17.58	16.5	25.32	18.19	14.15	12.86	14.97	13.88	14.21	12.41	19.28	11.69	12.55	13.06	9.53	11.34
Sulphate	$mg\ L^{-1}$	10.41	12.78	6.99	3.51	3.30	3.00	4.50	5.76	2.76	3.48	3.12	3.03	4.83	3.15	2.31	2.07	2.46	2.01	2.37	1.83	2.97		2.31		1.50	
Alkalinity (as $CaCO_3$)	$mg\ L^{-1}$	< 10.0	< 10.0	<10.0	<10.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
Dissolved Metals																											
Aluminum (Al)	$mg\ L^{-1}$	0.0780	0.0540	0.0814	0.0253	0.0143	0.0183	0.0495	0.105	0.0806	0.0131	0.0190	0.0108	0.0189	0.0124	0.0108	0.0055	0.0061	0.0043	0.0046	0.0029	0.0038		0.0026		0.0016	
Antimony (Sb)	$mg\ L^{-1}$	0.00099	0.00206	0.00174	0.00106	0.00086	0.00062	0.00076	0.00082	0.00033	0.00038	0.00036	0.00034	0.00048	0.00033	0.00030	0.00023	0.00025	0.00021	0.00022	0.00018	0.00025		0.00019		0.00011	
Arsenic (As)	$mg\ L^{-1}$	0.00192	0.00223	0.00263	0.00196	0.00161	0.00135	0.00209	0.00262	0.00078	0.00081	0.00087	0.00075	0.00106	0.00075	0.00075	0.00053	0.00059	0.00048	0.00051	0.00038	0.00051		0.00034		0.00021	
Barium (Ba)	$mg\ L^{-1}$	0.000793	0.00154	0.000636	0.000381	0.000318	0.000312	0.000450	0.000800	0.000684	0.000412	0.000403	0.000392	0.000551	0.000395	0.000371	0.000366	0.000414	0.000383	0.000375	0.000352	0.000521		0.000367		0.000307	
Beryllium (Be)	$mg\ L^{-1}$	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Bismuth (Bi)	$mg\ L^{-1}$	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Boron (B)	$mg\ L^{-1}$	< 0.01	0.013	0.011	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010		<0.010		0.013	
Cadmium (Cd)	$mg\ L^{-1}$	< 0.00001	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Calcium (Ca)	$mg\ L^{-1}$	4.67	4.74	3.29	1.71	1.63	1.51	2.84	3.27	1.29	1.87	1.57	1.57	2.73	1.86	1.49	1.34	1.50	1.29	1.47	1.12	1.75		1.68		0.948	
Chromium (Cr)	$mg\ L^{-1}$	0.00011	0.00011	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	0.00013	0.00011	0.00011	0.00011	0.00015	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Cobalt (Co)	$mg\ L^{-1}$	0.00016	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Copper (Cu)	$mg\ L^{-1}$	0.00202	0.00066	0.00042	<0.0002	0.00030	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00025	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00059	0.00056	0.00075		0.00065		0.00065	
Iron (Fe)	$mg\ L^{-1}$	0.029	0.011	<0.01	<0.01	<0.010	<0.010	<0.010	0.011	0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.01000	
Lead (Pb)	$mg\ L^{-1}$	0.000446	0.000133	0.000113	<0.00005	<0.00050	<0.000050	0.000051	0.000221	0.000259	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000093	0.000052	0.000070	0.000081	0.000065	0.000076		0.000085		0.000092	
Lithium (Li)	$mg\ L^{-1}$	0.00059	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Magnesium (Mg)	$mg\ L^{-1}$	0.746	0.874	0.549	0.270	0.247	0.194	0.315	0.338	0.156	0.169	0.147	0.134	0.213	0.140	0.116	0.101	0.110	0.0884	0.0985	0.0774	0.119		0.0865		0.0516	
Manganese (Mn)	$mg\ L^{-1}$	0.0162	0.0131	0.00987	0.00575	0.00554	0.00450	0.00588	0.00477	0.00344	0.00126	0.00124	0.00105	0.00152	0.00106	0.00119	0.000914	0.00131	0.00116	0.00156	0.00124	0.00161		0.000724		0.000725	
Molybdenum (Mo)	$mg\ L^{-1}$	0.000369	0.00123	0.000811	0.000241	0.000173	0.000100	0.000166	0.000105	<0.000050	<0.000050	<0.000050	<0.000050	0.000091	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050		<0.000050	
Nickel (Ni)	$mg\ L^{-1}$	0.00423	0.00176	0.00064	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Phosphorus (P)	$mg\ L^{-1}$	< 0.3	< 0.3	<0.3	<0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30		0.3	
Potassium (K)	$mg\ L^{-1}$	2.63	1.79	1.31	0.656	0.528	0.478	0.953	1.14	0.455	0.510	0.618	0.456	0.736	0.680	0.608	0.416	0.521	0.534	0.531	0.529	0.584		0.393		0.239	
Selenium (Se)	$mg\ L^{-1}$	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Silicon (Si)	$mg\ L^{-1}$	0.370	0.482	0.473	0.255	0.220	0.187	0.343	0.430	0.291	0.159	0.162	0.146	0.239	0.168	0.144	0.110	0.132	0.107	0.122	0.101	0.142		0.104		0.075	
Silver (Ag)	$mg\ L^{-1}$	0.000015	< 0.00001	<0.00001	<0.00001	0.000034	0.000199	<0.000010	<0.000010	<0.000010	0.000030	0.000019	<0.000010	0.000067	0.000015	0.000013	<0.000010	0.000013	0.000149	0.000031	0.000072	0.000088		<0.000010		<0.000010	
Sodium (Na)	$mg\ L^{-1}$	1.54	1.38	0.748	0.369	0.307	0.232	0.328	0.306	0.190	0.188	0.217	0.167	0.313	0.160	0.156	0.157	0.158	0.123	0.196	0.193	0.251		0.225		0.202	
Strontium (Sr)	$mg\ L^{-1}$	0.0185	0.0226	0.0141	0.00749	0.00715	0.00610	0.0102	0.0113	0.00467	0.00642	0.00545	0.00543	0.00924	0.00599	0.00497	0.00440	0.00484	0.00415	0.00439	0.00338	0.00529		0.00468		0.00269	
Sulfur (S)	$mg\ L^{-1}$	3.47	4.26	2.33	1.17	1.10	1.00	1.50	1.92	0.92	1.16	1.04	1.01	1.61	1.05	0.77	0.69	0.82	0.67	0.79	0.61	0.99		0.77		0.5	
Thallium (Tl)	$mg\ L^{-1}$	< 0.00001	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Tin (Sn)	$mg\ L^{-1}$	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Titanium (Ti)	$mg\ L^{-1}$	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.01000	
Uranium (U)	$mg\ L^{-1}$	0.000281	0.00108	0.000570	0.000275	0.000286	0.000226	0.000305	0.000318	0.000151	0.000212	0.000148	0.000164	0.000265	0.000161	0.000129	0.000141	0.000136	0.000144	0.000144	0.000091	0.000139		0.000127		0.000090	
Vanadium (V)	$mg\ L^{-1}$	< 0.001	< 0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010		<0.00100	
Zinc (Zn)	$mg\ L^{-1}$	< 0.001	0.0037	<0.001	<0.001	0.0017	0.0044	0.0012	0.0014	0.0016	0.0029	0.0022	0.0014	0.0019	0.0011	<0.0010	<0.0010	0.0017	<0.0010	0.0018	0.0039	0.0026		0.0021		0.0023	

Table F2 - Mine rock BMS-B HCT results cont.

Humidity Cell ID	Units	BMS-B																									
Date Sampled		2/12/13	2/19/13	2/26/13	3/5/13	3/12/13	3/19/13	3/26/13	4/2/13	4/9/13	4/16/13	4/23/13	4/30/13	5/7/13	5/14/13	5/21/13	5/28/13	6/4/13	6/11/13	6/18/13	6/25/13	7/2/13	7/9/13	7/16/13	7/23/13	7/30/13	8/6/13
Day		182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	322	329	336	343	350	357
Week		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Bottle	g																										
Mass Before Adding Water	g	1348.28	1347.46	1333.64	1323.32	1346.03	1343.74	1345.49	1336.71	1314.17	1325.01	1347.25	1345.25	1334.57	1326.22	1321.39	1320.58	1333.98	1346.05	1337.64	1337.58	1314.51	1338.84	1343.72	1313.37	1330.44	1339.29
Mass After Adding Water	g	2349.54	2341.12	2326.81	2324.93	2345.11	2338.02	2344.91	2343.55	2308.8	2324.95	2344.92	2332.58	2335.66	2317.52	2314.02	2321.41	2334.25	2347.2	2329.74	2331.85	2312.57	2347.46	2343.94	2319.66	2330.48	2338.81
Volume Water Recovered	mL	998.0	999.2	990.3	968.2	989.8	981.5	995.3	993.2	974.8	968.0	991.5	986.5	994.7	987.1	983.7	979.0	978.8	1000.7	981.0	1007.4	968.4	997.4	999.7	970.2	974.5	999.2
Mass After Water Recovered	g	1351.55	1341.89	1336.5	1356.78	1355.36	1356.5	1349.62	1350.32	1333.99	1356.98	1353.43	1346.09	1340.93	1330.45	1330.29	1342.38	1355.41	1346.54	1348.73	1324.42	1344.2	1350.03	1344.22	1349.49	1356	1339.61
pH		6.67	6.85	6.73	6.57	6.74	6.7	6.83	6.56	6.86	6.6	6.59	6.62	7.41	6.71	6.97	7.28	6.95	6.92	6.83	7.04	6.5	7.22	6.7	6.35	6.2	6.01
Conductivity	uS cm-1	14.78	19.92	15.79	11.27	13.03	13.78	9.63	9.67	17.19	11.61	9.22	10.11	19.2	15.55	14.54	15.38	11.84	12.31	12.5	14.95	12.83	12.01	11.18	14.27	6.29	12.4
Sulphate	mg L^{-1}		2.88			1.89			1.71			1.65			2.85	3.00					3.33						
Alkalinity (as $CaCO_3$)	mg L^{-1}		<10			<10			<10			<10			<10	<10					<10				<10		
Dissolved Metals																											
Aluminum (Al)	mg L^{-1}		0.0119			0.0287			0.0027			0.0027			0.0064	0.0148					0.0095				0.0079		
Antimony (Sb)	mg L^{-1}		0.00025			0.00012			<0.00010			<0.00010			0.00013	0.00016					0.00013				<0.00010		
Arsenic (As)	mg L^{-1}		0.00043			0.00024			0.00020			0.00033			0.00027	0.00030					0.00023				0.00026		
Barium (Ba)	mg L^{-1}		0.000848			0.000651			0.000314			0.000438			0.000549	0.000538					0.000623				0.000576		
Beryllium (Be)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}		0.000012			<0.000010			<0.000010			<0.000010			0.000014	<0.000010					<0.000010				<0.000010		
Calcium (Ca)	mg L^{-1}		2.24			1.30			0.968			0.932			1.54	1.37					1.43				1.17		
Chromium (Cr)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}		0.00013			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Copper (Cu)	mg L^{-1}		<0.00020			<0.00020			<0.00020			<0.00020			0.00039	0.00024					0.00030				0.00045		
Iron (Fe)	mg L^{-1}		<0.010			0.022			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Lead (Pb)	mg L^{-1}		0.000074			0.000229			<0.000050			0.000057			0.000062	0.000073					0.000101				0.000179		
Lithium (Li)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	mg L^{-1}		0.111			0.0752			0.0473			0.0778			0.0642	0.0602					0.0597				0.0604		
Manganese (Mn)	mg L^{-1}		0.00237			0.00163			0.000611			0.000677			0.00156	0.00191					0.00259				0.00262		
Molybdenum (Mo)	mg L^{-1}		<0.000050			<0.000050			<0.000050			<0.000050			<0.000050	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}		0.00053			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				0.00054		
Phosphorus (P)	mg L^{-1}		<0.30			<0.30			<0.30			<0.30			<0.30	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}		0.839			0.373			0.247			0.285			0.536	0.639					0.608				0.495		
Selenium (Se)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}		0.214			0.170			0.058			0.058			0.126	0.155					0.154				0.092		
Silver (Ag)	mg L^{-1}		<0.000010			0.000011			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				0.000013		
Sodium (Na)	mg L^{-1}		0.187			0.133			0.152			0.278			0.182	0.216					0.193				0.211		
Strontium (Sr)	mg L^{-1}		0.00597			0.00320			0.00238			0.00258			0.00351	0.00309					0.00326				0.00269		
Sulfur (S)	mg L^{-1}		0.96			0.63			0.57			0.55			0.95	1.00					1.11				1.04		
Thallium (Tl)	mg L^{-1}		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				<0.000010		
Tin (Sn)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}		0.000115			0.000102			0.000065			0.000058			0.000054	0.000040					0.000036				0.000029		
Vanadium (V)	mg L^{-1}		<0.00100			<0.00100			<0.00100			<0.00100			<0.00100	<0.00100					<0.00100				<0.00100		
Zinc (Zn)	mg L^{-1}		0.0028			0.0018			0.0017			0.0011			0.0020	0.0015					0.0034				0.0063		

Table F2 - Mine rock BMS-B HCT results cont.

Humidity Cell ID	Units	BMS-B											
Date Sampled		8/13/13	8/20/13	8/27/13	9/3/13	9/10/13	9/17/13	9/24/13	10/1/13	10/8/13	10/15/13	10/22/13	10/29/13
Day		364	371	378	385	392	399	406	413	420	427	434	259
Week		52	53	54	55	56	57	58	59	60	61	62	63
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	
Mass Before Adding Water	g	1309.71	1330.98	1324.31	1313.23	1335.54	1327.65	1326.82	1342.22	1344.29	1329.86	1344.97	1316.22
Mass After Adding Water	g	2312.69	2317.09	2316.22	2326.16	2335.33	2328.03	2326.9	2345.63	2344.52	2318.82	2338.77	2301.82
Volume Water Recovered	mL	1340.0	1317.1	1322.7	1341.7	1345.6	1340.6	1348.3	1349.0	1341.7	1349.7	1338.6	1357.2
Mass After Water Recovered	g	972.7	1000.0	993.5	984.4	989.7	987.5	978.6	996.6	1002.8	969.2	1000.1	944.7
pH		6.19	5.77	6.64	5.7	6.39	5.23	6.4	6.6	6.48	6.47	6.22	6.13
Conductivity	uS cm-1	13.11	12.67	16.5	12.39	11.35	8.71	9.65	10.15	11.05	14.67	11.98	20.52
Sulphate	mg L^{-1}	2.64					<1.5				2.85		
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10					<10				<10		
Dissolved Metals													
Aluminum (Al)	mg L^{-1}	0.0064					0.0010				0.0046		
Antimony (Sb)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Arsenic (As)	mg L^{-1}	0.00022					0.00013				0.00019		
Barium (Ba)	mg L^{-1}	0.000489					0.000323				0.000636		
Beryllium (Be)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}	<0.000010					<0.000010				<0.000010		
Calcium (Ca)	mg L^{-1}	1.07					0.67				1.20		
Chromium (Cr)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}	0.00011					<0.00010				0.00024		
Copper (Cu)	mg L^{-1}	0.00056					0.00082				0.00030		
Iron (Fe)	mg L^{-1}	<0.010					<0.010				<0.010		
Lead (Pb)	mg L^{-1}	0.000093					0.000204				0.000104		
Lithium (Li)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	mg L^{-1}	0.0482					0.0286				0.0503		
Manganese (Mn)	mg L^{-1}	0.00245					0.00195				0.00506		
Molybdenum (Mo)	mg L^{-1}	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}	0.00052					<0.00050				0.00106		
Phosphorus (P)	mg L^{-1}	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}	0.409					0.230				0.531		
Selenium (Se)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}	0.098					<0.050				5.13		
Silver (Ag)	mg L^{-1}	<0.000010					<0.000010				0.000012		
Sodium (Na)	mg L^{-1}	0.166					0.095				0.204		
Strontium (Sr)	mg L^{-1}	0.00258					0.00157				0.00271		
Sulfur (S)	mg L^{-1}	0.88					0.5				0.95		
Thallium (Tl)	mg L^{-1}	<0.000010					<0.000010				<0.000010		
Tin (Sn)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}	0.000028					0.000014				0.000025		
Vanadium (V)	mg L^{-1}	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}	0.0031					0.0019				0.0034		

Table F3 - Mine rock BMS-C HCT results

Humidity Cell ID	Units	BMS-C												
Date Sampled		8/14/12	8/21/12	8/28/12	9/4/12	9/11/12	9/18/12	9/25/12	10/2/12	10/9/12	10/16/12	10/23/12	10/30/12	11/6/12
Day		0	7	14	21	28	35	42	49	56	63	70	77	84
Week		0	1	2	3	4	5	6	7	8	9	10	11	12
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95
Mass Before Adding Water	g	1276.67	1366.27	1346.3	1336.59	1348.83	1341.85	1347.99	1329.87	1328.38	1333.14	1336.6	1348	1345.53
Mass After Adding Water	g	2229.37	2366.52	2255.1	2331.4	2336.87	2326.85	2267.55	2244.13	2316.52	2330.19	2336.61	2342.24	2334.89
Volume Water Recovered	mL	854.04	1013.89	907.36	980.67	992.68	977.0	934.6	912.5	980.1	991.6	985.8	994.1	988.6
Mass After Water Recovered	g	1375.33	1352.63	1347.74	1350.73	1344.19	1349.82	1332.94	1331.64	1336.47	1338.64	1350.86	1348.16	1346.31
pH		7.24	7.58	7.49	8.08	7.35	7.13	7.3	7.43	7.19	7.38	7.02	7	6.86
Conductivity	uS cm-1	85.6	84.8	50.6	28.9	9.04	17.44	29.22	35.8	17.61	21.95	21.13	22.28	18.03
Sulphate	mg L^{-1}	16.65	24.18	12.30	6.12	6.51	4.11	6.75	7.56	7.77	4.02	4.89	5.04	4.23
Alkalinity (as $CaCO_3$)	mg L^{-1}	< 10.0	< 10.0	<10.0	<10.0	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Metals														
Aluminum (Al)	mg L^{-1}	0.117	0.0379	0.0571	0.0187	0.0106	0.0114	0.0168	0.0688	0.260	0.0056	0.0110	0.0068	0.112
Antimony (Sb)	mg L^{-1}	0.00052	0.00159	0.00181	0.00099	0.00090	0.00048	0.00086	0.00100	0.00033	0.00030	0.00039	0.00037	0.00031
Arsenic (As)	mg L^{-1}	0.00044	0.00050	0.00041	0.00028	0.00021	0.00015	0.00024	0.00039	0.00029	<0.00010	0.00021	0.00012	0.00017
Barium (Ba)	mg L^{-1}	0.00207	0.00111	0.000619	0.000406	0.000509	0.000313	0.000457	0.000748	0.00574	0.000345	0.000542	0.000428	0.000832
Beryllium (Be)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)	mg L^{-1}	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)	mg L^{-1}	< 0.01	0.015	0.011	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	<0.010	<0.010
Cadmium (Cd)	mg L^{-1}	0.000013	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	0.000019	0.000012	<0.000010	0.000519	0.000017	0.000015
Calcium (Ca)	mg L^{-1}	6.02	7.81	4.63	2.45	2.71	1.56	3.02	3.98	3.59	1.60	2.15	2.17	1.89
Chromium (Cr)	mg L^{-1}	0.00014	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	<0.00010	0.00012	<0.00010	0.00017
Cobalt (Co)	mg L^{-1}	0.00109	0.00025	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)	mg L^{-1}	0.00124	0.00037	0.00031	0.00023	0.00026	<0.00020	<0.00020	<0.00020	0.00020	<0.00020	0.00032	<0.00020	<0.00020
Iron (Fe)	mg L^{-1}	0.098	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.051
Lead (Pb)	mg L^{-1}	0.00118	0.000310	0.000221	0.000144	0.000250	0.000167	0.000277	0.000852	0.000228	0.000192	0.000211	0.000223	0.00198
Lithium (Li)	mg L^{-1}	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium (Mg)	mg L^{-1}	0.917	1.33	0.711	0.362	0.388	0.204	0.365	0.435	0.347	0.168	0.223	0.219	0.217
Manganese (Mn)	mg L^{-1}	0.0345	0.0251	0.0126	0.00698	0.00789	0.00471	0.00853	0.00983	0.00697	0.00336	0.00445	0.00424	0.00717
Molybdenum (Mo)	mg L^{-1}	0.000221	0.000368	0.000241	0.000084	<0.00050	<0.000050	0.000086	<0.000050	0.000070	<0.000050	<0.000050	<0.000050	<0.000050
Nickel (Ni)	mg L^{-1}	0.0367	0.0142	0.00279	0.00158	0.00143	0.00097	0.00127	0.00085	0.00097	0.00089	0.00119	0.00120	0.00170
Phosphorus (P)	mg L^{-1}	< 0.3	< 0.3	<0.3	<0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)	mg L^{-1}	2.34	1.85	1.34	0.693	1.11	0.409	0.712	1.04	1.53	0.401	0.523	0.501	0.488
Selenium (Se)	mg L^{-1}	< 0.0001	0.00015	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)	mg L^{-1}	0.365	0.519	0.501	0.285	0.273	0.164	0.331	0.441	0.306	0.125	0.193	0.175	0.392
Silver (Ag)	mg L^{-1}	0.000034	< 0.00001	<0.00001	<0.00001	0.000630	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000033
Sodium (Na)	mg L^{-1}	1.48	1.59	0.745	0.368	0.359	0.223	0.251	0.283	0.277	0.134	0.218	0.171	0.137
Strontium (Sr)	mg L^{-1}	0.0240	0.0353	0.0194	0.0103	0.0113	0.00624	0.0114	0.0144	0.0110	0.00593	0.00821	0.00759	0.00690
Sulfur (S)	mg L^{-1}	5.55	8.06	4.10	2.04	2.17	1.37	2.25	2.52	2.59	1.34	1.63	1.68	1.41
Thallium (Tl)	mg L^{-1}	0.000012	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)	mg L^{-1}	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)	mg L^{-1}	0.000413	0.000660	0.000330	0.000171	0.000192	0.000090	0.000184	0.000174	0.000093	0.000073	0.000080	0.000101	0.000089
Vanadium (V)	mg L^{-1}	< 0.001	< 0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)	mg L^{-1}	0.0042	0.0023	<0.001	0.0016	0.0037	0.0034	0.0041	0.0029	0.0052	0.0039	0.0049	0.0040	0.0057

Humidity Cell ID	Units	BMS-C												
Date Sampled		11/13/12	11/20/12	11/27/12	12/4/12	12/11/12	12/18/12	12/24/12	1/2/13	1/9/13	1/15/13	1/22/13	1/29/13	2/5/13
Day		91	98	105	112	119	126	132	141	148	155	161	168	175
Week		13	14	15	16	17	18	19	20	21	22	23	24	25
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	
Mass Before Adding Water	g	1343.48	1335.96	1333.1	1330.04	1326.72	1324.38	1332.59	1345.48	1340.38	1332.2	1331.13	1325.68	1328.38
Mass After Adding Water	g	2331.64	2328.24	2333	2339.13	2324.66	2330.47	2339	2358.48	2340.32	2334.64	2331.87	2333.59	2328.22
Volume Water Recovered	mL	992.8	991.9	999.5	1008.7	997.2	994.6	989.4	1016.2	974.3	1001.2	1002.2	1000.5	991.5
Mass After Water Recovered	g	1338.87	1336.34	1333.47	1330.48	1327.51	1335.88	1349.62	1342.24	1366.04	1333.41	1329.64	1333.12	1336.71
pH		7.11	6.95	6.72	6.69	6.37	6.56	6.45	6.43	6.49	6.53	6.3	6.28	6.17
Conductivity	uS cm-1	18.72	17.67	15.81	13.83	15.2	13.69	14.18	19.81	17.35	15.63	15.37	12.93	13.15
Sulphate	mg L^{-1}	4.26	3.81	2.52	3.06	3.36	3.33	3.03	4.68		3.60		2.97	
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10	<10	<10	45	<10	<10	<10	<10		<10		<10	
Dissolved Metals														
Aluminum (Al)	mg L^{-1}	0.0105	0.0038	0.0033	0.0016	0.0181	0.0277	0.0011	0.0018		0.0012		0.0013	
Antimony (Sb)	mg L^{-1}	0.00029	0.00031	0.00156	0.00016	0.00020	0.00021	0.00015	0.00023		0.00017		0.00012	
Arsenic (As)	mg L^{-1}	<0.00010	0.00014	0.00040	<0.00010	<0.00010	<0.00010	<0.00010	0.00012		<0.00010		<0.00010	
Barium (Ba)	mg L^{-1}	0.000378	0.000417	0.000301	0.000323	0.000466	0.000667	0.000365	0.000519		0.000417		0.000353	
Beryllium (Be)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Bismuth (Bi)	mg L^{-1}	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Boron (B)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010		<0.010		0.012	
Cadmium (Cd)	mg L^{-1}	0.000011	0.000011	<0.000010	0.000012	0.000012	0.000014	0.000014	0.000023		0.000018		0.000014	
Calcium (Ca)	mg L^{-1}	1.85	1.72	1.09	1.30	1.40	1.44	1.35	2.10		1.75		1.33	
Chromium (Cr)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Cobalt (Co)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Copper (Cu)	mg L^{-1}	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	0.00062	0.00073		0.00077		0.00077	
Iron (Fe)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	0.013	0.020	<0.010	<0.010		<0.010		<0.01000	
Lead (Pb)	mg L^{-1}	0.000454	0.000464	0.000085	0.000391	0.000840	0.00107	0.000376	0.000608		0.000501		0.000366	
Lithium (Li)	mg L^{-1}	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Magnesium (Mg)	mg L^{-1}	0.162	0.157	0.0867	0.115	0.133	0.132	0.112	0.167		0.121		0.0928	
Manganese (Mn)	mg L^{-1}	0.00456	0.00472	0.00184	0.00296	0.00424	0.00433	0.00378	0.00642		0.00462		0.00436	
Molybdenum (Mo)	mg L^{-1}	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050		<0.000050	
Nickel (Ni)	mg L^{-1}	0.00159	0.00179	0.00094	0.00091	0.00126	0.00154	0.00136	0.00208		0.00117		0.00106	
Phosphorus (P)	mg L^{-1}	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30		0.3	
Potassium (K)	mg L^{-1}	0.439	0.500	0.561	0.361	0.450	0.359	0.309	0.470		1.04		0.318	
Selenium (Se)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Silicon (Si)	mg L^{-1}	0.162	0.146	0.122	0.083	0.143	0.146	0.097	0.145		0.107		0.096	
Silver (Ag)	mg L^{-1}	<0.000010	<0.000010	<0.000010	0.000020	0.000037	0.000016	0.000027	0.000014		0.000082		<0.000010	
Sodium (Na)	mg L^{-1}	0.123	0.129	0.292	0.139	0.099	0.121	0.176	0.211		0.243		0.180	
Strontium (Sr)	mg L^{-1}	0.00632	0.00586	0.00222	0.00428	0.00477	0.00465	0.00421	0.00662		0.00525		0.00394	
Sulfur (S)	mg L^{-1}	1.42	1.27	0.84	1.02	1.12	1.11	1.01	1.56		1.20		0.99	
Thallium (Tl)	mg L^{-1}	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Tin (Sn)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Titanium (Ti)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.01000	
Uranium (U)	mg L^{-1}	0.000082	0.000065	0.000377	0.000061	0.000079	0.000070	0.000070	0.000086		0.000057		0.000054	
Vanadium (V)	mg L^{-1}	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010		<0.00100	
Zinc (Zn)	mg L^{-1}	0.0031	0.0042	0.0011	0.0041	0.0049	0.0052	0.0044	0.0079		0.0079		0.0057	

Table F3 - Mine rock BMS-C HCT results cont.

Humidity Cell ID	Units	BMS-C																									
Date Sampled		**2/12/13**	**2/19/13**	**2/26/13**	**3/5/13**	**3/12/13**	**3/19/13**	**3/26/13**	**4/2/13**	**4/9/13**	**4/16/13**	**4/23/13**	**4/30/13**	**5/7/13**	**5/14/13**	**5/21/13**	**5/28/13**	**6/4/13**	**6/11/13**	**6/18/13**	**6/25/13**	**7/2/13**	**7/9/13**	**7/16/13**	**7/23/13**	**7/30/13**	**8/6/13**
Day		**182**	**189**	**196**	**203**	**210**	**217**	**224**	**231**	**238**	**245**	**252**	**259**	**266**	**273**	**280**	**287**	**294**	**301**	**308**	**315**	**322**	**329**	**336**	**343**	**350**	**357**
Week		**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**
Bottle	g																										
Mass Before Adding Water	g	1330.95	1331.68	1304.78	1306.31	1321.75	1311.9	1309.49	1310.14	1322.25	1301.96	1316.63	1325.92	1311.25	1305.38	1300.83	1295.85	1315.4	1323.37	1307.1	1306.32	1284.33	1312.22	1319.78	1294.65	1303.78	1313.91
Mass After Adding Water	g	2331.24	2323.39	2294.95	2311.29	2317.81	2308.8	2314	2310.95	2316.28	2307.33	2312.75	2319.52	2311.03	2297.2	2294.28	2293.4	2312.33	2319.36	2305.09	2300.92	2281.71	2319.58	2320.48	2301.05	2300.18	2317.44
Volume Water Recovered	mL	996.6	1008.3	977.5	978.9	986.2	977.1	982.4	975.4	1004.6	984.5	976.2	986.2	984.6	988.5	990.4	968.9	978.8	995.3	987.1	1003.9	959.1	990.0	1015.6	969.9	978.8	999.5
Mass After Water Recovered	g	1334.66	1315.13	1317.46	1332.39	1331.57	1331.7	1331.61	1335.52	1311.69	1322.84	1336.57	1333.32	1326.44	1308.72	1303.87	1324.53	1333.54	1324.07	1317.98	1297.01	1322.62	1329.63	1304.89	1331.17	1321.42	1317.98
pH		6.59	6.83	6.79	6.43	6.5	6.67	6.58	6.52	6.88	6.48	6.57	6.6	6.81	6.59	6.94	6.58	6.84	6.81	6.64	6.8	6.74	6.77	6.92	6.49	6.15	5.9
Conductivity	uS cm-1	18.63	29.99	20.24	13.14	14.5	18.62	12.25	10.65	22.58	13.4	14.51	16.35	14.13	18.53	19.59	11.19	17.35	15.84	16.05	18.8	16.4	21.94	15.6	19.42	16.16	15.91
Sulphate	mg L^{-1}		4.71			3.00			2.28			3.69			4.23	4.59					5.16				4.65		
Alkalinity (as $CaCO_3$)	mg L^{-1}		<10			<10			<10			<10			<10	<10					<10				<10		
Dissolved Metals																											
Aluminum (Al)	mg L^{-1}		0.0099			0.0015			0.0158			0.0020			0.0037	0.0137					0.0051				0.0021		
Antimony (Sb)	mg L^{-1}		0.00026			0.00010			<0.00010			<0.00010			0.00011	0.00018					0.00013				<0.00010		
Arsenic (As)	mg L^{-1}		0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Barium (Ba)	mg L^{-1}		0.000670			0.000359			0.000322			0.000476			0.000554	0.000600					0.000668				0.000580		
Beryllium (Be)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}		0.000039			0.000019			0.000024			0.000033			0.000031	0.000037					0.000038				0.000033		
Calcium (Ca)	mg L^{-1}		2.56			1.35			0.992			1.53			1.82	1.89					1.95				1.60		
Chromium (Cr)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Copper (Cu)	mg L^{-1}		<0.00020			0.00021			<0.00020			<0.00020			0.00030	0.00024					0.00028				0.00033		
Iron (Fe)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Lead (Pb)	mg L^{-1}		0.000345			0.000279			0.000366			0.000251			0.000321	0.000389					0.000423				0.000656		
Lithium (Li)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	mg L^{-1}		0.163			0.0813			0.0617			0.0836			0.0949	0.0945					0.0946				0.0770		
Manganese (Mn)	mg L^{-1}		0.00850			0.00429			0.00313			0.00538			0.00788	0.00864					0.00989				0.00859		
Molybdenum (Mo)	mg L^{-1}		<0.000050			<0.000050			<0.000050			<0.000050			<0.000050	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}		0.00141			0.00086			0.00063			0.00074			0.00110	0.00082					0.00122				0.00156		
Phosphorus (P)	mg L^{-1}		<0.30			<0.30			<0.30			<0.30			<0.30	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}		0.796			0.319			0.208			0.404			0.529	0.746					0.661				0.491		
Selenium (Se)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}		0.205			0.072			0.058			0.087			0.119	0.183					0.160				0.120		
Silver (Ag)	mg L^{-1}		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				<0.000010		
Sodium (Na)	mg L^{-1}		0.136			0.139			0.117			0.162			0.154	0.193					0.165				0.189		
Strontium (Sr)	mg L^{-1}		0.00709			0.00355			0.00259			0.00383			0.00441	0.00455					0.00458				0.00383		
Sulfur (S)	mg L^{-1}		1.57			1.00			0.76			1.23			1.41	1.53					1.72				1.55		
Thallium (Tl)	mg L^{-1}		<0.000010			<0.000010			0.000019			<0.000010			0.000015	0.000011					<0.000010				<0.000010		
Tin (Sn)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}		0.000072			0.000044			0.000037			0.000044			0.000033	0.000042					0.000030				0.000037		
Vanadium (V)	mg L^{-1}		<0.0010			<0.0010			<0.0010			<0.0010			<0.0010	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}		0.0075			0.0052			0.0048			0.0059			0.0079	0.0066					0.0083				0.0122		

Table F3 - Mine rock BMS-C HCT results cont.

Humidity Cell ID	Units	BMS-C																						
Date Sampled		8/13/13	8/20/13	8/27/13	9/3/13	9/10/13	9/17/13	9/24/13	10/1/13	10/8/13	10/15/13	10/22/13	10/29/13	11/5/13	11/12/13	11/19/13	11/26/13	12/3/13	12/10/13	12/17/13	12/24/13	12/31/13	1/7/14	1/14/14
Day		364	371	378	385	392	399	406	413	420	427	434	441	455	469	483	496	511	525	539	553	567	581	595
Week		52	53	54	55	56	57	58	59	60	61	62	63	65	67	69	71	73	75	77	79	81	83	85
Bottle	g																							
Mass Before Adding Water	g	1299.91	1293.18	1310.87	1287.9	1293.56	1276.63	1301.34	1307.96	1309.3	1291.72	1308.08	1304.47	1281.97	1304.65	1255.39	1231.54	1231.01	1237.22	1271.59	1252.84	1239.11	1239.19	1240.76
Mass After Adding Water	g	2306	2292.06	2303.9	2288.63	2293.83	2278.57	2311.45	2317.92	2309.05	2279.92	2298.7	2294.13	3259.06	3287.7	3222.55	3204.04	3198.2	3223	3264.51	3250.32	3216.56	3230.2	3215.88
Volume Water Recovered	mL	992.5	1000.0	1005.3	973.2	1003.1	971.8	992.3	995.3	998.5	974.7	974.6	970.5	1950.0	2000.0	1900.0	1900.0	1910.0	1910.0	1980.0	1970.0	1950.0	1960.0	1950.0
Mass After Water Recovered	g	1313.55	NR	1298.61	1315.41	1290.76	1306.78	1319.11	1322.61	1310.58	1305.24	1324.08	1323.66	1340.62	1305.59	1351.93	1314.2	1306.38	1315.39	1298.53	1293.67	1300.94	1290.85	1290.33
pH		5.76	5.6	7.44	6.78	6.67	5.59	6.22	6.36	6.27	6.28	6.01	6	5.14	5.73		5.91	5.58	5.94	5.47	5	5.25	5.24	4.64
Conductivity	uS cm-1	16.16	18.67	20.53	12.07	26.78	12.46	16.95	13.44	13.65	17.47	14.73	24.31	27.39	17.91		18.8	34.2	24.02	19.45	18.85	22.97	15.64	25.42
Sulphate	mg L^{-1}	3.90					2.55				4.47			4.02		3.96		6.45		4.41		5.28		5.49
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10					<10				<10			<10		<10		<10		<10		<10		<10
Dissolved Metals																								
Aluminum (Al)	mg L^{-1}	0.0015					<0.0010				0.0016			0.0083		0.0027		0.0030		0.0011		0.0023		0.0038
Antimony (Sb)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Arsenic (As)	mg L^{-1}	<0.00010					<0.00010				0.00010			0.00039		0.00015		0.00021		0.00014		0.00016		0.00116
Barium (Ba)	mg L^{-1}	0.000584					0.000495				0.000824			0.00167		0.000863		0.00150		0.00105		0.00148		0.00173
Beryllium (Be)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Bismuth (Bi)	mg L^{-1}	<0.00050					<0.00050				<0.00050			<0.00050		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050
Boron (B)	mg L^{-1}	<0.010					<0.010				<0.010			0.011		<0.010		<0.010		<0.010		<0.010		<0.010
Cadmium (Cd)	mg L^{-1}	0.000059					0.000030				0.000057			0.000097		0.000065		0.000109		0.000082		0.000112		0.000130
Calcium (Ca)	mg L^{-1}	1.51					1.11				1.49			1.79		1.33		2.05		1.44		1.71		1.86
Chromium (Cr)	mg L^{-1}	<0.00010					<0.00010				0.00050			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Cobalt (Co)	mg L^{-1}	0.00011					<0.00010				0.00017			0.00023		0.00018		0.00036		0.00032		0.00045		0.00049
Copper (Cu)	mg L^{-1}	0.00057					0.00082				0.00042			0.00135		0.00023		0.00034		0.00029		0.00050		0.00052
Iron (Fe)	mg L^{-1}	<0.010					<0.010				<0.010			<0.010		<0.010		<0.010		<0.010		0.024		0.037
Lead (Pb)	mg L^{-1}	0.000643					0.000678				0.00106			0.00373		0.00126		0.00221		0.00187		0.00291		0.00428
Lithium (Li)	mg L^{-1}	<0.00050					<0.00050				<0.00050			<0.00050		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050
Magnesium (Mg)	mg L^{-1}	0.0766					0.0494				0.0648			0.105		0.0543		0.0803		0.0612		0.0669		0.0738
Manganese (Mn)	mg L^{-1}	0.00768					0.00725				0.0111			0.0157		0.0114		0.0216		0.0182		0.0223		0.0247
Molybdenum (Mo)	mg L^{-1}	<0.000050					<0.000050				<0.000050			<0.000050		<0.000050		<0.000050		<0.000050		<0.000050		<0.000050
Nickel (Ni)	mg L^{-1}	0.00154					0.00123				0.00226			0.00319		0.00252		0.00636		0.00535		0.00667		0.00764
Phosphorus (P)	mg L^{-1}	<0.30					<0.30				<0.30			<0.30		<0.30		<0.30		<0.30		<0.30		<0.30
Potassium (K)	mg L^{-1}	0.432					0.273				0.519			0.414		0.581		0.568		0.349		0.378		0.620
Selenium (Se)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Silicon (Si)	mg L^{-1}	0.151					0.068				3.31			1.12		0.083		0.108		0.122		0.093		0.116
Silver (Ag)	mg L^{-1}	<0.000010					<0.000010				<0.000010			<0.000010		<0.000010		<0.000010		<0.000010		<0.000010		<0.000010
Sodium (Na)	mg L^{-1}	0.183					0.107				0.121			1.21		0.139		0.142		0.187		0.205		0.233
Strontium (Sr)	mg L^{-1}	0.00355					0.00254				0.00337			0.00401		0.00293		0.00470		0.00321		0.00412		0.00420
Sulfur (S)	mg L^{-1}	1.30					0.85				1.49			1.34		1.32		2.15		1.47		1.76		1.83
Thallium (Tl)	mg L^{-1}	<0.000010					<0.000010				<0.000010			<0.000010		<0.000010		<0.000010		<0.000010		<0.000010		<0.000010
Tin (Sn)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Titanium (Ti)	mg L^{-1}	<0.010					<0.010				<0.010			<0.010		<0.010		<0.010		<0.010		<0.010		<0.010
Uranium (U)	mg L^{-1}	0.000027					0.000017				0.000037			0.000135		0.000029		0.000047		0.000044		0.000062		0.000094
Vanadium (V)	mg L^{-1}	<0.0010					<0.0010				<0.0010			<0.0010		<0.0010		<0.0010		<0.0010		<0.0010		<0.0010
Zinc (Zn)	mg L^{-1}	0.0107					0.0096				0.0158			0.0312		0.0197		0.0351		0.0308		0.0406		0.0473

