Appendix 5-B

Brucejack Environmental Assessment: ML/ARD Baseline Report

ERM

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

PRETIVM RESOURCES INC.

BRUCEJACK ENVIRONMENTAL ASSESSMENT

ML/ARD BASELINE REPORT

FINAL

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May 28th, 2014
Project No.: 1008-010

Ian Chang
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Dear Mr. Chang,

Re: Brucejack EA ML/ARD Baseline Report – FINAL

Please find attached a copy of the above referenced report.

Should you have any questions or comments, please do not hesitate to contact me.

Yours sincerely,

BGC ENGINEERING INC.
per:

Jan Gerits, Ph.D.
Senior Geochemist

EXECUTIVE SUMMARY

The proposed Brucejack Gold Mine Project (Project) is owned by Pretivm Resources Inc. (Pretivm). The proposed mine site is located approximately 20 km northwest of Bowser Lake or 65 km north-northwest of the town of Stewart, British Columbia. Between 2011 and 2013, BGC completed an assessment of the metal leaching/acid rock drainage (ML/ARD) characteristics of materials that will be disturbed, excavated or exposed as a result of the planned mining activities. These materials include ore, waste rock, tailings, tailings paste backfill and various site characterization materials including overburden, construction and road (cut and fill) materials. This ML/ARD baseline information is one of the components required for Pretivm's Environmental Assessment of the Brucejack project. The ML/ARD baseline information will be used in the development of source terms for a site specific water quality model, which will predict water quality discharged from Brucejack Lake.

The Brucejack deposit is classified as an epithermal Au-Ag-Cu, low sulphidation deposit comprised of hydrothermal veins and disseminations hosted in volcanic and volcaniclastic sedimentary rock. Pretivm is proposing an underground mine operation with a 22 year life-of-mine. On-site mineral processing of the ore will be done by crushing, grinding, sulphide flotation and gravity concentration. Gold doré will be produced on-site from the gravity concentrate while the flotation concentrate will be trucked off-site for further processing.

Waste rock and flotation tailings are planned for underground disposal and deposition in Brucejack Lake. Approximately 1.76 Mt (40%) of the waste rock produced will be stored in the underground and the remaining 2.52 Mt (60%) will be deposited in Brucejack Lake, predominantly during the construction phase. Similarly, approximately 8.55 Mt (47%) of the flotation tailings will go to the underground workings as paste backfill and 9.52 Mt (53%) will be piped as fluidized tailings to the bottom of Brucejack Lake.

WASTE ROCK

Waste rock samples selected for the ML/ARD baseline characterization were submitted for static testing, shake flask extraction (SFE) tests, and kinetic testing. The waste rock material was distributed across seven spatial geological model units, identified by Pretivm through drill core logs and photographs. Ranked in order of decreasing contribution to the waste rock volume produced by underground mine operations, the seven units are: VSF – Fragmental – Conglomerate – Bridge P1 – Office P1 – Silicified Cap – P2. Each geological model unit was shown to contain many unique rock types and, for the purposes of simplification and identification of lithology-specific trends, samples were also reorganized into nine lithology groups: felsic volcanics, meta-sediments, conglomerate, andesite, mafic volcanics, porphyry, siliceous rocks, granitoids and metavolcanics.

Static Testing

A large number (N=428) of collected waste rock samples were submitted for Acid-Base Accounting (ABA) and elemental composition tests. A frequency analysis was performed on selected parameters from these tests to characterize their population distribution and statistical variation.

Acid-Base Accounting

Frequency analyses of NPR values of waste rock samples from the various geological model units show that Office P1 is the only unit that contains predominantly (84%) non-PAG waste rock. The waste rock from the other geological model units is characterized as predominantly (77%-100%) PAG material. Paste pH values are circumneutral to alkaline and closely related to the presence of carbonates. Most of the total-S constitutes sulphide-S with only a small contribution from sulphate-S. Insoluble-S can amount up to 12-20% of the total-S and likely represents highly insoluble sulphate minerals (barite, anglesite) or elemental S (S^o). A comparison between Sobek NP and Carbonate NP values indicates carbonates are the main NP contributors in Brucejack waste rock. Comparison of median NPR and NNP values indicates Office P1 is the only geological model unit with a significant excess of NP.

The VSF, Fragmental and Conglomerate units account for 84.8% of the total generated waste rock and contain 76.5 to 85.0% PAG material. The three geological model units constitute 86.7% and 87.6% of the waste rock destined for the underground mine and Brucejack Lake respectively.

ABA data for each lithology group show that paste pH values of the most lithology groups are generally circumneutral to alkaline. Sulphide is the main sulphur species (>90%), whereas sulphate-S and insoluble-S (<10%) make up relatively small components of the total-S content of most samples. Plots of NP against AP values show that most of the samples (66%-92%) from each lithology group are PAG, with the exception of mafic volcanics which are dominantly (83%) non-PAG. Similar to geological model trends, carbonates are the dominant buffering mineral and several logged lithologies contain iron carbonates, shown by higher CaNP versus Sobek NP plots and mineralogical analyses.

Comparable results and trends from the seven geological model units and nine lithological groups indicate there is considerable overlap between ABA parameters. The absence of a clear distinction between these groupings makes it difficult to propose recommendations for waste segregation based on ABA testing and parameter values specific for lithology groups or geological model units. Exceptions to this general observation are the andesites from the VSF and Fragmental units that clearly have different ABA characteristics.

Elemental composition

Frequency analyses of selected metal concentrations (As, Cd, Cu, Pb, Zn) of waste rock samples from the various geological model units show the highest metal concentrations

generally occur in the Silicified Cap and irregularly in the VSF and Conglomerate units. Office P1 and P2 have the lowest metal concentrations.