Table F4 - Mine rock BS-A HCT results

Humidity Cell ID	Units	BS-A																									
Date Sampled		**8/14/12**	**8/21/12**	**8/28/12**	**9/4/12**	**9/11/12**	**9/18/12**	**9/25/12**	**10/2/12**	**10/9/12**	**10/16/12**	**10/23/12**	**10/30/12**	**11/6/12**	**11/13/12**	**11/20/12**	**11/27/12**	**12/4/12**	**12/11/12**	**12/18/12**	**12/24/12**	**1/2/13**	**1/9/13**	**1/15/13**	**1/22/13**	**1/29/13**	**2/5/13**
Day		**0**	**7**	**14**	**21**	**28**	**35**	**42**	**49**	**56**	**63**	**70**	**77**	**84**	**91**	**98**	**105**	**112**	**119**	**126**	**132**	**141**	**148**	**155**	**161**	**168**	**175**
Week		**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	
Mass Before Adding Water	g	1274.13	1332.73	1315.88	1316.6	1315.38	1308.79	1316.51	1307.2	1300.2	1313.75	1310.2	1315.31	1323.34	1323.7	1321.69	1328.03	1313.05	1315.68	1322.24	1332.05	1319.05	1319.37	1332.31	1318.68	1330.29	1319.79
Mass After Adding Water	g	2268.04	2332.47	2233.09	2308.31	2300.95	2295.96	2237.31	2231.21	2288.17	2310.56	2306.82	2300.93	2312.63	2312.1	2323.61	2327.91	2324.64	2317.43	2323.83	2339.41	2316.94	2327.55	2336.24	2335.83	2334.36	2322.59
Volume Water Recovered	mL	925.83	1009.79	919.98	990.95	990.13	978.0	927.6	928.7	969.7	997.0	988.1	975.3	986.4	987.3	989.3	1012.6	1005.1	992.3	990.1	1016.6	996.1	993.2	1011.6	1003.4	1011.8	995.5
Mass After Water Recovered	g	1342.21	1322.68	1313.11	1317.36	1310.82	1318.01	1309.67	1302.51	1318.43	1313.54	1318.71	1325.61	1326.24	1324.8	1334.28	1315.31	1319.55	1325.14	1333.78	1322.79	1320.81	1334.396	1324.67	1332.42	1322.54	1327.11
pH		7.75	7.99	7.37	7.64	7.62	7.28	7.5	7.22	7.54	6.69	7.03	7.08	6.92	6.95	6.99	6.83	6.71	6.51	6.52	6.53	6.54	6.59	6.64	6.34	6.49	6.26
Conductivity	uS cm-1	55.2	67	43.3	25.59	32.7	16.73	21.49	23.29	16.87	14.05	14.29	14.75	13.25	15.06	15.76	13.65	12.35	13.78	11.26	14.54	15.93	12.46	13.02	12.15	12.71	11.08
Sulphate	mg L^{-1}	7.56	17.64	10.71	5.97	4.62	3.84	3.72	4.26	3.24	3.21	3.12	3.03	2.79	3.03	2.64	2.46	2.22	2.67	2.49	2.73	3.18		2.85		2.43	
Alkalinity (as $CaCO_3$)	mg L^{-1}	< 10.0	< 10.0	<10.0	<10.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
Dissolved Metals																											
Aluminum (Al)	mg L^{-1}	0.0408	0.0318	0.0575	0.0218	0.0063	0.0122	0.0387	0.0366	0.0122	0.0088	0.0126	0.0071	0.0042	0.0073	0.0063	0.0036	0.0029	0.0021	0.0021	0.0025	0.0018		0.0016		0.0020	
Antimony (Sb)	mg L^{-1}	< 0.0001	0.00022	0.00019	0.00013	0.00021	<0.00010	0.00010	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Arsenic (As)	mg L^{-1}	0.00026	0.00045	0.00072	0.00073	0.00043	0.00046	0.00076	0.00099	0.00060	0.00056	0.00069	0.00066	0.00052	0.00080	0.00090	0.00064	0.00069	0.00059	0.00062	0.00078	0.00073		0.00044		0.00048	
Barium (Ba)	mg L^{-1}	0.00154	0.00253	0.00226	0.00185	0.00150	0.00136	0.00147	0.00194	0.00141	0.00118	0.00119	0.00118	0.00119	0.00137	0.00144	0.00131	0.00122	0.00152	0.00126	0.00165	0.00180		0.00169		0.00159	
Beryllium (Be)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Bismuth (Bi)	mg L^{-1}	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Boron (B)	mg L^{-1}	< 0.01	< 0.01	<0.01	<0.01	<0.010	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	<0.010		<0.010		0.013	
Cadmium (Cd)	mg L^{-1}	< 0.00001	0.000010	<0.00001	<0.00001	0.000134	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000012		<0.000010		<0.000010	
Calcium (Ca)	mg L^{-1}	3.09	5.55	4.23	2.50	1.87	1.47	2.00	2.34	1.15	1.43	1.43	1.35	1.21	1.41	1.52	1.37	1.11	1.30	1.13	1.44	1.51		1.46		1.33	
Chromium (Cr)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	0.00010	<0.00010	<0.00010	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Cobalt (Co)	mg L^{-1}	0.00229	0.00379	0.00089	0.00127	0.00146	0.00110	0.00091	0.00078	0.00086	0.00097	0.00115	0.00115	0.00111	0.00121	0.00142	0.00118	0.00113	0.00151	0.00133	0.00199	0.00233		0.00207		0.00182	
Copper (Cu)	mg L^{-1}	< 0.0002	< 0.0002	<0.0002	<0.0002	0.00023	<0.00020	<0.00020	<0.00020	<0.00020	0.00238	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	0.00060	0.00055		0.00074		0.00063	
Iron (Fe)	mg L^{-1}	0.020	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.010	
Lead (Pb)	mg L^{-1}	< 0.00005	< 0.00005	<0.00005	<0.00005	0.00392	<0.000050	<0.000050	<0.000050	<0.000050	0.000128	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000051	0.000069		0.000061		0.000076	
Lithium (Li)	mg L^{-1}	< 0.0005	0.00051	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Magnesium (Mg)	mg L^{-1}	0.595	1.23	0.737	0.420	0.292	0.219	0.249	0.275	0.154	0.159	0.154	0.140	0.121	0.129	0.133	0.114	0.0966	0.103	0.0915	0.109	0.110		0.0997		0.0811	
Manganese (Mn)	mg L^{-1}	0.0136	0.0208	0.0129	0.00926	0.00753	0.00616	0.00894	0.00960	0.00656	0.00670	0.00723	0.00714	0.00753	0.00809	0.00906	0.00793	0.00732	0.00894	0.00771	0.0104	0.0117		0.0119		0.0102	
Molybdenum (Mo)	mg L^{-1}	0.000094	0.000217	0.000098	0.000055	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050		<0.000050	
Nickel (Ni)	mg L^{-1}	0.0241	0.0306	0.00876	0.00909	0.00865	0.00696	0.00585	0.00537	0.00501	0.00562	0.00640	0.00653	0.00576	0.00683	0.00784	0.00669	0.00586	0.00783	0.00685	0.00998	0.0118		0.0104		0.00946	
Phosphorus (P)	mg L^{-1}	< 0.3	< 0.3	<0.3	<0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30		0.3	
Potassium (K)	mg L^{-1}	1.51	1.78	1.49	0.917	104	0.486	0.739	0.889	0.505	0.436	0.478	0.413	0.368	0.526	0.606	0.508	0.369	0.529	0.463	0.643	1.01		0.452		0.378	
Selenium (Se)	mg L^{-1}	0.00024	0.00069	0.00030	0.00013	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Silicon (Si)	mg L^{-1}	0.146	0.327	0.374	0.251	0.167	0.139	0.225	0.239	0.133	0.112	0.122	0.109	0.093	0.129	0.125	0.096	0.082	0.094	0.089	0.123	0.103		0.089		0.085	
Silver (Ag)	mg L^{-1}	< 0.00001	< 0.00001	<0.00001	<0.00001	0.0413	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000824	<0.000010	<0.000010	<0.000010	<0.000010	0.000020	0.000024	0.000024	0.000524		<0.000010		0.000010	
Sodium (Na)	mg L^{-1}	0.508	0.606	0.343	0.230	0.237	0.155	0.178	0.169	0.135	0.122	0.140	0.127	0.169	0.098	0.116	0.120	0.120	0.104	0.121	0.177	0.171		0.244		0.184	
Strontium (Sr)	mg L^{-1}	0.00891	0.0188	0.0129	0.00756	0.00543	0.00427	0.00510	0.00580	0.00294	0.00359	0.00351	0.00324	0.00288	0.00321	0.00337	0.00302	0.00249	0.00286	0.00236	0.00288	0.00302		0.00277		0.00242	
Sulfur (S)	mg L^{-1}	2.52	5.88	3.57	1.99	1.54	1.28	1.24	1.42	1.08	1.07	1.04	1.01	0.93	1.01	0.88	0.82	0.74	0.89	0.83	0.91	1.06		0.95		0.81	
Thallium (Tl)	mg L^{-1}	< 0.00001	< 0.00001	0.000011	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Tin (Sn)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Titanium (Ti)	mg L^{-1}	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.01000	
Uranium (U)	mg L^{-1}	0.000098	0.000616	0.000264	0.000252	0.000284	0.000251	0.000248	0.000228	0.000214	0.000246	0.000204	0.000235	0.000200	0.000203	0.000197	0.000195	0.000181	0.000212	0.000154	0.000181	0.000191		0.000185		0.000153	
Vanadium (V)	mg L^{-1}	< 0.001	< 0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010		<0.0010	
Zinc (Zn)	mg L^{-1}	< 0.001	< 0.001	<0.001	<0.001	0.0079	0.0033	<0.0010	0.0013	<0.0010	0.0035	0.0013	0.0011	<0.0010	<0.0010	0.0012	<0.0010	0.0025	<0.0010	<0.0010	0.0017	0.0031		0.0017		0.0023	

Table F4 - Mine rock BS-A HCT results cont.

Humidity Cell ID	Units	BS-A												
Date Sampled		2/12/13	2/19/13	2/26/13	3/5/13	3/12/13	3/19/13	3/26/13	4/2/13	4/9/13	4/16/13	4/23/13	4/30/13	5/7/13
Day		182	189	196	203	210	217	224	231	238	245	252	259	266
Week		26	27	28	29	30	31	32	33	34	35	36	37	38
Bottle	g													
Mass Before Adding Water	g	1322.85	1315.17	1287.23	1291.7	1315.37	1320.07	1315.22	1310.01	1299.77	1286.18	1313.86	1303.23	1305.42
Mass After Adding Water	g	2336.76	2308.58	2278.49	2292.96	2313.75	2319.25	2317.86	2311.06	1296.05	2291.92	2311.39	2298.37	2303.43
Volume Water Recovered	mL	1017.0	1009.6	977.0	970.6	981.9	994.0	999.6	986.7	-5.6	966.7	993.5	983.4	984.7
Mass After Water Recovered	g	1319.81	1298.99	1301.45	1322.38	1331.9	1325.27	1318.22	1324.39	1301.67	1325.23	1317.9	1314.94	1318.78
pH		6.59	6.73	6.63	6.44	6.54	6.69	6.52	6.48	6.73	6.47	6.48	6.81	6.82
Conductivity	uS cm-1	13.1	16.42	13.34	12.01	12	17.58	11.23	9.52	16.6	2.08	2.77	13.12	12.27
Sulphate	mg L^{-1}		3.06			2.19			2.01			2.37		
Alkalinity (as $CaCO_3$)	mg L^{-1}		<10			<10			<10			<10		
Dissolved Metals														
Aluminum (Al)	mg L^{-1}		0.0059			0.0016			0.0015			0.0014		
Antimony (Sb)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010		
Arsenic (As)	mg L^{-1}		0.00066			0.00041			0.00033			0.00024		
Barium (Ba)	mg L^{-1}		0.00217			0.00144			0.00113			0.00150		
Beryllium (Be)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010		
Bismuth (Bi)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050		
Boron (B)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010		
Cadmium (Cd)	mg L^{-1}		0.000013			0.000012			<0.000010			0.000063		
Calcium (Ca)	mg L^{-1}		1.59			1.15			0.899			0.979		
Chromium (Cr)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010		
Cobalt (Co)	mg L^{-1}		0.00257			0.00132			0.00104			0.00103		
Copper (Cu)	mg L^{-1}		<0.00020			<0.00020			<0.00020			<0.00020		
Iron (Fe)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010		
Lead (Pb)	mg L^{-1}		<0.000050			<0.000050			<0.000050			0.000062		
Lithium (Li)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050		
Magnesium (Mg)	mg L^{-1}		0.0994			0.0639			0.0508			0.0514		
Manganese (Mn)	mg L^{-1}		0.0119			0.00488			0.00367			0.00291		
Molybdenum (Mo)	mg L^{-1}		<0.000050			<0.000050			<0.000050			<0.000050		
Nickel (Ni)	mg L^{-1}		0.0132			0.00744			0.00605			0.00631		
Phosphorus (P)	mg L^{-1}		<0.30			<0.30			<0.30			<0.30		
Potassium (K)	mg L^{-1}		0.613			0.312			0.218			0.272		
Selenium (Se)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010		
Silicon (Si)	mg L^{-1}		0.122			0.057			<0.050			0.052		
Silver (Ag)	mg L^{-1}		<0.000010			0.000018			<0.000010			<0.000010		
Sodium (Na)	mg L^{-1}		0.111			0.124			0.107			0.153		
Strontium (Sr)	mg L^{-1}		0.00284			0.00179			0.00137			0.00144		
Sulfur (S)	mg L^{-1}		1.02			0.73			0.67			0.79		
Thallium (Tl)	mg L^{-1}		<0.000010			0.000011			<0.000010			<0.000010		
Tin (Sn)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010		
Titanium (Ti)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010		
Uranium (U)	mg L^{-1}		0.000180			0.000129			0.000093			0.000075		
Vanadium (V)	mg L^{-1}		<0.0010			<0.0010			<0.0010			<0.0010		
Zinc (Zn)	mg L^{-1}		0.0012			0.0029			0.0013			<0.0010		

Humidity Cell ID	Units	BS-A												
Date Sampled		5/14/13	5/21/13	5/28/13	6/4/13	6/11/13	6/18/13	6/25/13	7/2/13	7/9/13	7/16/13	7/23/13	7/30/13	8/6/13
Day		273	280	287	294	301	308	315	322	329	336	343	350	357
Week		39	40	41	42	43	44	45	46	47	48	49	50	51
Bottle	g													
Mass Before Adding Water	g	1289.84	1289.1	1290.84	1321.25	1330.29	1300.29	1295.96	1283.85	1317.8	1315.94	1306.99	1311.06	1324.75
Mass After Adding Water	g	2281.34	2282.93	2290.23	2322.85	2325.11	2296.33	2290.74	2278.81	2326.26	2320.44	2305.25	2310.71	2330.62
Volume Water Recovered	mL	983.0	984.5	964.1	987.7	999.5	977.6	994.5	954.8	994.7	994.0	988.5	979.8	1019.6
Mass After Water Recovered	g	1298.38	1298.47	1326.17	1335.18	1325.59	1318.72	1296.22	1324.04	1331.54	1326.42	1316.74	1330.96	1311.07
pH		6.62	6.82	6.65	6.76	6.76	6.74	6.82	6.69	6.99	6.99	6.8	6.71	5.96
Conductivity	uS cm-1	13.58	13.38	10.02	11.84	11.94	13.45	13.83	11.52	13.42	13.16	13.87	11.89	12.15
Sulphate	mg L^{-1}	2.94	3.00					3.00				3.00		
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10	<10					<10				<10		
Dissolved Metals														
Aluminum (Al)	mg L^{-1}	0.0035	0.0060					0.0043				0.0022		
Antimony (Sb)	mg L^{-1}	<0.00010	<0.00010					<0.00010				<0.00010		
Arsenic (As)	mg L^{-1}	0.00029	0.00041					0.00050				0.00037		
Barium (Ba)	mg L^{-1}	0.00196	0.00210					0.00236				0.00198		
Beryllium (Be)	mg L^{-1}	<0.00010	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}	<0.00050	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}	<0.010	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}	0.000012	<0.000010					<0.000010				<0.000010		
Calcium (Ca)	mg L^{-1}	1.23	1.25					1.37				1.28		
Chromium (Cr)	mg L^{-1}	<0.00010	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}	0.00169	0.00148					0.00172				0.00162		
Copper (Cu)	mg L^{-1}	0.00030	0.00024					0.00026				0.00021		
Iron (Fe)	mg L^{-1}	<0.010	<0.010					<0.010				<0.010		
Lead (Pb)	mg L^{-1}	<0.000050	<0.000050					<0.000050				0.000074		
Lithium (Li)	mg L^{-1}	<0.00050	<0.00050					<0.00050				0.00057		
Magnesium (Mg)	mg L^{-1}	0.0597	0.0602					0.0631				0.0544		
Manganese (Mn)	mg L^{-1}	0.00382	0.00366					0.00383				0.00347		
Molybdenum (Mo)	mg L^{-1}	<0.000050	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}	0.00947	0.00855					0.00941				0.00877		
Phosphorus (P)	mg L^{-1}	<0.30	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}	0.419	0.564					0.524				0.397		
Selenium (Se)	mg L^{-1}	<0.00010	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}	0.073	0.105					0.096				0.073		
Silver (Ag)	mg L^{-1}	<0.000010	<0.000010					<0.000010				<0.000010		
Sodium (Na)	mg L^{-1}	0.163	0.142					0.153				0.151		
Strontium (Sr)	mg L^{-1}	0.00176	0.00173					0.00190				0.00179		
Sulfur (S)	mg L^{-1}	0.98	1.00					1.19				1.17		
Thallium (Tl)	mg L^{-1}	<0.000010	<0.000010					<0.000010				<0.000010		
Tin (Sn)	mg L^{-1}	<0.00010	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}	<0.010	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}	0.000089	0.000105					0.000089				0.000072		
Vanadium (V)	mg L^{-1}	<0.0010	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}	0.0011	0.0014					0.0011				0.0014		

Table F4 - Mine rock BS-A HCT results cont.

Humidity Cell ID	Units	BS-A											
Date Sampled		8/13/13	8/20/13	8/27/13	9/3/13	9/10/13	9/17/13	9/24/13	10/1/13	10/8/13	10/15/13	10/22/13	10/29/13
Day		364	371	378	385	392	399	406	413	420	427	434	441
Week		52	53	54	55	56	57	58	59	60	61	62	63
Bottle	g												
Mass Before Adding Water	g	1305.63	1306.21	1307.35	1287.9	1304.53	1306.46	1304.37	1321.63	1305.76	1311.06	1289.36	1285.49
Mass After Adding Water	g	2317.32	2305.13	2300.32	2288.63	2301.03	2308.01	2315.56	2325.4	2309.78	2297.81	2282.4	2275.24
Volume Water Recovered	mL	1002.3	985.0	1006.2	973.2	983.3	995.4	988.8	1008.0	992.0	1005.5	968.4	970.4
Mass After Water Recovered	g	1315.06	NR	1294.08	1315.41	1317.73	1312.61	1326.79	1317.37	1317.83	1292.32	1314.04	1304.86
pH		6.83	5.55	7.18	6.78	6.65	4.44	6.42	6.58	6.3	6.46	6.02	6.03
Conductivity	uS cm-1	15.65	14.16	17.25	12.07	12.39	131.4	10.78	13.1	10.19	12.67	11.69	18.84
Sulphate	mg L^{-1}	3.00				`	2.04				2.67		
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10					<10				<10		
Dissolved Metals													
Aluminum (Al)	mg L^{-1}	0.0101					<0.0010				0.0015		
Antimony (Sb)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Arsenic (As)	mg L^{-1}	0.00083					0.00026				0.00033		
Barium (Ba)	mg L^{-1}	0.00185					0.00178				0.00224		
Beryllium (Be)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}	<0.000010					<0.000010				0.000010		
Calcium (Ca)	mg L^{-1}	1.03					0.914				1.06		
Chromium (Cr)	mg L^{-1}	0.00012					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}	0.00182					0.00177				0.00242		
Copper (Cu)	mg L^{-1}	0.00057					0.00083				0.00030		
Iron (Fe)	mg L^{-1}	0.022					<0.010				<0.010		
Lead (Pb)	mg L^{-1}	0.000289					0.00201				0.000079		
Lithium (Li)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	mg L^{-1}	0.0813					0.0447				0.0501		
Manganese (Mn)	mg L^{-1}	0.00452					0.00333				0.00459		
Molybdenum (Mo)	mg L^{-1}	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}	0.00927					0.00881				0.0115		
Phosphorus (P)	mg L^{-1}	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}	0.451					0.316				0.431		
Selenium (Se)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}	0.112					0.057				3.18		
Silver (Ag)	mg L^{-1}	<0.000010					<0.000010				0.000012		
Sodium (Na)	mg L^{-1}	0.142					0.091				0.118		
Strontium (Sr)	mg L^{-1}	0.00156					0.00131				0.00144		
Sulfur (S)	mg L^{-1}	0.96					0.68				0.89		
Thallium (Tl)	mg L^{-1}	<0.000010					0.000011				<0.000010		
Tin (Sn)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}	0.000182					0.000049				0.000074		
Vanadium (V)	mg L^{-1}	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}	0.0020					0.0016				0.0015		

Table F5 - Mine rock BS-B HCT results

Humidity Cell ID	Units	BS-B																									
Date Sampled		8/14/12	8/21/12	8/28/12	9/4/12	9/11/12	9/18/12	9/25/12	10/2/12	10/9/12	10/16/12	10/23/12	10/30/12	11/6/12	11/13/12	11/20/12	11/27/12	12/4/12	12/11/12	12/18/12	12/24/12	1/2/13	1/9/13	1/15/13	1/22/13	1/29/13	2/5/13
Day		0	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	132	141	148	155	161	168	175
Week		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	
Mass Before Adding Water	g	1275.29	1347.72	1327.97	1315.18	1319.67	1331.68	1322.76	1317.62	1313.87	1327.74	1322.66	1320.25	1325.43	1316.74	1321.59	1329.05	1312.39	1324.63	1319.35	1321.76	1325.9	1335.81	1320.54	1320.83	1324.49	1323.66
Mass After Adding Water	g	2260.56	2347.97	2243.29	2306.66	2307.41	2318.86	2244.28	2226.6	2304.26	2321.27	2322.34	2313.67	2311.44	2307.5	2326.36	2329.3	2313.71	2330.5	2329.02	2320.06	2325.02	2335.75	2332.29	2321.22	2327.32	2327.49
Volume Water Recovered	mL	906.35	1013.5	924.99	982.54	973.22	994.3	924.6	910.8	934.2	994.4	999.9	984.7	991.8	982.5	994.3	1011.2	989.1	1009.0	1003.8	987.9	987.5	1011.1	1007.6	993.8	997.5	996.5
Mass After Water Recovered	g	1354.21	1334.47	1318.3	1324.12	1334.19	1324.6	1319.65	1315.81	1370.1	1326.87	1322.43	1328.98	1319.6	1324.97	1332.05	1318.15	1324.64	1321.5	1325.19	1332.18	1337.56	1324.67	1324.67	1327.45	1329.85	1330.95
pH		7.54	8.1	7.51	7.58	7.3	7.65	7.49	7.63	7.77	6.94	7.14	6.99	6.94	7.09	7.08	6.83	6.71	6.75	6.86	6.75	6.91	6.51	6.64	6.45	6.55	6.42
Conductivity	uS cm-1	72.9	67.9	42.5	20.71	26.34	13	24.4	26.6	31.5	15.97	15.18	14.3	14.72	15.52	16.39	12.89	10.79	13.59	12.56	15.23	19.88	11.27	13.02	12.88	12.73	11.46
Sulphate	$mg L^{-1}$	10.77	16.14	9.18	4.68	4.26	2.82	4.14	4.50	3.24	3.18	2.94	2.61	2.64	3.45	2.58	2.01	1.89	2.13	2.31	2.34	3.06		2.31		2.22	
Alkalinity (as $CaCO_3$)	$mg L^{-1}$	< 10.0	< 10.0	<10.0	<10.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
Dissolved Metals																											
Aluminum (Al)	$mg L^{-1}$	0.0644	0.0578	0.0706	0.0265	0.0192	0.0107	0.0482	0.0764	0.0198	0.0139	0.0154	0.0077	0.0636	0.0118	0.0109	0.0206	0.0041	0.0046	0.0053	0.0060	0.0039		0.0036		0.0029	
Antimony (Sb)	$mg L^{-1}$	0.00012	0.00028	0.00022	0.00011	0.00011	<0.00010	0.00011	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Arsenic (As)	$mg L^{-1}$	0.00025	0.00028	0.00025	0.00013	0.00013	<0.00010	0.00017	0.00020	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	0.00011	0.00013	<0.00010	<0.00010	<0.00010	<0.00010	0.00011		<0.00010		<0.00010	
Barium (Ba)	$mg L^{-1}$	0.00836	0.00511	0.00275	0.00174	0.00171	0.00102	0.00166	0.00212	0.00131	0.00136	0.00117	0.00112	0.00142	0.00107	0.00114	0.00115	0.000934	0.00113	0.00112	0.00125	0.00169		0.00121		0.00113	
Beryllium (Be)	$mg L^{-1}$	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Bismuth (Bi)	$mg L^{-1}$	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Boron (B)	$mg L^{-1}$	< 0.01	0.010	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		0.012	
Cadmium (Cd)	$mg L^{-1}$	< 0.00001	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Calcium (Ca)	$mg L^{-1}$	4.59	6.01	3.94	2.08	1.98	1.21	2.56	3.03	1.58	1.75	1.62	1.42	1.44	1.53	1.60	1.34	1.04	1.44	1.37	1.64	1.96		1.56		1.35	
Chromium (Cr)	$mg L^{-1}$	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00013	0.00012	<0.00010	0.00017	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		0.00010		<0.00010	
Cobalt (Co)	$mg L^{-1}$	0.00044	0.00028	0.00013	0.00013	0.00016	0.00016	0.00010	<0.00010	0.00011	0.00012	0.00013	0.00016	0.00019	0.00014	0.00016	0.00017	0.00013	0.00018	0.00010	0.00013	0.00019		0.00017		0.00014	
Copper (Cu)	$mg L^{-1}$	0.00076	0.00037	0.00041	0.00022	0.00028	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	0.00048	0.00063		0.00066		0.00067	
Iron (Fe)	$mg L^{-1}$	0.071	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.052	<0.010	<0.010	0.013	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.010	
Lead (Pb)	$mg L^{-1}$	0.000847	0.000241	0.000179	0.000076	0.000166	0.000091	0.000149	0.000314	0.000146	0.000132	0.000122	0.000113	0.000869	0.000153	0.000225	0.000345	0.000195	0.000225	0.000201	0.000273	0.000364		0.000280		0.000272	
Lithium (Li)	$mg L^{-1}$	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Magnesium (Mg)	$mg L^{-1}$	0.708	1.05	0.561	0.261	0.240	0.133	0.227	0.245	0.129	0.134	0.120	0.101	0.134	0.0965	0.0941	0.0901	0.0607	0.0670	0.0669	0.0783	0.0865		0.0672		0.0550	
Manganese (Mn)	$mg L^{-1}$	0.0219	0.0167	0.0102	0.00663	0.00633	0.00396	0.00919	0.0106	0.00653	0.00719	0.00691	0.00582	0.00891	0.00643	0.00734	0.00712	0.00556	0.00755	0.00726	0.00902	0.0120		0.0104		0.00890	
Molybdenum (Mo)	$mg L^{-1}$	0.000143	0.000277	0.000125	<0.00005	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050		<0.000050	
Nickel (Ni)	$mg L^{-1}$	0.00456	0.00351	0.00128	0.00084	0.00101	0.00083	0.00059	<0.00050	<0.00050	0.00063	<0.00050	0.00063	0.00076	0.00061	0.00066	0.00067	0.00054	0.00069	<0.00050	0.00054	0.00075		0.00065		0.00052	
Phosphorus (P)	$mg L^{-1}$	< 0.3	< 0.3	<0.3	<0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30		0.3	
Potassium (K)	$mg L^{-1}$	1.92	2.03	1.44	0.723	0.891	0.359	0.901	1.05	1.54	0.500	0.504	0.382	0.466	0.619	0.693	0.441	0.295	0.494	0.469	0.603	0.613		0.443		0.339	
Selenium (Se)	$mg L^{-1}$	0.00013	0.00018	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Silicon (Si)	$mg L^{-1}$	0.194	0.401	0.386	0.203	0.188	0.107	0.261	0.318	0.163	0.144	0.137	0.108	0.246	0.127	0.138	0.130	0.078	0.101	0.105	0.126	0.131		0.101		0.101	
Silver (Ag)	$mg L^{-1}$	< 0.00001	< 0.00001	<0.00001	<0.00001	0.000431	<0.000010	<0.000010	<0.000010	0.000133	0.000030	<0.000010	<0.000010	0.000123	0.000011	0.000017	<0.000010	<0.000010	0.000023	0.000019	0.000028	0.000016		0.000012		<0.000010	
Sodium (Na)	$mg L^{-1}$	1.47	1.41	0.612	0.304	0.270	0.172	0.240	0.231	0.148	0.151	0.162	0.138	0.179	0.114	0.133	0.114	0.110	0.111	0.129	0.163	0.193		0.204		0.185	
Strontium (Sr)	$mg L^{-1}$	0.0201	0.0281	0.0173	0.00829	0.00806	0.00486	0.00877	0.00999	0.00533	0.00581	0.00531	0.00460	0.00462	0.00470	0.00481	0.00402	0.00304	0.00416	0.00370	0.00429	0.00497		0.00386		0.00330	
Sulfur (S)	$mg L^{-1}$	3.59	5.38	3.06	1.56	1.42	0.94	1.38	1.50	1.08	1.06	0.98	0.87	0.88	1.15	0.86	0.67	0.63	0.71	0.77	0.78	1.02		0.77		0.74	
Thallium (Tl)	$mg L^{-1}$	< 0.00001	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Tin (Sn)	$mg L^{-1}$	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Titanium (Ti)	$mg L^{-1}$	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.01000	
Uranium (U)	$mg L^{-1}$	0.000135	0.000877	0.000618	0.000287	0.000310	0.000226	0.000330	0.000380	0.000286	0.000347	0.000262	0.000266	0.000298	0.000265	0.000226	0.000219	0.000209	0.000245	0.000239	0.000277	0.000298		0.000233		0.000201	
Vanadium (V)	$mg L^{-1}$	< 0.001	< 0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010		<0.0010	
Zinc (Zn)	$mg L^{-1}$	0.0011	0.0046	0.0013	0.0042	0.0032	0.0021	0.0013	<0.0010	<0.0010	0.0027	0.0015	0.0018	0.0022	0.0015	<0.0010	0.0012	0.0014	<0.0010	<0.0010	0.0019	0.0041		0.0020		0.0027	

Table F5 - Mine rock BS-B HCT results cont.

Humidity Cell ID	Units	BS-B																									
Date Sampled		2/12/13	2/19/13	2/26/13	3/5/13	3/12/13	3/19/13	3/26/13	4/2/13	4/9/13	4/16/13	4/23/13	4/30/13	5/7/13	5/14/13	5/21/13	5/28/13	6/4/13	6/11/13	6/18/13	6/25/13	7/2/13	7/9/13	7/16/13	7/23/13	7/30/13	8/6/13
Day		182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	322	329	336	343	350	357
Week		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Bottle	g																										
Mass Before Adding Water	g	1327.2	1321.96	1304.01	1286.49	1288.38	1323.79	1264.7	1309.25	1304.76	1298.19	1321.52	1320.04	1291.75	1312.36	1293.31	1288.44	1317.33	1325.91	1310.64	1302.81	1292.09	1315.17	1326.02	1321.52	1308.54	1294.56
Mass After Adding Water	g	2328.71	2313.04	2296.42	2288.32	2285.22	2345.23	2265.48	2314.63	2299.98	2306.28	2319.13	2311.56	2290.93	2304.64	2285.59	2285.71	2314.65	2318.96	2305.45	2297.07	2291.51	2320.67	2326.05	2330.54	2308.91	2295.82
Volume Water Recovered	mL	998.8	1003.5	988.8	958.9	952.6	1014.8	947.2	1001.4	993.1	977.7	990.7	992.2	972.2	1004.6	985.1	961.8	983.3	1003.1	978.0	998.0	971.8	980.7	997.8	995.8	988.6	980.3
Mass After Water Recovered	g	1329.9	1309.55	1307.61	1329.42	1332.63	1330.41	1318.25	1313.26	1306.91	1328.58	1328.44	1319.36	1318.73	1300	1300.54	1323.92	1331.32	1315.82	1327.48	1299.12	1319.7	1340.01	1328.22	1334.73	1320.27	1315.54
pH		6.66	6.96	6.77	6.83	6.6	6.85	6.63	6.64	6.69	6.62	6.72	6.81	6.51	6.81	6.84	6.97	6.88	7.19	6.72	6.94	7.37	6.91	7	7.2	6.74	5.99
Conductivity	uS cm-1	15.95	19.25	17.03	16.38	14.24	15.01	10.55	12.66	17.36	12.24	12.46	16.13	8.08	16.51	15.31	11.62	15.05	13.03	14.79	18.11	15.32	14.15	16.07	16.72	14.51	13.25
Sulphate	$mg\ L^{-1}$		2.91			2.07			2.52			2.58			3.00	3.15					3.96				3.36		
Alkalinity (as $CaCO_3$)	$mg\ L^{-1}$		<10			<10			<10			<10			<10	<10					<10				<10		
Dissolved Metals																											
Aluminum (Al)	$mg\ L^{-1}$		0.0136			0.0055			0.0131			0.0023			0.0068	0.0128					0.0126				0.0039		
Antimony (Sb)	$mg\ L^{-1}$		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Arsenic (As)	$mg\ L^{-1}$		<0.00010			<0.00010			0.00023			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Barium (Ba)	$mg\ L^{-1}$		0.00206			0.00116			0.00121			0.00120			0.00152	0.00145					0.00184				0.00144		
Beryllium (Be)	$mg\ L^{-1}$		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	$mg\ L^{-1}$		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Boron (B)	$mg\ L^{-1}$		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Cadmium (Cd)	$mg\ L^{-1}$		0.000011			<0.000010			<0.000010			0.000069			<0.000010	0.000019					<0.000010				<0.000010		
Calcium (Ca)	$mg\ L^{-1}$		2.31			1.22			1.37			1.55			1.74	1.50					1.95				1.53		
Chromium (Cr)	$mg\ L^{-1}$		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	$mg\ L^{-1}$		0.00023			0.00012			0.00019			<0.00010			0.00016	0.00013					0.00014				0.00015		
Copper (Cu)	$mg\ L^{-1}$		<0.00020			<0.00020			<0.00020			<0.00020			0.00028	0.00037					0.00029				0.00043		
Iron (Fe)	$mg\ L^{-1}$		<0.010			<0.010			0.014			<0.010			<0.010	<0.010					<0.010				<0.010		
Lead (Pb)	$mg\ L^{-1}$		0.000327			0.000311			0.000281			0.000184			0.000245	0.000396					0.000266				0.000324		
Lithium (Li)	$mg\ L^{-1}$		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				0.00054		
Magnesium (Mg)	$mg\ L^{-1}$		0.0765			0.0403			0.0528			0.0914			0.0469	0.0404					0.0524				0.0403		
Manganese (Mn)	$mg\ L^{-1}$		0.0167			0.00692			0.00885			0.00887			0.0136	0.0106					0.0123				0.0095		
Molybdenum (Mo)	$mg\ L^{-1}$		<0.000050			<0.000050			<0.000050			<0.000050			<0.000050	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	$mg\ L^{-1}$		0.00078			<0.00050			0.00075			<0.00050			0.00053	<0.00050					<0.00050				0.00055		
Phosphorus (P)	$mg\ L^{-1}$		<0.30			<0.30			<0.30			<0.30			<0.30	<0.30					<0.30				<0.30		
Potassium (K)	$mg\ L^{-1}$		0.755			0.344			0.280			0.310			0.494	0.662					0.574				0.762		
Selenium (Se)	$mg\ L^{-1}$		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Silicon (Si)	$mg\ L^{-1}$		0.174			0.061			0.072			0.065			0.103	0.104					0.116				0.086		
Silver (Ag)	$mg\ L^{-1}$		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	0.000277					<0.000010				0.000338		
Sodium (Na)	$mg\ L^{-1}$		0.130			0.121			0.111			0.308			0.138	0.159					0.166				0.195		
Strontium (Sr)	$mg\ L^{-1}$		0.00503			0.00245			0.00270			0.00355			0.00302	0.00253					0.00316				0.00255		
Sulfur (S)	$mg\ L^{-1}$		0.97			0.69			0.84			0.86			1.00	1.05					1.32				1.12		
Thallium (Tl)	$mg\ L^{-1}$		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				<0.000010		
Tin (Sn)	$mg\ L^{-1}$		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	$mg\ L^{-1}$		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Uranium (U)	$mg\ L^{-1}$		0.000208			0.000154			0.000194			0.000149			0.000118	0.000082					0.000089				0.000063		
Vanadium (V)	$mg\ L^{-1}$		<0.0010			<0.0010			<0.0010			<0.0010			<0.0010	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	$mg\ L^{-1}$		0.0020			0.0021			0.0014			0.0011			0.0018	0.0014					0.0050				0.0050		

Table F5 - Mine rock BS-B HCT results cont.

Humidity Cell ID	Units	BS-B											
Date Sampled		8/13/13	8/20/13	8/27/13	9/3/13	9/10/13	9/17/13	9/24/13	10/1/13	10/8/13	10/15/13	10/22/13	10/29/13
Day		364	371	378	385	392	399	406	413	420	427	434	441
Week		52	53	54	55	56	57	58	59	60	61	62	63
Bottle	g												
Mass Before Adding Water	g	1298.8	1312.73	1303.27	1277.42	1308.78	1283.87	1319.35	1306.18	1306.57	1314.31	1287.2	1290.24
Mass After Adding Water	g	2306.33	2308.54	2294.7	2278.68	2303.08	2285.61	2316.14	2317.72	2305	2307.39	2274.05	2274.03
Volume Water Recovered	mL	982.6	1010.0	998.0	959.5	1004.1	962.8	997.7	1004.0	986.9	1009.7	960.5	959.1
Mass After Water Recovered	g	1323.76	NR	1296.71	1319.18	1299.03	1322.79	1318.45	1313.76	1318.11	1297.7	1313.57	1314.97
pH		6.03	5.81	7.43	5.79	6.9	5.54	6.78	6.56	6.2	6.51	6.27	6.17
Conductivity	uS cm-1	12.86	15.8	17.36	12.58	15.14	9.99	12.08	12.26	12.99	14.22	11.65	22.27
Sulphate	$mg\ L^{-1}$	2.94					1.59				2.91		
Alkalinity (as $CaCO_3$)	$mg\ L^{-1}$	<10					<10				<10		
Dissolved Metals													
Aluminum (Al)	$mg\ L^{-1}$	0.0075					0.0026				0.0025		
Antimony (Sb)	$mg\ L^{-1}$	<0.00010					<0.00010				<0.00010		
Arsenic (As)	$mg\ L^{-1}$	<0.00010					<0.00010				<0.00010		
Barium (Ba)	$mg\ L^{-1}$	0.00120					0.00096				0.00151		
Beryllium (Be)	$mg\ L^{-1}$	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	$mg\ L^{-1}$	<0.00050					<0.00050				<0.00050		
Boron (B)	$mg\ L^{-1}$	<0.010					<0.010				<0.010		
Cadmium (Cd)	$mg\ L^{-1}$	<0.000010					<0.000010				<0.000010		
Calcium (Ca)	$mg\ L^{-1}$	1.45					0.93				1.30		
Chromium (Cr)	$mg\ L^{-1}$	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	$mg\ L^{-1}$	0.00013					<0.00010				0.00025		
Copper (Cu)	$mg\ L^{-1}$	0.00068					0.00057				0.00020		
Iron (Fe)	$mg\ L^{-1}$	<0.010					<0.010				<0.010		
Lead (Pb)	$mg\ L^{-1}$	0.000249					0.000340				0.000336		
Lithium (Li)	$mg\ L^{-1}$	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	$mg\ L^{-1}$	0.0387					0.0250				0.0342		
Manganese (Mn)	$mg\ L^{-1}$	0.00847					0.00597				0.0111		
Molybdenum (Mo)	$mg\ L^{-1}$	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	$mg\ L^{-1}$	<0.00050					<0.00050				0.00079		
Phosphorus (P)	$mg\ L^{-1}$	<0.30					<0.30				<0.30		
Potassium (K)	$mg\ L^{-1}$	0.432					0.239				0.471		
Selenium (Se)	$mg\ L^{-1}$	<0.00010					<0.00010				<0.00010		
Silicon (Si)	$mg\ L^{-1}$	0.087					<0.050				4.63		
Silver (Ag)	$mg\ L^{-1}$	0.000105					<0.000010				<0.000010		
Sodium (Na)	$mg\ L^{-1}$	0.151					0.094				0.114		
Strontium (Sr)	$mg\ L^{-1}$	0.00231					0.00139				0.00185		
Sulfur (S)	$mg\ L^{-1}$	0.98					0.53				0.97		
Thallium (Tl)	$mg\ L^{-1}$	<0.000010					<0.000010				<0.000010		
Tin (Sn)	$mg\ L^{-1}$	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	$mg\ L^{-1}$	<0.010					<0.010				<0.010		
Uranium (U)	$mg\ L^{-1}$	0.000065					0.000051				0.000061		
Vanadium (V)	$mg\ L^{-1}$	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	$mg\ L^{-1}$	0.0025					0.0032				0.0032		

Table F6 - Mine rock BS-C HCT results

Humidity Cell ID	Units	BS-C																									
Date Sampled		8/14/12	8/21/12	8/28/12	9/4/12	9/11/12	9/18/12	9/25/12	10/2/12	10/9/12	10/16/12	10/23/12	10/30/12	11/6/12	11/13/12	11/20/12	11/27/12	12/4/12	12/11/12	12/18/12	12/24/12	1/2/13	1/9/13	1/15/13	1/22/13	1/29/13	2/5/13
Day		0	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	132	141	148	155	161	168	175
Week		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	
Mass Before Adding Water	g	1279.66	1386.13	1354.32	1352.85	1345.16	1343.94	1343.37	1326.87	1326.48	1338.16	1322.66	1337.32	1341.01	1336.12	1337.21	1323.49	1324.55	1327.27	1326.71	1335.41	1343.06	1331.34	1329.9	1330.27	1330.82	1329.33
Mass After Adding Water	g	2278.1	2385.1	2270.33	2347.25	2334.1	2328.68	2256.13	2254.56	2311.25	2334.87	2322.34	2332.61	2326.91	2322.17	2335.84	2323.53	2323.3	2328.43	2333.89	2336.95	2341.91	2331.6	2330.27	2330.66	2334.05	2331.53
Volume Water Recovered	mL	884.73	1028.12	915.62	999.65	987.84	983.2	924.3	924.5	971.5	994.7	999.9	990.2	987.6	981.7	1004.1	988.8	994.2	998.0	996.3	989.1	1006.9	998.1	997.8	993.5	1002.9	1000.0
Mass After Water Recovered	g	1393.37	1356.98	1354.71	1347.6	1346.26	1345.52	1331.83	1330.08	1339.76	1340.22	1322.43	1342.42	1339.31	1340.52	1331.71	1334.75	1329.08	1330.45	1337.58	1347.87	1335.01	1333.46	1332.47	1337.12	1331.17	1331.58
pH		8.33	8.01	8.08	8.12	7.52	7.24	7.61	7.47	7.32	6.33	7.14		6.96	6.97	7.05	6.81	6.68	6.64	6.56	6.62	6.65	6.44	6.54	6.29	6.56	6.32
Conductivity	uS cm-1	106	100.9	50.7	25.79	22.49	13.4	26.17	27.75	18.52	19.88	15.18		14.97	17.26	16.74	12.95	13.92	14.32	14.81	17.11	20.74	13.26	14.88	11.2	14.8	15.41
Sulphate	mg L^{-1}	10.47	15.54	7.59	3.99	2.82	2.22	3.54	4.17	4.77	4.32	4.32		3.51	2.79	3.21	3.27	2.91	2.82	3.27	3.12	4.32		3.21		2.97	
Alkalinity (as $CaCO_3$)	mg L^{-1}	13	15	10	<10.0	<10	<10	<10	<10	<10	<10	<10		<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
Dissolved Metals																											
Aluminum (Al)	mg L^{-1}	0.105	0.0701	0.0973	0.0509	0.0192	0.0145	0.0666	0.0148	0.0089	0.0137	0.0137		0.107	0.0074	0.0077	0.0022	0.0038	0.0746	0.0037	0.0028	0.0036		0.0015		0.0030	
Antimony (Sb)	mg L^{-1}	0.00570	0.0255	0.0179	0.0117	0.00804	0.00471	0.00833	0.00379	0.00303	0.00337	0.00337		0.00234	0.00265	0.00262	0.00021	0.00165	0.00162	0.00160	0.00181	0.00204		0.00124		0.00099	
Arsenic (As)	mg L^{-1}	0.00395	0.00640	0.00440	0.00363	0.00198	0.00118	0.00311	0.00100	0.00067	0.00091	0.00091		0.00052	0.00078	0.00082	0.00012	0.00048	0.00041	0.00040	0.00045	0.00050		0.00037		0.00026	
Barium (Ba)	mg L^{-1}	0.000912	0.000972	0.000688	0.000308	0.000296	0.000296	0.000391	0.000352	0.000363	0.000357	0.000357		0.000667	0.000274	0.000328	0.000375	0.000348	0.000515	0.000366	0.000399	0.000457		0.000337		0.000375	
Beryllium (Be)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Bismuth (Bi)	mg L^{-1}	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Boron (B)	mg L^{-1}	< 0.01	0.017	0.016	<0.01	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	0.011	<0.010		<0.010		0.014	
Cadmium (Cd)	mg L^{-1}	< 0.00001	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000014		<0.000010		<0.000010	
Calcium (Ca)	mg L^{-1}	6.62	7.90	3.46	2.03	1.29	0.929	2.27	1.63	1.70	1.65	1.65		1.34	1.39	1.37	1.45	1.12	1.27	1.27	1.21	1.77		1.27		1.10	
Chromium (Cr)	mg L^{-1}	0.00017	0.00012	0.00015	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	0.00012	0.00012	0.00012		0.00029	<0.00010	<0.00010	<0.00010	<0.00010	0.00023	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Cobalt (Co)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Copper (Cu)	mg L^{-1}	0.00192	0.00111	0.00066	0.00031	0.00021	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00057	0.00062	0.00060		0.00086		0.00065	
Iron (Fe)	mg L^{-1}	0.012	0.016	0.011	<0.01	<0.010	<0.010	0.013	<0.010	<0.010	<0.010	<0.010		0.056	<0.010	<0.010	<0.010	<0.010	0.048	<0.010	<0.010	<0.010		<0.010		<0.010	
Lead (Pb)	mg L^{-1}	0.000805	0.00110	0.000528	0.000231	0.000174	0.000094	0.000534	0.000110	0.000238	0.000206	0.000206		0.000809	0.000112	0.000094	0.000582	0.000107	0.000488	0.000152	0.000162	0.000190		0.000162		0.000162	
Lithium (Li)	mg L^{-1}	0.00096	0.00103	<0.0005	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Magnesium (Mg)	mg L^{-1}	0.551	0.763	0.325	0.186	0.129	0.0852	0.197	0.136	0.140	0.138	0.138		0.155	0.107	0.106	0.134	0.0899	0.132	0.0929	0.0967	0.135		0.0957		0.0860	
Manganese (Mn)	mg L^{-1}	0.00516	0.00666	0.00290	0.00194	0.00181	0.00127	0.00380	0.00225	0.00253	0.00239	0.00239		0.00352	0.00223	0.00226	0.00354	0.00195	0.00310	0.00229	0.00255	0.00350		0.00284		0.00255	
Molybdenum (Mo)	mg L^{-1}	0.000444	0.000678	0.000331	0.000146	0.000111	<0.000050	0.000080	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050		<0.000050	
Nickel (Ni)	mg L^{-1}	0.00371	0.00441	0.00131	0.00069	<0.00050	0.00054	0.00078	0.00065	0.00068	0.00076	0.00076		0.00111	0.00108	0.00097	0.00109	0.00107	0.00116	0.00129	0.00165	0.00240		0.00237		0.00184	
Phosphorus (P)	mg L^{-1}	< 0.3	< 0.3	<0.3	<0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30		0.3	
Potassium (K)	mg L^{-1}	3.37	2.89	1.83	1.15	0.759	0.468	1.18	0.747	0.677	0.794	0.794		0.583	0.809	0.747	0.454	0.567	0.679	0.729	1.15	1.08		0.683		0.655	
Selenium (Se)	mg L^{-1}	0.00013	0.00026	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Silicon (Si)	mg L^{-1}	0.446	0.679	0.597	0.418	0.241	0.153	0.416	0.209	0.167	0.200	0.200		0.355	0.194	0.200	0.108	0.149	0.283	0.180	0.194	0.239		0.179		0.166	
Silver (Ag)	mg L^{-1}	0.000012	< 0.00001	0.000022	<0.00001	0.000040	<0.000010	<0.000010	<0.000010	0.0335	0.000024	0.000024		0.000011	0.000047	<0.000010	0.000026	<0.000010	0.000068	0.000011	0.000025	0.000254		<0.000010		0.000022	
Sodium (Na)	mg L^{-1}	5.61	6.40	2.87	1.48	0.884	0.543	0.963	0.503	0.464	0.525	0.525		0.385	0.380	0.393	0.186	0.325	0.304	0.389	0.391	0.449		0.437		0.367	
Strontium (Sr)	mg L^{-1}	0.0132	0.0178	0.00720	0.00409	0.00273	0.00199	0.00448	0.00320	0.00339	0.00337	0.00337		0.00276	0.00274	0.00277	0.00493	0.00232	0.00268	0.00248	0.00236	0.00348		0.00252		0.00221	
Sulfur (S)	mg L^{-1}	3.49	5.18	2.53	1.33	0.94	0.74	1.18	1.39	1.59	1.44	1.44		1.17	0.93	1.07	1.09	0.97	0.94	1.09	1.04	1.44		1.07		0.99	
Thallium (Tl)	mg L^{-1}	0.000014	0.000012	<0.00001	<0.00001	0.000025	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Tin (Sn)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Titanium (Ti)	mg L^{-1}	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.010	
Uranium (U)	mg L^{-1}	0.00114	0.0119	0.00538	0.00282	0.00168	0.00112	0.00224	0.000952	0.000786	0.000675	0.000675		0.000619	0.000461	0.000516	0.000056	0.000388	0.000482	0.000387	0.000359	0.000487		0.000321		0.000230	
Vanadium (V)	mg L^{-1}	< 0.001	< 0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010		<0.0010	
Zinc (Zn)	mg L^{-1}	< 0.001	0.0015	0.0013	<0.001	0.0019	0.0023	0.0011	0.0017	0.0025	0.0039	0.0039		0.0013	0.0011	<0.0010	0.0036	0.0013	0.0012	0.0019	0.0019	0.0034		0.0028		0.0028	

Table F6 - Mine rock BS-C HCT results cont.