The total elemental concentrations of waste rock from geological model units and lithology groups were compared to concentrations in non-mineralized rock (i.e., continental crust). Geological model units and lithology groups were considered to have a significant elemental enrichment if the median values of the elemental concentrations in waste rock were 10x higher than continental crust values. Significant enrichment was noted for Ag, As, Cd, Mo, Pb, Sb, Se and Zn in waste rock from most geological model units and from most lithology groups. Similar to frequency analyses results pertaining to Silicified Cap units, the siliceous rock lithology (including siliceous veins and breccias) present the highest metal enrichment for several metals (i.e., Ag, Sb, Cd, and Mo)

Shake Flask Extractions

Shake flask extracts (SFE) provide an estimate of the soluble constituents of waste rock that may be released with waste rock deposition in Brucejack Lake. Shake flask tests were conducted on 47 waste rock samples from the Brucejack project, representing the seven geological model units. Shake flask test results for only 3 of the 47 tested waste rock samples showed elevated metal concentrations (>1% of total metal content). Considering the reported metal content of waste rock, As, Sb, Ag and Cd may be a concern for metal leaching when waste rock is exposed to water.

Kinetic Testing

Several kinetic tests were conducted to investigate the weathering and metal leaching of waste materials, including humidity cells, subaqueous columns and field barrels. Optimal weathering conditions are simulated in humidity cells, whereas subaqueous conditions of proposed waste disposal strategies are simulated in the column experiments. The impact of equilibrium-controlled secondary mineral reactions on drainage chemistries is assessed with field barrels. Generally, a distinction can be made between the initial leaching of solutes at the beginning of the kinetic test (initial 3-5 weeks) and the final leaching at the end of the kinetic test (final 5-10 weeks).

Humidity Cells

A total of 36 humidity cells were implemented and leachate data was collected from test periods ranging from 26 weeks to 61 weeks. Leachates from the Fragmental and Silicified Cap units have the lowest average pH, as some of these humidity cells produced acidic pHs within months of initiation. For all other geological model units the average pH is circumneutral. Relative elevated metal concentrations of As, Cd, Cu, Pb, Se and Zn are often observed in Fragmental and Silicified Cap leachates. The (final) leaching rates of Fe, Cd, Cu, Pb and Zn are highest in the Fragmental and Silicified Cap humidity cells. Oxyanions (As, Sb and Se) show a different leaching behavior than transition metals, as they are more mobile at neutral pH conditions.

Leaching rates of SO_4, Al, Sb, As, Mo and Se show a decreasing trend over the duration of the humidity cell test (initial rates > final rates). An opposite trend is observed for Cd, Co, Cu, Fe, Pb and Zn.

The shortest lag times (<15 yrs) in the humidity cell tests are estimated for waste rock from the *Fragmental* (3 of 10 HCs), *VSF* (2 of 13 HCs), *Silicified Cap* (1 of 2 HCs) and *Conglomerate* (1 of 3 HCs) units. These geological units correspond to *andesite* (2 of 6 HCs), *felsic volcanics* (3 of 7 HCs), *siliceous rock* (1 of 6 HCs) and *conglomerate/arenite* (1 of 1 HCs). Materials with the shortest lag times typically have paste pH values below 7 and very low NP values (5-15 kg $CaCO_3$/t) combined with high sulphide-S values (3-8%). These materials weather readily and quickly.

Subaqueous Columns

Material from the geological model units representing the largest expected waste rock volumes (as per current mine plans) were used in the two subaqueous columns; Fragmental (andesite) and VSF (felsic volcanics). Leachate results from these columns show several metals with elevated concentrations (As, Sb, Mo, Se, and Zn), based on median values.

Estimated lag times from the two subaqueous columns are highly variable (274 and 71 yrs). However, these estimates are based on sulphate concentrations that have not yet reached their final values. Therefore, considering the column tests are ongoing and have not yet attained equilibrium, these estimated lag times should be interpreted with caution.

Field Barrels

Eight field barrels were constructed of five (of 7) geological model lithologies; Fragmental, VSF, P2, and Bridge P1. Among those elements with stable or decreasing leachate concentrations trends, As and Se are the only solutes with concentration values above maximum CCME guidelines and are highlighted as possible parameters of concern (POCs). The metals Cu, Cd and Zn also show increasing trends and are considered POCs for waste rock drainage in unsaturated conditions.

FLOTATION TAILINGS, PASTE, SLUDGE AND ORE

Over the operating life of mine, 18.99 Mt of ore will be extracted from underground operations and will produce 18.07 Mt of flotation tailings. From these flotation tailings, approximately 8.55 Mt (47%) will be returned as paste backfill to the underground and 9.52 Mt (53%) will be conveyed to Brucejack Lake as fluidized tailings. Similar to waste rock, tailings and ore material were submitted for static and kinetic testing.

Static Testing

Acid-Base Accounting (ABA)

In contrast to the ore and sludge, the acidifying potential of the tailings and paste is insignificant (AP<2 kg $CaCO_3$/t). The Sobek neutralization potential of the samples varies between 40 and 90 kg $CaCO_3$/t, with the exception of high-grade ore and cemented paste materials that show

the highest neutralization potential (165 kg $CaCO_3$/t) and the highest carbonate contents. Ore and sludge materials are the only samples with NPR values less than 2 and are characterized as PAG materials, whereas tailings samples and paste samples are non-PAG materials.

Elemental Composition

The elemental composition of ore, tailings, paste and sludge shows enrichments of Ag, As, Cd, Mo, Sb, Mn and possibly Se, relative to non-mineralized rock. Copper and zinc are selectively enriched in ore and ore and sludge materials (respectively). Tailings and paste show enrichments of Cr and Ni and sludge shows the highest concentrations of Cd, Pb and Zn (relative to tailings, paste and ore).

Shake Flask Extractions

Measured pH from SFE tests on tailings, raw paste and sludge show similar circumneutral pH values (pH~7.5), whereas highly alkaline values (pH>8.5) are observed from ore and cemented paste material. Alkalinity values complement measured pHs, with higher alkalinity associated with higher pHs and vice versa. Sulphate concentrations are generally low and between 24-85 mg/L, with the exception of 5x higher values from cemented paste and 24x higher values from sludge material (544-586 mg/L). Measured concentrations of Sb, As, Mo and Se from SFE tests with ore, tailings, paste and sludge are high and may be of concern with lake deposition. Similar to solid phase trends, aqueous concentrations of Cr and Ni are higher in tailings and paste material (relative to ore and sludge). Sludge materials present higher concentrations of Ag and Cd, relative to respectively ore and tailings, and may also be of concern during lake deposition.

Kinetic Testing

Humidity Cells

The tailings material was tested in two humidity cells (T1 and T2). Parameters of concern in the leachates from these humidity cells are identified as As, Sb, Mo and Se. The concentrations of these oxyanions maintain relatively high values throughout the test and during the final phase when concentrations generally approach constant values. Similarly, leachate rates from oxyanions (As, Sb, Mo and Se) are the highest for both initial and final phases, in addition to Al and Fe.

As per tailings static test results that show an extremely low acidifying potential (AP), it is evident the AP will be depleted prior to the exhaustion of its neutralization potential. As such, tailings material used in humidity cell tests are not likely to generate ARD.

Subaqueous Columns

The tailings material was tested in two subaqueous columns (Column 3 and 5). Similar to the leachate chemistry from tailings in the humidity cells, concentrations of As, Sb, Mo, Se are often elevated in the leachate from the columns. Similar to humidity cells, estimated lag times of subaqueous columns are such that they will never generate ARD conditions.

SITE CHARACTERIZATION MATERIALS

A site characterization program was designed to assess the ML/ARD characteristics of surface materials at (1) the plant site (including the plant foundation, overburden and roads); (2) the aerodrome; (3) the access road connecting Wildfire Camp to the Brucejack camp; and (4) the proposed quarry site.

Twenty-three of the 40 samples from the plant site present NPR values less than 2.0 and are characterized as PAG material. The majority of access road samples has NPR values greater than 2.0 and is generally considered non-PAG materials. Shale material poses the greatest risk to ARD as over half of the shale samples show NPR values below 2.0. Samples taken from the aerodrome and quarry are characterized as non-PAG.

The metals As, Ag, Hg and Sb are found at high concentrations in almost all lithologies sampled. The metals Mo, Pb, Zn, Cd and Mo are found at moderate to high concentrations in many samples while only a few lithologies show an exceedance of Cr and Ni.

MAIN CONCLUSIONS

The main conclusions of the ML/ARD baseline study can be summarized as follows:

- The ABA assessments of waste rock according to geological model units and lithology groupings both show the majority of waste rock at Brucejack is PAG material, with the exception of one geological model unit and one lithological group. Specifically:
    - The Office P1 unit contains predominantly non-PAG waste rock, as per results from frequency analyses conducted on waste rock static tests.
    - Mafic volcanics are generally non-PAG material, as 83% of samples submitted for static testing present NPR values greater than 2.
- The VSF, Fragmental and Conglomerate units account for 85% of the total generated waste rock and contain 77%-85% PAG material. These three geological model units constitute 87% and 88% of the waste rock destined for the underground mine and Brucejack Lake respectively.
- Due to the absence of a clear distinction in ABA characteristics between lithology groups or geological units it is difficult to propose recommendations for waste rock segregation. Exceptions to this general observation are the andesites from the VSF and Fragmental units that clearly have different ABA characteristics.
- Materials with the shortest lag times (<15 yrs) typically have paste pH values below 7, very low NP values (5-15 kg $CaCO_3$/t) and high sulphide-S values (3-8%) and weather readily and quickly.
- The elements As, Cd, Cu, Pb, Se and Zn are considered to be likely parameters of concern (POCs), based on leachate concentrations from humidity cells and field barrels containing waste rock.
- Subaqueous columns with waste rock material present elevated leachate concentrations of As, Sb, Mo, Se and Zn, which may be a concern under more reducing conditions.

- Ore and sludge samples are characterized as PAG materials, whereas tailings and paste samples are considered non-PAG materials.
- Tailings in the humidity cells and subaqueous column tests are not expected to generate ARD.
- Possible parameters of concern (POCs) for tailings materials are As, Sb, Mo and Se as per leachates from humidity cells and subaqueous columns.

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1.0 INTRODUCTION

BGC Engineering Inc. (BGC) was retained by Pretivm Resources Inc. (Pretivm) to conduct a Metal Leaching and Acid Rock Drainage (ML/ARD) prediction baseline program for the proposed Brucejack Gold Mine Project (the 'Project') in northwest British Columbia, Canada. The ML/ARD prediction program, along with a drainage quality prediction program, is required for the application of an Environmental Assessment (EA) Certificate for the Project.

1.1. Project Background

The proposed mine site is located approximately 20 km northwest of Bowser Lake or 65 km north-northwest of the town of Stewart, British Columbia at latitude 56°28'20" N and longitude 130°11'31" W (Drawing 1). Brucejack is an epithermal, low sulphidation gold-silver-copper deposit that has been explored extensively, beginning in the 1930's. Approximately 40 gossanous zones of gold, silver, copper and molybdenum–bearing quartz/carbonate veining, stockwork and breccia hosted mineralization have been identified.

Between 1986 and 1990, Newhawk Gold Mines Ltd. (Newhawk) excavated underground workings in the West Zone (WZ) deposit as part of an advanced exploration and bulk sampling program. The provincial environmental assessment processes for mine development certification began in 1987. At the time, the primary focus of mine planning was in the West Zone, near Brucejack Lake. The Newhawk assessment of the ML/ARD characteristics of material encountered in the underground workings at the Brucejack property included information on the lithology, acid-base accounting (ABA), solid phase metal concentrations, humidity cell analysis and leach tests using acetic acid and sulphuric acid.

Newhawk's construction of the underground workings generated approximately 124,000 tonnes (44,300 m^3) of waste rock. The waste rock generated was utilized as a shallow pad along the southern edge of Brucejack Creek, with the pad providing the foundation for the camp and other facilities. The mine never went into production due to economic reasons. Newhawk removed the waste pad in 1999 as part of the property reclamation required by BC Ministry of Energy and Mines (MEM), and disposed approximately 60,890 m^3 of waste rock into Brucejack Lake.

Silver Standard Resources Inc. acquired the Brucejack property in 1999-2000 initiated a new exploration program. A ML/ARD assessment and mitigation study was conducted on the disposal of waste rock into Brucejack Lake (MEND, 2005).

The Valley of Kings (VOK) Ore Zone was discovered in 2009-2010 and the Brucejack property was subsequently acquired by Pretivm Resources Inc. The property underwent a period of intensive exploration and a Feasibility Study for the Brucejack Project was submitted in the summer of 2013 (Tetra Tech, 2013). A Bulk Sample Project located in the Valley of Kings Ore Zone was initiated in the summer of 2013 and was completed by the end of October in the same year. An underground mine, extending into the Valley of Kings and the West Zone, is the next major proposed development.