Humidity Cell ID	Units	BS-C																									
Date Sampled		2/12/13	2/19/13	2/26/13	3/5/13	3/12/13	3/19/13	3/26/13	4/2/13	4/9/13	4/16/13	4/23/13	4/30/13	5/7/13	5/14/13	5/21/13	5/28/13	6/4/13	6/11/13	6/18/13	6/25/13	7/2/13	7/9/13	7/16/13	7/23/13	7/30/13	8/6/13
Day		182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	322	329	336	343	350	357
Week		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Bottle	g																										
Mass Before Adding Water	g	1329.08	1323.4	1272.51	1284.75	1314.86	1344.49	1324.63	1316.73	1298.89	1302.06	1325.31	1321.76	1296.92	1297.36	1294.88	1298.8	1327.06	1312.76	1316.26	1318.58	1288.14	1317.3	1298.4	1310.04	1295.74	1286.33
Mass After Adding Water	g	2331.53	2315.83	2265.46	2286.64	2313.15	2340.99	2327.36	2324.14	2293.38	2303.45	2318.22	2312.78	2295.46	2288.31	2287.2	2300.11	2323.94	2311.14	2310.32	2317.19	2293.44	2323.65	2303.15	2315.78	2295.57	2288.45
Volume Water Recovered	mL	1004.5	999.2	949.7	958.3	956.1	1004.3	995.6	1002.2	981.0	971.9	983.2	986.6	973.4	983.3	980.2	965.5	1000.1	986.2	982.1	1020.1	970.4	1012.3	984.4	994.0	983.2	974.4
Mass After Water Recovered	g	1327.06	1316.67	1315.77	1328.31	1357.02	1336.73	1331.77	1321.97	1312.4	1331.59	1335.02	1326.18	1322.02	1305.05	1306.99	1334.63	1323.89	1324.91	1328.25	1297.07	1323.08	1311.36	1318.77	1321.78	1312.39	1314.07
pH		6.45	6.8	6.65	6.59	6.6	6.59	6.6	6.37	6.68	6.46	6.61	6.71	6.75	6.56	6.87	6.7	6.5	6.71	6.6	6.75	6.92	6.61	6.81	6.36	5.22	5.76
Conductivity	uS cm-1	15.31	20.27	20.07	18.75	17.42	17.68	13.8	11.86	19.86	3.64	12.55	14.25	14.42	19.29	18.15	11.23	16.67	15.34	15.89	20.21	17.12	16.95	16.96	17.51	16.71	15.01
Sulphate	mg L^{-1}		3.99			3.63			2.55			3.18			4.53	4.59					5.40				5.13		
Alkalinity (as $CaCO_3$)	mg L^{-1}		<10			<10			<10			<10			<10	<10					<10				<10		
Dissolved Metals																											
Aluminum (Al)	mg L^{-1}		0.0086			0.0038			0.0013			0.0029			0.0102	0.0094					0.0060				0.0022		
Antimony (Sb)	mg L^{-1}		0.00145			0.00100			0.00053			0.00049			0.00064	0.00079					0.00069				0.00044		
Arsenic (As)	mg L^{-1}		0.00038			0.00036			0.00021			0.00028			0.00018	0.00024					0.00018				0.00011		
Barium (Ba)	mg L^{-1}		0.000483			0.000374			0.000295			0.000473			0.000461	0.000424					0.000573				0.000428		
Beryllium (Be)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}		<0.000010			<0.000010			<0.000010			0.000104			<0.000010	<0.000010					<0.000010				<0.000010		
Calcium (Ca)	mg L^{-1}		1.62			1.35			0.979			0.994			1.46	1.36					1.56				1.26		
Chromium (Cr)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					0.00011				0.00011		
Copper (Cu)	mg L^{-1}		<0.00020			<0.00020			<0.00020			0.00026			0.00042	0.00027					0.00048				0.00026		
Iron (Fe)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Lead (Pb)	mg L^{-1}		0.000166			0.000125			0.000107			0.000118			0.000189	0.000160					0.000251				0.000176		
Lithium (Li)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				0.00066		
Magnesium (Mg)	mg L^{-1}		0.119			0.0927			0.0660			0.0733			0.0944	0.0853					0.1000				0.0770		
Manganese (Mn)	mg L^{-1}		0.00389			0.00306			0.00221			0.00309			0.00445	0.00386					0.00447				0.00386		
Molybdenum (Mo)	mg L^{-1}		<0.000050			<0.000050			<0.000050			<0.000050			<0.000050	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}		0.00269			0.00217			0.00165			0.00190			0.00271	0.00242					0.00335				0.00352		
Phosphorus (P)	mg L^{-1}		<0.30			<0.30			<0.30			<0.30			<0.30	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}		1.09			0.817			0.423			0.632			0.963	1.11					1.10				0.83		
Selenium (Se)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}		0.290			0.204			0.121			0.147			0.264	0.316					0.375				0.299		
Silver (Ag)	mg L^{-1}		<0.000010			0.000020			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				<0.000010		
Sodium (Na)	mg L^{-1}		0.421			0.339			0.233			0.326			0.373	0.395					0.408				0.350		
Strontium (Sr)	mg L^{-1}		0.00329			0.00261			0.00190			0.00188			0.00269	0.00246					0.00296				0.00255		
Sulfur (S)	mg L^{-1}		1.33			1.21			0.85			1.06			1.51	1.53					1.80				1.71		
Thallium (Tl)	mg L^{-1}		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				<0.000010		
Tin (Sn)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}		0.000371			0.000212			0.000120			0.000115			0.000162	0.000133					0.000144				0.000121		
Vanadium (V)	mg L^{-1}		<0.0010			<0.0010			<0.0010			<0.0010			<0.0010	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}		0.0019			0.0022			0.0016			0.0017			0.0020	0.0012					0.0031				0.0027		

Table F6 - Mine rock BS-C HCT results cont.

Humidity Cell ID	Units	BS-C																						
Date Sampled		8/13/13	8/20/13	8/27/13	9/3/13	9/10/13	9/17/13	9/24/13	10/1/13	10/8/13	10/15/13	10/22/13	10/29/13	11/5/13	11/12/13	11/19/13	11/26/13	12/3/13	12/10/13	12/17/13	12/24/13	12/31/13	1/7/14	1/14/14
Day		364	371	378	385	392	399	406	413	420	427	434	441	455	469	483	496	511	525	539	553	567	581	595
Week		52	53	54	55	56	57	58	59	60	61	62	63	65	67	69	71	73	75	77	79	81	83	85
Bottle	g																							
Mass Before Adding Water	g	1299.16	1303.81	1312.42	1288.18	1309.81	1277.32	1307.28	1288.54	1306.04	1310.4	1290.04	1288.35	1274.05	1315.1	1264.94	1238.73	1292.95	1250.94	1232.54	1237.37	1233.31	1240.53	1285.56
Mass After Adding Water	g	2309.32	2293.8	2301.94	2290.72	2313.45	2290.95	2304.52	2302.47	2312.55	2298.03	2275.77	2280.68	3256.78	3303.33	3244.66	3217.34	3274.35	3236.41	3218.42	3220.98	3204.89	3217.36	3260.75
Volume Water Recovered	mL	990.9	990.0	1006.9	976.1	995.7	971.6	994.2	990.1	993.0	1004.3	965.5	969.3	1950.0	2000.0	1970.0	1870.0	1970.0	1950.0	1930.0	1960.0	1940.0	1930.0	1950.0
Mass After Water Recovered	g	1318.41	NR	1295.06	1314.63	1317.71	1319.34	1310.37	1312.37	1319.51	1293.77	1310.32	1311.42	1345.99	1311.5	1303.13	1373.4	1327.04	1308.45	1302.24	1294.64	1297.39	1317.39	1294.03
pH		5.78	5.58	7.07	5.56	6.07	5.15	6.03	6.47	6.51	6.21	6.03	6.04	5.3	5.62	5.52	5.61	5.96	5.96	5.8	4.86	5.47	5.04	4.56
Conductivity	uS cm-1	16.5	17.53	21.31	18.9	16.19	13.72	17.63	13.89	16.55	19.66	17.24	29.55	33.7	16.85	19.61	18.62	29.38	17.09	18.59	21.51	20.87	14.04	12.89
Sulphate	mg L^{-1}	3.93					2.82				4.83			4.68		4.62		5.16		4.23		4.86		4.74
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10					<10				<10			<10		<10		<10		<10		<10		<10
Dissolved Metals																								
Aluminum (Al)	mg L^{-1}	0.0021					<0.0010				0.0016			0.0074		0.0034		0.0043		0.0016		0.0024		0.0023
Antimony (Sb)	mg L^{-1}	0.00034					0.00013				0.00023			0.00012		0.00011		<0.00010		<0.00010		<0.00010		<0.00010
Arsenic (As)	mg L^{-1}	0.00015					<0.00010				0.00013			0.00042		<0.00010		<0.00010		<0.00010		<0.00010		0.00010
Barium (Ba)	mg L^{-1}	0.000444					0.000381				0.000601			0.00112		0.000619		0.000665		0.000513		0.000691		0.000679
Beryllium (Be)	mg L^{-1}	<0.00010					<0.00010				<0.00010			0.00014		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Bismuth (Bi)	mg L^{-1}	<0.00050					<0.00050				<0.00050			<0.00050		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050
Boron (B)	mg L^{-1}	<0.010					<0.010				<0.010			0.012		<0.010		<0.010		<0.010		<0.010		<0.010
Cadmium (Cd)	mg L^{-1}	<0.000010					<0.000010				0.000012			0.000026		0.000018		0.000017		0.000018		0.000022		0.000027
Calcium (Ca)	mg L^{-1}	1.21					0.96				1.46			1.82		1.35		1.47		1.19		1.41		1.40
Chromium (Cr)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Cobalt (Co)	mg L^{-1}	0.00014					0.00013				0.00027			0.00041		0.00032		0.00037		0.00028		0.00038		0.00042
Copper (Cu)	mg L^{-1}	0.00054					0.00077				0.00041			0.00137		0.00040		0.00047		0.00041		0.00062		0.00043
Iron (Fe)	mg L^{-1}	<0.010					<0.010				<0.010			<0.010		<0.010		<0.010		<0.010		<0.010		0.012
Lead (Pb)	mg L^{-1}	0.000176					0.000247				0.000242			0.000904		0.000305		0.000333		0.000374		0.000479		0.000434
Lithium (Li)	mg L^{-1}	<0.00050					<0.00050				<0.00050			0.00053		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050
Magnesium (Mg)	mg L^{-1}	0.0847					0.0536				0.0880			0.141		0.0770		0.0855		0.0629		0.0767		0.0789
Manganese (Mn)	mg L^{-1}	0.00373					0.00313				0.00615			0.00850		0.00635		0.00776		0.00597		0.00758		0.00800
Molybdenum (Mo)	mg L^{-1}	<0.000050					<0.000050				<0.000050			<0.000050		<0.000050		<0.000050		<0.000050		<0.000050		<0.000050
Nickel (Ni)	mg L^{-1}	0.00356					0.00361				0.00764			0.0116		0.00988		0.0111		0.00889		0.0118		0.0123
Phosphorus (P)	mg L^{-1}	<0.30					<0.30				<0.30			<0.30		<0.30		<0.30		<0.30		<0.30		<0.30
Potassium (K)	mg L^{-1}	0.793					0.458				0.899			0.669		0.552		0.629		0.495		0.559		0.565
Selenium (Se)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Silicon (Si)	mg L^{-1}	0.275					0.149				4.12			1.10		0.226		0.270		0.145		0.157		0.232
Silver (Ag)	mg L^{-1}	<0.000010					<0.000010				<0.000010			<0.000010		<0.000010		<0.000010		<0.000010		<0.000010		<0.000010
Sodium (Na)	mg L^{-1}	0.356					0.194				0.341			1.46		0.255		0.318		0.290		0.314		0.340
Strontium (Sr)	mg L^{-1}	0.00256					0.00195				0.00295			0.00363		0.00275		0.00295		0.00236		0.00294		0.00291
Sulfur (S)	mg L^{-1}	1.31					0.94				1.61			1.56		1.54		1.72		1.41		1.62		1.58
Thallium (Tl)	mg L^{-1}	<0.000010					<0.000010				<0.000010			<0.000010		<0.000010		<0.000010		<0.000010		<0.000010		<0.000010
Tin (Sn)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Titanium (Ti)	mg L^{-1}	<0.010					<0.010				<0.010			<0.010		<0.010		<0.010		<0.010		<0.010		<0.010
Uranium (U)	mg L^{-1}	0.000116					0.000083				0.000233			0.000771		0.000197		0.000183		0.000209		0.000267		0.000266
Vanadium (V)	mg L^{-1}	<0.0010					<0.0010				<0.0010			<0.0010		<0.0010		<0.0010		<0.0010		<0.0010		<0.0010
Zinc (Zn)	mg L^{-1}	0.0038					0.0026				0.0037			0.0049		0.0036		0.0064		0.0046		0.0057		0.0058

Table F7 - Mine rock MSS-A HCT results

Humidity Cell ID	Units	MSS-A												
Date Sampled		8/14/12	8/21/12	8/28/12	9/4/12	9/11/12	9/18/12	9/25/12	10/2/12	10/9/12	10/16/12	10/23/12	10/30/12	11/6/12
Day		0	7	14	21	28	35	42	49	56	63	70	77	84
Week		0	1	2	3	4	5	6	7	8	9	10	11	12
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95
Mass Before Adding Water	g	1284.56	1378.93	1351.33	1348.8	1354.94	1348.32	1354.03	1331.95	1330.75	1342.43	1335.68	1345.68	1335.66
Mass After Adding Water	g	2227.07	2385	2263.23	2340.17	2342.87	2335.06	2272.22	2261	2311.13	2343.87	2335.76	2342.64	2330.4
Volume Water Recovered	mL	844.48	1026.1	911.16	982.7	991.15	979.2	937.8	927.9	965.0	1005.7	987.4	1004.5	977.8
Mass After Water Recovered	g	1382.59	1358.9	1352.07	1357.47	1351.72	1355.82	1334.46	1333.11	1346.09	1338.16	1348.41	1338.15	1352.62
pH		7.65	8.13	7.95	7.48	7.89	7.21	7.52	7.39	7.12	6.93	7.11	6.93	7.02
Conductivity	uS cm-1	59.8	39.1	24.33	13.74	20.38	11.92	17.55	19.43	9.02	13.13	11.58	11.09	9.04
Sulphate	mg L^{-1}	5.61	6.03	3.09	1.83	1.83	1.68	1.80	0.00	1.50	1.77	1.56	1.56	1.50
Alkalinity (as $CaCO_3$)	mg L^{-1}	< 10.0	< 10.0	<10.0	<10.0	<10	<10	<10		<10	<10	<10	<10	<10
Dissolved Metals														
Aluminum (Al)	mg L^{-1}	0.0929	0.0607	0.0693	0.0181	0.0163	0.0150	0.0930		0.225	0.0106	0.0118	0.0068	0.0231
Antimony (Sb)	mg L^{-1}	0.00187	0.00547	0.00337	0.00187	0.00176	0.00112	0.00119		0.00060	0.00087	0.00066	0.00060	0.00046
Arsenic (As)	mg L^{-1}	0.00432	0.00664	0.00640	0.00479	0.00525	0.00381	0.00548		0.00250	0.00283	0.00275	0.00233	0.00183
Barium (Ba)	mg L^{-1}	0.000549	0.000707	0.000573	0.000313	0.000371	0.000328	0.000864		0.00210	0.000391	0.000336	0.000298	0.000817
Beryllium (Be)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)	mg L^{-1}	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)	mg L^{-1}	< 0.01	0.010	<0.01	<0.01	0.010	<0.010	<0.010		<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)	mg L^{-1}	< 0.00001	< 0.00001	<0.00001	<0.00001	0.000035	<0.000010	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)	mg L^{-1}	3.53	3.60	2.40	1.43	1.54	1.24	1.98		0.928	1.43	1.20	1.20	0.903
Chromium (Cr)	mg L^{-1}	0.00011	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010		0.00070	0.00017	0.00011	<0.00010	<0.00010
Cobalt (Co)	mg L^{-1}	0.00092	0.00111	0.00051	0.00052	0.00060	0.00057	0.00089		0.00102	0.00064	0.00097	0.00099	0.00100
Copper (Cu)	mg L^{-1}	0.00167	0.00048	0.00029	<0.0002	0.00024	<0.00020	<0.00020		0.00022	<0.00020	<0.00020	<0.00020	<0.00020
Iron (Fe)	mg L^{-1}	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	0.013		0.162	<0.010	<0.010	<0.010	<0.010
Lead (Pb)	mg L^{-1}	0.000312	0.000217	0.000127	<0.00005	0.000082	<0.000050	0.000232		0.000567	<0.000050	<0.000050	<0.000050	0.000151
Lithium (Li)	mg L^{-1}	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium (Mg)	mg L^{-1}	0.430	0.473	0.272	0.154	0.148	0.106	0.153		0.234	0.0894	0.0763	0.0653	0.0582
Manganese (Mn)	mg L^{-1}	0.0115	0.00904	0.00726	0.00429	0.00460	0.00378	0.00830		0.0133	0.00560	0.00509	0.00529	0.00501
Molybdenum (Mo)	mg L^{-1}	0.000421	0.000487	0.000255	0.000126	0.000084	<0.000050	0.000059		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel (Ni)	mg L^{-1}	0.0106	0.00740	0.00271	0.00215	0.00209	0.00185	0.00264		0.00262	0.00190	0.00263	0.00266	0.00249
Phosphorus (P)	mg L^{-1}	< 0.3	< 0.3	<0.3	<0.3	<0.30	<0.30	<0.30		<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)	mg L^{-1}	1.95	1.39	0.921	0.495	1.77	0.300	0.519		0.373	0.327	0.282	0.233	0.188
Selenium (Se)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)	mg L^{-1}	0.320	0.511	0.460	0.277	0.257	0.189	0.371		0.590	0.167	0.152	0.139	0.124
Silver (Ag)	mg L^{-1}	0.000019	< 0.00001	<0.00001	<0.00001	0.00205	<0.000010	<0.000010		<0.000010	0.000435	<0.000010	<0.000010	0.000037
Sodium (Na)	mg L^{-1}	1.43	0.952	0.457	0.230	0.240	0.164	0.203		0.134	0.133	0.145	0.126	0.114
Strontium (Sr)	mg L^{-1}	0.00946	0.0118	0.00709	0.00444	0.00448	0.00344	0.00491		0.00234	0.00341	0.00290	0.00276	0.00210
Sulfur (S)	mg L^{-1}	1.87	2.01	1.03	0.61	0.61	0.56	0.60		<0.50	0.59	0.52	0.52	<0.50
Thallium (Tl)	mg L^{-1}	0.000012	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)	mg L^{-1}	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010		0.012	<0.010	<0.010	<0.010	<0.010
Uranium (U)	mg L^{-1}	0.000266	0.000785	0.000403	0.000225	0.000190	0.000184	0.000197		0.000126	0.000164	0.000108	0.000093	0.000077
Vanadium (V)	mg L^{-1}	< 0.001	< 0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)	mg L^{-1}	0.0010	0.0012	<0.001	<0.001	0.0022	0.0020	0.0017		0.0028	0.0034	0.0027	<0.0010	0.0015

Humidity Cell ID	Units	MSS-A												
Date Sampled		11/13/12	11/20/12	11/27/12	12/4/12	12/11/12	12/18/12	12/24/12	1/2/13	1/9/13	1/15/13	1/22/13	1/29/13	2/5/13
Day		91	98	105	112	119	126	132	141	148	155	161	168	175
Week		13	14	15	16	17	18	19	20	21	22	23	24	25
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	
Mass Before Adding Water	g	1348.88	1334.48	1345.44	1338.84	1336.83	1341.05	1341.13	1344.77	1341.95	1336.98	1352.33	1336.51	1331.09
Mass After Adding Water	g	2332.95	2331.76	2334.06	2337.46	2338.05	2341.56	2341.1	2346.5	2342	2355.93	2362.77	2341.39	2331.53
Volume Water Recovered	mL	994.3	982.6	992.4	998.1	994.8	998.1	990.0	1001.8	1001.6	1000.1	1024.3	1007.5	983.5
Mass After Water Recovered	g	1338.7	1349.15	1341.62	1339.35	1343.27	1343.44	1351.14	1344.68	1340.41	1355.87	1338.52	1333.9	1348.01
pH		6.95	6.96	6.89	6.76	6.67	6.63	6.63	6.63	6.67	6.66	6.39	6.46	6.38
Conductivity	uS cm-1	11.14	11.06	10.27	9.99	9.88	9.69	10.34	14.61	16.09	11.74	10.68	10.02	9.17
Sulphate	mg L^{-1}	2.67	1.50	1.50	1.50	1.50	1.56	1.50	2.01		1.65		1.50	
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
Dissolved Metals														
Aluminum (Al)	mg L^{-1}	0.0059	0.0049	0.0030	0.0048	0.0026	0.0026	0.0049	0.0027		0.0021		0.0017	
Antimony (Sb)	mg L^{-1}	0.00056	0.00058	0.00049	0.00045	0.00039	0.00037	0.00040	0.00044		0.00037		0.00026	
Arsenic (As)	mg L^{-1}	0.00241	0.00237	0.00189	0.00165	0.00149	0.00146	0.00166	0.00180		0.00145		0.00100	
Barium (Ba)	mg L^{-1}	0.000310	0.000332	0.000324	0.000318	0.000309	0.000332	0.000378	0.000484		0.000450		0.000410	
Beryllium (Be)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Bismuth (Bi)	mg L^{-1}	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Boron (B)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	<0.010		0.010		0.013	
Cadmium (Cd)	mg L^{-1}	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Calcium (Ca)	mg L^{-1}	1.12	1.16	1.08	1.05	0.980	1.04	1.13	1.47		1.38		1.01	
Chromium (Cr)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Cobalt (Co)	mg L^{-1}	0.00119	0.00139	0.00135	0.00149	0.00147	0.00145	0.00196	0.00239		0.00217		0.00183	
Copper (Cu)	mg L^{-1}	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00064	0.00053	0.00071		0.00072		0.00063	
Iron (Fe)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.010	
Lead (Pb)	mg L^{-1}	0.000050	0.000054	<0.000050	0.000055	0.000056	0.000074	0.000099	0.000104		0.000104		0.000099	
Lithium (Li)	mg L^{-1}	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Magnesium (Mg)	mg L^{-1}	0.0612	0.0581	0.0521	0.0478	0.0441	0.0437	0.0471	0.0563		0.0443		0.0329	
Manganese (Mn)	mg L^{-1}	0.00577	0.00663	0.00620	0.00645	0.00665	0.00712	0.00805	0.0110		0.0106		0.00879	
Molybdenum (Mo)	mg L^{-1}	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050		<0.000050	
Nickel (Ni)	mg L^{-1}	0.00300	0.00336	0.00313	0.00352	0.00358	0.00375	0.00481	0.00631		0.00541		0.00488	
Phosphorus (P)	mg L^{-1}	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30		0.3	
Potassium (K)	mg L^{-1}	0.498	0.270	0.204	0.211	0.292	0.207	0.246	0.283		0.283		0.210	
Selenium (Se)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Silicon (Si)	mg L^{-1}	0.137	0.134	0.112	0.107	0.099	0.102	0.119	0.125		0.105		0.088	
Silver (Ag)	mg L^{-1}	0.000015	<0.000010	<0.000010	<0.000010	0.000041	<0.000010	0.000032	0.000011		<0.000010		0.000016	
Sodium (Na)	mg L^{-1}	0.100	0.110	0.114	0.113	0.104	0.196	0.159	0.204		0.231		0.174	
Strontium (Sr)	mg L^{-1}	0.00257	0.00259	0.00237	0.00227	0.00216	0.00204	0.00226	0.00290		0.00246		0.00184	
Sulfur (S)	mg L^{-1}	0.89	<0.50	<0.50	<0.50	<0.50	0.52	<0.5	0.67		0.55		0.5	
Thallium (Tl)	mg L^{-1}	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Tin (Sn)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Titanium (Ti)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.01000	
Uranium (U)	mg L^{-1}	0.000073	0.000066	0.000072	0.000065	0.000062	0.000066	0.000065	0.000078		0.000072		0.000055	
Vanadium (V)	mg L^{-1}	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010		<0.0010	
Zinc (Zn)	mg L^{-1}	0.0011	0.0012	<0.0010	0.0013	<0.0010	0.0021	0.0020	0.0026		0.0022		0.0023	

Table F7 - Mine rock MSS-A HCT results cont.

Humidity Cell ID	Units	MSS-A																									
Date Sampled		2/12/13	2/19/13	2/26/13	3/5/13	3/12/13	3/19/13	3/26/13	4/2/13	4/9/13	4/16/13	4/23/13	4/30/13	5/7/13	5/14/13	5/21/13	5/28/13	6/4/13	6/11/13	6/18/13	6/25/13	7/2/13	7/9/13	7/16/13	7/23/13	7/30/13	8/6/13
Day		182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	322	329	336	343	350	357
Week		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Bottle	g																										
Mass Before Adding Water	g	1343.79	1334.44	1314.3	1311.64	1336.36	1346.64	1325.24	1317.23	1325.42	1305.63	1324.62	1325.7	1323.6	1324.34	1297.24	1304.71	1311.88	1320.25	1327.97	1323.58	1300.95	1319.16	1370.37	1314.8	1297.13	1323.61
Mass After Adding Water	g	2343.82	2327.94	2306.15	2315.48	2336.35	2356.95	2328.08	2330.1	2321.65	2306.53	2317.79	2318.49	2326.48	2317.39	2292.19	2305.94	2314.05	2313.92	2324.29	2316.29	2298.18	2324.74	2370.67	2322.65	2298.8	2323
Volume Water Recovered	mL	1006.5	1006.7	982.3	969.9	978.4	1016.3	998.8	990.5	1004.2	972.9	977.5	979.3	995.6	1000.1	983.3	970.2	987.9	983.4	992.3	1009.5	968.8	944.1	1040.8	1000.5	967.4	989.8
Mass After Water Recovered	g	1337.36	1321.25	1323.83	1345.59	1357.99	1340.69	1329.33	1339.59	1317.5	1333.62	1340.26	1339.19	1330.89	1317.33	1308.87	1335.76	1326.13	1330.55	1332.01	1306.78	1329.36	1380.61	1329.89	1322.12	1331.39	1333.19
pH		6.59	6.83	6.73	6.39	6.73	6.7	6.7	6.41	6.84	6.52	6.88	6.64	7.05	6.77	6.97	6.76	7.47	7.38	6.82	6.9	6.78	6.81	6.67	6.48	5.04	5.86
Conductivity	uS cm-1	11.16	13.86	11.75	9.8	10.22	12.73	9.17	8.23	13.28	9.32	9.95	10.03	9.97	12.24	11.29	6.7	14.11	12.89	10.13	11.37	9.21	10.16	10.42	10.78	11.42	8.8
Sulphate	mg L^{-1}		1.95			1.50			1.50			1.68			1.95	2.07					2.25				2.22		
Alkalinity (as $CaCO_3$)	mg L^{-1}		<10			<10			<10			<10			<10	<10					<10				<10		
Dissolved Metals																											
Aluminum (Al)	mg L^{-1}		0.0078			0.0032			0.0012			0.0020			0.0052	0.0083					0.0044				0.0042		
Antimony (Sb)	mg L^{-1}		0.00042			0.00019			0.00015			0.00017			0.00019	0.00025					0.00020				0.00017		
Arsenic (As)	mg L^{-1}		0.00166			0.00065			0.00068			0.00062			0.00068	0.00104					0.00091				0.00085		
Barium (Ba)	mg L^{-1}		0.000690			0.000495			0.000381			0.000590			0.000660	0.000668					0.000822				0.000527		
Beryllium (Be)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}		<0.000010			<0.000010			<0.000010			0.000012			0.000022	<0.000010					0.000024				<0.000010		
Calcium (Ca)	mg L^{-1}		1.63			1.01			0.837			1.00			1.17	1.18					1.20				0.98		
Chromium (Cr)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}		0.00308			0.00156			0.00144			0.00165			0.00228	0.00183					0.00180				0.00152		
Copper (Cu)	mg L^{-1}		<0.00020			<0.00020			<0.00020			<0.00020			0.00020	<0.00020					0.00037				<0.00020		
Iron (Fe)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Lead (Pb)	mg L^{-1}		0.000117			0.000052			0.000069			0.000060			0.000069	0.000082					0.000124				0.000093		
Lithium (Li)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	mg L^{-1}		0.0483			0.0262			0.0223			0.0232			0.0265	0.0251					0.0242				0.0248		
Manganese (Mn)	mg L^{-1}		0.0156			0.00913			0.00653			0.00768			0.0108	0.00970					0.00959				0.00714		
Molybdenum (Mo)	mg L^{-1}		<0.000050			<0.000050			<0.000050			<0.000050			<0.000050	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}		0.00781			0.00436			0.00400			0.00467			0.00608	0.00508					0.00512				0.00411		
Phosphorus (P)	mg L^{-1}		<0.30			<0.30			<0.30			<0.30			<0.30	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}		0.390			0.198			0.164			0.220			0.296	0.374					0.329				0.236		
Selenium (Se)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}		0.157			0.076			0.052			0.064			0.094	0.121					0.111				0.088		
Silver (Ag)	mg L^{-1}		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				<0.000010		
Sodium (Na)	mg L^{-1}		0.115			0.101			0.132			0.150			0.156	0.146					0.150				0.167		
Strontium (Sr)	mg L^{-1}		0.00272			0.00149			0.00120			0.00137			0.00150	0.00146					0.00147				0.00126		
Sulfur (S)	mg L^{-1}		0.65			<0.50			<0.50			0.56			0.65	0.69					0.75				0.74		
Thallium (Tl)	mg L^{-1}		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				<0.000010		
Tin (Sn)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}		0.000072			0.000043			0.000034			0.000055			0.000034	0.000031					0.000034				0.000027		
Vanadium (V)	mg L^{-1}		<0.0010			<0.0010			<0.0010			<0.0010			<0.0010	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}		0.0017			0.0012			0.0014			0.0011			0.0016	0.0012					0.0054				0.0037		

Table F7 - Mine rock MSS-A HCT results cont.

\	Units	MSS-A											
Date Sampled		8/13/13	8/20/13	8/27/13	9/3/13	9/10/13	9/17/13	9/24/13	10/1/13	10/8/13	10/15/13	10/22/13	10/29/13
Day		364	371	378	385	392	399	406	413	420	427	434	441
Week		52	53	54	55	56	57	58	59	60	61	62	63
Bottle	g												
Mass Before Adding Water	g	1316.87	1300.01	1318.99	1297.45	1312.29	1321.3	1316.52	1308.95	1326.36	1314.58	1315.54	1302.78
Mass After Adding Water	g	2316.61	2289.49	2309.56	2303.57	2313.64	2318.72	2318.48	2311.64	2331.5	2300.74	2298.77	2293.34
Volume Water Recovered	mL	992.0	980.0	1005.9	976.3	985.7	997.5	993.6	977.1	1000.6	982.3	980.0	965.7
Mass After Water Recovered	g	1324.63	NR	1303.7	1327.32	1327.97	1321.22	1324.9	1334.54	1330.91	1318.42	1318.77	1327.6
pH		5.74	5.80	6.75	5.87	7.07	5.37	6.67	6.30	6.78	6.47	6.22	6.05
Conductivity	uS cm-1	10.51	10.91	12.12	8.80	9.94	7.76	8.32	7.52	9.06	10.41	9.65	15.95
Sulphate	mg L^{-1}	1.95					<1.5				1.83		
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10					<10				<10		
Dissolved Metals													
Aluminum (Al)	mg L^{-1}	0.0048					0.0012				0.0027		
Antimony (Sb)	mg L^{-1}	0.00014					<0.00010				0.00010		
Arsenic (As)	mg L^{-1}	0.00080					0.00043				0.00071		
Barium (Ba)	mg L^{-1}	0.000578					0.000437				0.000806		
Beryllium (Be)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}	<0.000010					<0.000010				<0.000010		
Calcium (Ca)	mg L^{-1}	1.04					0.69				0.833		
Chromium (Cr)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}	0.00160					0.00128				0.00209		
Copper (Cu)	mg L^{-1}	0.00074					0.00025				0.00023		
Iron (Fe)	mg L^{-1}	<0.010					<0.010				<0.010		
Lead (Pb)	mg L^{-1}	0.000193					0.000302				0.000261		
Lithium (Li)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	mg L^{-1}	0.0365					0.0177				0.0261		
Manganese (Mn)	mg L^{-1}	0.00651					0.00490				0.00631		
Molybdenum (Mo)	mg L^{-1}	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}	0.00425					0.00353				0.00569		
Phosphorus (P)	mg L^{-1}	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}	0.212					0.161				0.300		
Selenium (Se)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}	0.085					0.055				5.18		
Silver (Ag)	mg L^{-1}	<0.000010					<0.000010				<0.000010		
Sodium (Na)	mg L^{-1}	0.193					0.090				0.121		
Strontium (Sr)	mg L^{-1}	0.00146					0.00084				0.00103		
Sulfur (S)	mg L^{-1}	0.65					<0.50				0.61		
Thallium (Tl)	mg L^{-1}	<0.000010					<0.000010				<0.000010		
Tin (Sn)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}	0.000027					0.000013				0.000022		
Vanadium (V)	mg L^{-1}	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}	0.0057					0.0019				0.0023		

Table F8 - Mine rock MSS-B HCT results

Humidity Cell ID	Units	MSS-B												
Date Sampled		8/14/12	8/21/12	8/28/12	9/4/12	9/11/12	9/18/12	9/25/12	10/2/12	10/9/12	10/16/12	10/23/12	10/30/12	11/6/12
Day		0	7	14	21	28	35	42	49	56	63	70	77	84
Week		0	1	2	3	4	5	6	7	8	9	10	11	12
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95
Mass Before Adding Water	g	1275.93	1361.18	1329.87	1323.32	1337.47	1336.67	1337.2	1324.93	1317.36	1332.76	1326.32	1336.48	1333.41
Mass After Adding Water	g	2212.3	2362.46	2235.58	2316.56	2324.86	2327.36	2260.06	2243.81	2306.57	2330.51	2320.73	2334.48	2322.13
Volume Water Recovered	mL	839.71	1026.22	907.69	977	985.36	986.5	933.3	922.9	970.2	1001.6	981.6	996.4	990.1
Mass After Water Recovered	g	1372.59	1336.24	1327.89	1339.56	1339.5	1340.83	1326.74	1320.96	1336.4	1328.9	1339.12	1338.08	1332.03
pH		7.65	7.85	7.55	7.67	7.17	7.33	7.47	7.49	7.3	7.13	7.68	6.96	7.57
Conductivity	uS cm-1	59.8	64.7	41.8	25.93	22.89	15.69	24.71	27.57	11.99	14.3	32.5	14.1	48.3
Sulphate	mg L^{-1}	11.43	15.36	8.52	5.28	3.63	3.15	3.99	4.59	2.49	9.93	2.94	2.40	2.43
Alkalinity (as $CaCO_3$)	mg L^{-1}	< 10.0	< 10.0	<10.0	<10.0	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Metals														
Aluminum (Al)	mg L^{-1}	0.0861	0.0609	0.0834	0.0511	0.0101	0.0142	0.0476	0.0832	0.0127	0.0085	0.0134	0.0076	0.0116
Antimony (Sb)	mg L^{-1}	0.00350	0.00774	0.00594	0.00388	0.00269	0.00188	0.00288	0.00300	0.00099	0.00146	0.00155	0.00103	0.00103
Arsenic (As)	mg L^{-1}	0.00096	0.00074	0.00069	0.00061	0.00031	0.00030	0.00059	0.00068	0.00020	<0.00010	0.00033	0.00024	0.00022
Barium (Ba)	mg L^{-1}	0.000633	0.000697	0.000563	0.000311	0.000267	0.000230	0.000365	0.000603	0.000303	0.000915	0.000313	0.000340	0.000399
Beryllium (Be)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)	mg L^{-1}	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)	mg L^{-1}	< 0.01	0.013	0.011	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)	mg L^{-1}	< 0.00001	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	0.000014	<0.000010	0.000015	0.000030
Calcium (Ca)	mg L^{-1}	4.98	5.70	3.84	2.66	1.74	1.42	2.70	2.99	1.17	3.55	1.61	1.27	1.22
Chromium (Cr)	mg L^{-1}	0.00011	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00010
Cobalt (Co)	mg L^{-1}	0.00026	0.00019	<0.0001	<0.0001	0.00011	<0.00010	0.00011	0.00012	<0.00010	0.00030	0.00016	0.00015	0.00018
Copper (Cu)	mg L^{-1}	0.00151	0.00038	0.00029	<0.0002	0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0126
Iron (Fe)	mg L^{-1}	0.042	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (Pb)	mg L^{-1}	0.00240	0.000843	0.000692	0.000291	0.000261	0.000222	0.000576	0.00172	0.000534	0.000158	0.000576	0.000591	0.00151
Lithium (Li)	mg L^{-1}	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium (Mg)	mg L^{-1}	0.772	1.04	0.595	0.394	0.257	0.198	0.290	0.339	0.124	0.432	0.167	0.130	0.129
Manganese (Mn)	mg L^{-1}	0.0220	0.0218	0.0133	0.00908	0.00684	0.00567	0.00991	0.0113	0.00525	0.0436	0.00763	0.00609	0.00663
Molybdenum (Mo)	mg L^{-1}	0.000336	0.000385	0.000225	0.000103	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	0.000055	<0.000050	<0.000050	<0.000050
Nickel (Ni)	mg L^{-1}	0.00371	0.00202	0.00071	<0.0005	0.00057	<0.00050	<0.00050	<0.00050	<0.00050	0.00411	0.00051	<0.00050	0.00547
Phosphorus (P)	mg L^{-1}	< 0.3	< 0.3	<0.3	<0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)	mg L^{-1}	2.41	1.72	1.18	0.749	0.400	0.311	0.632	0.804	0.293	0.507	0.645	0.270	18.4
Selenium (Se)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)	mg L^{-1}	0.323	0.454	0.454	0.340	0.180	0.158	0.303	0.344	0.116	0.177	0.153	0.115	0.126
Silver (Ag)	mg L^{-1}	0.000015	0.000016	<0.00001	<0.00001	0.000094	<0.000010	<0.000010	<0.000010	<0.000010	0.000019	0.00115	<0.000010	0.0441
Sodium (Na)	mg L^{-1}	1.45	1.42	0.724	0.449	0.313	0.208	0.259	0.262	0.147	0.189	0.186	0.136	0.161
Strontium (Sr)	mg L^{-1}	0.0157	0.0222	0.0135	0.00901	0.00624	0.00517	0.00840	0.00922	0.00381	0.0124	0.00513	0.00407	0.00390
Sulfur (S)	mg L^{-1}	3.81	5.12	2.84	1.76	1.21	1.05	1.33	1.53	0.83	3.31	0.98	0.80	0.81
Thallium (Tl)	mg L^{-1}	< 0.00001	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)	mg L^{-1}	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)	mg L^{-1}	0.000291	0.00101	0.000508	0.000267	0.000213	0.000193	0.000246	0.000223	0.000102	0.000177	0.000127	0.000091	0.000100
Vanadium (V)	mg L^{-1}	< 0.001	< 0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)	mg L^{-1}	0.0019	0.0012	<0.001	<0.001	0.0056	0.0020	0.0020	0.0022	0.0035	0.0120	0.0034	0.0041	0.0029

Humidity Cell ID	Units	MSS-B												
Date Sampled		11/13/12	11/20/12	11/27/12	12/4/12	12/11/12	12/18/12	12/24/12	1/2/13	1/9/13	1/15/13	1/22/13	1/29/13	2/5/13
Day		91	98	105	112	119	126	132	141	148	155	161	168	175
Week		13	14	15	16	17	18	19	20	21	22	23	24	25
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	
Mass Before Adding Water	g	1329.67	1333.8	1332.97	1324.71	1327.64	1340.96	1329.81	1328.55	1330.42	1331.89	1330.8	1333.8	1335.14
Mass After Adding Water	g	2314.18	2335.89	2335.71	2333.59	2334.87	2340.03	2334.27	2330.55	2345.47	2331.17	2336.94	2333.3	2353.18
Volume Water Recovered	mL	977.0	1000.9	1004.6	1001.2	991.5	1008.0	998.6	996.5	1010.9	998.6	999.8	993.4	1018.4
Mass After Water Recovered	g	1337.17	1334.98	1331.11	1332.39	1343.37	1331.99	1335.64	1334.07	1334.58	1332.58	1337.15	1339.95	1334.82
pH		7.01	7.02	6.81	6.8	6.67	6.63	6.56	6.37	6.52	6.6	6.71	7.21	6.43
Conductivity	uS cm-1	15.23	15.02	11.86	12.18	14.88	12.97	13.46	16.16	12.92	12.6	15.32	17.47	12.14
Sulphate	mg L^{-1}	2.67	2.40	1.95	2.19	2.49	2.49	2.10	2.76		2.19		2.13	
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10	<10	<10	<10	<10	<10	<10	<10		<10			
Dissolved Metals														
Aluminum (Al)	mg L^{-1}	0.0071	0.0055	0.0045	0.0041	0.0045	0.0025	0.0027	0.0021		0.0021		<0.00100	
Antimony (Sb)	mg L^{-1}	0.00115	0.00126	0.00087	0.00086	0.00106	0.00083	0.00078	0.00091		0.00067		0.00059	
Arsenic (As)	mg L^{-1}	0.00024	0.00025	0.00023	0.00018	0.00022	0.00019	0.00018	0.00020		0.00017		0.00013	
Barium (Ba)	mg L^{-1}	0.000336	0.000295	0.000299	0.000325	0.000353	0.000301	0.000348	0.000378		0.000396		0.000323	
Beryllium (Be)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Bismuth (Bi)	mg L^{-1}	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Boron (B)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	0.010	<0.010		<0.010		0.012	
Cadmium (Cd)	mg L^{-1}	0.000010	<0.000010	<0.000010	<0.000010	0.000011	0.000011	0.000011	0.000017		0.000020		0.000013	
Calcium (Ca)	mg L^{-1}	1.42	1.53	1.27	1.29	1.65	1.38	1.34	1.65		1.18		1.26	
Chromium (Cr)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Cobalt (Co)	mg L^{-1}	0.00019	0.00022	0.00020	0.00018	0.00025	0.00025	0.00028	0.00037		0.00038		0.00028	
Copper (Cu)	mg L^{-1}	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00051	0.00044	0.00062		0.00070		0.00031	
Iron (Fe)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.010	
Lead (Pb)	mg L^{-1}	0.000677	0.000653	0.000548	0.000659	0.000818	0.000841	0.000977	0.00118		0.00110		0.000507	
Lithium (Li)	mg L^{-1}	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Magnesium (Mg)	mg L^{-1}	0.138	0.135	0.118	0.113	0.131	0.114	0.108	0.128		0.122		0.0870	
Manganese (Mn)	mg L^{-1}	0.00706	0.00781	0.00658	0.00672	0.00876	0.00766	0.00842	0.0104		0.0108		0.00816	
Molybdenum (Mo)	mg L^{-1}	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050		<0.000050	
Nickel (Ni)	mg L^{-1}	0.00072	0.00065	0.00054	<0.00050	0.00069	0.00076	0.00086	0.00107		0.00096		0.00073	
Phosphorus (P)	mg L^{-1}	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30		0.3	
Potassium (K)	mg L^{-1}	0.955	0.390	0.353	0.270	0.463	0.320	0.513	0.446		0.372		0.540	
Selenium (Se)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Silicon (Si)	mg L^{-1}	0.132	0.136	0.105	0.097	0.129	0.113	0.112	0.115		0.098		0.095	
Silver (Ag)	mg L^{-1}	0.000076	0.000021	<0.000010	<0.000010	0.000017	<0.000010	0.000015	0.000022		0.000010		0.000034	
Sodium (Na)	mg L^{-1}	0.238	0.127	0.132	0.130	0.119	0.184	0.172	0.193		0.233		0.207	
Strontium (Sr)	mg L^{-1}	0.00454	0.00478	0.00399	0.00394	0.00503	0.00407	0.00393	0.00478		0.00327		0.00351	
Sulfur (S)	mg L^{-1}	0.89	0.80	0.65	0.73	0.83	0.83	0.70	0.92		0.73		0.71	
Thallium (Tl)	mg L^{-1}	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Tin (Sn)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Titanium (Ti)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.01000	
Uranium (U)	mg L^{-1}	0.000085	0.000096	0.000086	0.000103	0.000106	0.000085	0.000084	0.000100		0.000073		0.000045	
Vanadium (V)	mg L^{-1}	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010		<0.0010	
Zinc (Zn)	mg L^{-1}	0.0061	0.0037	0.0036	0.0051	0.0041	0.0046	0.0053	0.0073		0.0082		0.0066	

Table F8 - Mine rock MSS-B HCT results cont.

Humidity Cell ID	Units	MSS-B																									
Date Sampled		2/12/13	2/19/13	2/26/13	3/5/13	3/12/13	3/19/13	3/26/13	4/2/13	4/9/13	4/16/13	4/23/13	4/30/13	5/7/13	5/14/13	5/21/13	5/28/13	6/4/13	6/11/13	6/18/13	6/25/13	7/2/13	7/9/13	7/16/13	7/23/13	7/30/13	8/6/13
Day		182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	322	329	336	343	350	357
Week		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Bottle	g																										
Mass Before Adding Water	g	1329.59	1339.42	1303.73	1297.95	1308.35	1330.45	1326.54	1327.15	1292.64	1294.37	1324.5	1317.96	1320.23	1317.83	1295.54	1297.36	1322.57	1336.72	1314.94	1324.24	1296.49	1319.92	1318.23	1301.2	1305.53	1314.46
Mass After Adding Water	g	2331.55	2331.8	2294.98	2298.01	2305.72	2333.06	2326.22	2329.4	2285.99	2293.01	2320.46	2312.22	2320.52	2309.4	2287.32	2293.46	2323.31	2337.39	2311.66	2317.49	2295.67	2326.81	2316.78	2306.3	2306.4	2317.82
Volume Water Recovered	mL	989.3	1017.3	985.4	959.3	967.6	996.0	991.2	1005.8	977.1	961.7	994.6	978.6	998.6	1000.7	984.6	966.8	978.8	1011.1	979.1	1013.9	971.0	1000.4	999.8	982.0	987.1	994.5
Mass After Water Recovered	g	1342.24	1314.51	1309.61	1338.72	1338.17	1337.09	1335	1323.62	1308.85	1331.34	1325.88	1333.64	1321.93	1308.74	1302.7	1326.71	1344.54	1326.31	1332.54	1303.59	1324.69	1326.4	1317	1324.32	1319.33	1323.29
pH		6.79	6.9	6.89	6.6	6.74	6.88	6.84	6.58	6.86	6.62	6.55	6.76	6.91	6.79	7.02	6.73	6.89	7.05	6.89	7.12	6.88	6.96	7.2	7.24	6.61	6.09
Conductivity	uS cm-1	13.82	18.6	16.77	10.35	14.89	15.66	11.18	9.62	16.18	10.38	11.96	12.34	11.82	15.02	13.75	8.95	12.31	11.77	11.67	20.75	12.26	13.31	14.27	15.65	11.87	11.38
Sulphate	mg L^{-1}		2.85			2.13			1.62			2.19			2.34	2.52					3.12				3.09		
Alkalinity (as $CaCO_3$)	mg L^{-1}		<10			<10			<10			<10			<10	<10					<10				<10		
Dissolved Metals																											
Aluminum (Al)	mg L^{-1}		0.0095			0.0063			0.0015			0.0023			0.0071	0.0122					0.1970				0.0054		
Antimony (Sb)	mg L^{-1}		0.00111			0.00067			0.00044			0.00052			0.00055	0.00058					0.00066				0.00042		
Arsenic (As)	mg L^{-1}		0.00016			0.00015			<0.00010			0.00011			<0.00010	0.00015					0.00030				0.00014		
Barium (Ba)	mg L^{-1}		0.000707			0.000482			0.000322			0.000458			0.000593	0.000514					0.001800				0.000548		
Beryllium (Be)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}		0.000031			0.000022			0.000013			0.000023			0.000027	0.000026					0.000038				0.000023		
Calcium (Ca)	mg L^{-1}		2.15			1.54			0.997			1.39			1.51	1.42					1.82				1.37		
Chromium (Cr)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					0.000350				<0.00010		
Cobalt (Co)	mg L^{-1}		0.00045			0.00027			0.00018			0.00021			0.00034	0.00022					0.00040				0.00023		
Copper (Cu)	mg L^{-1}		<0.00020			<0.00020			<0.00020			<0.00020			0.00021	<0.00020					0.00184				0.00023		
Iron (Fe)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					0.11100				<0.010		
Lead (Pb)	mg L^{-1}		0.00146			0.00108			0.000850			0.000872			0.00106	0.000896					0.009770				0.001010		
Lithium (Li)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	mg L^{-1}		0.134			0.0919			0.0567			0.0697			0.0753	0.0680					0.1510				0.0759		
Manganese (Mn)	mg L^{-1}		0.0145			0.00879			0.00592			0.00786			0.00983	0.00767					0.01220				0.01120		
Molybdenum (Mo)	mg L^{-1}		<0.000050			<0.000050			<0.000050			<0.000050			<0.000050	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}		0.00117			0.00075			0.00051			0.00052			0.00074	0.00052					0.00117				0.00070		
Phosphorus (P)	mg L^{-1}		<0.30			<0.30			<0.30			<0.30			<0.30	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}		0.550			0.392			0.209			0.321			0.389	0.421					0.550				0.367		
Selenium (Se)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}		0.167			0.108			0.058			0.084			0.105	0.115					0.421				0.092		
Silver (Ag)	mg L^{-1}		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					0.000016				0.000010		
Sodium (Na)	mg L^{-1}		0.147			0.142			0.126			0.162			0.154	0.149					0.189				0.277		
Strontium (Sr)	mg L^{-1}		0.00550			0.00366			0.00232			0.00316			0.00325	0.00294					0.00376				0.00378		
Sulfur (S)	mg L^{-1}		0.95			0.71			0.54			0.73			0.78	0.84					1.04				1.03		
Thallium (Tl)	mg L^{-1}		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					0.000019				<0.000010		
Tin (Sn)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}		0.000093			0.000079			0.000050			0.000086			0.000066	0.000058					0.000101				0.001290		
Vanadium (V)	mg L^{-1}		<0.0010			<0.0010			<0.0010			<0.0010			<0.0010	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}		0.0089			0.0063			0.0055			0.0054			0.0079	0.0058					0.0184				0.0093		

Table F8 - Mine rock MSS-B HCT results cont.

Humidity Cell ID	Units	MSS-B											
Date Sampled		8/13/13	8/20/13	8/27/13	9/3/13	9/10/13	9/17/13	9/24/13	10/1/13	10/8/13	10/15/13	10/22/13	10/29/13
Day		364	371	378	385	392	399	406	413	420	427	434	441
Week		52	53	54	55	56	57	58	59	60	61	62	63
Bottle	g												
Mass Before Adding Water	g	1307.57	1305.52	1303.37	1294.22	1320.62	1315.56	1308.76	1313.61	1315.48	1317.27	1295.45	1297.53
Mass After Adding Water	g	2310.09	2298.95	2296.76	2300.22	2316.08	2317.21	2318.09	2330.1	2320.33	2309.53	2286.17	2283.91
Volume Water Recovered	mL	990.8	1000.0	997.2	974.6	995.5	990.9	1000.5	1005.2	992.1	1011.7	972.0	960.9
Mass After Water Recovered	g	1319.31	NR	1299.6	1325.6	1320.54	1326.29	1317.56	1324.86	1328.2	1297.82	1314.18	1323.01
pH		6.15	5.92	7.6		6.55	5.49	6.66	6.58	6.85	6.79	6.36	6.03
Conductivity	uS cm-1	13.38	12.6	17.77		12.53	10.37	10.47	10.53	10.96	15.04	12.26	21.32
Sulphate	mg L^{-1}	2.43					1.56				2.52		
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10					<10				<10		
Dissolved Metals													
Aluminum (Al)	mg L^{-1}	0.0043					0.0019				0.0018		
Antimony (Sb)	mg L^{-1}	0.00037					0.00027				0.00035		
Arsenic (As)	mg L^{-1}	0.00014					<0.00010				0.00026		
Barium (Ba)	mg L^{-1}	0.000480					0.000387				0.000714		
Beryllium (Be)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}	0.000042					0.000019				0.000029		
Calcium (Ca)	mg L^{-1}	1.25					1.05				1.45		
Chromium (Cr)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}	0.00020					0.00019				0.00037		
Copper (Cu)	mg L^{-1}	0.00031					0.00093				<0.00020		
Iron (Fe)	mg L^{-1}	<0.010					<0.010				<0.010		
Lead (Pb)	mg L^{-1}	0.00108					0.00114				0.00181		
Lithium (Li)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	mg L^{-1}	0.0609					0.0481				0.0619		
Manganese (Mn)	mg L^{-1}	0.00532					0.00457				0.00703		
Molybdenum (Mo)	mg L^{-1}	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}	0.00057					0.00058				0.00096		
Phosphorus (P)	mg L^{-1}	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}	0.291					0.219				0.470		
Selenium (Se)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}	0.091					0.066				3.66		
Silver (Ag)	mg L^{-1}	<0.000010					<0.000010				0.000016		
Sodium (Na)	mg L^{-1}	0.157					0.092				0.123		
Strontium (Sr)	mg L^{-1}	0.00249					0.00210				0.00281		
Sulfur (S)	mg L^{-1}	0.81					0.52				0.84		
Thallium (Tl)	mg L^{-1}	<0.000010					<0.000010				<0.000010		
Tin (Sn)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}	0.000037					0.000025				0.000050		
Vanadium (V)	mg L^{-1}	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}	0.0067					0.0059				0.0109		

Table F9 - Mine rock MSS-C HCT results

Humidity Cell ID	Units	MSS-C												
Date Sampled		8/14/12	8/21/12	8/28/12	9/4/12	9/11/12	9/18/12	9/25/12	10/2/12	10/9/12	10/16/12	10/23/12	10/30/12	11/6/12
Day		0	7	14	21	28	35	42	49	56	63	70	77	84
Week		0	1	2	3	4	5	6	7	8	9	10	11	12
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95
Mass Before Adding Water	g	1280.51	1366.33	1333.76	1332.66	1341.68	1319.09	1332.52	1328.13	1319.12	1326.56	1324.45	1327.62	1336.84
Mass After Adding Water	g	2242.38	2378.9	2245.88	2324.11	2327.21	2311.03	2248.44	2256.17	2307.02	2321.41	2319.12	2322.48	2322.03
Volume Water Recovered	mL	866.91	1038.56	908.58	980.28	1004.94	974.4	918.2	933.7	976.4	994.4	989.3	983.2	998.3
Mass After Water Recovered	g	1375.47	1340.34	1337.3	1343.83	1322.27	1336.59	1330.25	1322.5	1330.61	1327	1329.79	1339.31	1323.72
pH		7.49	7.68	7.64	7.62	7.55	7.19	7.41	7.24	7.24	6.92	6.99	6.82	6.74
Conductivity	uS cm-1	58.8	55.2	30.7	17.89	20.75	11.12	19.01	18.05	11.4	12.54	12.13	11.68	9.71
Sulphate	mg L^{-1}	10.53	13.41	6.72	4.05	2.79	2.58	3.30	3.45	2.52	2.82	2.58	2.49	2.22
Alkalinity (as $CaCO_3$)	mg L^{-1}	< 10.0	< 10.0	<10.0	<10.0	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dissolved Metals														
Aluminum (Al)	mg L^{-1}	0.0481	0.0448	0.0490	0.0160	0.0048	0.0059	0.0620	0.0239	0.0067	0.0081	0.0082	0.0030	0.0029
Antimony (Sb)	mg L^{-1}	0.00586	0.0136	0.00937	0.00502	0.00334	0.00229	0.00320	0.00389	0.00191	0.00205	0.00181	0.00159	0.00107
Arsenic (As)	mg L^{-1}	0.00181	0.00205	0.00138	0.00082	0.00044	0.00040	0.00059	0.00066	0.00034	0.00027	0.00030	0.00027	0.00017
Barium (Ba)	mg L^{-1}	0.000733	0.000728	0.000530	0.000382	0.000281	0.000251	0.000773	0.000498	0.000293	0.000301	0.000351	0.000295	0.000276
Beryllium (Be)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)	mg L^{-1}	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)	mg L^{-1}	< 0.01	0.011	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)	mg L^{-1}	0.000134	0.000032	0.000021	0.000014	0.000016	0.000016	0.000023	0.000027	0.000022	0.000020	0.000024	0.000029	0.000028
Calcium (Ca)	mg L^{-1}	4.36	5.05	2.75	1.69	1.17	0.876	1.49	1.73	1.07	1.23	1.12	1.02	0.817
Chromium (Cr)	mg L^{-1}	0.00014	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00012	<0.00010	<0.00010
Cobalt (Co)	mg L^{-1}	0.00036	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)	mg L^{-1}	0.00448	0.00066	0.00041	0.00022	0.00023	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Iron (Fe)	mg L^{-1}	0.038	< 0.01	<0.01	<0.01	<0.010	<0.010	0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (Pb)	mg L^{-1}	0.00505	0.00148	0.00141	0.000656	0.000511	0.000749	0.00400	0.00142	0.000847	0.000952	0.00127	0.00150	0.00167
Lithium (Li)	mg L^{-1}	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium (Mg)	mg L^{-1}	0.555	0.742	0.389	0.236	0.159	0.115	0.189	0.207	0.120	0.134	0.128	0.116	0.0948
Manganese (Mn)	mg L^{-1}	0.0393	0.0311	0.0181	0.0114	0.00859	0.00676	0.0144	0.0157	0.00983	0.0115	0.0117	0.0109	0.00951
Molybdenum (Mo)	mg L^{-1}	0.000253	0.000314	0.000166	0.000087	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel (Ni)	mg L^{-1}	0.00513	0.00120	0.00057	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus (P)	mg L^{-1}	< 0.3	< 0.3	<0.3	<0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)	mg L^{-1}	2.20	1.62	1.03	0.590	0.443	0.247	0.446	0.513	0.266	0.266	0.280	0.234	0.156
Selenium (Se)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)	mg L^{-1}	0.224	0.501	0.410	0.265	0.158	0.115	0.299	0.278	0.160	0.154	0.147	0.124	0.096
Silver (Ag)	mg L^{-1}	0.000029	< 0.00001	<0.00001	0.000011	0.000477	0.000167	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000084
Sodium (Na)	mg L^{-1}	0.907	0.939	0.469	0.259	0.229	0.158	0.181	0.182	0.145	0.131	0.124	0.130	0.133
Strontium (Sr)	mg L^{-1}	0.0161	0.0224	0.0119	0.00741	0.00523	0.00404	0.00646	0.00723	0.00444	0.00514	0.00469	0.00432	0.00345
Sulfur (S)	mg L^{-1}	3.51	4.47	2.24	1.35	0.93	0.86	1.10	1.15	0.84	0.94	0.86	0.83	0.74
Thallium (Tl)	mg L^{-1}	< 0.00001	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)	mg L^{-1}	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)	mg L^{-1}	0.000285	0.000258	0.000109	0.000060	0.000029	0.000025	0.000041	0.000035	0.000023	0.000023	0.000019	0.000017	0.000015
Vanadium (V)	mg L^{-1}	< 0.001	< 0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)	mg L^{-1}	0.0419	0.0048	0.0028	0.0042	0.0046	0.0045	0.0068	0.0065	0.0047	0.0058	0.0067	0.0073	0.0070

Humidity Cell ID	Units	MSS-C												
Date Sampled		11/13/12	11/20/12	11/27/12	12/4/12	12/11/12	12/18/12	12/24/12	1/2/13	1/9/13	1/15/13	1/22/13	1/29/13	2/5/13
Day		91	98	105	112	119	126	132	141	148	155	161	168	175
Week		13	14	15	16	17	18	19	20	21	22	23	24	25
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	
Mass Before Adding Water	g	1320.45	1331.8	133.5	1325.65	1326.29	1320.14	1325.45	1330.51	1325.87	1327.83	1326.75	1323.61	1337.46
Mass After Adding Water	g	2293.73	2335.4	2330.94	2326.74	2329.54	2319.94	2327.61	2331.5	2327.43	2331.06	2331.88	2329.24	2343.39
Volume Water Recovered	mL	958.0	997.3	999.6	996.5	1005.7	988.6	993.4	1004.1	997.1	1000.4	1004.9	986.4	1005.2
Mass After Water Recovered	g	1335.76	1338.06	1331.38	1330.22	1323.83	1331.36	1334.25	1327.41	1330.29	1330.68	1327	1342.88	1338.17
pH		6.83	6.82	6.51	6.53	6.51	6.35	6.46	6.28	6.26	6.35	6.11	6.24	6.28
Conductivity	uS cm-1	11.78	11.83	9.92	10.78	11.59	10.79	10.97	13.41	8.78	10.82	10.36	8.32	9.97
Sulphate	mg L^{-1}	1.50	2.49	2.22	1.98	2.22	2.61	2.25	3.00		2.25		1.71	
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
Dissolved Metals														
Aluminum (Al)	mg L^{-1}	0.0044	0.0018	0.0028	0.0010	0.0100	<0.0010	<0.0010	<0.0010		0.0014		0.0010	
Antimony (Sb)	mg L^{-1}	0.00136	0.00147	0.00101	0.00084	0.00090	0.00085	0.00097	0.00095		0.00065		0.00044	
Arsenic (As)	mg L^{-1}	0.00029	0.00026	0.00022	0.00025	0.00022	0.00023	0.00027	0.00026		0.00017		0.00011	
Barium (Ba)	mg L^{-1}	0.000292	0.000359	0.000334	0.000271	0.000430	0.000385	0.000309	0.000447		0.000364		0.000308	
Beryllium (Be)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Bismuth (Bi)	mg L^{-1}	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Boron (B)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010		<0.010		0.014	
Cadmium (Cd)	mg L^{-1}	0.000029	0.000029	0.000030	0.000031	0.000037	0.000040	0.000037	0.000059		0.000046		0.000031	
Calcium (Ca)	mg L^{-1}	1.08	1.13	0.837	0.857	0.986	0.970	1.01	1.24		0.916		0.674	
Chromium (Cr)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Cobalt (Co)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Copper (Cu)	mg L^{-1}	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00066	0.00053	0.00062		0.00066		0.00070	
Iron (Fe)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.010	
Lead (Pb)	mg L^{-1}	0.00217	0.00256	0.00260	0.00222	0.00287	0.00337	0.00344	0.00468		0.00464		0.00439	
Lithium (Li)	mg L^{-1}	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Magnesium (Mg)	mg L^{-1}	0.109	0.115	0.0990	0.0879	0.0984	0.0972	0.0986	0.119		0.0906		0.0610	
Manganese (Mn)	mg L^{-1}	0.0120	0.0132	0.0114	0.0108	0.0132	0.0129	0.0136	0.0175		0.0149		0.00994	
Molybdenum (Mo)	mg L^{-1}	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050		<0.000050	
Nickel (Ni)	mg L^{-1}	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00082	<0.00050	<0.00050		<0.00050		<0.00050	
Phosphorus (P)	mg L^{-1}	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30		0.3	
Potassium (K)	mg L^{-1}	0.516	0.271	0.276	0.225	0.292	0.263	0.338	0.344		0.225		0.144	
Selenium (Se)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Silicon (Si)	mg L^{-1}	0.128	0.134	0.108	0.088	0.139	0.113	0.117	0.123		0.095		0.075	
Silver (Ag)	mg L^{-1}	0.000240	<0.000010	<0.000010	<0.000010	0.000016	<0.000010	0.000016	0.000030		<0.000010		0.000014	
Sodium (Na)	mg L^{-1}	0.103	0.106	0.115	0.117	0.098	0.189	0.159	0.198		0.197		0.193	
Strontium (Sr)	mg L^{-1}	0.00444	0.00477	0.00359	0.00351	0.00400	0.00389	0.00395	0.00489		0.00366		0.00276	
Sulfur (S)	mg L^{-1}	<0.50	0.83	0.74	0.66	0.74	0.87	0.75	1.00		0.75		0.57	
Thallium (Tl)	mg L^{-1}	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Tin (Sn)	mg L^{-1}	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Titanium (Ti)	mg L^{-1}	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.010	
Uranium (U)	mg L^{-1}	0.000018	0.000019	0.000015	0.000016	0.000018	0.000018	0.000022	0.000026		0.000020		0.000017	
Vanadium (V)	mg L^{-1}	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010		<0.0010	
Zinc (Zn)	mg L^{-1}	0.0067	0.0084	0.0076	0.0098	0.0147	0.0118	0.0115	0.0169		0.0146		0.0120	

Table F9 - Mine rock MSS-C HCT results cont.

Humidity Cell ID	Units	MSS-C																									
Date Sampled		2/12/13	2/19/13	2/26/13	3/5/13	3/12/13	3/19/13	3/26/13	4/2/13	4/9/13	4/16/13	4/23/13	4/30/13	5/7/13	5/14/13	5/21/13	5/28/13	6/4/13	6/11/13	6/18/13	6/25/13	7/2/13	7/9/13	7/16/13	7/23/13	7/30/13	8/6/13
Day		182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	322	329	336	343	350	357
Week		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Bottle	g																										
Mass Before Adding Water	g	1335.72	1332.63	1293.51	1304.05	1322.11	1329.07	1331.72	1319.32	1315.23	1301.56	1296.32	1310.26	1312.24	1265.37	1285.88	130.267	1305.24	1323.2	1320.07	1279.64	1297.27	1312.06	1312.26	1281.71	1311.84	1307.76
Mass After Adding Water	g	2339.87	2325.78	2284.79	2304.26	2347.54	2330.22	2335.91	2319.12	2310.98	2317.14	2293.12	2311.95	2311.94	2256.84	2277.51	2302.77	2307.49	2322.58	2316.07	2273.71	2294.35	2318.62	2311.25	2286.71	2313.69	2314.37
Volume Water Recovered	mL	1004.8	1012.1	969.3	967.6	1008.6	988.1	1007.8	991.2	1000.8	985.9	962.9	980.6	989.8	951.7	969.1	983.5	978.7	996.8	987.6	970.2	973.4	988.1	990.6	957.0	986.5	988.8
Mass After Water Recovered	g	1335.03	1313.66	1315.48	1336.64	1338.96	1342.09	1328.09	1327.91	1310.17	1331.27	1330.23	1331.36	1322.12	1305.16	1308.44	1319.24	1328.83	1325.77	1328.51	1303.54	1320.95	1330.5	1320.66	1329.69	1327.24	1325.61
pH		6.35	6.46	6.34	6.37	6.31	6.55	6.51	6.08	6.53	6.38	5.88	6.89	6.81	6.31	6.58	6.67	6.83	6.56	6.87	6.48	6.41	6.3	6.4	6.25	5.81	5.78
Conductivity	uS cm-1	10.35	12.07	11.28	9.6	8.59	10.67	8.12	7.67	12.57	9.44	9.25	15.6	13.53	12.09	13.11	8.98	10.89	9.71	11.81	13.9	10.41	9.94	11.07	11.42	7.75	9.31
Sulphate	$mg\ L^{-1}$		2.70			1.50			1.65			2.19			3.00	3.30					3.45				2.85		
Alkalinity (as $CaCO_3$)	$mg\ L^{-1}$		<10			<10			<10			<10			<10	<10					<10				<10		
Dissolved Metals																											
Aluminum (Al)	$mg\ L^{-1}$		0.0029			<0.0010			<0.0010			<0.0010			0.0033	0.0046					0.0024				0.0013		
Antimony (Sb)	$mg\ L^{-1}$		0.00085			0.00027			0.00033			0.00033			0.00045	0.00061					0.00042				0.00033		
Arsenic (As)	$mg\ L^{-1}$		0.00018			<0.00010			0.00011			0.00018			0.00013	0.00018					0.00018				0.00019		
Barium (Ba)	$mg\ L^{-1}$		0.000577			0.000402			0.000323			0.000829			0.000864	0.000868					0.000830				0.000641		
Beryllium (Be)	$mg\ L^{-1}$		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	$mg\ L^{-1}$		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Boron (B)	$mg\ L^{-1}$		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Cadmium (Cd)	$mg\ L^{-1}$		0.000064			0.000037			0.000049			0.000061			0.000105	0.000105					0.000100				0.000078		
Calcium (Ca)	$mg\ L^{-1}$		1.19			0.622			0.649			1.07			0.994	1.18					1.210				0.962		
Chromium (Cr)	$mg\ L^{-1}$		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	0.00023					<0.00010				<0.00010		
Cobalt (Co)	$mg\ L^{-1}$		0.00010			<0.00010			<0.00010			<0.00010			0.00011	<0.00010					<0.00010				<0.00010		
Copper (Cu)	$mg\ L^{-1}$		<0.00020			<0.00020			<0.00020			0.00020			0.00030	0.00021					0.00034				0.00025		
Iron (Fe)	$mg\ L^{-1}$		<0.010			<0.010			<0.010			<0.010			0.017	<0.010					<0.010				<0.010		
Lead (Pb)	$mg\ L^{-1}$		0.00513			0.00323			0.00439			0.00525			0.00796	0.00737					0.00738				0.00787		
Lithium (Li)	$mg\ L^{-1}$		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	$mg\ L^{-1}$		0.105			0.0517			0.0530			0.345			0.0714	0.0839					0.0809				0.0666		
Manganese (Mn)	$mg\ L^{-1}$		0.0193			0.00896			0.0102			0.0124			0.0161	0.0189					0.01650				0.01320		
Molybdenum (Mo)	$mg\ L^{-1}$		<0.000050			<0.000050			<0.000050			0.000052			<0.000050	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	$mg\ L^{-1}$		<0.00050			<0.00050			<0.00050			<0.00050			0.00170	0.00060					<0.00050				<0.00050		
Phosphorus (P)	$mg\ L^{-1}$		<0.30			<0.30			<0.30			<0.30			<0.30	<0.30					<0.30				<0.30		
Potassium (K)	$mg\ L^{-1}$		0.253			0.100			0.105			0.227			0.208	0.283					0.234				0.158		
Selenium (Se)	$mg\ L^{-1}$		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Silicon (Si)	$mg\ L^{-1}$		0.144			<0.050			0.055			0.111			0.078	0.145					0.100				0.084		
Silver (Ag)	$mg\ L^{-1}$		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				<0.000010		
Sodium (Na)	$mg\ L^{-1}$		0.112			0.133			0.123			0.722			0.144	0.139					0.155				0.149		
Strontium (Sr)	$mg\ L^{-1}$		0.00484			0.00232			0.00242			0.00456			0.00375	0.00423					0.00431				0.00395		
Sulfur (S)	$mg\ L^{-1}$		0.90			<0.50			0.55			0.73			1.00	1.10					1.15				0.95		
Thallium (Tl)	$mg\ L^{-1}$		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				<0.000010		
Tin (Sn)	$mg\ L^{-1}$		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	$mg\ L^{-1}$		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Uranium (U)	$mg\ L^{-1}$		0.000030			0.000015			0.000015			0.000046			0.000023	0.000020					0.000021				0.000025		
Vanadium (V)	$mg\ L^{-1}$		<0.0010			<0.0010			<0.0010			<0.0010			<0.0010	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	$mg\ L^{-1}$		0.0203			0.0116			0.0134			0.0178			0.0272	0.0279					0.0287				0.0241		

Table F9 - Mine rock MSS-C HCT results cont.

Humidity Cell ID	Units	MSS-C																						
Date Sampled		8/13/13	8/20/13	8/27/13	9/3/13	9/10/13	9/17/13	9/24/13	10/1/13	10/8/13	10/15/13	10/22/13	10/29/13	11/5/13	11/12/13	11/19/13	11/26/13	12/3/13	12/10/13	12/17/13	12/24/13	12/31/13	1/7/14	1/14/14
Day		364	371	378	385	392	399	406	413	420	427	434	441	448	469	483	496	511	525	539	553	567	581	595
Week		52	53	54	55	56	57	58	59	60	61	62	63	64	67	69	71	73	75	77	79	81	83	85
Bottle	g																							
Mass Before Adding Water	g	1310.04	1301.3	1317.25	1296.41	1319.16	1301.43	1315.08	1319.17	1312.8	1312.39	1315.84	1290.91	1290.86	1279.74	1290.9	1262.88	1286.06	1306.62	1277.94	1250.55	1258.05	1249.81	1250.79
Mass After Adding Water	g	2315.78	2284.57	2306.66	2296.67	2320.04	2307.6	2319.03	2324.08	2320.42	2302.07	2301.97	2282.43	3269.74	3265.53	3254.08	3238.44	3255.28	3295.59	3251.57	3230.51	3233.9	3235.33	3226.74
Volume Water Recovered	mL	994.7	1000.0	1005.3	972.3	995.4	982.7	995.0	999.8	996.8	983.8	1003.1	957.6	1960.0	1980.0	1960.0	1940.0	1930.0	2000.0	1980.0	1960.0	1950.0	1960.0	1950.0
Mass After Water Recovered	g	1321.06	NR	1301.38	1324.36	1324.6	1324.91	1324	1324.25	1323.64	1318.24	1298.87	1324.81	1326.17	1318.99	1331.06	1337.18	1349.61	1316.07	1305.87	1302.5	1304.55	1300.98	1301
pH		6.33	5.86		5.53	4.42	3.96	6.22	5.87	6.32	6.1	6.11	5.85	5.02	5.6		5.57	5.45	5.91	5.78	4.93	5.52	5.06	4.52
Conductivity	uS cm-1	10.92	12.6		10.51	20.09	14.29	3.29	4.02	8.54	10.73	10.51	16.21	23.25	10.12		11.63	15.12	17.16	11	11.37	12.1	7.98	12.89
Sulphate	mg L^{-1}	2.34					1.62				2.43			2.34		2.22		1.92		1.92		2.25		2.46
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10					<10				<10			<10		<10		<10		<10		<10		<10
Dissolved Metals																								
Aluminum (Al)	mg L^{-1}	0.0014					0.0011				<0.0010			0.0177		0.0019		0.0026		0.0011		0.0012		0.0019
Antimony (Sb)	mg L^{-1}	0.00029					0.00019				0.00023			0.00021		0.00016		0.00012		0.00013		<0.00010		0.00011
Arsenic (As)	mg L^{-1}	0.00022					0.00024				0.00019			0.00052		0.00012		<0.00010		<0.00010		0.00019		0.00017
Barium (Ba)	mg L^{-1}	0.000566					0.000493				0.000757			0.00161		0.000741		0.000828		0.000742		0.000929		0.00115
Beryllium (Be)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Bismuth (Bi)	mg L^{-1}	<0.00050					<0.00050				<0.00050			<0.00050		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050
Boron (B)	mg L^{-1}	<0.010					<0.010				<0.010			0.011		<0.010		<0.010		<0.010		<0.010		<0.010
Cadmium (Cd)	mg L^{-1}	0.000070					0.000066				0.000103			0.000193		0.000114		0.000114		0.000103		0.000123		0.000169
Calcium (Ca)	mg L^{-1}	0.804					0.727				0.756			0.995		0.710		0.726		0.726		0.803		0.881
Chromium (Cr)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Cobalt (Co)	mg L^{-1}	<0.00010					<0.00010				0.00011			0.00015		<0.00010		<0.00010		<0.00010		0.00012		0.00014
Copper (Cu)	mg L^{-1}	0.00052					0.00148				0.00027			0.00095		<0.00020		0.00022		0.00022		0.00031		0.00020
Iron (Fe)	mg L^{-1}	<0.010					<0.010				<0.010			0.012		<0.010		<0.010		<0.010		<0.010		<0.010
Lead (Pb)	mg L^{-1}	0.00735					0.00975				0.0116			0.0384		0.0138		0.0129		0.0139		0.0167		0.0230
Lithium (Li)	mg L^{-1}	<0.00050					<0.00050				<0.00050			<0.00050		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050
Magnesium (Mg)	mg L^{-1}	0.0576					0.0496				0.0533			0.117		0.0450		0.0388		0.0370		0.0438		0.0468
Manganese (Mn)	mg L^{-1}	0.0117					0.0100				0.0125			0.0182		0.0119		0.0121		0.0102		0.0130		0.0148
Molybdenum (Mo)	mg L^{-1}	<0.000050					<0.000050				<0.000050			<0.000050		<0.000050		<0.000050		<0.000050		<0.000050		0.000056
Nickel (Ni)	mg L^{-1}	<0.00050					<0.00050				0.00058			0.00075		0.00054		0.00054		<0.00050		0.00069		0.00083
Phosphorus (P)	mg L^{-1}	<0.30					<0.30				<0.30			<0.30		<0.30		<0.30		<0.30		<0.30		<0.30
Potassium (K)	mg L^{-1}	0.141					0.100				0.157			0.147		0.111		0.120		0.102		0.096		0.132
Selenium (Se)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Silicon (Si)	mg L^{-1}	0.097					0.068				5.02			0.888		0.074		0.067		0.052		<0.050		0.056
Silver (Ag)	mg L^{-1}	<0.000010					<0.000010				<0.000010			<0.000010		<0.000010		<0.000010		<0.000010		<0.000010		<0.000010
Sodium (Na)	mg L^{-1}	0.123					0.087				0.101			1.57		0.131		0.134		0.170		0.183		0.194
Strontium (Sr)	mg L^{-1}	0.00285					0.00259				0.00265			0.00338		0.00245		0.00238		0.00243		0.00261		0.00291
Sulfur (S)	mg L^{-1}	0.78					0.54				0.81			0.78		0.74		0.64		0.64		0.75		0.82
Thallium (Tl)	mg L^{-1}	<0.000010					<0.000010				<0.000010			<0.000010		<0.000010		<0.000010		<0.000010		<0.000010		<0.000010
Tin (Sn)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Titanium (Ti)	mg L^{-1}	<0.010					<0.010				<0.010			<0.010		<0.010		<0.010		<0.010		<0.010		<0.010
Uranium (U)	mg L^{-1}	0.000032					0.000019				0.000026			0.000107		0.000022		0.000019		0.000020		0.000023		0.000036
Vanadium (V)	mg L^{-1}	<0.0010					<0.0010				<0.0010			<0.0010		<0.0010		<0.0010		<0.0010		<0.0010		<0.0010
Zinc (Zn)	mg L^{-1}	0.0221					0.0228				0.0345			0.0589		0.0386		0.0400		0.0377		0.0473		0.0570

Table F10 - Mine rock MSED-A HCT results

Humidity Cell ID	Units	MSED-A									
Date Sampled		8/14/12	8/21/12	8/28/12	9/4/12	9/11/12	9/18/12	9/25/12	10/2/12	10/9/12	10/16/12
Day		0	7	14	21	28	35	42	49	56	63
Week		0	1	2	3	4	5	6	7	8	9
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95
Mass Before Adding Water	g	1280.4	1361.67	1329.25	1320.42	1333.34	1330.77	1332.06	1320.2	1315.74	1327.11
Mass After Adding Water	g	2213	2361.86	2241.89	2315.68	2320.54	2323.22	2254.18	2238.96	2301.47	2325.06
Volume Water Recovered	mL	845.26	1027.21	919.05	978.68	987.36	989.5	931.7	921.2	970.6	983.4
Mass After Water Recovered	g	1367.74	1334.65	1322.84	1337	1333.18	1333.72	1322.5	1317.77	1330.87	1341.63
pH		8.99	9.02	8.68	7.81	7.69	8.3	8.12	8.52	7.5	7.08
Conductivity	uS cm-1	46.6	48.5	13.93	15.4	18.25	19.6	22.99	24.12	13.32	13.91
Sulphate	$mg\ L^{-1}$	5.40	8.07	3.03	1.50	1.50	1.50	1.50	1.56	1.50	1.50
Alkalinity (as $CaCO_3$)	$mg\ L^{-1}$	13	10	<10.0	<10.0	<10	<10	<10	<10	<10	<10
Dissolved Metals											
Aluminum (Al)	$mg\ L^{-1}$	0.0982	0.0959	0.114	0.0292	0.0177	0.0163	0.0882	0.110	0.0597	0.0190
Antimony (Sb)	$mg\ L^{-1}$	0.00041	0.00131	0.00080	0.00045	0.00039	0.00026	0.00034	0.00035	0.00021	0.00020
Arsenic (As)	$mg\ L^{-1}$	0.00192	0.00265	0.00218	0.00103	0.00098	0.00066	0.00175	0.00200	0.00075	0.00058
Barium (Ba)	$mg\ L^{-1}$	0.00124	0.00161	0.00119	0.000912	0.000692	0.000551	0.00111	0.00133	0.000979	0.000658
Beryllium (Be)	$mg\ L^{-1}$	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)	$mg\ L^{-1}$	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)	$mg\ L^{-1}$	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)	$mg\ L^{-1}$	< 0.00001	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)	$mg\ L^{-1}$	3.90	4.69	3.14	1.71	1.44	1.19	2.74	2.87	1.53	1.54
Chromium (Cr)	$mg\ L^{-1}$	0.00010	< 0.0001	<0.0001	<0.0001	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)	$mg\ L^{-1}$	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)	$mg\ L^{-1}$	0.00076	0.00028	<0.0002	0.00023	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Iron (Fe)	$mg\ L^{-1}$	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	0.026	<0.010
Lead (Pb)	$mg\ L^{-1}$	< 0.00005	< 0.00005	0.000084	<0.00005	<0.00050	0.000110	0.000092	0.000098	0.000081	<0.000050
Lithium (Li)	$mg\ L^{-1}$	< 0.0005	0.00055	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium (Mg)	$mg\ L^{-1}$	0.449	0.622	0.358	0.173	0.156	0.115	0.207	0.206	0.125	0.0984
Manganese (Mn)	$mg\ L^{-1}$	0.0109	0.0136	0.0111	0.00811	0.00642	0.00551	0.0123	0.0124	0.00858	0.00806
Molybdenum (Mo)	$mg\ L^{-1}$	0.00194	0.00273	0.00104	0.000406	0.000307	0.000221	0.000262	0.000223	0.000144	0.000130
Nickel (Ni)	$mg\ L^{-1}$	0.00059	0.00074	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus (P)	$mg\ L^{-1}$	< 0.3	< 0.3	<0.3	<0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)	$mg\ L^{-1}$	2.16	2.15	1.55	0.723	0.567	0.798	1.01	1.05	0.539	0.473
Selenium (Se)	$mg\ L^{-1}$	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)	$mg\ L^{-1}$	0.383	0.533	0.464	0.197	0.166	0.126	0.314	0.323	0.223	0.124
Silver (Ag)	$mg\ L^{-1}$	0.000034	< 0.00001	<0.00001	<0.00001	0.000095	0.000084	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)	$mg\ L^{-1}$	0.927	0.707	0.357	0.199	0.215	0.145	0.174	0.186	0.143	0.129
Strontium (Sr)	$mg\ L^{-1}$	0.0113	0.0170	0.0100	0.00513	0.00496	0.00391	0.00735	0.00761	0.00419	0.00418
Sulfur (S)	$mg\ L^{-1}$	1.80	2.69	1.01	<0.5	<0.50	<0.50	<0.50	0.52	<0.50	<0.50
Thallium (Tl)	$mg\ L^{-1}$	< 0.00001	< 0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)	$mg\ L^{-1}$	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)	$mg\ L^{-1}$	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)	$mg\ L^{-1}$	0.000154	0.00216	0.00143	0.000664	0.000710	0.000537	0.000844	0.000789	0.000568	0.000524
Vanadium (V)	$mg\ L^{-1}$	< 0.001	< 0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)	$mg\ L^{-1}$	< 0.001	0.0010	<0.001	0.0078	0.0028	0.0016	0.0013	0.0012	<0.0010	0.0028