1.2. Scope of Work

The main objective of the ML/ARD prediction baseline program is to provide an understanding of the geochemical characteristics of the materials that are disturbed, excavated or exposed as a result of the planned mining activities. Ultimately, the results of the geochemical characterization will be incorporated into the mine and mine waste management plan and used to assess potential effects on surface and groundwater quality.

The scope of work includes the following information on the site geochemistry:

- Assessment and prediction of ML/ARD potential
- Description of sampling and analytical approach used
- Description of results from different tests used for the ML/ARD characterization
- Practical guidelines for the distinction and, if feasible, segregation of potentially acid-generating (PAG) and non-acid-generating (NAG or non-PAG) materials in the field.

Materials that require geochemical characterization as part of the ML/ARD prediction baseline program include:

- Waste rock
- Tailings and tailings paste backfill
- Solids from the water treatment plant (sludge)
- Ore and low-grade ore
- Overburden, construction and (access) road cut and fill materials.

1.3. Project Description and Setting

The entrance to the proposed underground gold and silver mine and associated plant site facilities will be located southwest of Brucejack Lake in the area overlying, and adjacent to, the WZ and VOK ore zones (Drawing 2). Access to the mine site is either by helicopter or the 75 km access road west from Highway 37. A 12 km section of the access road crosses the Knipple Glacier.

Underground mining will be done by the long-hole open stoping method. Ore extraction from the underground workings will begin following an initial construction phase and continue for a period of 22 years. Run-of-mine (ROM) ore will first be crushed underground before being transported to the surface to a ROM ore stockpile. On-site mineral processing of the ore will be done by crushing, grinding, sulphide flotation and gravity concentration. Gold doré will be produced on-site from the gravity concentrate using a smelting furnace, while the flotation concentrate will be trucked off-site via the access road and Highway 37 to the port in Stewart (BC) for further processing. The ROM ore stockpile, ore processing activities, paste backfill production and the concentrate stockpile will be located in a single (Mill) building (Drawing 2).

The mine waste (waste rock and flotation tailings) is planned for underground disposal and deposition in Brucejack Lake. Approximately 40% of the total amount of waste rock produced will be stored in the underground while the remaining 60% of waste rock, largely produced during the construction phase of the underground mine, will be deposited in the southwest

corner of Brucejack Lake. Approximately 47% of the flotation tailings will go to the underground workings as paste backfill and the remainder will be deposited at the bottom of Brucejack Lake. Paste backfill will be produced from thickened flotation tailings and mixed with waste rock from the underground development. Specifically, flotation tailings are thickened by combining tailings with 6% binder and, following mixing with waste rock, paste backfill will be used to backfill stope voids via pipes in the access decline and boreholes. The flotation tailings that are not used as paste backfill will be discharged through a pipeline located along the south side of Brucejack Lake. The pipeline will extend along the lake bed to the deepest part of the lake at the east side of Brucejack Lake. The tailings slurry will be discharged through a 'sand filter' for the purposes of trapping fine particles and reducing the total suspended solids (TSS) loads to the overlying water. The conceptual deposition plan allows for the tailings to accumulate subaqueously from the lake bottom to a depth of approximately 40 m. Sludge will be deposited with tailings to Brucejack Lake or, as a secondary option, incorporated with paste backfill to those stopes that do not require structural support.

2.0 GEOLOGIC SETTING

2.1. Regional Geology

The Brucejack area is located along the western margin of the Intermontaine Tectonic Belt. The regional geology of the area has previously been described in detail by Grove (1971, 1986), Alldrick (1989), Britton and Alldrick (1988), Alldrick and Britton (1988), Roach and MacDonald (1992), McPherson et al., (1994) and Savell (2008). A brief description is provided below.

The Brucejack property and the surrounding areas are underlain by the Upper Triassic Stuhini Group rocks and Lower to Middle Jurassic Hazelton Group assemblages. The Hazelton Group is a widespread assemblage of volcanic and associated sedimentary strata and represents a time of critical change in the history of the Stikine terrane as it evolved from an independent arc towards incorporation into the Cordilleran tectonic collage (Gagnon et al., 2012). The Hazelton Group, observed throughout the Stikine terrane, is known to comprise of up to five unique formations (Telkwa, Jack, Unuk River, Betty Creek, Mount Dilworth and Toodoggone) (Gagnon et al., 2012). However, surficial mapping within the Brucejack area presents three of the five formations of the Hazelton Group (Lewis, 2013). As such, the regional stratigraphic assemblage observed within the Brucejack area includes the following groups and formations (from oldest to youngest):

i. Stuhini Group: basaltic flows and breccia, arkosic sandsone, debris-flow conglomerate, turbiditic volcanic sandstone, agillite and limestone of Carnian to Norian age (Bultman, 1979; Mihalynuk and Mountjoy, 1990).
ii. Hazelton Group.
    - Jack Formation: interbedded fossiliferous, limey sandstone, and siltstone, occurring above a basal granodiorite and limestone boulder conglomerate (Henderson et al., 1992; Nadaraju, 1993)
    - Betty Creek Formation: alternating conglomerate, sandstone, and intermediate to mafic volcanic rock
    - Mount Dilworth Formation: felsic pyroclastic tuffaceous rock and flows.

Deformation of the Hazelton Group lithologies range from gently warped to tight disharmonic folds. Regional faulting is dominated by northerly striking, steep normal faults, with minor, westerly dipping thrust faults. Several coeval, volcanic, sedimentary, and intrusive faults have also been inferred.

Three intrusive episodes have occurred in the region. These intermediate to felsic plutons are assumed to be coeval with volcanic and volcaniclastic supracrustal rocks, and small stocks related to the Cretaceous Coast Plutonic Complex, followed by minor tertiary dykes and sills (Britton and Alldrick 1988).

2.2. Brucejack Geology

Both Britton and Alldrick (1988) and Kirkham and Margolis (1995) show the Brucejack Property is underlain, almost entirely, by volcanic and related sedimentary rocks of the Jack Formation (previously defined as the Unuk River Formation by Grove (1986)) and the Betty Creek Formation. Lesser occurrences of Upper Triassic volcaniclastic and epiclastic sedimentary rocks of the Stuhini Group are noted to the western end of the property. These units are presented in Figure 2-1 as a simplified geological map of the Brucejack Property area and are described below, in order from oldest to youngest. Note, the local geology is described in greater detail by Britton and Alldrick (1988), Alldrick and Britton (1988; 1991) and Roach and MacDonald (1992).

2.2.1. Stratigraphy

2.2.1.1. Stuhini Group

These rocks are locally exposed in the western VOK area, adjacent the Brucejack fault, and are comprised of thinly-bedded well- stratified/sorted fine-grained sedimentary rocks and subordinate mafic volcanic rocks. Specific assemblages include common mudstone, siltstone and thin- to medium- bedded sandstone. These rock assemblages may, in part, represent Jurassic-aged rocks observed elsewhere in the property area as they are outwardly similar in appearance. The majority of plutonic rocks observed within the property area originate from intrusions into the Stuhini Group, which were previously referred to as Mitchell intrusions (Kirkham, 1963). Interbedded with, and locally capping, the sedimentary rocks of this group is a flow-banded rhyolite, which was U-Pb dated by Pretivm to be Late Triassic in age.

2.2.1.2. Hazelton Group – Jack Formation

An unconformity marks the transition from the older Stuhini Group assemblages to the younger Hazelton Group rocks. Open folding and probable thrust faulting placed a wedge of the Jack Formation at the western end of Brucejack Lake (Tetra Tech, 2010). The Jack Formation is a lithologically varied sequence of sedimentary rocks. Specifically, this unit is comprised of; thin conglomeratic layers containing clasts of the Stuhini Group turbiditic mudstones and siltstone (Henderson et al., 1992), fossiliferous limey sandstone and siltstone, thin to medium bedded turbiditic siltstones and interbedded sandstones.

2.2.1.3. Hazelton Group – Betty Creek Formation

Overlying the Jack Formation is a complex sequence of volcanic and volcaniclastic lithologies belonging to the Betty Creek Formation. The absence of a strong stratigraphic continuity of lithofacies in this formation results in its poor definition in many map studies. The Betty Creek Formation represents a shift in the style of volcanism and contains three unique members (Lewis et al, 2001);

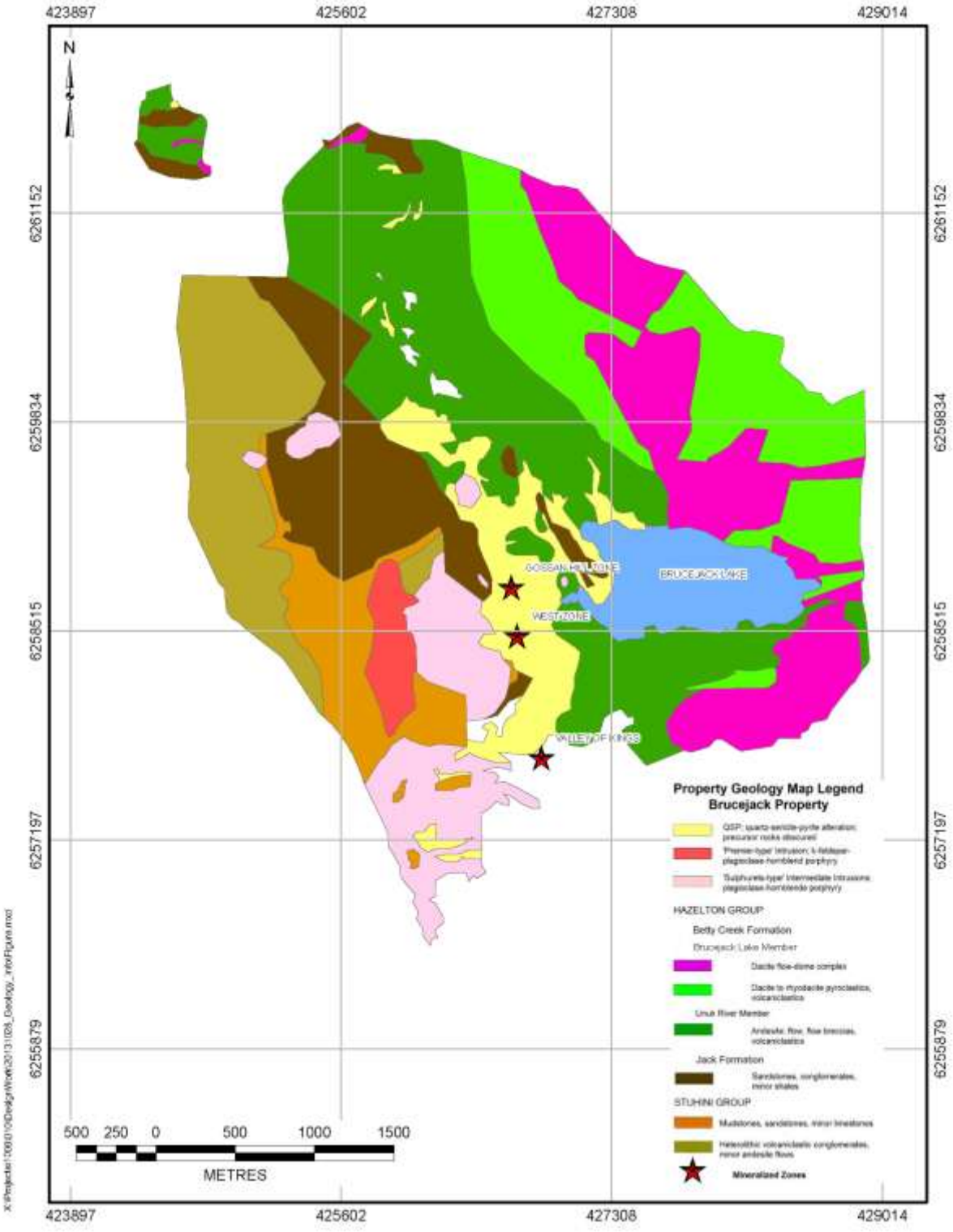


Figure 2-1. Simplified geology with mineralized zones of the Brucejack property (Pretivm).

a. The Unuk River Member: andesitic composition flows, breccias (monolithic to slightly polylithic) and volcaniclastic rocks, intercalated with lapilli to block tuff and similar to the previously described Unuk River Formation by Grove (1986).
b. The Brucejack Lake Member: felsic (dacite to rhyolite) pyroclastic rocks (i.e., tuff-breccia, lapilli tuff, crystal-lithic tuffs, and minor ash tuff) and rhyolite flows with thin argillite interbeds, as exposed on the mountainside north of Brucejack Lake.
c. The Treaty Ridge Member: marine sedimentary rocks including sandstone, conglomerate, turbiditic siltstone and limestone, distinct rock types associated with this unit are bioclastic sandstone and intercalated siltstone or argillite.