Humidity Cell ID	Units	MSED-A															
Date Sampled		10/23/12	10/30/12	11/6/12	11/13/12	11/20/12	11/27/12	12/4/12	12/11/12	12/18/12	12/24/12	1/2/13	1/9/13	1/15/13	1/22/13	1/29/13	2/5/13
Day		70	77	84	91	98	105	112	119	126	132	141	148	155	161	168	175
Week		10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	
Mass Before Adding Water	g	1338.09	1329.74	1329.5	1337.13	1336.36	1335.6	1344.61	1330.89	1324.05	1328.72	1335.36	1324.45	1327.84	1326.71	1333.19	1330.99
Mass After Adding Water	g	2341.42	2320.94	2319.93	2323.23	2334.85	2334.9	2344.05	2331.9	2326.53	2335.82	2343.26	2325.65	2341.86	2329.3	2333.86	2332.96
Volume Water Recovered	mL	1009.9	988.2	980.4	987.4	995.9	986.8	1010.2	1005.5	995.7	995.5	1017.0	994.4	1009.0	994.0	997.8	1001.4
Mass After Water Recovered	g	1331.54	1332.74	1339.57	1335.81	1338.97	1348.13	1333.86	1326.38	1330.79	1340.37	1326.25	1331.29	1332.87	1335.35	1336.08	1331.58
pH		7.24	7.42	7.27	7.38	7.52	7.22	7.26	7.14	6.88	7.04	6.84	6.72	6.86	6.35	6.76	6.53
Conductivity	uS cm-1	14.14	14.04	12.81	13.94	14.68	13.36	15.92	18.97	12.9	12.06	17.71	12.48	12.96	11.04	11.33	10.89
Sulphate	$mg\ L^{-1}$	1.50	1.50	1.50	7.29	1.50	1.50	1.50	1.50	1.50	1.50	1.65		1.50		1.50	
Alkalinity (as $CaCO_3$)	$mg\ L^{-1}$	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
Dissolved Metals																	
Aluminum (Al)	$mg\ L^{-1}$	0.0185	0.0181	0.0130	0.0161	0.0215	0.0108	0.0148	0.0260	0.0093	0.0148	0.0094		0.0080		0.0063	
Antimony (Sb)	$mg\ L^{-1}$	0.00020	0.00017	0.00015	0.00016	0.00016	0.00013	0.00015	0.00014	0.00012	0.00014	0.00013		<0.00010		<0.00010	
Arsenic (As)	$mg\ L^{-1}$	0.00058	0.00057	0.00050	0.00051	0.00061	0.00044	0.00049	0.00047	0.00034	0.00057	0.00046		0.00034		0.00025	
Barium (Ba)	$mg\ L^{-1}$	0.000754	0.000714	0.000686	0.000743	0.000794	0.000826	0.000957	0.00123	0.000894	0.00105	0.00120		0.00103		0.000913	
Beryllium (Be)	$mg\ L^{-1}$	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Bismuth (Bi)	$mg\ L^{-1}$	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Boron (B)	$mg\ L^{-1}$	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	<0.010		<0.010		0.012	
Cadmium (Cd)	$mg\ L^{-1}$	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Calcium (Ca)	$mg\ L^{-1}$	1.73	1.59	1.46	1.60	1.78	1.58	1.86	1.99	1.62	2.25	2.22		1.75		1.39	
Chromium (Cr)	$mg\ L^{-1}$	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Cobalt (Co)	$mg\ L^{-1}$	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Copper (Cu)	$mg\ L^{-1}$	0.00194	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00054	0.00040	0.00065		0.00085		0.00062	
Iron (Fe)	$mg\ L^{-1}$	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	<0.010	<0.010	<0.010		<0.010		<0.01000	
Lead (Pb)	$mg\ L^{-1}$	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000059	0.000105	0.000054	<0.000050	0.000060		0.000137		0.000057	
Lithium (Li)	$mg\ L^{-1}$	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Magnesium (Mg)	$mg\ L^{-1}$	0.103	0.0947	0.0863	0.0757	0.0819	0.0739	0.0779	0.0835	0.0552	0.0738	0.0731		0.0534		0.0375	
Manganese (Mn)	$mg\ L^{-1}$	0.00887	0.00864	0.00850	0.00863	0.0103	0.00993	0.0127	0.0138	0.0107	0.0149	0.0163		0.0125		0.0110	
Molybdenum (Mo)	$mg\ L^{-1}$	0.000112	0.000105	0.000089	0.000089	0.000095	0.000099	0.000096	0.000092	0.000078	0.000074	0.000084		0.000074		<0.000050	
Nickel (Ni)	$mg\ L^{-1}$	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Phosphorus (P)	$mg\ L^{-1}$	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30		0.3	
Potassium (K)	$mg\ L^{-1}$	0.509	0.510	0.445	0.537	0.570	0.493	0.634	2.79	0.604	0.811	0.722		0.500		0.364	
Selenium (Se)	$mg\ L^{-1}$	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Silicon (Si)	$mg\ L^{-1}$	0.133	0.119	0.105	0.110	0.120	0.094	0.108	0.133	0.089	0.112	0.104		0.086		0.074	
Silver (Ag)	$mg\ L^{-1}$	<0.000010	<0.000010	0.000043	<0.000010	<0.000010	<0.000010	<0.000010	0.000127	0.000014	0.000023	0.000302		<0.000010		<0.000010	
Sodium (Na)	$mg\ L^{-1}$	0.126	0.126	0.130	0.087	0.101	0.121	0.134	0.087	0.185	0.153	0.212		0.230		0.171	
Strontium (Sr)	$mg\ L^{-1}$	0.00457	0.00413	0.00383	0.00390	0.00435	0.00378	0.00427	0.00445	0.00340	0.00450	0.00454		0.00348		0.00270	
Sulfur (S)	$mg\ L^{-1}$	<0.50	<0.50	<0.50	2.43	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.55		0.5		0.5	
Thallium (Tl)	$mg\ L^{-1}$	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Tin (Sn)	$mg\ L^{-1}$	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Titanium (Ti)	$mg\ L^{-1}$	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.01000	
Uranium (U)	$mg\ L^{-1}$	0.000493	0.000457	0.000461	0.000430	0.000368	0.000409	0.000408	0.000352	0.000365	0.000364	0.000451		0.000313		0.000258	
Vanadium (V)	$mg\ L^{-1}$	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010		<0.0010	
Zinc (Zn)	$mg\ L^{-1}$	0.0017	0.0012	<0.0010	<0.0010	<0.0010	<0.0010	0.0027	0.0017	0.0019	0.0013	0.0023		0.0017		0.0020	

Table F10 - Mine rock MSED-A HCT results cont.

Humidity Cell ID	Units	MSED-A																									
Date Sampled		2/12/13	2/19/13	2/26/13	3/5/13	3/12/13	3/19/13	3/26/13	4/2/13	4/9/13	4/16/13	4/23/13	4/30/13	5/7/13	5/14/13	5/21/13	5/28/13	6/4/13	6/11/13	6/18/13	6/25/13	7/2/13	7/9/13	7/16/13	7/23/13	7/30/13	8/6/13
Day		182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	322	329	336	343	350	357
Week		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Bottle	g																										
Mass Before Adding Water	g	1327.59	1321.94	1290.38	1298.5	1289.79	1321.44	1279.96	1297.75	1308.58	1296.81	1313.69	1323.82	1317.42	1312.73	1276.39	1291.39	1310.41	1327.44	1330.99	1317.1	1294.16	1315.99	1316.18	1315.78	1327.78	1336.4
Mass After Adding Water	g	2332.54	2315	2281.49	2302.12	2285.73	2312.57	2280.1	2306.71	2301.63	2294.33	2312.04	2317.28	2312.75	2304.54	2269.1	2292.85	2312.03	2324.49	2326.58	2312.39	2290.6	2327.08	2316	2341.52	2328.38	2340.64
Volume Water Recovered	mL	1007.3	1002.4	968.5	972.2	952.8	984.7	954.5	972.7	992.4	968.0	976.0	985.2	993.8	998.0	963.0	969.1	974.0	988.8	1004.1	1009.4	967.9	1000.1	993.1	1003.3	986.3	1006.4
Mass After Water Recovered	g	1325.22	1312.57	1312.96	1329.94	1332.91	1327.86	1325.64	1334.05	1309.2	1326.36	1336.03	1332.05	1318.94	1306.5	1306.12	1323.71	1338.08	1335.7	1322.49	1302.97	1322.69	1327.03	1322.88	1338.25	1342.08	1334.2
pH		7.12	7.21	7.01	6.91	6.85	7.08	6.97	6.8	7.04	7.24	6.94	6.87	7.52	7.15	7.51	7.24	7.3	7.36	7.51	7.47	7.42	7.78	7.63	7.02	7.69	6.47
Conductivity	uS cm-1	14.16	21.01	15.45	13.88	12.5	15.9	9.73	11.22	18.25	14.57	12.66	12.69	13.49	30.6	15.6	10.11	13.82	13.27	17.69	16.17	12.01	15.34	14.46	11.2	13.66	14.02
Sulphate	mg L^{-1}		1.71			1.50			1.50			1.50			1.56	1.74					1.68				1.62		
Alkalinity (as $CaCO_3$)	mg L^{-1}		<10			<10			<10			<10			<10	<10					<10				<10		
Dissolved Metals																											
Aluminum (Al)	mg L^{-1}		0.0301			0.0083			0.0064			0.0107			0.0197	0.0524					0.0295				0.0133		
Antimony (Sb)	mg L^{-1}		0.00013			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Arsenic (As)	mg L^{-1}		0.00068			0.00030			0.00031			0.00024			0.00032	0.00068					0.00061				0.00036		
Barium (Ba)	mg L^{-1}		0.00169			0.000868			0.000895			0.00113			0.00143	0.00127					0.001470				0.001170		
Beryllium (Be)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				<0.000010		
Calcium (Ca)	mg L^{-1}		2.61			1.17			1.30			1.53			1.98	1.83					1.99				1.54		
Chromium (Cr)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Copper (Cu)	mg L^{-1}		<0.00020			<0.00020			<0.00020			<0.00020			<0.00020	<0.00020					0.00032				<0.00020		
Iron (Fe)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Lead (Pb)	mg L^{-1}		<0.000050			0.000056			<0.000050			0.000053			0.000058	0.000065					0.000051				0.000420		
Lithium (Li)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	mg L^{-1}		0.0657			0.0295			0.0277			0.0311			0.0402	0.0306					0.0384				0.0281		
Manganese (Mn)	mg L^{-1}		0.0173			0.00513			0.00510			0.00672			0.0109	0.00804					0.0088				0.0076		
Molybdenum (Mo)	mg L^{-1}		0.000074			0.000067			0.000052			0.000065			0.000053	0.000070					0.000058				<0.000050		
Nickel (Ni)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Phosphorus (P)	mg L^{-1}		<0.30			<0.30			<0.30			<0.30			<0.30	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}		0.817			0.378			0.378			0.391			0.591	0.658					0.634				0.451		
Selenium (Se)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}		0.140			<0.050			<0.050			0.061			0.090	0.126					0.112				0.066		
Silver (Ag)	mg L^{-1}		0.000021			<0.000010			<0.000010			<0.000010			0.000022	0.000011					<0.000010				<0.000010		
Sodium (Na)	mg L^{-1}		0.149			0.133			0.124			0.156			0.139	0.155					0.148				0.142		
Strontium (Sr)	mg L^{-1}		0.00454			0.00199			0.00207			0.00231			0.00298	0.00245					0.00267				0.00215		
Sulfur (S)	mg L^{-1}		0.57			<0.50			<0.50			<0.50			0.52	0.58					0.56				0.54		
Thallium (Tl)	mg L^{-1}		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				<0.000010		
Tin (Sn)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}		0.000409			0.000230			0.000251			0.000281			0.000233	0.000173					0.000181				0.000178		
Vanadium (V)	mg L^{-1}		<0.0010			<0.0010			<0.0010			<0.0010			<0.0010	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}		0.0013			<0.0010			0.0014			0.0010			<0.0010	<0.0010					0.0036				0.0027		

Table F10 - Mine rock MSED-A HCT results cont.

Humidity Cell ID	Units	MSS-B											
Date Sampled		8/13/13	8/20/13	8/27/13	9/3/13	9/10/13	9/17/13	9/24/13	10/1/13	10/8/13	10/15/13	10/22/13	10/29/13
Day		364	371	378	385	392	399	406	413	420	427	434	441
Week		52	53	54	55	56	57	58	59	60	61	62	63
Bottle	g												
Mass Before Adding Water	g	1323.59	1309.23	1321.35	1285.18	1314.75	1313.27	1319	1319.53	1310.63	1311.33	1303.47	1282.18
Mass After Adding Water	g	2325.87	2296.32	2314.1	2286.99	2315.12	2318.85	2319.61	2325.02	2317.82	2303.37	2291.97	2267.93
Volume Water Recovered	mL	996.9	990.0	1014.1	959.7	989.6	989.9	994.3	1000.9	994.1	996.1	991.1	945.9
Mass After Water Recovered	g	1328.95	NR	1299.99	1327.25	1325.5	1328.91	1325.28	1324.15	1323.72	1307.32	1300.88	1322.07
pH		6.30	6.42	7.32	6.50	6.53	6.04	7.22	7.29	7.06	7.35	6.55	6.41
Conductivity	uS cm-1	14.71	16.08	17.73	13.14	14.29	12.76	11.78	10.79	13.80	16.41	14.59	23.46
Sulphate	mg L^{-1}	<1.5					<1.5				<1.5		
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10					<10				<10		
Dissolved Metals													
Aluminum (Al)	mg L^{-1}	0.0196					0.0116				0.0106		
Antimony (Sb)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Arsenic (As)	mg L^{-1}	0.00048					0.00032				0.00064		
Barium (Ba)	mg L^{-1}	0.00118					0.00104				0.00143		
Beryllium (Be)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}	<0.000010					<0.000010				<0.000010		
Calcium (Ca)	mg L^{-1}	1.94					1.48				1.72		
Chromium (Cr)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Copper (Cu)	mg L^{-1}	0.00034					0.00030				0.00025		
Iron (Fe)	mg L^{-1}	<0.010					<0.010				<0.010		
Lead (Pb)	mg L^{-1}	<0.000050					0.000111				0.000183		
Lithium (Li)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Magnesium (Mg)	mg L^{-1}	0.0244					0.0238				0.0313		
Manganese (Mn)	mg L^{-1}	0.00875					0.00880				0.0131		
Molybdenum (Mo)	mg L^{-1}	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}	<0.00050					<0.00050				<0.00050		
Phosphorus (P)	mg L^{-1}	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}	0.524					0.411				0.744		
Selenium (Se)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}	0.081					0.053				5.25		
Silver (Ag)	mg L^{-1}	<0.000010					<0.000010				0.000309		
Sodium (Na)	mg L^{-1}	0.117					0.092				0.119		
Strontium (Sr)	mg L^{-1}	0.00243					0.00181				0.00206		
Sulfur (S)	mg L^{-1}	<0.50					<0.50				<0.50		
Thallium (Tl)	mg L^{-1}	<0.000010					<0.000010				0.000011		
Tin (Sn)	mg L^{-1}	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}	0.000148					0.000132				0.000136		
Vanadium (V)	mg L^{-1}	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}	0.0015					0.0015				0.0015		

Table F11 - Mine rock MSED-B HCT results

Humidity Cell ID	Units	MSED-B																									
Date Sampled		8/14/12	8/21/12	8/28/12	9/4/12	9/11/12	9/18/12	9/25/12	10/2/12	10/9/12	10/16/12	10/23/12	10/30/12	11/6/12	11/13/12	11/20/12	11/27/12	12/4/12	12/11/12	12/18/12	12/24/12	1/2/13	1/9/13	1/15/13	1/22/13	1/29/13	2/5/13
Day		0	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	132	141	148	155	161	168	175
Week		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Bottle	g	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	273.95	
Mass Before Adding Water	g	1283.35	1360.42	1334.41	1323.35	1337.54	1343	1354.83	1319.43	1320.17	1333.23	1340.13	1337.05	1337.05	1324.03	1337.83	1329.08	1322.84	1336.79	1340.37	1341.18	1328.63	1336.67	1336.16	1332.67	1330.9	1336.76
Mass After Adding Water	g	2214.41	2360.3	2247.88	2317.99	2324.11	2331.08	2274.02	2236.78	2306.94	2329.38	2335.48	2326.19	2325.89	2309.42	2341.28	2331.4	2321.17	2339.01	2340.29	2341.74	2328.6	2341.46	2338.13	2334.29	2332.6	2337.03
Volume Water Recovered	mL	847.18	1021.43	921.03	978.22	979.02	974.5	951.9	918.2	971.9	986.6	995.9	985.4	997.7	969.6	1010.0	1006.0	982.0	995.9	996.7	1004.5	990.1	1002.5	1002.5	998.9	992.1	999.4
Mass After Water Recovered	g	1367.23	1338.87	1326.85	1339.77	1345.09	1356.6	1322.1	1318.56	1335.05	1342.79	1339.54	1340.82	1328.2	1339.8	1331.32	1325.44	1339.16	1343.14	1343.59	1337.29	1338.5	1339.01	1335.65	1335.44	1340.5	1337.67
pH		6.98	7.42	7.39	7.74	7.05	6.95	7.39	7.28	7.04	6.85	7.04	6.95	6.79	6.92	7.05	6.85	6.79	6.74	6.69	6.8	6.52	6.5	6.63	6.37	6.54	6.85
Conductivity	uS cm-1	149.1	146.3	98.8	45.5	51.5	36.2	53.7	73.3	25.97	32.5	35.1	32.1	23.62	27.54	27.69	21	24.03	25.38	23.14	28	28.84	18.83	23.39	20.11	20.83	29.94
Sulphate	mg L^{-1}	30.90	47.40	30.60	14.49	12.21	10.20	13.89	15.21	7.89	3.15	9.42	8.91	6.57	7.20	6.66	5.37	6.36	6.30	5.79	6.09	7.35		5.73		4.92	
Alkalinity (as $CaCO_3$)	mg L^{-1}	13	< 10.0	<10.0	<10.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
Dissolved Metals																											
Aluminum (Al)	mg L^{-1}	0.0111	0.0336	0.0377	0.0128	0.0078	0.0122	0.0233	0.0981	0.176	0.0082	0.0123	0.0065	0.0045	0.0105	0.0047	0.0050	0.0040	0.0076	0.0036	0.0040	0.0027		0.0028		0.0024	
Antimony (Sb)	mg L^{-1}	0.00117	0.00610	0.00489	0.00188	0.00186	0.00214	0.00328	0.00325	0.00114	0.00134	0.00191	0.00149	0.00103	0.00118	0.00176	0.00123	0.00113	0.00129	0.00123	0.00166	0.00126		0.00114		0.00108	
Arsenic (As)	mg L^{-1}	< 0.0001	0.00021	0.00015	<0.0001	<0.00010	<0.00010	<0.00010	0.00013	0.00011	0.00021	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Barium (Ba)	mg L^{-1}	0.00285	0.00235	0.00162	0.000945	0.000928	0.000728	0.00106	0.00156	0.00158	0.000308	0.000830	0.000789	0.000683	0.000764	0.000822	0.000679	0.000753	0.000837	0.000713	0.000873	0.00101		0.000806		0.000819	
Beryllium (Be)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Bismuth (Bi)	mg L^{-1}	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Boron (B)	mg L^{-1}	< 0.01	0.013	<0.01	<0.01	<0.010	<0.010	<0.010	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010		<0.010		0.013	
Cadmium (Cd)	mg L^{-1}	0.000028	0.000014	<0.00001	0.000011	0.000013	<0.000010	<0.000010	0.000016	<0.000010	<0.000010	<0.000010	0.000017	0.000012	0.000011	<0.000010	<0.000010	<0.000010	0.000012	0.000010	0.000012	0.000019		<0.000010		<0.000010	
Calcium (Ca)	mg L^{-1}	10.4	14.5	10.2	4.89	4.25	3.58	5.84	6.25	2.91	1.53	3.77	3.36	2.45	2.99	2.98	2.27	2.57	2.95	2.54	3.33	3.14		2.61		2.37	
Chromium (Cr)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	0.00015	0.00021	0.00019	0.00042	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Cobalt (Co)	mg L^{-1}	0.00265	0.00091	0.00045	0.00042	0.00043	0.00031	0.00027	0.00017	0.00031	0.00012	0.00030	0.00027	0.00026	0.00023	0.00027	0.00023	0.00025	0.00027	0.00022	0.00025	0.00029		0.00026		0.00021	
Copper (Cu)	mg L^{-1}	0.00026	< 0.0002	0.00028	<0.0002	0.00021	<0.00020	<0.00020	<0.00020	0.00022	0.00029	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00065	0.00050	**0.00192**		0.00072		0.00068	
Iron (Fe)	mg L^{-1}	0.191	< 0.01	<0.01	<0.01	0.017	0.018	0.013	<0.010	0.199	<0.010	<0.010	<0.010	0.012	0.011	<0.010	0.013	<0.010	0.014	<0.010	<0.010	<0.010		<0.010		<0.01000	
Lead (Pb)	mg L^{-1}	0.000077	< 0.00005	0.000062	<0.00005	0.000085	0.000066	0.000073	0.000186	0.00130	0.000621	0.000171	0.000121	0.000178	0.000160	0.000165	0.000158	0.000173	0.000209	0.000198	0.000171	0.000237		0.000190		0.000238	
Lithium (Li)	mg L^{-1}	0.00076	0.00066	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Magnesium (Mg)	mg L^{-1}	1.75	2.81	1.72	0.829	0.671	0.522	0.763	0.786	0.453	0.167	0.445	0.383	0.287	0.304	0.316	0.246	0.265	0.270	0.227	0.290	0.272		0.234		0.188	
Manganese (Mn)	mg L^{-1}	0.148	0.138	0.0928	0.0531	0.0475	0.0380	0.0613	0.0592	0.0392	0.00698	0.0454	0.0416	0.0330	0.0352	0.0372	0.0298	0.0347	0.0379	0.0323	0.0391	0.0407		0.0358		0.0306	
Molybdenum (Mo)	mg L^{-1}	0.000334	0.000540	0.000259	0.000104	0.000087	0.000087	0.000156	0.000103	<0.000050	<0.000050	<0.000050	0.000055	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050		<0.000050	
Nickel (Ni)	mg L^{-1}	0.0406	0.0166	0.00852	0.00637	0.00679	0.00506	0.00430	0.00308	0.00378	<0.00050	0.00393	0.00355	0.00342	0.00331	0.00360	0.00302	0.00298	0.00315	0.00279	0.00314	0.00355		0.00299		0.00238	
Phosphorus (P)	mg L^{-1}	< 0.3	< 0.3	<0.3	<0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30		0.3	
Potassium (K)	mg L^{-1}	2.19	2.09	1.45	0.669	0.505	0.500	0.806	0.943	0.483	0.343	0.646	0.505	0.384	0.548	0.583	0.464	0.470	0.593	0.515	0.669	0.558		0.610		0.412	
Selenium (Se)	mg L^{-1}	0.00013	0.00030	0.00018	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Silicon (Si)	mg L^{-1}	0.220	0.537	0.474	0.227	0.203	0.211	0.371	0.356	0.465	0.132	0.221	0.180	0.134	0.174	0.187	0.137	0.142	0.164	0.153	0.193	0.161		0.146		0.126	
Silver (Ag)	mg L^{-1}	< 0.00001	< 0.00001	<0.00001	<0.00001	0.000034	<0.000010	<0.000010	<0.000010	0.000013	<0.000010	0.000018	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000020	<0.000010	0.000024	<0.000010		0.000015		<0.000010	
Sodium (Na)	mg L^{-1}	1.20	1.52	0.760	0.384	0.322	0.253	0.293	0.274	0.175	0.154	0.175	0.163	0.181	0.122	0.136	0.139	0.147	0.112	0.189	0.179	0.231		0.238		0.192	
Strontium (Sr)	mg L^{-1}	0.0404	0.0639	0.0411	0.0202	0.0170	0.0141	0.0202	0.0223	0.0103	0.00507	0.0133	0.0115	0.00837	0.00972	0.0102	0.00778	0.00847	0.00953	0.00783	0.0101	0.00950		0.00825		0.00704	
Sulfur (S)	mg L^{-1}	10.3	15.8	10.2	4.83	4.07	3.40	4.63	5.07	2.63	1.05	3.14	2.97	2.19	2.40	2.22	1.79	2.12	2.10	1.93	2.03	2.45		1.91		1.64	
Thallium (Tl)	mg L^{-1}	0.000017	0.000013	0.000010	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Tin (Sn)	mg L^{-1}	< 0.0001	< 0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Titanium (Ti)	mg L^{-1}	< 0.01	< 0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.01000	
Uranium (U)	mg L^{-1}	0.000256	0.000517	0.000279	0.000173	0.000220	0.000198	0.000229	0.000197	0.000194	0.000132	0.000173	0.000170	0.000150	0.000146	0.000144	0.000142	0.000156	0.000149	0.000142	0.000181	0.000178		0.000156		0.000177	
Vanadium (V)	mg L^{-1}	< 0.001	< 0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010		<0.0010	
Zinc (Zn)	mg L^{-1}	0.0148	0.0035	0.0018	0.0038	0.0097	0.0048	0.0023	0.0038	0.0049	0.0043	0.0043	0.0036	0.0037	0.0045	0.0041	0.0033	0.0044	0.0037	0.0043	0.0045	0.0058		0.0049		0.0052	

Table F11 - Mine rock MSED-B HCT results cont.

Humidity Cell ID	Units	MSED-B																									
Date Sampled		2/12/13	2/19/13	2/26/13	3/5/13	3/12/13	3/19/13	3/26/13	4/2/13	4/9/13	4/16/13	4/23/13	4/30/13	5/7/13	5/14/13	5/21/13	5/28/13	6/4/13	6/11/13	6/18/13	6/25/13	7/2/13	7/9/13	7/16/13	7/23/13	7/30/13	8/6/13
Day		182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	322	329	336	343	350	357
Week		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Bottle	g																										
Mass Before Adding Water	g	1333.63	1331.96	1314.15	1301.24	1318.35	1340.07	1305.66	1335.6	1320.24	1310.61	1306	1319.16	1308.13	1319.71	1286.19	1302.07	1319.63	1293.06	1322.36	1312.97	1301.02	1348.83	1324.9	1308.46	1311.41	1308.2
Mass After Adding Water	g	2334.21	2324.02	2304.46	2315.21	2320.27	2335.32	2306.21	2338.16	2313.61	2310.35	2302.34	2317.31	2308.42	2312.42	2280.08	2298.37	2320.33	2289.75	2320.08	2315.76	2302.42	2360.02	2326.88	2311.78	2315.22	2313.25
Volume Water Recovered	mL	999.5	1001.7	986.5	973.4	970.5	999.5	960.7	1005.3	995.3	974.6	971.2	999.8	979.9	1002.1	970.2	968.6	982.4	958.5	983.7	1006.4	949.1	985.6	1000.4	977.1	989.6	981.4
Mass After Water Recovered	g	1334.68	1322.33	1317.98	1341.84	1349.77	1335.83	1345.53	1332.86	1318.33	1335.75	1331.14	1317.52	1328.51	1310.33	1309.86	1329.76	1337.92	1331.21	1336.43	1309.41	1353.28	1374.38	1326.45	1334.73	1325.59	1331.87
pH		6.72	6.93	6.93	6.59	6.69	6.81	6.79	6.62	6.95	6.98	7.2	6.81	7.2	6.93	7.14	6.83	7.08	6.94	6.95	7.28	7.68	7.13	6.94	6.87	6.54	6.2
Conductivity	uS cm-1	19.76	32	26.59	18.75	20.03	25.8	16.88	17.03	28.4	24.77	35.8	21.14	16.68	27.5	26.53	15.54	22.09	16.13	22.12	26.42	35.8	24.64	22.2	24.52	20.27	19.42
Sulphate	mg L^{-1}		6.63			4.41			3.57			4.86			5.43	5.91					6.27				6.06		
Alkalinity (as $CaCO_3$)	mg L^{-1}		<10			<10			<10			<10			<10	<10					<10				<10		
Dissolved Metals																											
Aluminum (Al)	mg L^{-1}		0.0081			0.0702			0.0042			0.0053			0.0117	0.0217					0.0130				0.0108		
Antimony (Sb)	mg L^{-1}		0.00191			0.00083			0.00081			0.00084			0.00108	0.00125					0.00142				0.00119		
Arsenic (As)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Barium (Ba)	mg L^{-1}		0.00117			0.00146			0.000630			0.000909			0.000983	0.000945					0.001100				0.000826		
Beryllium (Be)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				<0.00050		
Boron (B)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}		0.000012			<0.000010			<0.000010			0.000017			0.000012	0.000011					0.000014				<0.000010		
Calcium (Ca)	mg L^{-1}		3.66			2.12			1.86			2.32			3.02	3.03					3.24				2.79		
Chromium (Cr)	mg L^{-1}		<0.00010			0.00016			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}		0.00029			0.00015			0.00010			0.00011			0.00016	0.00011					0.00012				0.00013		
Copper (Cu)	mg L^{-1}		<0.00020			<0.00020			<0.00020			0.00023			<0.00020	0.00022					0.00037				0.00023		
Iron (Fe)	mg L^{-1}		<0.010			0.079			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Lead (Pb)	mg L^{-1}		0.000149			0.000838			0.000135			0.000363			0.000106	0.000091					0.000122				0.000169		
Lithium (Li)	mg L^{-1}		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050	<0.00050					<0.00050				0.00060		
Magnesium (Mg)	mg L^{-1}		0.293			0.195			0.134			0.156			0.179	0.168					0.178				0.160		
Manganese (Mn)	mg L^{-1}		0.0497			0.0292			0.0218			0.0231			0.0399	0.0322					0.0358				0.0282		
Molybdenum (Mo)	mg L^{-1}		<0.000050			<0.000050			<0.000050			0.000179			<0.000050	<0.000050					<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}		0.00317			0.00159			0.00127			0.00108			0.00139	0.00101					0.00124				0.00133		
Phosphorus (P)	mg L^{-1}		<0.30			<0.30			<0.30			<0.30			<0.30	<0.30					<0.30				<0.30		
Potassium (K)	mg L^{-1}		0.860			0.405			0.331			2.12			0.563	0.655					0.658				0.593		
Selenium (Se)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}		0.221			0.192			0.084			0.094			0.142	0.156					0.165				0.149		
Silver (Ag)	mg L^{-1}		0.000011			<0.000010			<0.000010			0.000426			<0.000010	<0.000010					<0.000010				<0.000010		
Sodium (Na)	mg L^{-1}		0.132			0.105			0.151			0.214			0.151	0.150					0.158				0.176		
Strontium (Sr)	mg L^{-1}		0.0106			0.00569			0.00487			0.00604			0.00693	0.00681					0.00725				0.00655		
Sulfur (S)	mg L^{-1}		2.21			1.47			1.19			1.62			1.81	1.97					2.09				2.02		
Thallium (Tl)	mg L^{-1}		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010	<0.000010					<0.000010				<0.000010		
Tin (Sn)	mg L^{-1}		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010	<0.00010					<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}		<0.010			<0.010			<0.010			<0.010			<0.010	<0.010					<0.010				<0.010		
Uranium (U)	mg L^{-1}		0.000192			0.000158			0.000133			0.000354			0.000132	0.000112					0.000120				0.000101		
Vanadium (V)	mg L^{-1}		<0.0010			<0.0010			<0.0010			<0.0010			<0.0010	<0.0010					<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}		0.0047			0.0036			0.0029			0.0030			0.0029	0.0021					0.0041				0.0026		

Table F11 - Mine rock MSED-B HCT results cont.

Humidity Cell ID	Units	MSED-B																						
Date Sampled		8/13/13	8/20/13	8/27/13	9/3/13	9/10/13	9/17/13	9/24/13	10/1/13	10/8/13	10/15/13	10/22/13	10/29/13	11/5/13	11/12/13	11/19/13	11/26/13	12/3/13	12/10/13	12/17/13	12/24/13	12/31/13	1/7/14	1/14/14
Day		364	371	378	385	392	399	406	413	420	427	434	441	455	469	483	496	511	525	539	553	567	581	595
Week		52	53	54	55	56	57	58	59	60	61	62	63	65	67	69	71	73	75	77	79	81	83	85
Bottle	g																							
Mass Before Adding Water	g	1325.65	1323.28	1309.96	1298.58	1314.65	1306.2	1319.66	1319.66	1314.27	1314.41	1302.72	1289.54	1302.22	1277.49	1285.11	1309.56	1292.95	1309.69	1295.36	1257.56	1260.48	1283.59	1262.78
Mass After Adding Water	g	2329.76	2313.72	2302.97	2297.48	2317.98	2309.85	2320.07	2320.07	2320.04	2304.97	2285.47	2275.98	3270.76	3249.88	3259.55	3293.25	3274.35	3296.23	3267.34	3245.06	3238.94	3257.99	3229.33
Volume Water Recovered	mL	997.3	1010.0	995.9	971.7	986.8	983.0	995.0	995.0	1000.4	997.1	979.3	946.5	1960.0	1960.0	1960.0	1990.0	1970.0	2000.0	1980.0	1970.0	1920.0	2.0	1950.0
Mass After Water Recovered	g	1332.47	NR	1307.09	1325.75	1331.17	1326.9	1325.08	1325.08	1319.65	1307.83	1306.16	1329.46	1316.35	1319.83	1330.66	1329.14	1327.04	1317.71	1317.64	1310.14	1320.97	1313.92	1311.53
pH		6.15	6.01	7.07	6.11	6.77	5.6	6.45	6.45	6.81	6.65	6.64	6.4	5.78	6.27	6.23	6.23	5.96	6.67	6.33	5.6	6.15	5.87	5.39
Conductivity	uS cm-1	23.25	24.7	29.02	20.71	22.79	20.31	21.63	21.63	16.44	22.93	23.23	36.1	43.4	16.94	22.25	19.82	29.38	22.87	18.97	19.59	28.74	16.44	23.81
Sulphate	mg L^{-1}	2.34					1.62				2.43			2.34		2.22		1.92		1.92		2.25		2.46
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10					<10				<10			<10		<10		<10		<10		<10		<10
Dissolved Metals																								
Aluminum (Al)	mg L^{-1}	0.0044					0.0033				0.0043			0.0035		0.0087		0.0083		0.0061		0.0032		0.0022
Antimony (Sb)	mg L^{-1}	0.00113					0.00070				0.00106			0.00070		0.00061		0.00059		0.00055		0.00064		0.00053
Arsenic (As)	mg L^{-1}	<0.00010					0.00011				<0.00010			0.00031		<0.00010		<0.00010		<0.00010		0.00011		0.00016
Barium (Ba)	mg L^{-1}	0.000861					0.000738				0.00104			0.00223		0.000889		0.000796		0.000655		0.00109		0.000911
Beryllium (Be)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Bismuth (Bi)	mg L^{-1}	<0.00050					<0.00050				<0.00050			<0.00050		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050
Boron (B)	mg L^{-1}	<0.010					<0.010				<0.010			0.012		<0.010		<0.010		<0.010		<0.010		<0.010
Cadmium (Cd)	mg L^{-1}	<0.000010					0.000015				0.000014			0.000039		0.000011		0.000011		<0.000010		0.000016		0.000024
Calcium (Ca)	mg L^{-1}	2.67					2.19				2.58			3.24		2.07		2.03		1.71		2.70		2.30
Chromium (Cr)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Cobalt (Co)	mg L^{-1}	0.00014					0.00010				0.00019			0.00049		0.00011		0.00010		<0.00010		0.00024		0.00014
Copper (Cu)	mg L^{-1}	0.00030					0.00040				0.00153			0.00108		0.00021		<0.00020		<0.00020		0.00038		<0.00020
Iron (Fe)	mg L^{-1}	<0.010					<0.010				<0.010			<0.010		<0.010		<0.010		<0.010		<0.010		<0.010
Lead (Pb)	mg L^{-1}	0.000176					0.000729				0.000152			0.00107		0.000219		0.000240		0.000255		0.000356		0.000318
Lithium (Li)	mg L^{-1}	<0.00050					<0.00050				<0.00050			<0.00050		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050
Magnesium (Mg)	mg L^{-1}	0.147					0.108				0.123			0.162		0.0926		0.0869		0.0702		0.109		0.0880
Manganese (Mn)	mg L^{-1}	0.0247					0.0222				0.0342			0.0630		0.0232		0.0256		0.0204		0.0349		0.0251
Molybdenum (Mo)	mg L^{-1}	<0.000050					<0.000050				<0.000050			<0.000050		<0.000050		<0.000050		<0.000050		<0.000050		<0.000050
Nickel (Ni)	mg L^{-1}	0.00133					0.00111				0.00168			0.00346		0.00094		0.00099		0.00076		0.00185		0.00126
Phosphorus (P)	mg L^{-1}	<0.30					<0.30				<0.30			<0.30		<0.30		<0.30		<0.30		<0.30		<0.30
Potassium (K)	mg L^{-1}	0.572					0.354				0.574			0.512		0.364		0.364		0.338		0.365		0.336
Selenium (Se)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Silicon (Si)	mg L^{-1}	0.144					0.083				3.87			1.23		0.091		0.089		0.075		0.082		0.073
Silver (Ag)	mg L^{-1}	0.000048					<0.000010				<0.000010			<0.000010		<0.000010		<0.000010		<0.000010		<0.000010		<0.000010
Sodium (Na)	mg L^{-1}	0.151					0.101				0.127			1.04		0.158		0.132		0.141		0.167		0.207
Strontium (Sr)	mg L^{-1}	0.00609					0.00475				0.00538			0.00653		0.00406		0.00394		0.00316		0.00541		0.00440
Sulfur (S)	mg L^{-1}	1.45					1.24				1.48			1.47		1.41		1.37		1.12		2.20		1.74
Thallium (Tl)	mg L^{-1}	<0.000010					<0.000010				<0.000010			<0.000010		<0.000010		<0.000010		<0.000010		<0.000010		<0.000010
Tin (Sn)	mg L^{-1}	<0.00010					<0.00010				<0.00010			<0.00010		<0.00010		<0.00010		<0.00010		<0.00010		<0.00010
Titanium (Ti)	mg L^{-1}	<0.010					<0.010				<0.010			<0.010		<0.010		<0.010		<0.010		<0.010		<0.010
Uranium (U)	mg L^{-1}	0.000053					0.000074				0.000113			0.000208		0.000075		0.000077		0.000072		0.000102		0.000062
Vanadium (V)	mg L^{-1}	<0.0010					<0.0010				<0.0010			<0.0010		<0.0010		<0.0010		<0.0010		<0.0010		<0.0010
Zinc (Zn)	mg L^{-1}	0.0041					0.0048				0.0049			0.0145		0.0059		0.0030		0.0032		0.0055		0.0040

Appendix G Tailings Humidity Cell Tests Dataset

Table G1 - Tailings HCT results

Humidity Cell ID	Units	TAILINGS-1																									
Date Sampled		10/2/12	10/9/12	10/16/12	10/23/12	10/30/12	11/6/12	11/13/12	11/20/12	11/27/12	12/4/12	12/11/12	12/18/12	12/24/12	1/2/13	1/8/13	1/15/13	1/22/13	1/29/13	2/5/13	2/12/13	2/19/13	2/26/13	3/5/13	3/12/13	3/19/13	3/26/13
Day		0	7	14	21	28	35	42	49	56	63	70	77	83	92	98	105	112	119	126	133	140	147	154	161	168	175
Week		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Iniital Mass	g	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127
Volume Water Added	mL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume Water Recovered	mL	1	0.97	0.94	0.92	0.93	0.92	0.92	0.94	0.92	0.9	0.95	0.91	1	0.88	0.97	0.93	0.87	0.95	0.91	0.9	1	0.88	0.91	0.87	0.89	0.89
pH		8.06	7.81	7.87	7.74	7.87	7.76	7.8	7.89	7.68	7.69	7.46	7.19	7.31	7.21	7.18	7	6.97	6.86	6.83	6.72	6.87	6.7	6.57	6.55	6.62	6.62
Conductivity	$\mu S\ cm^{-1}$	373	216.6	182.5	150.2	139.9	118.7	108.8	107.4	101.5	113.6	113.9	102.2	104.1	124.7	85.6	84.2	81.7	74.4	75.2	65.7	64.1	89.1	52.7	50.8	52.8	52.8
Sulphate	$mg\ L^{-1}$	129	55.2	52.5	34.8	30	22.68	20.1	18.84	19.41	24	25.05	25.95	20.85	17.61	17.61	19.71	20.13	18.69	21.09	17.61	15.63		13.65		14.91	
Alkalinity (as $CaCO_3$)	$mg\ L^{-1}$	47	41	34	32	27	<10	25	26	19	26	18	12	18	19	19	12	12	<10	11	<10	<10		<10		<10	
Dissolved Metals																											
Aluminum (Al)	$mg\ L^{-1}$	0.107	0.0694	0.0748	0.0559	0.0671	0.0438	0.0432	0.0345	0.0293	0.0213	0.0225	0.0135	0.0104	0.0068	0.0068	0.0053	0.0040	0.0044	0.0039	0.0028	0.0023		0.0018		0.0013	
Antimony (Sb)	$mg\ L^{-1}$	0.0728	0.0497	0.0325	0.0304	0.0276	0.0237	0.0205	0.0210	0.0172	0.0191	0.0139	0.0132	0.0123	0.00879	0.00879	0.00623	0.00572	0.00497	0.00523	0.00306	0.00289		0.00196		0.00194	
Arsenic (As)	$mg\ L^{-1}$	0.00110	0.00099	0.00074	0.00066	0.00060	0.00051	0.00042	0.00043	0.00039	0.00037	0.00029	0.00028	0.00025	0.00020	0.00020	0.00016	0.00023	0.00012	<0.00010	<0.00010	0.00013		<0.00010		<0.00010	
Barium (Ba)	$mg\ L^{-1}$	0.00759	0.00488	0.00424	0.00344	0.00327	0.00295	0.00283	0.00300	0.00319	0.00410	0.00445	0.00452	0.00487	0.00616	0.00616	0.00608	0.00802	0.00888	0.0108	0.0125	0.0160		0.0217		0.0314	
Beryllium (Be)	$mg\ L^{-1}$	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Bismuth (Bi)	$mg\ L^{-1}$	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050		<0.00050	
Boron (B)	$mg\ L^{-1}$	0.015	0.011	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.010	<0.010	0.011	0.011	0.011	0.011	0.011	0.011	0.012	0.013	0.015	0.021	<0.010		<0.010		<0.010	
Cadmium (Cd)	$mg\ L^{-1}$	0.000235	0.000033	0.000041	0.000039	0.000054	0.000066	0.000071	0.000095	0.000111	0.000184	0.000263	0.000318	0.000423	0.000712	0.000712	0.000827	0.00145	0.00161	0.00192	0.00277	0.00351		0.00544		0.00835	
Calcium (Ca)	$mg\ L^{-1}$	37.2	29.7	27.5	21.7	19.8	16.5	14.5	15.2	13.9	16.3	16.8	15.3	15.1	12.7	12.7	10.7	10.6	9.16	9.00	7.52	6.46		4.94		4.39	
Chromium (Cr)	$mg\ L^{-1}$	<0.00010	<0.00010	0.00014	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Cobalt (Co)	$mg\ L^{-1}$	0.00810	0.00204	0.00047	0.00028	0.00021	0.00016	0.00011	0.00011	0.00011	0.00012	0.00014	0.00014	0.00015	0.00017	0.00017	0.00022	0.00033	0.00034	0.00041	0.00059	0.00078		0.00104		0.00129	
Copper (Cu)	$mg\ L^{-1}$	1.51	0.00067	0.00030	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00064	0.00064	0.00055	0.00055	0.00096	0.00068	0.00079	0.00074	0.00070	0.00035		0.00036		0.00041	
Iron (Fe)	$mg\ L^{-1}$	0.058	0.040	0.027	<0.010	0.028	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.01000	<0.01000	<0.01000	<0.010	<0.010	<0.010	<0.01000	<0.010	<0.010	<0.010		<0.010		<0.010	
Lead (Pb)	$mg\ L^{-1}$	0.00893	0.00484	0.00458	0.00165	0.00671	0.00277	0.00324	0.00300	0.00347	0.0111	0.00675	0.00441	0.00580	0.00725	0.00725	0.00693	0.00865	0.00912	0.0178	0.0124	0.0143		0.0278		0.0470	
Lithium (Li)	$mg\ L^{-1}$	0.00309	0.00285	0.00172	0.00140	0.00135	0.00096	0.00103	0.00081	0.00087	0.00082	0.00079	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00054	0.00054	0.00064	0.00053	0.00060		0.00060		<0.00050	
Magnesium (Mg)	$mg\ L^{-1}$	2.33	1.49	0.986	0.614	0.471	0.353	0.267	0.260	0.235	0.241	0.236	0.219	0.218	0.189	0.189	0.185	0.223	0.217	0.313	0.264	0.281		0.295		0.361	
Manganese (Mn)	$mg\ L^{-1}$	0.0532	0.0548	0.0379	0.0276	0.0253	0.0259	0.0212	0.0249	0.0250	0.0369	0.0470	0.0491	0.0615	0.0719	0.0719	0.0699	0.0983	0.100	0.111	0.124	0.139		0.140		0.154	
Molybdenum (Mo)	$mg\ L^{-1}$	0.00488	0.00498	0.00171	0.00107	0.000752	0.000540	0.000444	0.000390	0.000346	0.000391	0.000339	0.000333	0.000311	0.000281	0.000281	0.000211	0.000150	0.000128	0.000104	0.000068	<0.000050		<0.000050		<0.000050	
Nickel (Ni)	$mg\ L^{-1}$	0.0684	0.00075	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00059		0.00078		0.00108	
Phosphorus (P)	$mg\ L^{-1}$	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.3	0.3	0.3	<0.30	<0.30	<0.30	0.3	<0.30	0.3	<0.30		<0.30		<0.30	
Potassium (K)	$mg\ L^{-1}$	8.27	5.35	4.64	4.54	3.65	3.59	3.07	3.16	2.90	3.03	3.06	2.89	3.20	2.54	2.54	2.34	2.66	2.43	2.46	2.29	2.32		2.01		2.24	
Selenium (Se)	$mg\ L^{-1}$	0.00329	0.00041	0.00032	0.00032	0.00028	0.00027	0.00023	0.00020	0.00019	0.00020	0.00016	0.00016	0.00014	0.00011	0.00011	<0.00010	0.00010	<0.00010	0.00012	<0.00010	<0.00010		<0.00010		<0.00010	
Silicon (Si)	$mg\ L^{-1}$	1.01	1.65	1.29	1.31	1.32	1.34	1.23	1.32	1.27	1.62	1.41	1.49	1.55	1.51	1.51	1.37	1.51	1.55	1.70	1.29	1.52		1.27		1.67	
Silver (Ag)	$mg\ L^{-1}$	0.0167	0.000049	0.000018	0.000020	<0.000010	<0.000010	0.000011	<0.000010	<0.000010	0.000022	<0.000010	<0.000010	0.000371	0.000012	0.000012	<0.000010	0.000017	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010	
Sodium (Na)	$mg\ L^{-1}$	25.2	3.54	0.884	0.583	0.443	0.397	0.348	0.354	0.331	0.370	0.309	0.393	0.362	0.360	0.360	0.409	0.371	0.399	0.403	0.365	0.342		0.280		0.317	
Strontium (Sr)	$mg\ L^{-1}$	0.108	0.0758	0.0614	0.0475	0.0413	0.0347	0.0300	0.0320	0.0281	0.0308	0.0356	0.0315	0.0300	0.0282	0.0282	0.0251	0.0277	0.0245	0.0236	0.0233	0.0213		0.0172		0.0151	
Sulfur (S)	$mg\ L^{-1}$	43.0	18.4	17.5	11.6	10.0	7.56	6.7	6.28	6.47	8.00	8.35	8.65	6.95	5.87	5.87	6.57	6.71	6.23	7.03	5.87	5.21		4.55		4.97	
Thallium (Tl)	$mg\ L^{-1}$	0.000046	0.000045	0.000036	0.000033	0.000034	0.000031	0.000031	0.000030	0.000032	0.000040	0.000037	0.000034	0.000036	0.000039	0.000039	0.000034	0.000041	0.000034	0.000041	0.000040	0.000040		0.000042		0.000052	
Tin (Sn)	$mg\ L^{-1}$	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010		<0.00010	
Titanium (Ti)	$mg\ L^{-1}$	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01000	<0.01000	<0.01000	<0.010	<0.010	<0.010	<0.01000	<0.010	<0.010	<0.010		<0.010		<0.010	
Uranium (U)	$mg\ L^{-1}$	0.00150	0.000852	0.000458	0.000410	0.000399	0.000356	0.000265	0.000220	0.000166	0.000252	0.000191	0.000121	0.000102	0.000070	0.000070	0.000027	0.000025	0.000017	0.000013	<0.000010	<0.000010		0.000011		<0.000010	
Vanadium (V)	$mg\ L^{-1}$	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.00100	<0.00100	<0.00100	<0.0010	<0.0010	<0.0010	<0.00100	<0.0010	<0.0010	<0.0010		<0.0010		<0.0010	
Zinc (Zn)	$mg\ L^{-1}$	0.355	0.0108	0.0149	0.0090	0.0105	0.0114	0.0110	0.0130	0.0175	0.0239	0.0349	0.0384	0.0538	0.0987	0.0987	0.125	0.247	0.295	0.356	0.572	0.781		1.44		2.24	

Table G1 - Tailings HCT results cont.