The andesites of the Unuk River member are the most important host rocks to Au- and Ag-bearing quartz veins with the Brucejack Property. These volcanic assemblages have been affected by widespread hydrothermal alteration (i.e. quartz-sericite-pyrite) and U-Pb geochronology has determined the age of this member to be 196 to 194 Ma (Sinemurian age).

2.2.2. Intrusive Rocks

Three different intrusive episodes are recognized throughout the Brucejack property. The most common intrusive rock is a plagioclase- and hornblende-phyric to porphyritic rock of diorite to tonalite composition that forms two stocks found in the southern half of the property. The second type of intrusive rock forms an elongate body of about 700 m length, aligned north-south along the western margin of one of the Sulphurets stocks. This intrusion is best described as potassium feldspar-plagioclase-hornblende porphyry. Based on cross-cutting relationships it would appear that this intrusion is younger than the southern intrusion. The youngest intrusive rocks observed consist of fine-grained andesitic to basalt andesitic dikes that are generally less than 2 m in the thickness. These dikes generally strike north to northeast.

2.2.3. Mineralization

The gold mineralization and associated alteration systems at Brucejack were most likely developed as a result of hydrothermal activity focused on Early Jurassic intermediate, porphyritic intrusions. Gold occurs as microscopic grains (<30 µm) of electrum with 1% - 5% fine grained, disseminated pyrite. Other minerals associated with gold mineralization include: galena, sphalerite, tetrahedrite-tennantite, barite, acanthine, and rare chalcopyrite.

Gold is hosted in almost every rock type; however, volcaniclastic, and sedimentary rocks tend to have higher gold concentrations. The Brucejack occurrence is classified as an epithermal Au-Ag-Cu, low sulphidation deposit comprised of hydrothermal veins and disseminations hosted in volcanic and volcaniclastic sedimentary rock.

2.2.3.1. Epithermal Gold Mineralization

The Brucejack deposit is characterized as an epithermal ore deposit. These types of deposits tend to form at shallow depth and were first described by Lindgren (1933), which based the majority of his conclusions on geologic reconstructions, ore mineralogy and related textures. These types of deposits were later refined by fluid inclusion data, which indicated epithermal ore forms from the surface to up to 1 to 2 km depth and between temperature ranges of less than 150°C to approximately 300°C. Epithermal gold deposits are further distinguished on the basis of the sulphidation state of the sulphide mineralogy (Hedenquist et al., 2000):

- High sulphidation
- Low sulphidation.

Distinguishing between the two types is crucial for effective exploration (Figure 2-2). Although they show similar alteration mineralogy, the distribution of the alteration zones and the zones of economic mineralization are different. The alteration zoning can be used as a guide towards the most prospective part of the system, but only when the type of sulphidation has been correctly recognized. Furthermore, the two types of mineralization have different geochemical associations, which represent different geochemical environments (Hedenquist et al., 2000).

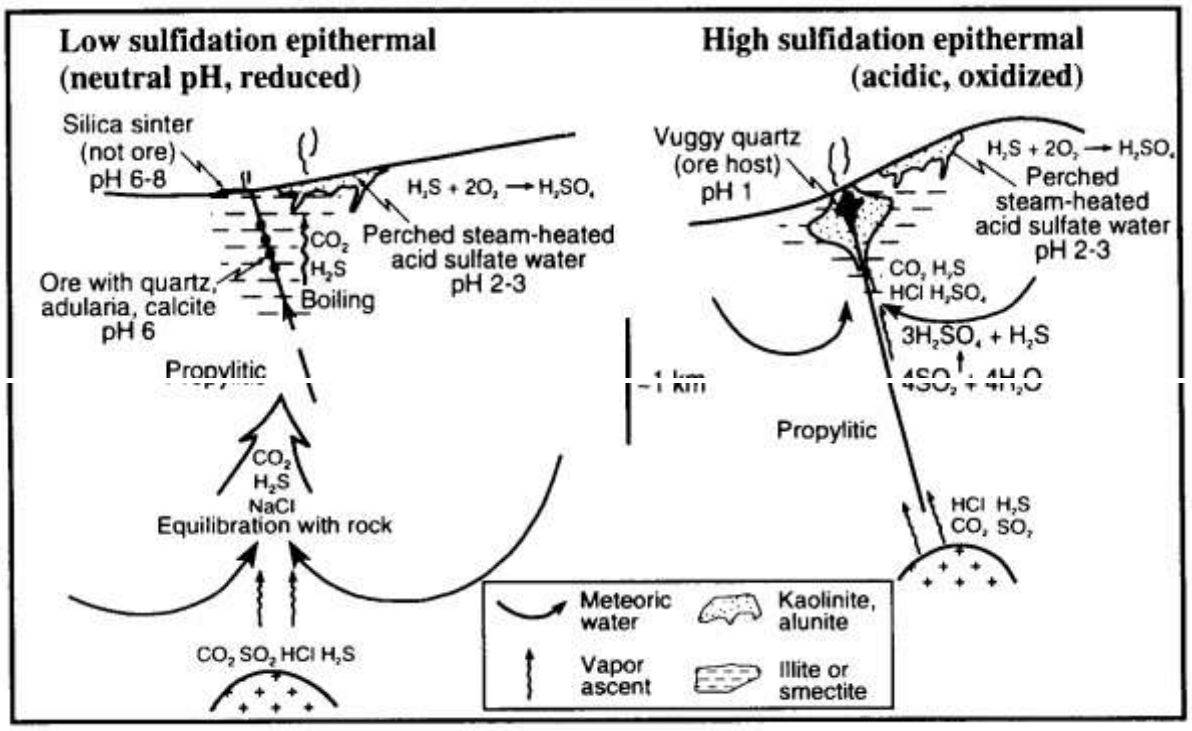


Figure 2-2. Schematic showing the relation of fluid types to alteration zoning in the two styles of epithermal deposits (Hedenquist *et al*., 1994).

In the low sulphidation environment, the mineralizing fluids originate from active geothermal systems (Henley and Ellis, 1983). Fluids associated with low sulphidation deposits typically have near-neutral pH and are reduced forming sulphide minerals (Barton and Skinner, 1979).

The boiling fluid rises along permeable zones, depositing ore and gangue minerals, or may discharge as near-neutral pH water at hot springs.

In contrast, high sulphidation systems are associated with acidic and oxidized fluids formed in the magmatic-hydrothermal environment of young volcanoes (Hedenquist et al., 1994). Magmatic volatiles (vapors containing HCl and SO_2(g)) ascend to the epithermal environment where they are absorbed by meteoric water and form a highly acidic solution that leaches the rock adjacent to the fluid conduit.

Low sulphidation epithermal Au-Ag deposits can also be distinguished from high sulphidation deposits by sulphide mineralogy (pyrite, sphalerite, galena, chalcopyrite) typically within quartz veins with local carbonate, and associated near neutral wall rock alteration (illite clays), deposited from dilute hydrothermal fluids (Corbett and Leach, 1998). Many low sulphidation veins are well banded and each band represents a separate episode of hydrothermal mineral deposition.

Mineralization at the Brucejack deposit has been previously classified as an epithermal, low sulphidation deposit. Many features of the mineralized zones at Brucejack conform to characteristics of low sulphidation deposits, such as vein mineralogy bearing adularia and acanthite and common stockwork veining and breccia-veins. While these characteristics suggest a shallower level of emplacement, several structural features (not discussed here) suggest a deeper level of vein emplacement and contradict a clear-cut deposit designation. As such, Pretivm is engaged in further geological studies to better understand the constraints associated with the formation of the Brucejack deposit.

2.2.3.2. Brucejack Mineralized Zones

The Brucejack property currently consists of several mineral claims totaling 3,199.28 ha. The primary focus of mine planning is currently on two mineralized zones; West Zone (WZ) and the Valley of the Kings (VOK). Other mineralized zones include: Gossan Hill (GH), Galena Hill, Shore Zone, SG Zone, Bridge and Bridge Halo. The focus of the ML/ARD assessment is on the two mineralized zones associated with mine planning; the remaining zones will not be discussed in detail in this report.

Mineralization in the West Zone is a structurally controlled, complex vein/breccia system related to the Brucejack Fault lying to the immediate west. The occurrence is hosted by a north-westerly trending band of lower Jurassic (Unuk River member, Hazelton Group) andesitic and lesser sedimentary rocks, that passes between two intrusive bodies of plagioclase-hornblende porphyry. The deposit itself comprises at least 10 quartz veins and quartz stockwork shoots.

Gold in the West Zone occurs mainly as electrum in quartz veins and is associated with pyrite, sphalerite, chalcopyrite and galena. Silver also occurs in electrum as tetrahedrite, pyrargyrite, polybasite and rarely stephanite and acanthtite. Gangue mineralogy in veins is dominated by quartz, accessory K-feldspar, albite, and sericite, and minor carbonate and barite.

The VOK occurrence is associated with the contact area of a volcanic conglomerate and a pyroclastic volcanic unit as well as a thin and discontinuous rhyolite. These units are contained within a shallowly east-plunging syncline. The mineralized area is broadly associated with the contact area between Upper Triassic sedimentary to volcanic sedimentary rocks and Lower Jurassic conglomerates and pyroclastic rocks. VOK mineralization is hosted in sericite altered andesitic rocks typically mineralized with disseminated pyrite, accompanied by minor to occasionally substantial amounts of sphalerite, chalcopyrite and galena.

Gossan Hill is the third main mineralized occurrence at Brucejack. Although, this zone is currently not included in mine planning, several samples were taken from the area for static testing and ML/ARD characterization. Gossan Hill mineralization shows intense quartz-sericite-pyrite alteration developed in Jurassic andesites of the Unuk River member of the Betty Creek formation. This alteration zone is host to at least eleven quartz vein and stockwork structures most of which trend east-west and dip steeply to the north.

Overall, the sulphide mineralogy at Brucejack is relatively simple. The dominant sulphide mineral is pyrite (up to 20%). Sphalerite, galena, tetrahedrite, electrum, aregentite, pyargyrite, chalcopyrite and molybdenite are present but in trace amounts. Carbonate minerals (primarily calcite) occur mainly in the matrix of the rock as alterations or locally as veinlets.

2.2.4. Alteration

Hydrothermal alteration occurs around the West Zone deposit. Vein-hosted, gold-silver mineralization is contained within intensely altered and strained intermediate volcanic tuffs, tuff breccias and volcaniclastic rock. Mineralized veins and veinlets form a zone of potassium feldspar alteration around a central silicified core, passing outwards to zone of sericite, to chlorite, and lastly to clay. Accessory sericite and carbonate occur throughout each alteration zone.

2.2.5. Veining

Veins have been classified on the basis of metal content and gangue mineralogy. Typically the exposed veins are thin (1 m) and short (< 50 m). Individual veins may coalesce into more densely packed vein systems, especially in more intensely altered areas; they often represent more than 25% of the outcrop. Such vein systems typically grade imperceptibly into the strongly silicified host rocks.

Base metal bearing quartz veins consist primarily of thin stringers of quartz (both with and without carbonate) which locally contain zones of disseminated to massive sulphides. They are found locally around the Brucejack Plateau outside the main areas of alteration. The veins show complex crosscutting relationships that indicate repeated fracturing and filling as the host rocks underwent brittle deformation.

Precious metal mineralization is interpreted to be the result of a single episode of veining, which is not necessarily the same episode as base metal mineralization. Gold is associated

with pyrite and electrum in quartz and/or calcite veins. Arsenopyrite may occur peripherally in the host rocks.