Humidity Cell ID	Units	Tailings-1																									
Date Sampled		4/2/13	4/9/13	4/16/13	4/23/13	4/30/13	5/7/13	5/14/13	5/21/13	5/28/13	6/4/13	6/11/13	6/18/13	6/25/13	7/2/13	7/9/13	7/16/13	7/23/13	7/30/13	8/6/13	7/23/13	7/30/13	8/6/13	8/13/13	8/20/13	8/27/13	9/3/13
Day		182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	322	329	336	343	350	357
Week		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
Iniital Mass	g	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127
Volume Water Added	mL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume Water Recovered	mL	0.91	0.89	0.91	0.9	0.92	0.87	0.85	0.96	0.94	0.91	0.97	0.95	0.78	0.98	0.93	0.98	0.9	0.92	0.93	0.94	0.765	1	0.93	0.92	0.91	1
pH		6.69	6.53	6.37	6.42	6.24	6.28	6.31	6.37	6.37	6.37	6.23	6.14	6.23	6.13	6.26	6.07	5.8	5.43	5.71	5.35	4.87	6.46	5.83		5.38	5.7
Conductivity	µS cm^{-1}	39.7	44.0	39.9	48.6	40.7	34.7	45.2	38.9	35.8	43.8	33.5	37.5	48.7	41.9	45.2	43.0	47.6	51.4	44.0	42.3	67.7	48.9	57.0	10.2	58.3	28.6
Sulphate	mg L^{-1}	11.37			12.03			13.29			12.75			13.98				16.53				16.98				19.29	
Alkalinity (as $CaCO_3$)	mg L^{-1}	<10			<10			<10			<10			<10				<10				<10				<10	
Dissolved Metals																											
Aluminum (Al)	mg L^{-1}	0.0012			<0.0010			0.0011			<0.0010			0.0013				0.0013				0.0045				0.0107	
Antimony (Sb)	mg L^{-1}	0.00136			0.00112			0.00094			0.00098			0.00068				0.00065				0.00068				0.00053	
Arsenic (As)	mg L^{-1}	<0.00010			<0.00010			<0.00010			<0.00010			<0.00010				0.00010				0.00022				0.00049	
Barium (Ba)	mg L^{-1}	0.0303			0.0440			0.0694			0.0800			0.106				0.118				0.124				0.0749	
Beryllium (Be)	mg L^{-1}	<0.00010			<0.00010			<0.00010			<0.00010			<0.00010				<0.00010				<0.00010				<0.00010	
Bismuth (Bi)	mg L^{-1}	<0.00050			<0.00050			<0.00050			<0.00050			<0.00050				<0.00050				<0.00050				<0.00050	
Boron (B)	mg L^{-1}	<0.010			<0.010			<0.010			<0.010			<0.010				<0.010				<0.010				<0.010	
Cadmium (Cd)	mg L^{-1}	0.00754			0.00952			0.0134			0.0132			0.0162				0.0183				0.0219				0.0204	
Calcium (Ca)	mg L^{-1}	3.08			2.52			2.71			2.00			1.77				1.77				3.33				1.64	
Chromium (Cr)	mg L^{-1}	<0.00010			<0.00010			<0.00010			<0.00010			<0.00010				<0.00010				<0.00010				<0.00010	
Cobalt (Co)	mg L^{-1}	0.00101			0.00111			0.00125			0.00122			0.00130				0.00163				0.00196				0.00341	
Copper (Cu)	mg L^{-1}	0.00029			0.00043			0.00055			0.00040			0.00080				0.00134				0.00140				0.00357	
Iron (Fe)	mg L^{-1}	<0.010			<0.010			<0.010			<0.010			<0.010				<0.010				<0.010				<0.010	
Lead (Pb)	mg L^{-1}	0.0581			0.118			0.227			0.282			0.506				1.24				2.41				4.19	
Lithium (Li)	mg L^{-1}	<0.00050			<0.00050			<0.00050			<0.00050			<0.00050				0.00101				0.00068				<0.00050	
Magnesium (Mg)	mg L^{-1}	0.400			0.300			0.330			0.314			0.313				0.333				0.316				0.421	
Manganese (Mn)	mg L^{-1}	0.107			0.106			0.110			0.0999			0.102				0.116				0.134				0.159	
Molybdenum (Mo)	mg L^{-1}	<0.000050			<0.000050			<0.000050			<0.000050			<0.000050				<0.000050				<0.000050				<0.000050	
Nickel (Ni)	mg L^{-1}	0.00101			0.00134			0.00152			0.00160			0.00169				0.00224				0.00301				0.00608	
Phosphorus (P)	mg L^{-1}	<0.30			<0.30			<0.30			<0.30			<0.30				<0.30				<0.30				<0.30	
Potassium (K)	mg L^{-1}	1.70			1.79			1.71			2.25			2.02				2.03				3.03				2.50	
Selenium (Se)	mg L^{-1}	<0.00010			<0.00010			<0.00010			<0.00010			<0.00010				0.00011				0.00011				0.00012	
Silicon (Si)	mg L^{-1}	1.04			0.995			1.35			1.44			1.44				1.39				1.71				1.50	
Silver (Ag)	mg L^{-1}	<0.000010			<0.000010			<0.000010			0.000052			<0.000010				<0.000010				<0.000010				<0.000010	
Sodium (Na)	mg L^{-1}	0.281			0.333			0.333			0.363			0.383				0.511				0.414				0.455	
Strontium (Sr)	mg L^{-1}	0.00998			0.00814			0.00879			0.00613			0.00555				0.00627				0.00685				0.00692	
Sulfur (S)	mg L^{-1}	3.79			4.01			4.43			4.25			4.66				5.51				5.66				6.43	
Thallium (Tl)	mg L^{-1}	0.000044			0.000047			<0.000080			0.000056			0.000280				0.000276				0.000108				0.000101	
Tin (Sn)	mg L^{-1}	<0.00010			<0.00010			<0.00010			<0.00010			<0.00010				<0.00010				<0.00010				<0.00010	
Titanium (Ti)	mg L^{-1}	<0.010			<0.010			<0.010			<0.010			<0.010				<0.010				<0.010				<0.010	
Uranium (U)	mg L^{-1}	0.000025			0.000037			<0.000010			0.000062			<0.000010				0.000045				0.000013				0.000017	
Vanadium (V)	mg L^{-1}	<0.0010			<0.0010			<0.0010			<0.0010			<0.0010				<0.0010				<0.0010				<0.0010	
Zinc (Zn)	mg L^{-1}	1.92			2.45			3.08			2.86			3.67				3.88				4.65				5.55	

Table G2 - Tailings HCT results cont.

Humidity Cell ID	Units	Tailings-1																										
Date Sampled		9/10/13	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00
Day		364	371	378	385	392	399	406	413	420	427	434	441	448	455	462	469	476	483	490	497	504	511	518	525	532	539	546
Week		52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78
Iniital Mass	g	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127	1.00127
Volume Water Added	mL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume Water Recovered	mL	0.92	0.96	0.95	0.98	0.91	0.93	0.95	0.9	0.85	0.94	0.88	0.88	0.8	0.82	0.85	0.91	0.89	0.93	0.89	0.92	0.89	0.88	0.92	0.98	0.91	0.88	0.88
pH		5.21	5.34	5.33	5.56	5.26	5.32	5.46	4.54	4.6	4.76	4.64	4.63	4.4	4.41	4.36	4.71	4.76	4.71		4.69	3.62		4.52	4.32	3.97	3.69	3.69
Conductivity	µS cm^{-1}	85.6	68.5	63.4	63.3	77	76.1	81.5	81.3	67.1	69	79.6	78.3	81.8	88.1	111.5	83.1	81.8	78.3		85.4	90.9		100.2	91.5	72.8	79.3	79.3
Sulphate	mg L^{-1}			22.38				25.23				24.15				24.81					25.62			29.4				34.5
Alkalinity (as $CaCO_3$)	mg L^{-1}			<10				<10				<10				<10					<10			<10				<10
Dissolved Metals																												
Aluminum (Al)	mg L^{-1}			0.0217				0.0274				0.0980				0.158					0.292			0.456				0.874
Antimony (Sb)	mg L^{-1}			0.00048				0.00059				0.00058				0.00045					0.00041			0.00039				0.00041
Arsenic (As)	mg L^{-1}			0.00055				0.00105				0.00086				0.00104					0.00144			0.00147				0.00272
Barium (Ba)	mg L^{-1}			0.0380				0.0242				0.0107				0.00868					0.008			0.00547				0.00367
Beryllium (Be)	mg L^{-1}			<0.00010				<0.00010				<0.00010				<0.00010					<0.00010			0.00011				0.00020
Bismuth (Bi)	mg L^{-1}			<0.00050				<0.00050				<0.00050				<0.00050					<0.00050			<0.00050				<0.00050
Boron (B)	mg L^{-1}			<0.010				0.013				<0.010				<0.010					<0.010			<0.010				<0.010
Cadmium (Cd)	mg L^{-1}			0.0204				0.0224				0.0175				0.0163					0.0135			0.0151				0.0174
Calcium (Ca)	mg L^{-1}			0.989				1.30				1.01				0.929					0.90			1.08				1.39
Chromium (Cr)	mg L^{-1}			<0.00010				0.00012				<0.00010				<0.00010					<0.00010			<0.00010				<0.00010
Cobalt (Co)	mg L^{-1}			0.00560				0.00795				0.00768				0.00776					0.00740			0.00855				0.00854
Copper (Cu)	mg L^{-1}			0.00816				0.0162				0.0260				0.0420					0.06710			0.0996				0.1890
Iron (Fe)	mg L^{-1}			0.015				0.027				0.105				0.164					0.316			0.511				1.170
Lead (Pb)	mg L^{-1}			4.77				6.27				6.27				7.39					8.37			8.50				7.35
Lithium (Li)	mg L^{-1}			<0.00050				0.00076				<0.00050				<0.00050					0.000640			0.00072				0.00105
Magnesium (Mg)	mg L^{-1}			0.354				0.444				0.351				0.336					0.275			0.332				0.323
Manganese (Mn)	mg L^{-1}			0.199				0.264				0.218				0.207					0.162			0.189				0.187
Molybdenum (Mo)	mg L^{-1}			<0.000050				<0.000050				<0.000050				<0.000050					<0.000050			<0.000050				<0.000050
Nickel (Ni)	mg L^{-1}			0.0109				0.0172				0.0181				0.0196					0.0198			0.0243				0.0272
Phosphorus (P)	mg L^{-1}			<0.30				<0.30				<0.30				<0.30					<0.30			<0.30				<0.30
Potassium (K)	mg L^{-1}			2.51				2.50				2.54				2.55					2.39			2.88				2.92
Selenium (Se)	mg L^{-1}			0.00016				0.00026				0.00035				0.00039					0.00046			0.00050				0.00069
Silicon (Si)	mg L^{-1}			2.85				3.51				1.69				1.85					1.75			2.08				2.57
Silver (Ag)	mg L^{-1}			<0.000010				0.000014				<0.000010				<0.000010					<0.000010			<0.000010				<0.000010
Sodium (Na)	mg L^{-1}			0.242				0.770				0.266				0.264					0.259			0.351				0.393
Strontium (Sr)	mg L^{-1}			0.00389				0.00513				0.00446				0.00435					0.00446			0.00526				0.00674
Sulfur (S)	mg L^{-1}			7.46				8.41				8.05				8.27					8.54			9.80				11.50
Thallium (Tl)	mg L^{-1}			0.000095				0.000178				0.000156				0.000132					0.000134			0.000132				0.000142
Tin (Sn)	mg L^{-1}			<0.00010				<0.00010				<0.00010				<0.00010					<0.00010			<0.00010				<0.00010
Titanium (Ti)	mg L^{-1}			<0.010				<0.010				<0.010				<0.010					<0.010			<0.010				<0.010
Uranium (U)	mg L^{-1}			0.000082				0.000269				0.000541				0.000804					0.001360			0.00186				0.00355
Vanadium (V)	mg L^{-1}			<0.0010				<0.0010				<0.0010				<0.0010					<0.0010			<0.0010				<0.0010
Zinc (Zn)	mg L^{-1}			6.79				8.60				6.97				7.54					6.93			8.20				8.62

Table G2 - Tailings Duplicate HCT results

Humidity Cell ID	Units	Tailings-2																						
Date Sampled		10/2/12	10/9/12	10/16/12	10/23/12	10/30/12	11/6/12	11/13/12	11/20/12	11/27/12	12/4/12	12/11/12	12/18/12	12/24/12	1/2/13	1/8/13	1/15/13	1/22/13	1/29/13	2/5/13	2/12/13	2/19/13	2/26/13	3/5/13
Day		0	7	14	21	28	35	42	49	56	63	70	77	83	92	98	105	112	119	126	133	140	147	154
Week		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Iniital Mass	g	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001
Volume Water Added	mL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume Water Recovered	mL	0.95	0.92	0.94	0.9	0.96	0.9	0.9	0.91	0.92	0.9	0.91	0.92	0.9	0.89	0.92	0.94	0.88	0.94	0.93	0.95	1.04	0.84	0.91
pH		8.13	7.89	7.73	7.82	7.82	7.65	7.73	7.59	7.69	7.89	7.53	7.29	7.36	7.09	7.16	7.08	6.97	6.92	6.81	6.74	6.89	6.71	6.54
Conductivity	uS cm-1	376	212.5	171.1	159.7	144.1	143.9	121.2	120.1	112.5	87.5	111.11	94.7	110.2	121.9	87.8	89.5	70.3	73.7	73	67.5	62.8	64.1	57.4
Sulphate	$mg L^{-1}$	133.5	56.4	50.7	33.6	30	24.27	25.44	23.22	22.26	25.53	23.31	23.22	20.01	19.77		21.3	20.55	17.4	19.38	18.09	16.74		15.96
Alkalinity (as $CaCO_3$)	$mg L^{-1}$	49	36	36	34	24	24	23	27	23		17	18	16	19		15	13	<10	11	<10	<10		<10
Dissolved Metals																								
Aluminum (Al)	$mg L^{-1}$	0.0904	0.0620	0.0646	0.0519	0.0495	0.0403	0.0364	0.0321	0.0292	0.0219	0.0168	0.0157	0.0125	0.0084		0.0071	0.0052	0.0052	0.0036	0.0039	0.0023		0.0018
Antimony (Sb)	$mg L^{-1}$	0.0950	0.0530	0.0350	0.0323	0.0306	0.0258	0.0219	0.0241	0.0206	0.0161	0.0165	0.0139	0.0126	0.0101		0.00834	0.00766	0.00663	0.00400	0.00426	0.00351		0.00214
Arsenic (As)	$mg L^{-1}$	0.00131	0.00101	0.00075	0.00066	0.00056	0.00048	0.00039	0.00045	0.00044	0.00034	0.00030	0.00023	0.00024	0.00019		0.00014	0.00018	<0.00010	0.00010	<0.00010	0.00011		<0.00010
Barium (Ba)	$mg L^{-1}$	0.00639	0.00463	0.00492	0.00347	0.00345	0.00304	0.00306	0.00353	0.00358	0.00407	0.00433	0.00420	0.00462	0.00610		0.00580	0.00790	0.00782	0.0115	0.0120	0.0143		0.0252
Beryllium (Be)	$mg L^{-1}$	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
Bismuth (Bi)	$mg L^{-1}$	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050
Boron (B)	$mg L^{-1}$	0.017	<0.010	<0.010	<0.010	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01000	0.011	0.011		0.011	0.011	0.013	0.016	0.021	<0.010		<0.010
Cadmium (Cd)	$mg L^{-1}$	0.000454	0.000032	0.000062	0.000055	0.000062	0.000069	0.000078	0.000099	0.000125	0.000182	0.000252	0.000272	0.000371	0.000625		0.000693	0.00119	0.00123	0.00227	0.00234	0.00311		0.00597
Calcium (Ca)	$mg L^{-1}$	38.6	29.2	25.9	21.6	20.4	17.8	16.8	17.5	16.6	16.0	17.0	14.8	15.2	13.3		12.7	12.1	9.05	8.90	7.72	6.44		4.98
Chromium (Cr)	$mg L^{-1}$	0.00012	<0.00010	0.00013	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
Cobalt (Co)	$mg L^{-1}$	0.00837	0.00123	0.00043	0.00024	0.00018	0.00015	0.00011	0.00011	0.00010	0.00013	0.00013	0.00010	0.00013	0.00016		0.00016	0.00028	0.00026	0.00049	0.00054	0.00082		0.00141
Copper (Cu)	$mg L^{-1}$	1.57	0.00041	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00055	0.00057	0.00037		0.00077	0.00067	0.00073	0.00065	0.00079	0.00025		0.00031
Iron (Fe)	$mg L^{-1}$	0.023	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01000	<0.01000	<0.01000		<0.010	<0.010	<0.01000	<0.010	<0.010	<0.010		<0.010
Lead (Pb)	$mg L^{-1}$	0.00424	0.00258	0.00376	0.00500	0.00602	0.00662	0.00720	0.00911	0.00946	0.00407	0.0127	0.00986	0.0121	0.0112		0.0118	0.0148	0.0147	0.0114	0.0209	0.0237		0.0479
Lithium (Li)	$mg L^{-1}$	0.00292	0.00263	0.00171	0.00134	0.00138	0.00092	0.00080	0.00086	0.00087	0.00077	0.00063	<0.00050	0.00063	<0.00050		0.00076	<0.00050	<0.00050	0.00069	0.00059	<0.00050		0.00058
Magnesium (Mg)	$mg L^{-1}$	2.47	1.42	1.14	0.612	0.466	0.346	0.276	0.272	0.249	0.255	0.226	0.203	0.208	0.207		0.220	0.266	0.241	0.254	0.322	0.355		0.398
Manganese (Mn)	$mg L^{-1}$	0.0564	0.0454	0.0453	0.0291	0.0271	0.0272	0.0247	0.0294	0.0295	0.0378	0.0412	0.0370	0.0465	0.0583		0.0581	0.0784	0.0751	0.123	0.118	0.150		0.183
Molybdenum (Mo)	$mg L^{-1}$	0.00637	0.00441	0.00160	0.00102	0.000750	0.000564	0.000473	0.000451	0.000445	0.000326	0.000350	0.000338	0.000287	0.000271		0.000239	0.000192	0.000146	0.000113	0.000081	<0.000050		<0.000050
Nickel (Ni)	$mg L^{-1}$	0.0649	0.00051	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	<0.00050	<0.00050	0.00072	0.00062		0.00149
Phosphorus (P)	$mg L^{-1}$	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.3	0.3	0.3		<0.30	<0.30	0.3	<0.30	0.3	<0.30		<0.30
Potassium (K)	$mg L^{-1}$	8.57	5.37	6.01	4.09	3.69	3.92	3.27	3.45	3.16	3.10	3.11	2.71	2.85	2.67		2.37	2.96	2.38	2.67	2.47	2.41		2.32
Selenium (Se)	$mg L^{-1}$	0.00362	0.00041	0.00027	0.00029	0.00031	0.00026	0.00024	0.00024	0.00020	0.00018	0.00017	0.00017	0.00014	0.00013		0.00010	0.00018	0.00013	<0.00010	0.00012	0.00012		<0.00010
Silicon (Si)	$mg L^{-1}$	1.10	1.66	1.31	1.34	1.40	1.39	1.33	1.46	1.51	1.38	1.55	1.49	1.52	1.71		1.48	1.84	1.73	1.48	1.67	1.70		1.59
Silver (Ag)	$mg L^{-1}$	0.0907	0.000031	0.000090	<0.000010	<0.000010	0.000045	0.000012	0.000012	<0.000010	<0.000010	0.000020	<0.000010	0.000055	0.000012		<0.000010	0.000647	<0.000010	0.000070	<0.000010	<0.000010		0.000121
Sodium (Na)	$mg L^{-1}$	26.3	2.91	1.00	0.538	0.470	0.393	0.366	0.369	0.361	0.343	0.335	0.385	0.361	0.378		0.401	0.385	0.398	0.390	0.392	0.327		0.327
Strontium (Sr)	$mg L^{-1}$	0.113	0.0725	0.0594	0.0465	0.0417	0.0359	0.0327	0.0337	0.0317	0.0316	0.0319	0.0276	0.0278	0.0272		0.0264	0.0273	0.0224	0.0248	0.0235	0.0222		0.0206
Sulfur (S)	$mg L^{-1}$	44.5	18.8	16.9	11.2	10.0	8.09	8.48	7.74	7.42	8.51	7.77	7.74	6.67	6.59		7.10	6.85	5.80	6.46	6.03	5.58		5.32
Thallium (Tl)	$mg L^{-1}$	0.000034	0.000045	0.000035	0.000033	0.000035	0.000032	0.000032	0.000035	0.000033	0.000035	0.000039	0.000032	0.000035	0.000034		0.000032	0.000044	0.000034	0.000047	0.000041	0.000039		0.000043
Tin (Sn)	$mg L^{-1}$	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
Titanium (Ti)	$mg L^{-1}$	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01000	<0.01000	<0.01000		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010
Uranium (U)	$mg L^{-1}$	0.00175	0.000668	0.000443	0.000402	0.000431	0.000350	0.000308	0.000300	0.000274	0.000195	0.000230	0.000168	0.000141	0.000075		0.000054	0.000047	0.000018	0.000016	<0.000010	<0.000010		<0.000010
Vanadium (V)	$mg L^{-1}$	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.00100	<0.00100	<0.00100		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010
Zinc (Zn)	$mg L^{-1}$	0.703	0.0076	0.0141	0.0114	0.0115	0.0113	0.0109	0.0144	0.0187	0.0263	0.0329	0.0322	0.0478	0.0835		0.102	0.181	0.204	0.440	0.472	0.750		1.84

Table G2 - Tailings Duplicate HCT results cont.

Humidity Cell ID	Units	Tailings-2																					
Date Sampled		3/12/13	3/19/13	3/26/13	4/2/13	4/9/13	4/16/13	4/23/13	4/30/13	5/7/13	5/14/13	5/21/13	5/28/13	6/4/13	6/11/13	6/18/13	6/25/13	7/2/13	7/9/13	7/16/13	7/23/13	7/30/13	8/6/13
Day		161	168	175	182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308
Week		23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
Iniital Mass	g	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001
Volume Water Added	mL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume Water Recovered	mL	0.89	0.9	0.9	0.9	0.88	0.93	0.9	0.92	0.91	0.91	0.92	0.92	0.97	0.95	0.94	0.93	0.91	0.96	0.92	0.96	0.94	0.9
pH		6.51	6.82	6.82	6.78	6.34	6.36	6.33	6.21	6.36	6.39	6.36	6.31	6.47	6.24	6.07	6.18	6.07	6.16	5.9	5.73	5.28	5.5
Conductivity	µS cm^{-1}	54	54.2	54.2	49.3	41.6	38	39.1	37.9	40.1	38.6	38.5	35.9	39.9	34	37.9	41	41.9	38.1	42.5	47	43.3	50.8
Sulphate	mg L^{-1}		13.35		11.52			12.27			11.01			11.91			12.48				16.44		
Alkalinity (as $CaCO_3$)	mg L^{-1}		<10		<10			<10			<10			<10			<10				<10		
Dissolved Metals																							
Aluminum (Al)	mg L^{-1}		0.0015		0.0013			0.0011			<0.0010			<0.0010			0.0011				0.0012		
Antimony (Sb)	mg L^{-1}		0.00225		0.00175			0.00140			0.00111			0.00090			0.00077				0.00060		
Arsenic (As)	mg L^{-1}		<0.00010		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010				0.00021		
Barium (Ba)	mg L^{-1}		0.0300		0.0328			0.0448			0.0571			0.0862			0.110				0.136		
Beryllium (Be)	mg L^{-1}		<0.00010		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010				<0.00010		
Bismuth (Bi)	mg L^{-1}		<0.00050		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050				<0.00050		
Boron (B)	mg L^{-1}		<0.010		<0.010			<0.010			<0.010			<0.010			<0.010				<0.010		
Cadmium (Cd)	mg L^{-1}		0.00738		0.00817			0.0102			0.0117			0.0139			0.0155				0.0190		
Calcium (Ca)	mg L^{-1}		3.55		2.43			2.16			1.87			1.54			1.40				1.51		
Chromium (Cr)	mg L^{-1}		<0.00010		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010				<0.00010		
Cobalt (Co)	mg L^{-1}		0.00139		0.00132			0.00131			0.00123			0.00136			0.00136				0.00195		
Copper (Cu)	mg L^{-1}		0.00030		0.00025			0.00041			0.00047			0.00046			0.00077				0.00133		
Iron (Fe)	mg L^{-1}		<0.010		<0.010			<0.010			<0.010			0.00047			<0.010				<0.010		
Lead (Pb)	mg L^{-1}		0.0817		0.112			0.165			0.250			0.370			0.591				1.56		
Lithium (Li)	mg L^{-1}		<0.00050		<0.00050			<0.00050			<0.00050			<0.00050			<0.00050				0.00093		
Magnesium (Mg)	mg L^{-1}		0.412		0.358			0.349			0.302			0.325			0.300				0.350		
Manganese (Mn)	mg L^{-1}		0.157		0.134			0.121			0.0969			0.106			0.0975				0.126		
Molybdenum (Mo)	mg L^{-1}		<0.000050		<0.000050			<0.000050			<0.000050			<0.000050			<0.000050				<0.000050		
Nickel (Ni)	mg L^{-1}		0.00280		0.00143			0.00152			0.00152			0.00194			0.00186				0.00293		
Phosphorus (P)	mg L^{-1}		<0.30		<0.30			<0.30			<0.30			<0.30			<0.30				<0.30		
Potassium (K)	mg L^{-1}		2.33		2.04			1.97			1.66			1.92			1.97				2.15		
Selenium (Se)	mg L^{-1}		0.00013		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010				<0.00010		
Silicon (Si)	mg L^{-1}		1.91		1.55			1.61			1.42			1.49			1.49				1.60		
Silver (Ag)	mg L^{-1}		<0.000010		<0.000010			<0.000010			<0.000010			<0.000010			<0.000010				<0.000010		
Sodium (Na)	mg L^{-1}		0.302		0.332			0.356			0.303			0.374			0.374				0.424		
Strontium (Sr)	mg L^{-1}		0.0148		0.00963			0.00838			0.00745			0.00580			0.00536				0.00620		
Sulfur (S)	mg L^{-1}		4.45		3.84			4.09			3.67			3.97			4.16				5.48		
Thallium (Tl)	mg L^{-1}		0.000051		0.000044			0.000052			<0.000080			0.000060			0.000318				0.000311		
Tin (Sn)	mg L^{-1}		<0.00010		<0.00010			<0.00010			<0.00010			<0.00010			<0.00010				<0.00010		
Titanium (Ti)	mg L^{-1}		<0.010		<0.010			<0.010			<0.010			<0.010			<0.010				<0.010		
Uranium (U)	mg L^{-1}		0.000034		<0.000010			0.000013			<0.000010			0.000015			<0.000010				0.000049		
Vanadium (V)	mg L^{-1}		<0.0010		<0.0010			<0.0010			<0.0010			<0.0010			<0.0010				<0.0010		
Zinc (Zn)	mg L^{-1}		2.30		2.37			2.75			2.81			2.92			3.38				4.02		

Table G2 - Tailings Duplicate HCT results cont.

Humidity Cell ID	Units	Tailings-2														
Date Sampled		8/13/13	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00	1/7/00
Day		315	322	329	336	343	350	357	364	371	378	385	392	399	406	413
Week		45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
Iniital Mass	g	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001
Volume Water Added	mL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Volume Water Recovered	mL	0.89	0.84	1.05	0.94	0.91	0.9	0.97	0.93	0.91	0.98	0.95	0.95	0.95	0.95	
pH		5.3	4.56	5.85	4.89		4.25	5.06	4.95	4.98	4.85	4.82	4.76	4.76	4.76	
Conductivity	$\mu S\ cm^{-1}$	34.6	137.4	70.8	82.5	73.9	84.1	85.5	97.4	109.6	83.1	94.3	105.3	105.3	105.3	
Sulphate	mg L^{-1}		24.42				31.2				30				25.38	
Alkalinity (as $CaCO_3$)	mg L^{-1}		<10				<10				<10				<10	
Dissolved Metals																
Aluminum (Al)	mg L^{-1}		0.0084				0.0527				0.110				0.0269	
Antimony (Sb)	mg L^{-1}		0.00076				0.00058				0.00054				0.00061	
Arsenic (As)	mg L^{-1}		0.00092				0.00105				0.00106				0.00101	
Barium (Ba)	mg L^{-1}		0.0855				0.0264				0.0262				0.0242	
Beryllium (Be)	mg L^{-1}		<0.00010				<0.00020				<0.00010				<0.00010	
Bismuth (Bi)	mg L^{-1}		<0.00050				<0.0010				<0.00050				<0.00050	
Boron (B)	mg L^{-1}		0.015				<0.020				<0.010				0.013	
Cadmium (Cd)	mg L^{-1}		0.0274				0.0288				0.0258				0.0222	
Calcium (Ca)	mg L^{-1}		1.63				1.66				1.32				1.28	
Chromium (Cr)	mg L^{-1}		<0.00010				<0.00020				<0.00010				0.00017	
Cobalt (Co)	mg L^{-1}		0.00587				0.0103				0.0101				0.00791	
Copper (Cu)	mg L^{-1}		0.00402				0.0109				0.0195				0.0161	
Iron (Fe)	mg L^{-1}		<0.010				0.039				0.110				0.024	
Lead (Pb)	mg L^{-1}		4.97				6.08				7.35				6.16	
Lithium (Li)	mg L^{-1}		0.00058				<0.0010				0.00061				0.00069	
Magnesium (Mg)	mg L^{-1}		0.447				0.570				0.464				0.449	
Manganese (Mn)	mg L^{-1}		0.245				0.337				0.294				0.262	
Molybdenum (Mo)	mg L^{-1}		<0.000050				<0.00010				<0.000050				<0.000050	
Nickel (Ni)	mg L^{-1}		0.0111				0.0210				0.0223				0.0171	
Phosphorus (P)	mg L^{-1}		<0.30				<0.60				<0.30				<0.30	
Potassium (K)	mg L^{-1}		3.19				3.07				2.95				2.48	
Selenium (Se)	mg L^{-1}		0.00019				0.00022				0.00029				0.00029	
Silicon (Si)	mg L^{-1}		2.34				2.29				3.78				3.36	
Silver (Ag)	mg L^{-1}		0.000010				<0.000020				<0.000010				0.000011	
Sodium (Na)	mg L^{-1}		0.402				0.31				0.276				0.761	
Strontium (Sr)	mg L^{-1}		0.00673				0.00726				0.00620				0.00508	
Sulfur (S)	mg L^{-1}		8.14				10.4				10.0				8.46	
Thallium (Tl)	mg L^{-1}		0.000141				0.000135				0.000131				0.000172	
Tin (Sn)	mg L^{-1}		<0.00010				<0.00020				<0.00010				<0.00010	
Titanium (Ti)	mg L^{-1}		<0.010				<0.020				<0.010				<0.010	
Uranium (U)	mg L^{-1}		0.000093				0.000235				0.000548				0.000254	
Vanadium (V)	mg L^{-1}		<0.0010				<0.0020				<0.0010				<0.0010	
Zinc (Zn)	mg L^{-1}		7.08				10.1				9.63				8.49	

Appendix H Field Barrel Tests Dataset

Table H1 - Field Barrel general chemistry results

Sample ID	Date Sampled	Week	Volume Collected	Field pH	Temp	Lab pH	Conductivity (EC)	Hardness (as CaCO3)	TDS	Acidity (as $CaCO_3$)	Alkalinity (as $CaCO_3$)	Ammonia, Total (as N)	Chloride (Cl)	Nitrate (as N)	Nitrite (as N)	Phosphorus (P)	Sulfate	WAD Cyanide	Total Cyanide	Free Cyanide
			(mL)		(°C)	pH Units	(µS/cm)	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})
BMS	12-Nov-12	8	11210	7.42	19	6.92	120	40.6	24.6	2.8	14.6	0.310	5.29	0.954	<0.02	0.0241	26.9	<0.002	<0.002	<0.005
	11-Jan-13	17	5675	6.10	6	6.94	117	43.7	72.8	13.2	10.6	0.368	4.07	1.05	<0.02	0.0713	31.2	<0.002	<0.002	<0.005
	27-Mar-13	27	3650	6.79	11	6.94	121	38.7	16.4	7.8	9.6		3.46	0.791	<0.02		36.3	<0.002	<0.002	<0.005
	27-May-13	36	11725	7.18	30	7.18	78.0	25.5	56.9	4.8	13.2	0.361	1.47	0.385	<0.02	0.0398	20.2	<0.002	<0.002	<0.005
	18-Jun-13	39	9470	6.71	22	7.12	68.5	25.6	28.5	2.2	10.9	0.890	0.81	0.259	<0.02	0.0354	16.5	<0.002	<0.002	<0.005
	30-Jul-13	47	15950	6.74	22	6.29	94.0	25.7	31.0	<5	10.0	0.64	0.94	0.29	0.36	0.06	23.3		<0.002	<0.002
	11-Apr-14	83	16560	6.55	13.9	6.53	214				<10						74.3			
	17-Jul-14	96	12950	6.57	27.6	6.30	65.1				<2						20.5			
BS	12-Nov-12	8	11220	7.25	20	6.68	160	48.0	7.1	3.4	9.2	0.589	6.16	1.20	<0.02	0.0096	46.0	<0.002	<0.002	<0.005
	11-Jan-13	17	5955	6.18	5	6.70	134	42.6	28.7	11.4	6.9	0.458	3.85	1.09	<0.02	0.0318	41.8	<0.002	<0.002	<0.005
	27-Mar-13	27	2605	6.45	10	6.42	200	63.6	115	14.0	5.6		4.80	1.00	<0.02		73.0	<0.002	<0.002	<0.005
	27-May-13	36	12490	6.96	28	6.96	96.9	28.6	22.6	3.8	9.8	0.979	1.72	0.425	<0.02	0.0510	29.5	<0.002	<0.002	<0.005
	18-Jun-13	39	9185	6.79	22	7.02	78.8	25.1	7.6	2.0	8.7	0.973	0.90	0.275	<0.02	0.0188	21.8	<0.002	<0.002	<0.005
	30-Jul-13	47	15750	6.68	23	6.32	105.0	26.2	6.0	<5	6.0	0.94	0.80	0.27	<0.05	0.04	32.7		<0.002	<0.002
	11-Apr-14	83	16700	5.4	11	5.78	261				<10						90.0			
	17-Jul-14	96	12610	4.68	28.5	4.53	112				<2						35.3			
MSS	12-Nov-12	8	11175	7.58	2	6.96	131	42.0	10.9	2.8	15.5	0.384	5.90	0.756	<0.02	0.0161	30.3	<0.002	<0.002	<0.005
	11-Jan-13	17	5480	6.01	5	6.86	88.2	28.5	155	10.6	8.9	0.411	2.39	0.772	<0.02	0.106	23.0	<0.002	<0.002	<0.005
	27-Mar-13	27	15425	6.90	28	7.01	78.2	22.4	49.1	6.6	11.5	0.479	3.36	0.344	<0.02	0.0370	17.5	<0.002	<0.002	<0.005
	27-May-13	36	9555	6.47	22	7.12	53.3	18.0	8.2	2.0	9.4	0.548	0.53	0.218	<0.02	0.0457	11.6			
	18-Jun-13	39	15900	6.48	22	6.86	86.0	18.7	11.0	<5	17.0	1.67	0.52	0.23	0.18	0.19	17.5		<0.002	<0.002
	30-Jul-13	47	16750	6.75	12.2	6.65	130				<10						43.3			
	11-Apr-14	83	13110	6.7	26.5	6.59	74.0				<2						25.3			
MSED	12-Nov-12	8	11340	7.48	18	7.10	136	47.2	21.8	2.6	18.5	0.228	4.73	0.865	<0.02	0.0197	31.9	<0.002	<0.002	<0.005
	11-Jan-13	17	5781	6.44	4	7.05	144	55.8	43.8	6.0	16.6	0.277	3.92	0.944	<0.02	0.0370	40.5	<0.002	<0.002	<0.005
	27-Mar-13	27	4235	6.71	10	7.09	123	40.0	72.4	10.0	13.0		2.93	0.587	<0.02		34.4	<0.002	<0.002	<0.005
	27-May-13	36	11675	7.36	30	7.36	99.3	33.6	34.7	5.0	20.2	0.898	1.56	0.358	<0.02	0.0897	22.2	<0.002	<0.002	<0.005
	18-Jun-13	39	9395	7.55	21	7.45	76.8	28.4	9.5	2.0	16.4	0.713	1.16	0.244	<0.02	0.0420	14.4	<0.002	<0.002	<0.005
	30-Jul-13	47	16020	8.23	22	6.23	88.0	26.1	7.0	<5	7.0	0.23	4.27	0.33	<0.05	0.15	16.6		<0.002	<0.002
	11-Apr-14	83	16700	7.23	14.5	6.99	236				18.0						81.3			
	17-Jul-14	96	12750	9.44	25.7	9.49	93.9				7.8						20.5			
FIELD BLANK	27-Mar-13	27				5.52	<3	<0.51	<2	<2	<5		<0.1	<0.03	<0.02		<0.3	<0.002	<0.002	<0.005
	27-May-13	36				5.49	<3	<0.51	<3	<2	<5	<0.02	<0.1	<0.03	<0.02	<0.005	<0.3	<0.002	<0.002	<0.005
	30-Jul-13	45				5.34	2.0	<0.5	1.0	<5	5.0	<0.02	<0.1	<0.05	<0.05	<0.02	<0.1		<0.002	<0.002
TRAVEL BLANK	27-Mar-13	27				5.50	<3	<0.51	<2	<2	<5		<0.1	<0.03	<0.02		<0.3	<0.002	<0.002	<0.005
	27-May-13	36				5.41	<3	<0.51	<3	<2	<5	<0.02	<0.1	<0.03	<0.02	<0.005	<0.3	<0.002	<0.002	<0.005
	30-Jul-13	45				4.76	2.0	<0.5	1.0	<5	5.0	<0.02	<0.1	<0.05	<0.05	<0.02	<0.1		<0.002	<0.002

Table H2 - Field Barrel total metals results

Sample ID	Date Sampled	Week	Volume Collected (mL)	Aluminum (Al) (mg L^{-1})	Antimony (Sb) (mg L^{-1})	Arsenic (As) (mg L^{-1})	Barium (Ba) (mg L^{-1})	Beryllium (Be) (mg L^{-1})	Bismuth (Bi) (mg L^{-1})	Boron (B) (mg L^{-1})	Cadmium (Cd) (mg L^{-1})	Calcium (Ca) (mg L^{-1})	Chromium (Cr) (mg L^{-1})	Cobalt (Co) (mg L^{-1})	Copper (Cu) (mg L^{-1})	Iron (Fe) (mg L^{-1})	Lead (Pb) (mg L^{-1})	Lithium (Li) (mg L^{-1})	Magnesium (Mg) (mg L^{-1})	Manganese (Mn) (mg L^{-1})
BMS	12-Nov-12	8	11210	0.1830	0.0030	0.0017	<0.01	<0.001	<0.001	<0.05	0.000067	12.9	<0.001	0.00524	0.0088	0.324	0.0051	<0.05	2.37	0.104
	11-Jan-13	17	5675	0.0164	0.00228	0.0010	<0.01	<0.001	<0.001	<0.05	0.000088	12.2	<0.001	0.00633	0.0112	0.025	0.0011	<0.05	2.34	0.127
	27-Mar-13	27	3650	2.5800	0.00187	0.0039	0.016	<0.001	<0.001	<0.05	0.000123	14.3	0.0035	0.00980	0.0209	2.18	0.0239	<0.05	3.10	0.197
	27-May-13	36	11725	1.39	0.00209	0.0026	<0.01	<0.001	<0.001	<0.05	0.000077	8.42	0.0015	0.00355	0.0106	1.25	0.0161	<0.05	2.30	0.0892
	18-Jun-13	39	9470	0.167	0.00168	0.0019	<0.01	<0.001	<0.001	<0.05	0.000043	7.38	<0.001	0.00273	0.0051	0.409	0.0045	<0.05	1.38	0.0628
	30-Jul-13	47	15950	0.789	<0.02	<0.015	<0.01	<0.01	<0.01	<0.05	<0.01	8.22	<0.015	<0.01	<0.015	0.867	<0.01	<0.01	1.91	0.087
	11-Apr-14	83	16560																	
	17-Jul-14	96	12950																	
BS	12-Nov-12	8	11220	0.0603	0.00176	<0.001	<0.01	<0.001	<0.001	<0.05	0.000198	16.4	<0.001	0.0646	0.0148	0.391	0.0011	<0.05	2.40	0.249
	11-Jan-13	17	5955	0.9280	0.00175	0.0011	0.010	<0.001	<0.001	<0.05	0.000118	13.2	0.0030	0.0529	0.0221	1.25	0.0046	<0.05	2.26	0.208
	27-Mar-13	27	2605	2.0200	0.00136	0.0017	0.018	<0.001	<0.001	<0.05	0.000189	23.1	0.0064	0.0894	0.0288	2.87	0.0085	<0.05	3.11	0.322
	27-May-13	36	12490	0.114	0.00124	<0.001	<0.01	<0.001	<0.001	<0.05	0.000117	9.28	<0.001	0.0382	0.0094	0.195	0.0013	<0.05	1.49	0.106
	18-Jun-13	39	9185	0.0405	0.00101	<0.001	<0.01	<0.001	<0.001	<0.05	0.000081	7.60	<0.001	0.0289	0.0064	0.140	<0.001	<0.05	1.18	0.0931
	30-Jul-13	47	15750	0.208	<0.02	<0.015	<0.01	<0.01	<0.01	<0.05	<0.01	12.4	<0.015	0.058	<0.015	0.497	<0.01	<0.01	1.83	0.170
	11-Apr-14	83	16700																	
	17-Jul-14	96	12610																	
MSS	12-Nov-12	8	11175	0.0466	0.0144	0.0042	<0.01	<0.001	<0.001	<0.05	0.000427	14.5	<0.001	0.00434	0.0260	0.105	0.0157	<0.05	2.00	0.129
	11-Jan-13	17	5480	2.6900	0.00948	0.0064	0.026	<0.001	<0.001	<0.05	0.000379	9.91	0.0035	0.00530	0.0490	1.73	0.0856	<0.05	2.08	0.141
	27-Mar-13	27	15425	0.225	0.00737	0.0026	<0.01	<0.001	<0.001	<0.05	0.000214	7.55	<0.001	0.00206	0.0137	0.184	0.0172	<0.05	1.02	0.0442
	27-May-13	36	9555	0.114	0.00638	0.0027	<0.01	<0.001	<0.001	<0.05	0.000150	5.47	<0.001	0.00104	0.0088	0.179	0.0127	<0.05	0.701	0.0349
	18-Jun-13	39	15900	0.175	<0.02	<0.015	<0.01	<0.01	<0.01	<0.05	<0.01	6.48	<0.015	<0.01	<0.015	0.233	0.012	<0.01	1.03	0.024
	30-Jul-13	47	16750																	
	11-Apr-14	83	13110																	
MSED	12-Nov-12	8	11340	0.2570	0.00114	0.0010	<0.01	<0.001	<0.001	<0.05	0.000049	15.3	<0.001	0.00504	0.0166	0.358	0.0028	<0.05	3.31	0.125
	11-Jan-13	17	5781	1.4100	0.00107	0.0014	0.013	<0.001	<0.001	<0.05	0.000058	15.6	0.0025	0.00520	0.0181	1.35	0.0070	<0.05	4.00	0.167
	27-Mar-13	27	4235	2.5600	0.00088	0.0018	0.016	<0.001	<0.001	<0.05	0.000080	13.4	0.0047	0.00602	0.0240	2.39	0.0136	<0.05	3.69	0.188
	27-May-13	36	11675	0.394	0.00118	0.0014	<0.01	<0.001	<0.001	<0.05	0.000039	10.1	<0.001	0.00082	0.0192	0.379	0.0027	<0.05	2.41	0.0267
	18-Jun-13	39	9395	0.0381	0.00114	0.0012	<0.01	<0.001	<0.001	<0.05	0.000021	7.79	<0.001	<0.0005	0.0112	0.029	<0.001	<0.05	1.50	0.0185
	30-Jul-13	47	16020	0.136	<0.02	<0.015	<0.01	<0.01	<0.01	<0.05	<0.01	8.13	<0.015	<0.01	0.021	0.139	<0.01	<0.01	1.70	0.055
	11-Apr-14	83	16700																	
	17-Jul-14	96	12750																	
FIELD BLANK	27-Mar-13	27		<0.005	<0.0006	<0.001	<0.01	<0.001	<0.001	<0.05	<0.000017	<0.2	<0.001	<0.0005	<0.001	<0.02	<0.001	<0.05	<0.02	<0.001
	27-May-13	36		<0.005	<0.0006	<0.001	<0.01	<0.001	<0.001	<0.05	<0.000017	<0.2	<0.001	<0.0005	<0.001	<0.02	<0.001	<0.05	<0.02	<0.001
	30-Jul-13	45		<0.02	<0.02	<0.015	<0.01	<0.01	<0.01	<0.05	<0.01	0.28	<0.015	<0.01	<0.015	<0.05	<0.01	<0.01	<0.2	<0.015
TRAVEL BLANK	27-Mar-13	27		<0.005	<0.0006	<0.001	<0.01	<0.001	<0.001	<0.05	<0.000017	<0.2	<0.001	<0.0005	<0.001	<0.02	<0.001	<0.05	<0.02	<0.001
	27-May-13	36		<0.005	<0.0006	<0.001	<0.01	<0.001	<0.001	<0.05	<0.000017	<0.2	<0.001	<0.0005	<0.001	<0.02	<0.001	<0.05	<0.02	<0.001
	30-Jul-13	45		<0.02	<0.02	<0.015	<0.01	<0.01	<0.01	<0.05	<0.01	<0.2	<0.015	<0.01	<0.015	<0.05	<0.01	<0.01	<0.2	<0.015

Table H2 - Field Barrel total metals results cont.

Sample ID	Date Sampled	Week	Volume Collected	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Tellurium (Te)	Thallium (Tl)	Tin (Sn)	Titanium (Ti)	Tungsten (W)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
			(mL)	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})
BMS	12-Nov-12	8	11210	<0.00001	0.0010	0.0434	2.34	<0.001	<0.0001	3.25	0.0669	<0.001	<0.0003	<0.001	0.0057	<0.01	<0.005	<0.001	0.0359	0.0024
	11-Jan-13	17	5675	<0.00001	0.0010	0.0424	2.30	<0.001	<0.0001	3.51	0.0617	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0487	0.0017
	27-Mar-13	27	3650	0.000016	0.0013	0.0594	3.27	<0.001	0.00092	3.26	0.0706	<0.001	<0.0003	0.0014	0.0928	<0.01	<0.005	0.0022	0.0849	0.0026
	27-May-13	36	11725	<0.00001	0.0012	0.0234	1.96	<0.001	0.00026	1.80	0.0368	<0.001	<0.0003	<0.001	0.0447	<0.01	<0.005	0.0013	0.0400	0.0012
	18-Jun-13	39	9470	<0.00001	<0.001	0.0194	1.37	<0.001	<0.0001	1.21	0.0300	<0.001	<0.0003	<0.001	0.0043	<0.01	<0.005	<0.001	0.0186	0.0011
	30-Jul-13	47	15950	<0.0002	<0.01	0.022	1.56	<0.02	<0.01	1.27	0.040	<0.01	<0.03	<0.015	0.029	<0.05	<0.01	<0.01	0.031	
	11-Apr-14	83	16560																	
	17-Jul-14	96	12950																	
BS	12-Nov-12	8	11220	<0.00001	0.0208	0.386	2.75	<0.001	<0.0001	6.35	0.0765	<0.001	<0.0003	<0.001	0.0031	0.016	<0.005	<0.001	0.0446	0.0019
	11-Jan-13	17	5955	<0.00001	0.0076	0.344	2.34	<0.001	0.00064	5.48	0.0629	<0.001	<0.0003	<0.001	0.0485	<0.01	<0.005	0.0018	0.0421	0.0020
	27-Mar-13	27	2605	<0.00001	0.0052	0.507	3.96	0.0021	0.00163	5.72	0.126	<0.001	<0.0003	0.0011	0.102	0.012	0.0051	0.0036	0.0757	0.0025
	27-May-13	36	12490	<0.00001	0.0068	0.236	1.62	<0.001	0.00015	2.83	0.0393	<0.001	<0.0003	<0.001	0.0066	<0.01	<0.005	<0.001	0.0212	<0.001
	18-Jun-13	39	9185	<0.00001	0.0048	0.166	1.24	<0.001	<0.0001	1.77	0.0264	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0155	<0.001
	30-Jul-13	47	15750	<0.0002	<0.01	0.287	1.38	<0.02	<0.01	1.85	0.041	<0.01	<0.03	<0.015	<0.01	<0.05	<0.01	<0.01	0.113	
	11-Apr-14	83	16700																	
	17-Jul-14	96	12610																	
MSS	12-Nov-12	8	11175	<0.00001	0.0016	0.0407	3.36	<0.001	<0.0001	4.03	0.0773	<0.001	<0.0003	<0.001	0.0021	<0.01	<0.005	<0.001	0.193	0.0061
	11-Jan-13	17	5480	0.000013	0.0015	0.0463	3.19	<0.001	0.00089	2.82	0.0588	<0.001	<0.0003	0.0025	0.0954	<0.01	<0.005	0.0024	0.224	0.0046
	27-Mar-13	27	15425	0.000031	0.0013	0.0190	2.12	<0.001	<0.0001	1.51	0.0351	<0.001	<0.0003	<0.001	0.0077	<0.01	<0.005	<0.001	0.0839	0.0017
	27-May-13	36	9555	<0.00001	0.0011	0.0112	1.34	<0.001	<0.0001	0.85	0.0230	<0.001	<0.0003	<0.001	0.0034	<0.01	<0.005	<0.001	0.0560	<0.001
	18-Jun-13	39	15900	<0.0002	<0.01	<0.015	1.89	<0.02	<0.01	1.49	0.029	<0.01	<0.03	<0.015	<0.01	<0.05	<0.01	<0.01	0.092	
	30-Jul-13	47	16750																	
	11-Apr-14	83	13110																	
MSED	12-Nov-12	8	11340	<0.00001	0.0016	0.0518	2.58	<0.001	<0.0001	3.34	0.103	<0.001	<0.0003	<0.001	0.0127	<0.01	<0.005	<0.001	0.0689	0.0022
	11-Jan-13	17	5781	<0.00001	0.0018	0.0466	2.82	<0.001	0.00043	3.54	0.118	<0.001	<0.0003	0.0012	0.0685	<0.01	<0.005	0.0020	0.0325	0.0027
	27-Mar-13	27	4235	<0.00001	0.0015	0.0482	3.67	<0.001	0.00072	3.19	0.0928	<0.001	<0.0003	0.0020	0.113	<0.01	<0.005	0.0033	0.0546	0.0021
	27-May-13	36	11675	<0.00001	0.0018	0.0196	2.32	<0.001	0.00014	2.05	0.0699	<0.001	<0.0003	<0.001	0.0179	<0.01	<0.005	<0.001	0.0121	<0.001
	18-Jun-13	39	9395	<0.00001	0.0012	0.0088	1.79	<0.001	<0.0001	1.28	0.0486	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0062	<0.001
	30-Jul-13	47	16020	<0.0002	<0.01	0.019	2.25	<0.02	<0.01	1.39	0.052	<0.01	<0.03	<0.015	<0.01	<0.05	<0.01	<0.01	<0.02	
	11-Apr-14	83	16700																	
	17-Jul-14	96	12750																	
FIELD BLANK	27-Mar-13	27		<0.00001	<0.001	<0.002	<0.5	<0.001	<0.0001	<0.1	<0.001	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	<0.003	<0.001
	27-May-13	36		<0.00001	<0.001	<0.002	<0.5	<0.001	<0.0001	<0.1	<0.001	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	<0.003	<0.001
	30-Jul-13	45		<0.0002	<0.01	<0.015	<0.2	<0.02	<0.01	0.26	<0.02	<0.01	<0.03	<0.015	<0.01	<0.05	<0.01	<0.01	<0.02	
TRAVEL BLANK	27-Mar-13	27		<0.00001	<0.001	<0.002	<0.5	<0.001	<0.0001	<0.1	<0.001	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	<0.003	<0.001
	27-May-13	36		<0.00001	<0.001	<0.002	<0.5	<0.001	<0.0001	<0.1	<0.001	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	<0.003	<0.001
	30-Jul-13	45		<0.0002	<0.01	<0.015	<0.2	<0.02	<0.01	<0.2	<0.02	<0.01	<0.03	<0.015	<0.01	<0.05	<0.01	<0.01	<0.02	

Table H3 - Field Barrel dissolved metals results

Sample ID	Date Sampled	Week	Volume Collected (mL)	Aluminum (Al) (mg L^{-1})	Antimony (Sb) (mg L^{-1})	Arsenic (As) (mg L^{-1})	Barium (Ba) (mg L^{-1})	Beryllium (Be) (mg L^{-1})	Bismuth (Bi) (mg L^{-1})	Boron (B) (mg L^{-1})	Cadmium (Cd) (mg L^{-1})	Calcium (Ca) (mg L^{-1})	Chromium (Cr) (mg L^{-1})	Cobalt (Co) (mg L^{-1})	Copper (Cu) (mg L^{-1})	Iron (Fe) (mg L^{-1})	Lead (Pb) (mg L^{-1})	Lithium (Li) (mg L^{-1})	Magnesium (Mg) (mg L^{-1})	Manganese (Mn) (mg L^{-1})
BMS	12-Nov-12	8	11210	0.0058	0.00295	<0.001	<0.01	<0.001	<0.001	<0.05	0.000061	12.5	<0.001	0.00402	0.0063	<0.02	<0.001	<0.05	2.28	0.0737
	11-Jan-13	17	5675	0.526	0.00249	0.0026	<0.01	<0.001	<0.001	<0.05	0.000094	13.3	<0.001	0.00799	0.0170	0.594	0.0186	<0.05	2.58	0.152
	27-Mar-13	27	3650	<0.005	0.00142	<0.001	<0.01	<0.001	<0.001	<0.05	0.000055	12.4	<0.001	0.00639	0.0081	<0.02	<0.001	<0.05	1.87	0.109
	27-May-13	36	11725	<0.05	<0.006	<0.01	<0.1	<0.01	<0.01	<0.5	<0.00017	7.9	<0.01	<0.005	<0.01	<0.2	<0.01	<0.5	1.42	<0.01
	18-Jun-13	39	9470	0.0146	0.00171	0.0015	<0.01	<0.001	<0.001	<0.05	0.000031	7.95	<0.001	<0.0005	0.0032	0.112	0.0010	<0.05	1.39	0.0163
	30-Jul-13	47	15950	0.014	<0.003	<0.003	0.002	<0.002	<0.001	0.01	<0.0001	7.85	<0.003	0.0006	0.004	<0.01	<0.001	<0.005	1.49	0.022
	11-Apr-14	83	16560	0.0070	<0.00060	<0.0010	<0.010	<0.0010	<0.0010	<0.050	0.000262	23.8	<0.0010	0.0237	0.0043	<0.020	<0.0010	<0.050	3.39	0.383
	17-Jul-14	96	12950	0.0183	0.00256	<0.0010	<0.010	<0.0010	<0.0010	<0.050	0.000374	6.77	<0.0010	0.00149	0.0027	0.084	0.0030	<0.050	0.887	0.0565
BS	12-Nov-12	8	11220	0.0115	0.00170	<0.001	<0.01	<0.001	<0.001	<0.05	0.000194	15.5	<0.001	0.0549	0.0127	<0.02	<0.001	<0.05	2.27	0.197
	11-Jan-13	17	5955	0.0158	0.00154	<0.001	<0.01	<0.001	<0.001	<0.05	0.000102	13.8	<0.001	0.0495	0.0151	0.047	<0.001	<0.05	2.02	0.190
	27-Mar-13	27	2605	0.0214	0.00107	<0.001	<0.01	<0.001	<0.001	<0.05	0.000158	21.9	<0.001	0.0794	0.0147	0.061	<0.001	<0.05	2.19	0.266
	27-May-13	36	12490	0.0096	0.00124	<0.001	<0.01	<0.001	<0.001	<0.05	0.000114	9.21	<0.001	0.0355	0.0073	<0.02	<0.001	<0.05	1.36	0.115
	18-Jun-13	39	9185	0.0137	0.00100	<0.001	<0.01	<0.001	<0.001	<0.05	0.000070	8.07	<0.001	0.0292	0.0056	0.038	<0.001	<0.05	1.19	0.0900
	30-Jul-13	47	15750	0.021	<0.003	<0.003	0.004	<0.002	<0.001	0.01	<0.0001	8.01	<0.003	0.0449	0.005	0.05	<0.001	<0.005	1.50	0.128
	11-Apr-14	83	16700	0.0766	<0.00060	<0.0010	<0.010	<0.0010	<0.0010	<0.050	0.000198	33.5	<0.0010	0.108	0.0080	0.302	<0.0010	<0.050	2.88	0.368
	17-Jul-14	96	12610	0.174	<0.00060	0.0010	<0.010	<0.0010	<0.0010	<0.050	0.000176	7.83	<0.0010	0.0591	0.0106	0.791	0.0019	<0.050	1.48	0.159
MSS	12-Nov-12	8	11175	0.0164	0.0139	0.0039	<0.01	<0.001	<0.001	<0.05	0.000407	13.7	<0.001	0.00367	0.0230	0.023	0.0111	<0.05	1.88	0.100
	11-Jan-13	17	5480	0.0149	0.00784	0.0024	<0.01	<0.001	<0.001	<0.05	0.000233	9.17	<0.001	0.00288	0.0217	<0.02	0.0073	<0.05	1.37	0.0780
	27-Mar-13	27	15425	0.0084	0.00732	0.0019	<0.01	<0.001	<0.001	<0.05	0.000197	7.50	<0.001	0.00169	0.0095	<0.02	0.0034	<0.05	0.890	0.0527
	27-May-13	36	9555	0.0123	0.00670	0.0025	<0.01	<0.001	<0.001	<0.05	0.000139	6.03	<0.001	0.00082	0.0066	0.046	0.0059	<0.05	0.724	0.0311
	18-Jun-13	39	15900	0.018	0.005	0.004	0.003	<0.002	<0.001	0.01	0.0002	6.07	<0.003	<0.0005	0.007	0.02	0.004	<0.005	0.86	0.012
	30-Jul-13	47	16750	0.0072	0.00355	0.0012	<0.010	<0.0010	<0.0010	<0.050	0.000586	15.2	<0.0010	0.00449	0.0056	<0.020	0.0021	<0.050	1.47	0.137
	11-Apr-14	83	13110	0.0567	<0.00060	<0.0010	<0.010	<0.0010	<0.0010	<0.050	0.000033	7.33	<0.0010	0.00098	0.0022	0.172	<0.0010	<0.050	1.53	0.0322
MSED	12-Nov-12	8	11340	<0.005	0.00113	<0.001	<0.01	<0.001	<0.001	<0.05	0.000049	14.0	<0.001	0.00368	0.0128	<0.02	<0.001	<0.05	2.94	0.0884
	11-Jan-13	17	5781	<0.005	0.00089	<0.001	<0.01	<0.001	<0.001	<0.05	0.000046	16.3	<0.001	0.00391	0.0107	<0.02	<0.001	<0.05	3.64	0.126
	27-Mar-13	27	4235	<0.005	<0.0006	<0.001	<0.01	<0.001	<0.001	<0.05	0.000040	12.0	<0.001	0.00336	0.0102	<0.02	<0.001	<0.05	2.46	0.113
	27-May-13	36	11675	0.0081	0.00113	0.0012	<0.01	<0.001	<0.001	<0.05	0.000028	10.0	<0.001	<0.0005	0.0146	<0.02	<0.001	<0.05	2.08	0.0014
	18-Jun-13	39	9395	0.0162	0.00118	0.0013	<0.01	<0.001	<0.001	<0.05	<0.000017	8.65	<0.001	<0.0005	0.0100	<0.02	<0.001	<0.05	1.65	<0.001
	30-Jul-13	47	16020	0.021	<0.003	<0.003	<0.002	<0.002	<0.001	0.01	<0.0001	7.93	<0.003	<0.0005	0.016	<0.01	<0.001	<0.005	1.54	0.024
	11-Apr-14	83	16700	<0.0050	0.00085	<0.0010	<0.010	<0.0010	<0.0010	<0.050	0.000194	27.4	<0.0010	0.00264	0.0055	<0.020	<0.0010	<0.050	5.64	0.184
	17-Jul-14	96	12750	0.0084	0.00076	0.0013	<0.010	<0.0010	<0.0010	<0.050	<0.000017	8.45	0.0020	<0.00050	0.0059	<0.020	<0.0010	<0.050	1.50	0.0053
FIELD BLANK	27-Mar-13	27		<0.005	<0.0006	<0.001	<0.01	<0.001	<0.001	<0.05	<0.000017	<0.2	<0.001	<0.0005	<0.001	<0.02	<0.001	<0.05	<0.02	<0.001
	27-May-13	36		<0.005	<0.0006	<0.001	<0.01	<0.001	<0.001	<0.05	<0.000017	<0.2	<0.001	<0.0005	<0.001	<0.02	<0.001	<0.05	<0.02	<0.001
	30-Jul-13	45		0.010	<0.003	<0.003	<0.002	<0.002	<0.001	<0.01	<0.0001	0.10	<0.003	<0.0005	<0.002	<0.01	<0.001	<0.005	<0.05	<0.002
TRAVEL BLANK	27-Mar-13	27		<0.005	<0.0006	<0.001	<0.01	<0.001	<0.001	<0.05	<0.000017	<0.2	<0.001	<0.0005	<0.001	<0.02	<0.001	<0.05	<0.02	<0.001
	27-May-13	36		<0.005	<0.0006	<0.001	<0.01	<0.001	<0.001	<0.05	<0.000017	<0.2	<0.001	<0.0005	<0.001	<0.02	<0.001	<0.05	<0.02	<0.001
	30-Jul-13	45		<0.004	<0.003	<0.003	<0.002	<0.002	<0.001	<0.01	<0.0001	0.05	<0.003	<0.0005	<0.002	<0.01	<0.001	<0.005	<0.05	<0.002

Table H3 - Field Barrel dissolved metals results cont.

Sample ID	Date Sampled	Week	Volume Collected	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Potassium (K)	Selenium (Se)	Silver (Ag)	Sodium (Na)	Strontium (Sr)	Tellurium (Te)	Thallium (Tl)	Tin (Sn)	Titanium (Ti)	Tungsten (W)	Uranium (U)	Vanadium (V)	Zinc (Zn)	Zirconium (Zr)
			(mL)	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})	(mg L^{-1})
BMS	12-Nov-12	8	11210	<0.00001	<0.001	0.0408	2.19	<0.001	<0.0001	3.23	0.0578	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0286	0.0019
	11-Jan-13	17	5675	<0.00001	0.0010	0.0482	2.44	<0.001	<0.0001	3.59	0.0576	<0.001	<0.0003	<0.001	0.0117	<0.01	<0.005	<0.001	0.0685	0.0022
	27-Mar-13	27	3650	<0.00001	<0.001	0.0438	2.27	<0.001	<0.0001	2.84	0.0574	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0397	0.0010
	27-May-13	36	11725	0.000012	<0.01	<0.02	<5	<0.01	<0.001	1.6	0.031	<0.01	<0.003	<0.01	<0.02	<0.1	<0.05	<0.01	<0.03	<0.01
	18-Jun-13	39	9470	<0.00001	<0.001	0.0165	1.41	<0.001	<0.0001	1.24	0.0294	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0125	<0.001
	30-Jul-13	47	15950	<0.0001	<0.002	0.013	1.49	<0.004	<0.0001	1.22	0.031	<0.05	<0.0003	<0.002	<0.002	<0.002	<0.002	<0.002	0.014	
	11-Apr-14	83	16560		<0.0010	0.138	1.98	<0.0010	<0.00010	2.09	0.118	<0.0010	<0.00030	<0.0010	<0.0020	<0.010	<0.0050	<0.0010	0.105	<0.0010
	17-Jul-14	96	12950		<0.0010	0.0150	0.94	<0.0010	<0.00010	0.43	0.0273	<0.0010	<0.00030	<0.0010	<0.0020	<0.010	<0.0050	<0.0010	0.118	<0.0010
BS	12-Nov-12	8	11220	<0.00001	0.0186	0.352	2.48	<0.001	<0.0001	6.01	0.0670	<0.001	<0.0003	<0.001	<0.002	0.010	<0.005	<0.001	0.0480	0.0015
	11-Jan-13	17	5955	<0.00001	0.0067	0.328	2.11	<0.001	<0.0001	5.73	0.0551	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0345	0.0013
	27-Mar-13	27	2605	<0.00001	0.0027	0.444	3.15	<0.001	0.00012	5.35	0.106	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0618	<0.001
	27-May-13	36	12490	<0.00001	0.0059	0.223	1.50	<0.001	<0.0001	2.69	0.0360	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0200	<0.001
	18-Jun-13	39	9185	<0.00001	0.0043	0.165	1.25	<0.001	<0.0001	1.79	0.0259	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0180	<0.001
	30-Jul-13	47	15750	<0.0001	<0.002	0.220	1.43	<0.004	<0.0001	1.79	0.030	<0.05	<0.0003	<0.002	<0.002	<0.002	<0.002	<0.002	0.026	
	11-Apr-14	83	16700		<0.0010	0.579	1.64	0.0017	<0.00010	3.58	0.144	<0.0010	<0.00030	<0.0010	<0.0020	<0.010	<0.0050	<0.0010	0.0871	<0.0010
	17-Jul-14	96	12610		<0.0010	0.316	0.94	<0.0010	<0.00010	1.18	0.0297	<0.0010	<0.00030	<0.0010	<0.0020	<0.010	<0.0050	<0.0010	0.0703	<0.0010
MSS	12-Nov-12	8	11175	<0.00001	0.0015	0.0365	2.93	<0.001	<0.0001	3.59	0.0668	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.206	0.0056
	11-Jan-13	17	5480	<0.00001	0.0011	0.0313	2.15	<0.001	<0.0001	2.51	0.0454	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.138	0.0032
	27-Mar-13	27	15425	<0.00001	0.0011	0.0160	2.02	<0.001	<0.0001	1.45	0.0319	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0753	0.0013
	27-May-13	36	9555	<0.00001	<0.001	0.0105	1.41	<0.001	<0.0001	0.87	0.0229	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0607	<0.001
	18-Jun-13	39	15900	<0.0001	<0.002	0.009	1.70	<0.004	<0.0001	0.80	0.026	<0.05	<0.0003	<0.002	<0.002	<0.002	<0.002	<0.002	0.079	
	30-Jul-13	47	16750		<0.0010	0.0392	1.63	<0.0010	<0.00010	1.00	0.0757	<0.0010	<0.00030	<0.0010	<0.0020	<0.010	<0.0050	<0.0010	0.264	<0.0010
	11-Apr-14	83	13110		<0.0010	0.0084	1.05	<0.0010	<0.00010	0.75	0.0290	<0.0010	<0.00030	<0.0010	<0.0020	<0.010	<0.0050	<0.0010	0.0148	<0.0010
MSED	12-Nov-12	8	11340	<0.00001	0.0015	0.0465	2.19	<0.001	<0.0001	2.99	0.0883	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0658	0.0018
	11-Jan-13	17	5781	<0.00001	0.0016	0.0418	2.49	<0.001	<0.0001	3.66	0.105	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0195	0.0018
	27-Mar-13	27	4235	<0.00001	0.0011	0.0342	2.65	<0.001	<0.0001	2.83	0.0773	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0220	<0.001
	27-May-13	36	11675	0.000011	0.0016	0.0166	2.11	<0.001	<0.0001	1.96	0.0622	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0067	<0.001
	18-Jun-13	39	9395	<0.00001	0.0011	0.0076	1.93	<0.001	<0.0001	1.37	0.0486	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	0.0056	<0.001
	30-Jul-13	47	16020	<0.0001	<0.002	0.012	2.42	<0.004	<0.0001	1.32	0.045	<0.05	<0.0003	<0.002	<0.002	<0.002	<0.002	<0.002	0.011	
	11-Apr-14	83	16700		0.0011	0.0469	3.03	0.0011	<0.00010	2.75	0.190	<0.0010	<0.00030	<0.0010	<0.0020	<0.010	<0.0050	<0.0010	0.0187	<0.0010
	17-Jul-14	96	12750		<0.0010	0.0047	2.64	<0.0010	<0.00010	1.07	0.0482	<0.0010	<0.00030	<0.0010	<0.0020	<0.010	<0.0050	<0.0010	0.0046	<0.0010
FIELD BLANK	27-Mar-13	27		<0.00001	<0.001	<0.002	<0.5	<0.001	<0.0001	<0.1	<0.001	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	<0.003	<0.001
	27-May-13	36		<0.00001	<0.001	<0.002	<0.5	<0.001	<0.0001	<0.1	<0.001	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	<0.003	<0.001
	30-Jul-13	45		<0.0001	<0.002	<0.003	<0.05	<0.004	<0.0001	0.24	<0.005	<0.05	<0.0003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	
TRAVEL BLANK	27-Mar-13	27		<0.00001	<0.001	<0.002	<0.5	<0.001	<0.0001	<0.1	<0.001	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	<0.003	<0.001
	27-May-13	36		<0.00001	<0.001	<0.002	<0.5	<0.001	<0.0001	<0.1	<0.001	<0.001	<0.0003	<0.001	<0.002	<0.01	<0.005	<0.001	<0.003	<0.001
	30-Jul-13	45		<0.0001	<0.002	<0.003	<0.05	<0.004	<0.0001	<0.05	<0.005	<0.05	<0.0003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	

Appendix I Mine Rock Loading Rates

Table I1 - Mine Rock Loading Raates (Weeks 0-10)

Parameter	Units	BMS			BS			MSS			MSED	
		BMS-A	BMS-B	BMS-C	BS-A	BS-B	BS-C	MSS-A	MSS-B	MSS-C	MSED-A	MSED-B
Sulphide	%S	0.16	0.26	0.69	0.12	0.28	1.02	0.11	0.61	0.75	0.42	0.89
Sulphate	$mg\ kg^{-1}\ wk^{-1}$	8.51	5.68	10.40	8.38	7.27	6.34	2.82	7.05	5.83	3.08	22.32
Aluminum (Al)	$mg\ kg^{-1}\ wk^{-1}$	0.02164	0.0365	0.0260	0.0250	0.0358	0.0488	0.0344	0.0423	0.0233	0.0528	0.0200
Antimony (Sb)	$mg\ kg^{-1}\ wk^{-1}$	0.00052	0.0012	0.0011	0.0002	0.0002	0.0133	0.0026	0.0043	0.0066	0.0006	0.0033
Arsenic (As)	$mg\ kg^{-1}\ wk^{-1}$	0.00044	0.0019	0.0003	0.0005	0.0002	0.0035	0.0052	0.0005	0.0010	0.0015	0.0001
Barium (Ba)	$mg\ kg^{-1}\ wk^{-1}$	0.000361	0.000614	0.000578	0.00186	0.00242	0.000501	0.000444	0.000403	0.000425	0.00097	0.001275
Beryllium (Be)	$mg\ kg^{-1}\ wk^{-1}$	<0.000098	<0.000096	<0.000097	<0.000098	<0.000098	<0.000098	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097
Bismuth (Bi)	$mg\ kg^{-1}\ wk^{-1}$	<0.000491	<0.000478	<0.000486	<0.000489	<0.000488	<0.000489	<0.000484	<0.000487	<0.000487	<0.000487	<0.000483
Boron (B)	$mg\ kg^{-1}\ wk^{-1}$	<0.010	<0.010	<0.011	<0.010	<0.010	<0.012	<0.010	<0.011	<0.010	<0.010	<0.010
Cadmium (Cd)	$mg\ kg^{-1}\ wk^{-1}$	0.000013	<0.000010	0.000010	0.000034	0.000010	0.000010	0.000015	0.000010	0.000019	<0.000010	0.000011
Calcium (Ca)	$mg\ kg^{-1}\ wk^{-1}$	2.648	2.465	3.74	3.052	2.98	3.084	1.98	3.00	2.27	2.38	7.26
Chromium (Cr)	$mg\ kg^{-1}\ wk^{-1}$	<0.000098	<0.000098	<0.000097	<0.000098	<0.000098	<0.000111	<0.000097	<0.000097	<0.00010	<0.000099	<0.000106
Cobalt (Co)	$mg\ kg^{-1}\ wk^{-1}$	0.00082	<0.000096	<0.000128	0.00168	<0.000169	<0.000098	0.00065	0.00012	<0.00010	<0.000097	0.00049
Copper (Cu)	$mg\ kg^{-1}\ wk^{-1}$	0.00053	<0.00034	<0.00027	<0.00020	<0.00029	0.00049	<0.00027	<0.00025	0.00034	<0.00022	0.00021
Iron (Fe)	$mg\ kg^{-1}\ wk^{-1}$	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011	<0.010	<0.010	<0.010	<0.010	<0.013
Lead (Pb)	$mg\ kg^{-1}\ wk^{-1}$	0.000137	0.000162	0.000213	0.000815	0.000147	0.000420	0.000102	0.000450	0.00093	0.000155	0.000060
Lithium (Li)	$mg\ kg^{-1}\ wk^{-1}$	<0.000491	<0.000478	<0.000486	<0.000491	<0.000488	<0.000597	<0.000484	<0.000487	<0.000487	<0.000497	<0.000515
Magnesium (Mg)	$mg\ kg^{-1}\ wk^{-1}$	0.6075	0.4088	0.5850	0.5678	0.4405	0.2942	0.2246	0.4872	0.323	0.2792	1.274
Manganese (Mn)	$mg\ kg^{-1}\ wk^{-1}$	0.0200	0.007412	0.01120	0.01110	0.00858	0.00288	0.00561	0.01111	0.0149	0.00872	0.0717
Molybdenum (Mo)	$mg\ kg^{-1}\ wk^{-1}$	<0.000452	<0.000488	<0.000243	<0.000182	<0.000196	<0.000259	<0.000196	<0.000248	0.000221	0.000930	0.000210
Nickel (Ni)	$mg\ kg^{-1}\ wk^{-1}$	0.00409	<0.000753	0.00416	0.01267	<0.001473	0.00148	0.00318	0.00085	<0.000645	<0.000536	0.00844
Phosphorus (P)	$mg\ kg^{-1}\ wk^{-1}$	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
Potassium (K)	$mg\ kg^{-1}\ wk^{-1}$	1.618	0.910	1.052	21.501	1.063	1.393	0.950	0.852	0.771	1.131	1.01
Selenium (Se)	$mg\ kg^{-1}\ wk^{-1}$	<0.000098	<0.000096	<0.000107	<0.000262	<0.000114	<0.000130	<0.000097	<0.000097	<0.00010	<0.000097	<0.000152
Silicon (Si)	$mg\ kg^{-1}\ wk^{-1}$	0.428	0.308	0.337	0.245	0.250	0.408	0.328	0.308	0.283	0.289	0.319
Silver (Ag)	$mg\ kg^{-1}\ wk^{-1}$	<0.005963	<0.000051	<0.000132	<0.008185	<0.000092	<0.000018	<0.000410	<0.000027	<0.000134	<0.000041	0.000014
Sodium (Na)	$mg\ kg^{-1}\ wk^{-1}$	0.800	0.583	0.643	0.308	0.545	2.405	0.399	0.612	0.405	0.319	0.632
Strontium (Sr)	$mg\ kg^{-1}\ wk^{-1}$	0.00914	0.01101	0.01612	0.00958	0.01304	0.00669	0.00608	0.01100	0.01004	0.00804	0.03037
Sulfur (S)	$mg\ kg^{-1}\ wk^{-1}$	2.84	1.89	3.47	2.79	2.42	2.11	0.94	2.35	1.94	<1.03	7.44
Thallium (Tl)	$mg\ kg^{-1}\ wk^{-1}$	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000013	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)	$mg\ kg^{-1}\ wk^{-1}$	<0.000098	<0.000096	<0.000097	<0.000098	<0.000098	<0.000098	<0.000097	<0.000097	<0.00010	<0.000097	<0.000097
Titanium (Ti)	$mg\ kg^{-1}\ wk^{-1}$	<0.009818	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)	$mg\ kg^{-1}\ wk^{-1}$	0.000273	0.000468	0.000282	0.000328	0.000453	0.004522	0.000349	0.000431	0.000095	0.001076	0.000270
Vanadium (V)	$mg\ kg^{-1}\ wk^{-1}$	<0.0010	<0.000957	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)	$mg\ kg^{-1}\ wk^{-1}$	0.0035	0.0023	0.0024	<0.0028	0.0030	0.0016	0.0014	0.0021	0.0041	0.0028	0.0046

Table I2 - Mine Rock Loading Raates (Weeks 180-85)

Parameter	Units	BMS			BS			MSS			MSED	
		BMS-A	BMS-B	BMS-C	BS-A	BS-B	BS-C	MSS-A	MSS-B	MSS-C	MSED-A	MSED-B
Sulphide	%S	0.16	0.26	0.69	0.12	0.28	1.02	0.11	0.61	0.75	0.42	0.89
Sulphate	$mg\ kg^{-1}\ wk^{-1}$	1.63E-02	1.34E-02	2.93E-02	2.12E-02	2.00E-02	2.42E-02	1.10E-02	1.99E-02	1.66E-02	1.12E-02	4.72E-02
Aluminum (Al)	$mg\ kg^{-1}\ wk^{-1}$	1.24E-05	3.93E-05	1.11E-04	5.47E-05	1.00E-04	9.78E-05	1.10E-04	1.19E-04	4.66E-05	1.62E-04	9.58E-05
Antimony (Sb)	$mg\ kg^{-1}\ wk^{-1}$	<5.76E-07	<8.18E-07	<2.13E-06	<6.37E-07	<6.33E-07	1.73E-05	4.32E-06	8.45E-06	9.30E-06	<1.26E-06	8.57E-06
Arsenic (As)	$mg\ kg^{-1}\ wk^{-1}$	<5.97E-07	1.66E-06	1.12E-06	3.28E-06	<7.01E-07	4.86E-06	1.25E-05	1.50E-06	1.98E-06	4.06E-06	<6.54E-07
Barium (Ba)	$mg\ kg^{-1}\ wk^{-1}$	1.39E-06	2.77E-06	4.46E-06	9.47E-06	8.65E-06	2.70E-06	3.09E-06	2.74E-06	3.36E-06	5.94E-06	5.62E-06
Beryllium (Be)	$mg\ kg^{-1}\ wk^{-1}$	<5.76E-07	<5.62E-07	<5.70E-07	<5.75E-07	<5.73E-07	<5.75E-07	<5.70E-07	<5.75E-07	<5.82E-07	<5.70E-07	<5.67E-07
Bismuth (Bi)	$mg\ kg^{-1}\ wk^{-1}$	<2.88E-06	<2.81E-06	<2.85E-06	<2.87E-06	<2.86E-06	<2.85E-06	<2.85E-06	<2.87E-06	<2.91E-06	<2.85E-06	<2.84E-06
Boron (B)	$mg\ kg^{-1}\ wk^{-1}$	<5.87E-05	<5.81E-05	<5.91E-05	<5.80E-05	<5.76E-05	<6.01E-05	<5.76E-05	<5.85E-05	<5.94E-05	<5.73E-05	<5.80E-05
Cadmium (Cd)	$mg\ kg^{-1}\ wk^{-1}$	2.78E-07	<5.83E-08	2.60E-07	8.99E-08	6.93E-08	8.20E-08	6.65E-08	9.88E-08	3.61E-07	<5.70E-08	7.31E-08
Calcium (Ca)	$mg\ kg^{-1}\ wk^{-1}$	4.71E-03	7.29E-03	1.18E-02	9.17E-03	1.04E-02	9.29E-03	7.27E-03	1.04E-02	6.66E-03	1.08E-02	1.96E-02
Chromium (Cr)	$mg\ kg^{-1}\ wk^{-1}$	<5.76E-07	<5.62E-07	<6.43E-07	<5.80E-07	<5.94E-07	<6.37E-07	<6.89E-07	<6.19E-07	<6.03E-07	<5.72E-07	<6.57E-07
Cobalt (Co)	$mg\ kg^{-1}\ wk^{-1}$	5.90E-06	<6.25E-07	8.09E-07	8.72E-06	8.68E-07	8.41E-07	8.16E-06	1.29E-06	6.08E-07	<5.70E-07	1.38E-06
Copper (Cu)	$mg\ kg^{-1}\ wk^{-1}$	3.14E-06	2.47E-06	2.05E-06	2.07E-06	1.76E-06	2.36E-06	1.76E-06	4.08E-06	2.12E-06	1.89E-06	2.11E-06
Iron (Fe)	$mg\ kg^{-1}\ wk^{-1}$	1.29E-04	<6.04E-05	<7.09E-05	<5.96E-05	<6.59E-05	<7.15E-05	<8.40E-05	<7.55E-05	<6.11E-05	<6.10E-05	<9.79E-05
Lead (Pb)	$mg\ kg^{-1}\ wk^{-1}$	1.74E-06	5.70E-07	4.62E-06	1.39E-06	1.46E-06	1.68E-06	6.73E-07	6.48E-06	4.11E-05	5.33E-07	1.50E-06
Lithium (Li)	$mg\ kg^{-1}\ wk^{-1}$	<2.88E-06	<2.81E-06	<2.85E-06	<2.89E-06	<2.87E-06	<2.96E-06	<2.85E-06	<2.87E-06	<2.91E-06	<2.86E-06	<2.87E-06
Magnesium (Mg)	$mg\ kg^{-1}\ wk^{-1}$	5.37E-04	3.89E-04	1.11E-03	1.02E-03	8.00E-04	7.40E-04	4.64E-04	1.07E-03	7.38E-04	5.85E-04	2.16E-03
Manganese (Mn)	$mg\ kg^{-1}\ wk^{-1}$	1.05E-04	1.02E-05	4.93E-05	4.42E-05	5.10E-05	2.16E-05	4.33E-05	5.66E-05	7.82E-05	5.75E-05	2.24E-04
Molybdenum (Mo)	$mg\ kg^{-1}\ wk^{-1}$	<2.88E-07	<2.81E-07	<4.38E-07	<4.04E-07	<4.16E-07	<4.50E-07	<4.21E-07	<4.64E-07	4.21E-07	1.26E-06	4.46E-07
Nickel (Ni)	$mg\ kg^{-1}\ wk^{-1}$	1.53E-05	<3.04E-06	1.28E-05	5.01E-05	<4.20E-06	1.91E-05	2.28E-05	5.61E-06	<3.43E-06	<2.89E-06	1.78E-05
Phosphorus (P)	$mg\ kg^{-1}\ wk^{-1}$	<1.72E-03	<1.69E-03	<1.71E-03	<1.72E-03	<1.72E-03	<1.71E-03	<1.71E-03	<1.72E-03	<1.75E-03	<1.71E-03	<1.70E-03
Potassium (K)	$mg\ kg^{-1}\ wk^{-1}$	2.32E-03	2.62E-03	3.45E-03	2.14E-02	3.64E-03	4.80E-03	2.20E-03	6.04E-03	1.72E-03	4.20E-03	3.59E-03
Selenium (Se)	$mg\ kg^{-1}\ wk^{-1}$	<5.76E-07	<5.62E-07	<5.77E-07	<7.19E-07	<5.87E-07	<5.95E-07	<5.70E-07	<5.75E-07	<5.82E-07	<5.70E-07	<6.08E-07
Silicon (Si)	$mg\ kg^{-1}\ wk^{-1}$	2.93E-03	2.51E-03	1.62E-03	1.27E-03	1.68E-03	2.14E-03	1.85E-03	1.58E-03	1.76E-03	1.72E-03	1.75E-03
Silver (Ag)	$mg\ kg^{-1}\ wk^{-1}$	<7.28E-07	<1.13E-07	<1.72E-07	<7.50E-06	<3.03E-07	<5.09E-06	<5.15E-07	<7.99E-06	<2.00E-07	<2.11E-07	1.32E-07
Sodium (Na)	$mg\ kg^{-1}\ wk^{-1}$	1.18E-03	1.08E-03	1.50E-03	9.61E-04	1.24E-03	3.89E-03	1.06E-03	1.37E-03	1.53E-03	9.65E-04	1.43E-03
Strontium (Sr)	$mg\ kg^{-1}\ wk^{-1}$	1.65E-05	1.89E-05	3.83E-05	2.14E-05	3.15E-05	1.93E-05	1.58E-05	3.13E-05	2.68E-05	2.48E-05	6.30E-05
Sulfur (S)	$mg\ kg^{-1}\ wk^{-1}$	5.43E-03	4.47E-03	9.76E-03	7.12E-03	6.68E-03	8.08E-03	3.68E-03	6.63E-03	5.52E-03	< 0.003773	1.57E-02
Thallium (Tl)	$mg\ kg^{-1}\ wk^{-1}$	<6.01E-08	<5.62E-08	<5.92E-08	<5.80E-08	<5.73E-08	<5.95E-08	<5.70E-08	<5.91E-08	<5.82E-08	<5.72E-08	<5.72E-08
Tin (Sn)	$mg\ kg^{-1}\ wk^{-1}$	<5.76E-07	<5.62E-07	<5.70E-07	<5.75E-07	<5.73E-07	<5.69E-07	<5.70E-07	<5.75E-07	<5.82E-07	<5.70E-07	<5.67E-07
Titanium (Ti)	$mg\ kg^{-1}\ wk^{-1}$	<5.76E-05	<5.62E-05	<5.70E-05	<5.75E-05	<5.73E-05	<5.69E-05	<5.74E-05	<5.75E-05	<5.82E-05	<5.70E-05	<5.67E-05
Uranium (U)	$mg\ kg^{-1}\ wk^{-1}$	3.13E-07	4.04E-07	5.94E-07	1.08E-06	1.41E-06	5.45E-06	6.43E-07	1.05E-06	2.12E-07	2.70E-06	9.22E-07
Vanadium (V)	$mg\ kg^{-1}\ wk^{-1}$	<5.76E-06	<5.62E-06	<5.70E-06	<5.75E-06	<5.73E-06	<5.69E-06	5.70E-06	5.75E-06	5.82E-06	<5.70E-06	<5.67E-06
Zinc (Zn)	$mg\ kg^{-1}\ wk^{-1}$	1.13E-04	1.47E-05	5.66E-05	<9.96E-06	1.28E-05	1.51E-05	1.15E-05	3.27E-05	1.11E-04	1.01E-05	2.49E-05

Appendix J Tailings Loading Rates

Table J1 - Tailings Loading Rates (Weeks 0-10)

Parameter	Units	Tailings	
		Replicate 1	Replicate 2
Sulphide	%S	1.29	1.29
Sulphate	mg kg^{-1} wk^{-1}	28.3	28.9
Aluminum (Al)	mg kg^{-1} wk^{-1}	0.0431	0.0372
Antimony (Sb)	mg kg^{-1} wk^{-1}	0.0239	0.0253
Arsenic (As)	mg kg^{-1} wk^{-1}	0.00050	0.00049
Barium (Ba)	mg kg^{-1} wk^{-1}	0.00339	0.00349
Beryllium (Be)	mg kg^{-1} wk^{-1}	<0.00009	<0.00009
Bismuth (Bi)	mg kg^{-1} wk^{-1}	<0.00046	<0.00046
Boron (B)	mg kg^{-1} wk^{-1}	<0.010	0.009
Cadmium (Cd)	mg kg^{-1} wk^{-1}	0.000089	0.000093
Calcium (Ca)	mg kg^{-1} wk^{-1}	17.9	18.2
Chromium (Cr)	mg kg^{-1} wk^{-1}	<0.00010	<0.00010
Cobalt (Co)	mg kg^{-1} wk^{-1}	0.00036	0.00026
Copper (Cu)	mg kg^{-1} wk^{-1}	<0.00024	<0.00020
Iron (Fe)	mg kg^{-1} wk^{-1}	<0.016	<0.010
Lead (Pb)	mg kg^{-1} wk^{-1}	0.00446	0.00608
Lithium (Li)	mg kg^{-1} wk^{-1}	0.00118	0.00109
Magnesium (Mg)	mg kg^{-1} wk^{-1}	0.484	0.484
Manganese (Mn)	mg kg^{-1} wk^{-1}	0.0305	0.0308
Molybdenum (Mo)	mg kg^{-1} wk^{-1}	0.00104	0.000955
Nickel (Ni)	mg kg^{-1} wk^{-1}	<0.00049	<0.00046
Phosphorus (P)	mg kg^{-1} wk^{-1}	<0.28	<0.27
Potassium (K)	mg kg^{-1} wk^{-1}	3.45	3.59
Selenium (Se)	mg kg^{-1} wk^{-1}	0.00024	0.00024
Silicon (Si)	mg kg^{-1} wk^{-1}	1.28	1.31
Silver (Ag)	mg kg^{-1} wk^{-1}	0.000016	<0.000023
Sodium (Na)	mg kg^{-1} wk^{-1}	0.715	0.651
Strontium (Sr)	mg kg^{-1} wk^{-1}	0.0390	0.0383
Sulfur (S)	mg kg^{-1} wk^{-1}	09.4	09.6
Thallium (Tl)	mg kg^{-1} wk^{-1}	0.000032	0.000032
Tin (Sn)	mg kg^{-1} wk^{-1}	<0.00009	<0.00009
Titanium (Ti)	mg kg^{-1} wk^{-1}	<0.009	<0.009
Uranium (U)	mg kg^{-1} wk^{-1}	0.000334	0.000331
Vanadium (V)	mg kg^{-1} wk^{-1}	<0.0009	<0.0009
Zinc (Zn)	mg kg^{-1} wk^{-1}	0.0146	0.0145

Table J2 - Tailings Loading Rates (Weeks 20-42)

Parameter	Units	Tailings	
		Replicate 1	Replicate 2
Sulphide	%S	1.29	1.29
Sulphate	$mg\ kg^{-1}\ wk^{-1}$	11.4	11.1
Aluminum (Al)	$mg\ kg^{-1}\ wk^{-1}$	0.0970	0.0153
Antimony (Sb)	$mg\ kg^{-1}\ wk^{-1}$	0.00086	0.00122
Arsenic (As)	$mg\ kg^{-1}\ wk^{-1}$	0.00054	0.00036
Barium (Ba)	$mg\ kg^{-1}\ wk^{-1}$	0.0392	0.0497
Beryllium (Be)	$mg\ kg^{-1}\ wk^{-1}$	<0.00009	<0.00010
Bismuth (Bi)	$mg\ kg^{-1}\ wk^{-1}$	<0.00045	<0.00050
Boron (B)	$mg\ kg^{-1}\ wk^{-1}$	<0.009	<0.011
Cadmium (Cd)	$mg\ kg^{-1}\ wk^{-1}$	0.0128	0.0141
Calcium (Ca)	$mg\ kg^{-1}\ wk^{-1}$	2.11	1.93
Chromium (Cr)	$mg\ kg^{-1}\ wk^{-1}$	<0.00009	<0.00010
Cobalt (Co)	$mg\ kg^{-1}\ wk^{-1}$	0.00347	0.00330
Copper (Cu)	$mg\ kg^{-1}\ wk^{-1}$	0.02275	0.00399
Iron (Fe)	$mg\ kg^{-1}\ wk^{-1}$	0.120	0.019
Lead (Pb)	$mg\ kg^{-1}\ wk^{-1}$	2.893	1.977
Lithium (Li)	$mg\ kg^{-1}\ wk^{-1}$	<0.000523	<0.00053
Magnesium (Mg)	$mg\ kg^{-1}\ wk^{-1}$	0.302	0.362
Manganese (Mn)	$mg\ kg^{-1}\ wk^{-1}$	0.139	0.1646
Molybdenum (Mo)	$mg\ kg^{-1}\ wk^{-1}$	<0.000045	<0.000050
Nickel (Ni)	$mg\ kg^{-1}\ wk^{-1}$	0.00788	0.00625
Phosphorus (P)	$mg\ kg^{-1}\ wk^{-1}$	<0.27	<0.30
Potassium (K)	$mg\ kg^{-1}\ wk^{-1}$	2.07	2.17
Selenium (Se)	$mg\ kg^{-1}\ wk^{-1}$	<0.00020	<0.00014
Silicon (Si)	$mg\ kg^{-1}\ wk^{-1}$	1.58	1.87
Silver (Ag)	$mg\ kg^{-1}\ wk^{-1}$	<0.000011	<0.000018
Sodium (Na)	$mg\ kg^{-1}\ wk^{-1}$	0.325	0.348
Strontium (Sr)	$mg\ kg^{-1}\ wk^{-1}$	0.00735	0.00905
Sulfur (S)	$mg\ kg^{-1}\ wk^{-1}$	5.74	5.54
Thallium (Tl)	$mg\ kg^{-1}\ wk^{-1}$	<0.000102	<0.000113
Tin (Sn)	$mg\ kg^{-1}\ wk^{-1}$	<0.00009	<0.00010
Titanium (Ti)	$mg\ kg^{-1}\ wk^{-1}$	<0.009	<0.010
Uranium (U)	$mg\ kg^{-1}\ wk^{-1}$	0.000433	0.000094
Vanadium (V)	$mg\ kg^{-1}\ wk^{-1}$	<0.0009	<0.0010
Zinc (Zn)	$mg\ kg^{-1}\ wk^{-1}$	4.27	4.15

Table J3 - Tailings Scaled Equilibrium Loading Rates (Weeks 20-42)

Parameter	Units	Tailings	
		Replicate 1	Replicate 2
Sulphide	%S	1.29	1.29
Sulphate	mg L^{-1}	1.3	1.3
Aluminum (Al)	mg kg^{-1} wk^{-1}	1.13E-02	<1.79E-03
Antimony (Sb)	mg kg^{-1} wk^{-1}	1.00E-04	1.42E-04
Arsenic (As)	mg kg^{-1} wk^{-1}	<6.26E-05	<4.19E-05
Barium (Ba)	mg kg^{-1} wk^{-1}	4.56E-03	5.80E-03
Beryllium (Be)	mg kg^{-1} wk^{-1}	<1.10E-05	<1.16E-05
Bismuth (Bi)	mg kg^{-1} wk^{-1}	<5.20E-05	<5.82E-05
Boron (B)	mg kg^{-1} wk^{-1}	<1.06E-03	<1.23E-03
Cadmium (Cd)	mg kg^{-1} wk^{-1}	1.49E-03	1.65E-03
Calcium (Ca)	mg kg^{-1} wk^{-1}	2.45E-01	2.25E-01
Chromium (Cr)	mg kg^{-1} wk^{-1}	<1.05E-05	<1.22E-05
Cobalt (Co)	mg kg^{-1} wk^{-1}	4.04E-04	3.85E-04
Copper (Cu)	mg kg^{-1} wk^{-1}	2.65E-03	4.64E-04
Iron (Fe)	mg kg^{-1} wk^{-1}	1.40E-02	2.23E-03
Lead (Pb)	mg kg^{-1} wk^{-1}	3.37E-01	2.30E-01
Lithium (Li)	mg kg^{-1} wk^{-1}	<6.10E-05	<6.20E-05
Magnesium (Mg)	mg kg^{-1} wk^{-1}	3.51E-02	4.22E-02
Manganese (Mn)	mg kg^{-1} wk^{-1}	1.62E-02	1.92E-02
Molybdenum (Mo)	mg kg^{-1} wk^{-1}	<5.20E-06	<5.82E-06
Nickel (Ni)	mg kg^{-1} wk^{-1}	9.19E-04	7.28E-04
Phosphorus (P)	mg kg^{-1} wk^{-1}	<3.12E-02	<3.49E-02
Potassium (K)	mg kg^{-1} wk^{-1}	2.42E-01	2.53E-01
Selenium (Se)	mg kg^{-1} wk^{-1}	<2.29E-05	<1.62E-05
Silicon (Si)	mg kg^{-1} wk^{-1}	1.84E-01	2.18E-01
Silver (Ag)	mg kg^{-1} wk^{-1}	<1.31E-06	<2.08E-06
Sodium (Na)	mg kg^{-1} wk^{-1}	3.79E-02	4.06E-02
Strontium (Sr)	mg kg^{-1} wk^{-1}	8.56E-04	1.05E-03
Sulfur (S)	mg kg^{-1} wk^{-1}	6.69E-01	6.46E-01
Thallium (Tl)	mg kg^{-1} wk^{-1}	<1.19E-05	<1.32E-05
Tin (Sn)	mg kg^{-1} wk^{-1}	<1.04E-05	<1.16E-05
Titanium (Ti)	mg kg^{-1} wk^{-1}	<1.04E-03	<1.16E-03
Uranium (U)	mg kg^{-1} wk^{-1}	<5.05E-05	<1.09E-05
Vanadium (V)	mg kg^{-1} wk^{-1}	<1.04E-04	<1.16E-04
Zinc (Zn)	mg kg^{-1} wk^{-1}	4.97E-01	4.84E-01

Appendix K **QA/QC Results**

Table K1 - Mine Rock SFE QA/QC Results

Mine Rock SFE Parameters	Units	Detection Limits	TL 11-150	TL 11-150-Replicate	RPD/AD	TL 09-86-Acid	TL 09-86-Acid-Dup	RPD/AD	TL 08-08	TL 08-08-Dup	RPD/AD	TL 11-132	TL 11-132-Dup	RPD/AD	TL 08-07-Acid	TL 08-07-Acid-Dup	RPD/AD
			(21.5-22.0)	(21.5-22.0)	(%)	(27.5-28.0)	(27.5-28.0)	(%)	(84.5-85.0)	(84.5-85.0)	(%)	(21.5-22.0)	(21.5-22.0)	(%)	(20.5-21.0)	(20.5-21.0)	(%)
Aluminum (Al)	mg L^{-1}	0.0010	0.339	0.883	**89.0**	0.10	0.0932	3.8	0.0155	0.0162	4.4	0.103	0.100	3.0	5.09	5.05	0.8
Antimony (Sb)	mg L^{-1}	0.00010	0.00046	0.00032	0.0001	0.00209	0.00214	2.4	0.00017	0.00018	5.7	0.00054	0.00053	1.9	0.00262	0.00247	5.9
Arsenic (As)	mg L^{-1}	0.00010	0.00060	0.00133	**75.6**	0.0064	0.00648	1.2	0.00053	0.00062	15.7	0.00142	0.00139	2.1	0.0235	0.0230	2.2
Barium (Ba)	mg L^{-1}	0.000050	0.000759	0.00279	**114.5**	0.0005	0.000467	8.2	0.000854	0.000782	8.8	0.000766	0.000780	1.8	0.0606	0.0581	4.2
Beryllium (Be)	mg L^{-1}	0.00010	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	0.00147	0.00135	8.5
Bismuth (Bi)	mg L^{-1}	0.00050	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD
Boron (B)	mg L^{-1}	0.010	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	<0.010	BD	0.015	0.013	0.002
Cadmium (Cd)	mg L^{-1}	0.000010	<0.000010	<0.000010	BD	<0.000010	<0.000010	BD	0.000013	0.000014	7.4	<0.000010	<0.000010	BD	0.000158	0.000151	4.5
Calcium (Ca)	mg L^{-1}	0.020	0.131	2.63	**181.0**	03.0	2.90	4.4	1.84	1.78	3.3	2.48	2.49	0.4	57.9	51.3	12.1
Chromium (Cr)	mg L^{-1}	0.00010	0.00022	0.00027	**20.4**	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	0.00311	0.00307	1.3
Cobalt (Co)	mg L^{-1}	0.00010	<0.00010	0.00012	0.00002	<0.00010	<0.00010	BD	0.00317	0.00314	1.0	<0.00010	<0.00010	BD	0.00151	0.00147	2.7
Copper (Cu)	mg L^{-1}	0.00020	0.00031	0.00050	0.0002	0.0017	0.00171	0.6	0.00066	0.00068	3.0	0.00046	0.00047	2.2	0.0224	0.0221	1.3
Iron (Fe)	mg L^{-1}	0.010	<0.010	0.045	0.035	<0.010	<0.010	BD	0.124	0.124	0.0	0.011	0.011	0.0	1.96	1.97	0.5
Lead (Pb)	mg L^{-1}	0.000050	0.000177	0.000404	**78.1**	0.00021	0.00042	**67.7**	0.00158	0.00147	7.2	0.00106	0.000987	7.1	0.201	0.193	4.1
Lithium (Li)	mg L^{-1}	0.00050	<0.00050	0.00103	0.0005	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	0.00221	0.00164	**29.6**
Magnesium (Mg)	mg L^{-1}	0.0050	0.0381	0.275	**151.3**	0.25	0.240	2.1	0.266	0.265	0.4	0.255	0.251	1.6	3.38	3.62	6.9
Manganese (Mn)	mg L^{-1}	0.000050	0.000427	0.00234	**138.3**	0.01	0.0136	3.0	0.0393	0.0409	4.0	0.0106	0.0108	1.9	0.434	0.443	2.1
Molybdenum (Mo)	mg L^{-1}	0.000050	0.000083	0.000112	29.7	0.000203	0.000202	0.5	<0.000050	<0.000050	BD	<0.000050	<0.000050	BD	0.000432	0.000393	9.5
Nickel (Ni)	mg L^{-1}	0.00050	<0.00050	<0.00050	BD	0.0014	0.00184	0.0004	0.0188	0.0191	1.6	<0.00050	<0.00050	BD	0.00464	0.00480	3.4
Phosphorus (P)	mg L^{-1}	0.30	<0.30	<0.30	BD	<0.30	<0.30	BD	<0.30	<0.30	BD	<0.30	<0.30	BD	15.4	15.4	0.0
Potassium (K)	mg L^{-1}	0.050	2.80	2.44	13.7	0.63	0.613	3.2	0.734	0.669	9.3	1.15	1.09	5.4	3.01	3.01	0.0
Selenium (Se)	mg L^{-1}	0.00010	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD
Silicon (Si)	mg L^{-1}	0.050	1.28	2.07	**47.2**	0.34	0.328	2.1	0.111	0.105	5.6	0.318	0.315	0.9	4.87	4.87	0.0
Silver (Ag)	mg L^{-1}	0.000010	<0.000010	<0.000010	BD	<0.000010	<0.000010	BD	0.000024	0.000018	0.00001	0.000057	0.000043	**28.0**	0.000075	0.000069	8.3
Sodium (Na)	mg L^{-1}	0.050	1.35	2.13	**44.8**	0.60	0.586	2.4	0.615	0.614	0.2	0.455	0.447	1.8	1.09	1.09	0.0
Strontium (Sr)	mg L^{-1}	0.00020	0.00030	0.00453	0.0042	0.0057	0.00588	3.1	0.00775	0.00774	0.1	0.00615	0.00624	1.5	0.121	0.109	10.4
Sulfur (S)	mg L^{-1}	0.50	0.85	1.25	0.4000	<0.50	<0.50	BD	1.88	1.86	1.1	0.93	0.93	0.0	0.76	0.75	1.3
Thallium (Tl)	mg L^{-1}	0.000010	<0.000010	<0.000010	BD	<0.000010	<0.000010	BD	<0.000010	<0.000010	BD	<0.000010	<0.000010	BD	<0.000070	0.000059	0.00001
Tin (Sn)	mg L^{-1}	0.00010	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	0.00011	<0.00010	0.00001
Titanium (Ti)	mg L^{-1}	0.010	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	<0.010	BD	0.014	0.013	7.4
Uranium (U)	mg L^{-1}	0.000010	<0.000010	0.000113	0.0001	0.00006	0.000079	**22.5**	0.000228	0.000226	0.9	0.000071	0.000070	1.4	0.00691	0.00660	4.6
Vanadium (V)	mg L^{-1}	0.0010	0.0024	0.0016	0.0008	<0.0010	<0.0010	BD	<0.0010	<0.0010	BD	<0.0010	<0.0010	BD	0.0025	0.0026	3.9
Zinc (Zn)	mg L^{-1}	0.0010	<0.0010	0.0033	0.002	0.0014	0.0011	0.0003	0.0076	0.0074	2.7	<0.0010	<0.0010	BD	0.0758	0.0756	0.3

Table K2 - Composite tailings relative standard deviation calculation results

Tailings SFE Parameters	Units	Detection Limits	DI WASH				ACID WASH			
			Average	Geomean	Std. Dev.	RSD (%)	Average	Geomean	Std. Dev.	RSD (%)
pH	---	-	7.17	7.17	0.18	2.44	1.37	1.37	0.03	2.19
Conductivity	uS/cm	-	287.0	286.9	9.70	3.38	26,230	26,230	185	0.71
Sulphate	mg/L	-	112.9	112.8	5.00	4.43	100.5	100.3	8.12	8.08
Dissolved Metals										
Aluminum (Al)	mg L^{-1}	0.0010	0.0091	0.0086	0.004	**39.3**	73.0	72.9	4.88	6.68
Antimony (Sb)	mg L^{-1}	0.00010	0.00680	0.00680	0.000	4.68	0.0753	0.0751	0.01	10.0
Arsenic (As)	mg L^{-1}	0.00010	0.00023	0.00023	0.000	2.47	0.1011	0.1009	0.01	7.82
Barium (Ba)	mg L^{-1}	0.000050	0.00704	0.00701	0.001	9.88	0.309	0.308	0.03	8.13
Beryllium (Be)	mg L^{-1}	0.00010	<0.00010	<0.00010	-	-	0.0033	0.0033	0.000	9.35
Bismuth (Bi)	mg L^{-1}	0.00050	<0.00050	<0.00050	-	-	0.0103	0.0103	0.000	2.03
Boron (B)	mg L^{-1}	0.010	<0.010	<0.010	-	-	<0.10	<0.10	-	-
Cadmium (Cd)	mg L^{-1}	0.000010	0.0016	0.0016	0.000	16.1	0.119	0.118	0.02	12.9
Calcium (Ca)	mg L^{-1}	0.020	43.0	42.9	2.20	5.12	214	214	8.33	3.90
Chromium (Cr)	mg L^{-1}	0.00010	0.00013	0.00013	-	-	0.345	0.344	0.03	8.96
Cobalt (Co)	mg L^{-1}	0.00010	0.00173	0.00172	0.000	6.35	0.0456	0.0455	0.003	7.03
Copper (Cu)	mg L^{-1}	0.00020	0.00050	0.00049	-	-	0.736	0.736	0.02	2.47
Iron (Fe)	mg L^{-1}	0.010	<0.010	<0.010	-	-	257	256	21.1	8.23
Lead (Pb)	mg L^{-1}	0.000050	0.0191	0.0191	0.002	8.81	74.8	74.6	5.78	7.74
Lithium (Li)	mg L^{-1}	0.00050	0.00188	0.00188	0.000	2.01	0.0344	0.0342	0.004	11.8
Magnesium (Mg)	mg L^{-1}	0.0050	1.42	1.42	0.08	5.64	33.2	33.2	2.82	8.49
Manganese (Mn)	mg L^{-1}	0.000050	0.274	0.273	0.02	7.49	5.85	5.83	0.59	10.0
Molybdenum (Mo)	mg L^{-1}	0.000050	0.000725	0.000724	0.000	5.45	0.00362	0.00361	0.000	7.51
Nickel (Ni)	mg L^{-1}	0.00050	0.00088	0.00083	0.000	-	0.292	0.291	0.02	8.40
Phosphorus (P)	mg L^{-1}	0.30	<0.30	<0.30	-	-	23.5	23.4	3.16	13.4
Potassium (K)	mg L^{-1}	0.050	5.22	5.21	0.19	3.59	40.5	40.1	6.36	15.7
Selenium (Se)	mg L^{-1}	0.00010	0.00030	0.00030	0.000	5.15	<0.0010	<0.0010	-	-
Silicon (Si)	mg L^{-1}	0.050	1.06	1.06	0.04	3.77	75.8	75.6	7.17	9.46
Silver (Ag)	mg L^{-1}	0.000010	<0.000010	<0.000010	-	-	0.00625	0.00624	0.001	8.40
Sodium (Na)	mg L^{-1}	0.050	4.42	4.42	0.12	2.73	9.9	9.8	1.23	12.4
Strontium (Sr)	mg L^{-1}	0.00020	0.0822	0.0821	0.01	6.27	0.350	0.350	0.01	2.56
Sulfur (S)	mg L^{-1}	0.50	37.6	37.6	1.67	4.43	33.5	33.4	2.71	8.08
Thallium (Tl)	mg L^{-1}	0.000010	0.000089	8.8985E-05	0.000	2.25	0.00211	0.00210	0.000	10.3
Tin (Sn)	mg L^{-1}	0.00010	<0.00010	<0.00010	-	-	0.0027	0.0027	0.000	9.44
Titanium (Ti)	mg L^{-1}	0.010	<0.010	<0.010	-	-	0.42	0.42	0.07	17.4
Uranium (U)	mg L^{-1}	0.000010	0.000159	0.000154	0.000	**29.2**	0.0435	0.0434	0.004	8.66
Vanadium (V)	mg L^{-1}	0.0010			-	-	0.063	0.062	0.01	10.6
Zinc (Zn)	mg L^{-1}	0.0010	0.129	0.126	0.03	**25.3**	37.8	37.6	4.84	12.8

Table K3 - Mine Rock HCT QA/QC Results

Sample ID	Detection Limits	BMS-B	BMS-B-Dup	RPD or AD	MSED-A	MSED-A-Dup	RPD or AD	BMS-A	BMS-A-Dup	RPD or AD	BMS-C	BMS-C-Dup	RPD or AD	MSS-B	MSS-B-Dup	RPD or AD	Tailings	Tailings-Dup	RPD or AD
Week		14	14		35	35		189	189		231	231		273	273		245	245	
Date Sampled		28-Aug-12	28-Aug-12		18-Sep-12	18-Sep-12		19-Feb-13	19-Feb-13		02-Apr-13	02-Apr-13		14-May-13	14-May-13		12-Jun-13	12-Jun-13	
Units	(mg/L)	(mg/L)	(mg/L)	(%)	(mg/L)	(mg/L)	(%)	(mg/L)	(mg/L)	(%)	(mg/L)	(mg/L)	(%)	(mg/L)	(mg/L)	(%)	(mg/L)	(mg/L)	(%)
Aluminum (Al)	0.0010	0.0814	0.0798	2.0	0.0163	0.0162	0.6	0.0050	0.0046	8.3	0.0158	0.0154	2.6	0.0071	0.0067	5.8	<0.0010	<0.0010	BD
Antimony (Sb)	0.00010	0.00174	0.00172	1.2	0.00026	0.00027	0.00001	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	0.00055	0.00055	0.0	0.00098	0.00098	0.0
Arsenic (As)	0.00010	0.00263	0.00248	5.9	0.00066	0.00074	11.4	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	0.00010	0.0	<0.00010	<0.00010	BD
Barium (Ba)	0.000050	0.000636	0.000640	0.6	0.000551	0.000601	8.7	0.000329	0.000346	5.0	0.000322	0.000405	22.8	0.000593	0.000587	1.0	0.0800	0.0782	2.3
Beryllium (Be)	0.00010	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD
Bismuth (Bi)	0.00050	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD
Boron (B)	0.010	0.011	0.010	0.001	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	<0.010	BD
Cadmium (Cd)	0.000010	<0.000010	<0.000010	BD	<0.000010	<0.000010	BD	0.000073	0.000065	11.6	0.000024	0.000022	8.7	0.000027	0.000027	0.0	0.0132	0.0132	0.0
Calcium (Ca)	0.020	3.29	3.22	2.2	1.19	1.28	7.3	1.04	1.07	2.8	0.992	0.959	3.4	1.51	1.50	0.7	2.00	1.99	0.5
Chromium (Cr)	0.00010	<0.00010	0.00011	BD	0.00011	<0.00010	0.00001	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	0.00010	0.0	<0.00010	<0.00010	BD
Cobalt (Co)	0.00010	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	0.00105	0.00105	0.0	<0.00010	<0.00010	BD	0.00034	0.00035	0.00001	0.00122	0.00122	0.0
Copper (Cu)	0.00020	0.00042	0.00039	0.00003	<0.00020	<0.00020	BD	<0.00020	<0.00020	BD	<0.00020	<0.00020	BD	0.00021	0.00025	0.00004	0.00040	0.00044	0.00004
Iron (Fe)	0.010	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	0.011	0.001	<0.010	<0.010	BD	<0.010	<0.010	BD
Lead (Pb)	0.000050	0.000113	0.000112	0.000001	0.000110	<0.000050	0.00006	0.000129	0.000129	0.0	0.000366	0.000634	53.6	0.00106	0.00112	5.5	0.282	0.286	1.4
Lithium (Li)	0.00050	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	<0.00050	<0.00050	BD	<0.00050	0.00056	0.00006
Magnesium (Mg)	0.0050	0.549	0.535	2.6	0.115	0.130	12.2	0.122	0.124	1.6	0.0617	0.0717	15.0	0.0753	0.0752	0.1	0.314	0.303	3.6
Manganese (Mn)	0.000050	0.00987	0.00941	4.8	0.00551	0.00603	9.0	0.0252	0.0250	0.8	0.00313	0.00374	17.8	0.00983	0.00957	2.7	0.0999	0.0997	0.2
Molybdenum (Mo)	0.000050	0.000811	0.000783	3.5	0.000221	0.000281	0.00006	<0.000050	<0.000050	BD	<0.000050	<0.000050	BD	<0.000050	<0.000050	BD	<0.000050	<0.000050	BD
Nickel (Ni)	0.00050	0.00064	0.00064	0	<0.00050	<0.00050	BD	0.00219	0.00211	3.7	0.00063	0.00064	1.6	0.00074	0.00081	9.0	0.00160	0.00160	0.0
Phosphorus (P)	0.30	<0.30	<0.30	BD	<0.30	<0.30	BD	<0.30	<0.30	BD	<0.30	<0.30	BD	<0.30	<0.30	BD	<0.30	<0.30	BD
Potassium (K)	0.050	1.31	1.27	3.1	0.798	0.582	31.3	0.507	0.517	2.0	0.208	0.215	3.3	0.389	0.446	13.7	2.25	2.22	1.3
Selenium (Se)	0.00010	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD
Silicon (Si)	0.050	0.473	0.469	0.8	0.126	0.130	3.1	0.310	0.314	1.3	0.058	0.069	17.3	0.105	0.100	4.9	1.44	1.42	1.4
Silver (Ag)	0.000010	<0.000010	<0.000010	BD	0.000084	0.000030	0.00005	0.000013	<0.000010	0.000003	<0.000010	<0.000010	BD	<0.000010	<0.000010	BD	0.000052	0.000080	42.4
Sodium (Na)	0.050	0.748	0.725	3.1	0.145	0.175	18.8	0.193	0.190	1.6	0.117	0.118	0.9	0.154	0.190	20.9	0.363	0.363	0.0
Strontium (Sr)	0.00020	0.0141	0.0139	1.4	0.00391	0.00451	14.3	0.00358	0.00361	0.8	0.00259	0.00250	3.5	0.00325	0.00327	0.6	0.00613	0.00609	0.7
Sulfur (S)	0.50	2.33	2.28	2.2	<0.50	0.53	0.03	1.12	1.14	1.8	0.76	0.76	0.0	0.78	0.82	5.0	4.25	4.22	0.7
Thallium (Tl)	0.000010	<0.000010	<0.000010	BD	<0.000010	<0.000010	BD	0.000017	<0.000010	0.000007	0.000019	<0.000010	0.000009	<0.000010	<0.000010	BD	0.000056	0.000056	0.0
Tin (Sn)	0.00010	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD	<0.00010	<0.00010	BD
Titanium (Ti)	0.010	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	<0.010	BD	<0.010	<0.010	BD
Uranium (U)	0.000010	0.000570	0.000564	1.1	0.000537	0.000589	9.2	0.000041	0.000037	0.000004	0.000037	0.000024	0.00001	0.000066	0.000074	11.4	0.000062	0.000062	0.0
Vanadium (V)	0.0010	<0.0010	<0.0010	BD	<0.0010	<0.0010	BD	<0.0010	<0.0010	BD	<0.0010	<0.0010	BD	<0.0010	<0.0010	BD	<0.0010	<0.0010	BD
Zinc (Zn)	0.0010	<0.0010	<0.0010	BD	0.0016	0.0018	0.0002	0.0186	0.0190	2.1	0.0048	0.0070	37.3	0.0079	0.0075	5.2	2.86	2.79	2.5

Table K4 - Field Cell Field and Travel Blank Results

Sample ID	Units	FIELD BLANK			TRAVEL BLANK		
Date Sampled		27-Mar-13	27-May-13	30-Jul-13	27-Mar-13	27-May-13	30-Jul-13
Week		27	36	45	27	36	45
General Parameters							
pH	---	5.52	5.49	5.34	5.50	5.41	4.76
Conductivity (EC)	µS/cm	<3	<3	**2.0**	<3	<3	**2.0**
Hardness (as CaCO3)	mg/L	<0.51	<0.51	<0.5	<0.51	<0.51	<0.5
Total Suspended Solids	mg/L	<2	<3	**1.0**	<2	<3	**1.0**
Acidity (as CaCO3)	mg/L	<2	<2	<5	<2	<2	<5
Alkalinity, Total (as CaCO3)	mg/L	<5	<5	**5.0**	<5	<5	**5.0**
Ammonia, Total (as N)	mg/L		<0.02	<0.02		<0.02	<0.02
Chloride (Cl)	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate (as N)	mg/L	<0.03	<0.03	<0.05	<0.03	<0.03	<0.05
Nitrite (as N)	mg/L	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05
Phosphorus (P)	mg/L		<0.005	<0.02		<0.005	<0.02
Sulfate (SO4)	mg/L	<0.3	<0.3	<0.1	<0.3	<0.3	<0.1
WAD Cyanide	mg/L	<0.002	<0.002		<0.002	<0.002	
Total Cyanide	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Free Cyanide	mg/L	<0.005	<0.005	<0.002	<0.005	<0.005	<0.002
Total Metals							
Aluminum (Al)	mg/L	<0.005	<0.005	<0.02	<0.005	<0.005	<0.02
Antimony (Sb)	mg/L	<0.0006	<0.0006	<0.02	<0.0006	<0.0006	<0.02
Arsenic (As)	mg/L	<0.001	<0.001	<0.015	<0.001	<0.001	<0.015
Barium (Ba)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Beryllium (Be)	mg/L	<0.001	<0.001	<0.01	<0.001	<0.001	<0.01
Bismuth (Bi)	mg/L	<0.001	<0.001	<0.01	<0.001	<0.001	<0.01
Boron (B)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium (Cd)	mg/L	<0.000017	<0.000017	<0.01	<0.000017	<0.000017	<0.01
Calcium (Ca)	mg/L	<0.2	<0.2	**0.28**	<0.2	<0.2	<0.2
Chromium (Cr)	mg/L	<0.001	<0.001	<0.015	<0.001	<0.001	<0.015
Cobalt (Co)	mg/L	<0.0005	<0.0005	<0.01	<0.0005	<0.0005	<0.01
Copper (Cu)	mg/L	<0.001	<0.001	<0.015	<0.001	<0.001	<0.015
Iron (Fe)	mg/L	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05
Lead (Pb)	mg/L	<0.001	<0.001	<0.01	<0.001	<0.001	<0.01
Lithium (Li)	mg/L	<0.05	<0.05	<0.01	<0.05	<0.05	<0.01
Magnesium (Mg)	mg/L	<0.02	<0.02	<0.2	<0.02	<0.02	<0.2
Manganese (Mn)	mg/L	<0.001	<0.001	<0.015	<0.001	<0.001	<0.015
Mercury (Hg)	mg/L	<0.00001	<0.00001	<0.0002	<0.00001	<0.00001	<0.0002
Molybdenum (Mo)	mg/L	<0.001	<0.001	<0.01	<0.001	<0.001	<0.01
Nickel (Ni)	mg/L	<0.002	<0.002	<0.015	<0.002	<0.002	<0.015
Potassium (K)	mg/L	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2
Selenium (Se)	mg/L	<0.001	<0.001	<0.02	<0.001	<0.001	<0.02
Silver (Ag)	mg/L	<0.0001	<0.0001	<0.01	<0.0001	<0.0001	<0.01
Sodium (Na)	mg/L	<0.1	<0.1	**0.26**	<0.1	<0.1	<0.2
Strontium (Sr)	mg/L	<0.001	<0.001	<0.02	<0.001	<0.001	<0.02
Tellurium (Te)	mg/L	<0.001	<0.001	<0.01	<0.001	<0.001	<0.01
Thallium (Tl)	mg/L	<0.0003	<0.0003	<0.03	<0.0003	<0.0003	<0.03
Tin (Sn)	mg/L	<0.001	<0.001	<0.015	<0.001	<0.001	<0.015
Titanium (Ti)	mg/L	<0.002	<0.002	<0.01	<0.002	<0.002	<0.01
Tungsten (W)	mg/L	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05
Uranium (U)	mg/L	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
Vanadium (V)	mg/L	<0.001	<0.001	<0.01	<0.001	<0.001	<0.01
Zinc (Zn)	mg/L	<0.003	<0.003	<0.02	<0.003	<0.003	<0.02
Zirconium (Zr)	mg/L	<0.001	<0.001		<0.001	<0.001	

Table K4 - Field Cell Field and Travel Blank Results cont.

Sample ID	Units	FIELD BLANK			TRAVEL BLANK		
Date Sampled Week		27-Mar-13 27	27-May-13 36	30-Jul-13 45	27-Mar-13 27	27-May-13 36	30-Jul-13 45
Dissolved Metals							
Aluminum (Al)	mg/L	<0.005	<0.005	**0.010**	<0.005	<0.005	<0.004
Antimony (Sb)	mg/L	<0.0006	<0.0006	<0.003	<0.0006	<0.0006	<0.003
Arsenic (As)	mg/L	<0.001	<0.001	<0.003	<0.001	<0.001	<0.003
Barium (Ba)	mg/L	<0.01	<0.01	<0.002	<0.01	<0.01	<0.002
Beryllium (Be)	mg/L	<0.001	<0.001	<0.002	<0.001	<0.001	<0.002
Bismuth (Bi)	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron (B)	mg/L	<0.05	<0.05	<0.01	<0.05	<0.05	<0.01
Cadmium (Cd)	mg/L	<0.000017	<0.000017	<0.0001	<0.000017	<0.000017	<0.0001
Calcium (Ca)	mg/L	<0.2	<0.2	**0.10**	<0.2	<0.2	**0.05**
Chromium (Cr)	mg/L	<0.001	<0.001	<0.003	<0.001	<0.001	<0.003
Cobalt (Co)	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Copper (Cu)	mg/L	<0.001	<0.001	<0.002	<0.001	<0.001	<0.002
Iron (Fe)	mg/L	<0.02	<0.02	<0.01	<0.02	<0.02	<0.01
Lead (Pb)	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Lithium (Li)	mg/L	<0.05	<0.05	<0.005	<0.05	<0.05	<0.005
Magnesium (Mg)	mg/L	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05
Manganese (Mn)	mg/L	<0.001	<0.001	<0.002	<0.001	<0.001	<0.002
Mercury (Hg)	mg/L	<0.00001	<0.00001	<0.0001	<0.00001	<0.00001	<0.0001
Molybdenum (Mo)	mg/L	<0.001	<0.001	<0.002	<0.001	<0.001	<0.002
Nickel (Ni)	mg/L	<0.002	<0.002	<0.003	<0.002	<0.002	<0.003
Potassium (K)	mg/L	<0.5	<0.5	<0.05	<0.5	<0.5	<0.05
Selenium (Se)	mg/L	<0.001	<0.001	<0.004	<0.001	<0.001	<0.004
Silver (Ag)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium (Na)	mg/L	<0.1	<0.1	**0.24**	<0.1	<0.1	<0.05
Strontium (Sr)	mg/L	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005
Tellurium (Te)	mg/L	<0.001	<0.001	<0.05	<0.001	<0.001	<0.05
Thallium (Tl)	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Tin (Sn)	mg/L	<0.001	<0.001	<0.002	<0.001	<0.001	<0.002
Titanium (Ti)	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Tungsten (W)	mg/L	<0.01	<0.01	<0.002	<0.01	<0.01	<0.002
Uranium (U)	mg/L	<0.005	<0.005	<0.002	<0.005	<0.005	<0.002
Vanadium (V)	mg/L	<0.001	<0.001	<0.002	<0.001	<0.001	<0.002
Zinc (Zn)	mg/L	<0.003	<0.003	<0.005	<0.003	<0.003	<0.005
Zirconium (Zr)	mg/L	<0.001	<0.001		<0.001	<0.001	