2.2.6. Geological Model Lithologies

The Brucejack area contains a wide range of rock types and 24 unique rock lithologies have been identified by Pretivm geologists from drill core. For the purposes of simplifying the range of logged lithologies, comparable rock assemblages were grouped into a single lithology heading. For example, rocks denoted as polymictic conglomerate or breccia-conglomerate will be described as ‘conglomerate. As such, the following presents 9 general lithology groupings:

1. *Felsic volcanics:* Intermediate volcanics, dacite and rhyolite, felsic volcanics
2. *Meta-sediments:* Pelite and arenite
3. *Conglomerate:* Poly-conglomerate, meta-conglomerate, and breccia-conglomerate
4. *Andesite:* Andesite
5. *Mafic volcanics:* Basalt and mafic dykes
6. *Porphyry:* K-feldspar-hornblende porphyry and plagioclase-hornblende porphyry
7. *Siliceous rocks:* quartz-carb vein, dense vein stock works, silicified breccia and hydrothermal breccia, siliceous rocks
8. *Granitoids:* Tonalite
9. *Meta-volcanics:* Meta-felsic volcanics, meta-intermediate felsic volcanics, meta-intermediate mafic volcanics, meta-volcanics.

In addition to a wide range of mineral assemblages, a number of rock types in the Brucejack property area bear strong similarities with Stuhini and Hazelton Group material that outcrop elsewhere in the Iskut-Stewart area (Anderson, 1989, Anderson and Thorkelson, 1990) and contact relationships suggest some lithologies represent facies equivalents of one another. One of the greatest ambiguities relates the characterization of lowermost Hazelton Group member as the Jack Formation or the Unuk River Formation. The Jack Formation is a lithological varied sequence of sedimentary rocks overlying the Stuhini Group strata and was first defined informally by Henderson et al. (1992) based on structural and stratigraphic studies of the Sulphurets map area. At that time, it was recognized that the Jack “formation” and the Unuk River Formation were lithological similar, but located in spatially distinct regions (i.e., west and east of Bowser River, respectively (Nadaraju, 1993)). The lower Hazelton Group also presents the most intense alteration within the Brucejack area and adds to the ambiguities associated with these formations. Specifically, the alteration generally masks its original composition and has commonly resulted in its incorrect interpretation. As a consequence, Pretivm has refrained from formally assigning formational names to the map units until more detailed map and geochronological studies are conducted.

Pretivm has adopted a generalized nomenclature to relate logged lithologies to model units that best categorize their composition. The Pretivm geological block model groups the lithological groups and formations of the Brucejack area into seven general units using drillhole logs and photographs (Table 2-1). Several reasons exist for this more generalized approach, which include:

- Logged lithologies appear to correlate well with Jack Formation (previously Unuk Formation) and Betty Creek Formations (Britton and Alldrick, 1988), however some of the rocks appear to be lateral and time-stratigraphic equivalents of one another and require further studies to assess their proper location within the stratigraphic sequence.
- Host rocks tend to be intensely altered, which results in considerable uncertainty in regards to composition and correlation.
- Previous maps of the Property area have shown a number of intrusions; however the details of contacts, composition and location are not uniformly consistent between maps.

Table 2-1. Description of units in Pretivm's geological model.

Model Unit	Description	Sulphides
P2	Megacrystic, plagioclase, K-feldspar and hornblende phyric flow.	Pyrite with minor sphalerite and trace chalcopyrite
Fragmental	Hornblende and/or feldspar phyric latite to andesite fragmental volcanic rocks and subordinate flows with minor ash and lapilli tuff.	Pyrite with minor sphalerite and trace chalcopyrite
Conglomerate	Heterolithic boulder to course cobble conglomerate with sandstone.	Pyrite with minor sphalerite and trace chalcopyrite
Silicified Cap	Silicified rocks; typically poorly sorted heterolithic conglomerate, lesser sandstone and local mudstone; commonly includes rhyolite fragments.	Pyrite with minor sphalerite and trace chalcopyrite
Volcanic Sedimentary Facies (VSF)	Volcanically derived siltstone and sandstone with minor arenite and pebble conglomerate.	Pyrite with minor sphalerite and trace chalcopyrite
Office P1	Hornblende, feldspar phyric latite flows.	Pyrite with minor sphalerite and trace chalcopyrite
Bridge P1	Hornblende, feldspar phyric latite flows. Same general rock type as Office P1 but with a different age and geochemical signature.	Pyrite with minor sphalerite and trace chalcopyrite

A variety of criteria were used when defining the units of the geological model. All the lithologies on the property are heavily altered, display radical facies changes over short distances and are extensively deformed. Much of the grouping was done by geochemistry (Ti/V ratios) and comparing stratigraphic relationships. Titanium/Vanadium ratios were used to delineate the porphyritic rocks and the andesite used in the fragmental unit. The sediments, however, showed a range of ratios as would be expected from material that contains minerals derived from various other rocks.

Pretivm geologists indicate the Silicified Cap unit was used as a stratigraphic marker because it is a recognizable marker within the central part of the deposit. Also, although there are a diverse range of rock assemblages underlying the Brucejack Property, it is feasible to highlight a few possible relationships. Specifically, hornblende-feldspar phyric flows on the Property are generally characterized as Early Jurassic in age. Therefore, geological model units containing these phyric assemblages (i.e., P2, Office P1 and Bridge P1, Fragmental) are likely correlated to the Jack Formation and Lower-Mid Betty Creek Formations. Tuffaceous compositions within the Fragmental unit are most likely related to the Lower to Middle Betty Creek Formation.

Using a solids model, a 3-D view of the geological model with successive cross-sections is presented in Figure 2-3 from three different perspectives. For orientation purposes, the approximate locations of the VOK Zone, the West Zone and the plant site are also indicated. VSF, Fragmental and Conglomerate appear to be the major geological model units at the VOK and West Zone with smaller occurrences of Office P1 and Bridge P1. A detailed map of the Brucejack mine site area with the geological model units exposed at the surface is shown in Drawing 2. The surface geology at the plant site, the VOK and the West Zone appears to be dominated by the Fragmental unit with smaller exposures of the VSF, Conglomerate and Bridge P1 units.

A detailed account of the amount of waste rock from the different geological model units that will be generated during the underground mining operations is presented in Section 3.0.

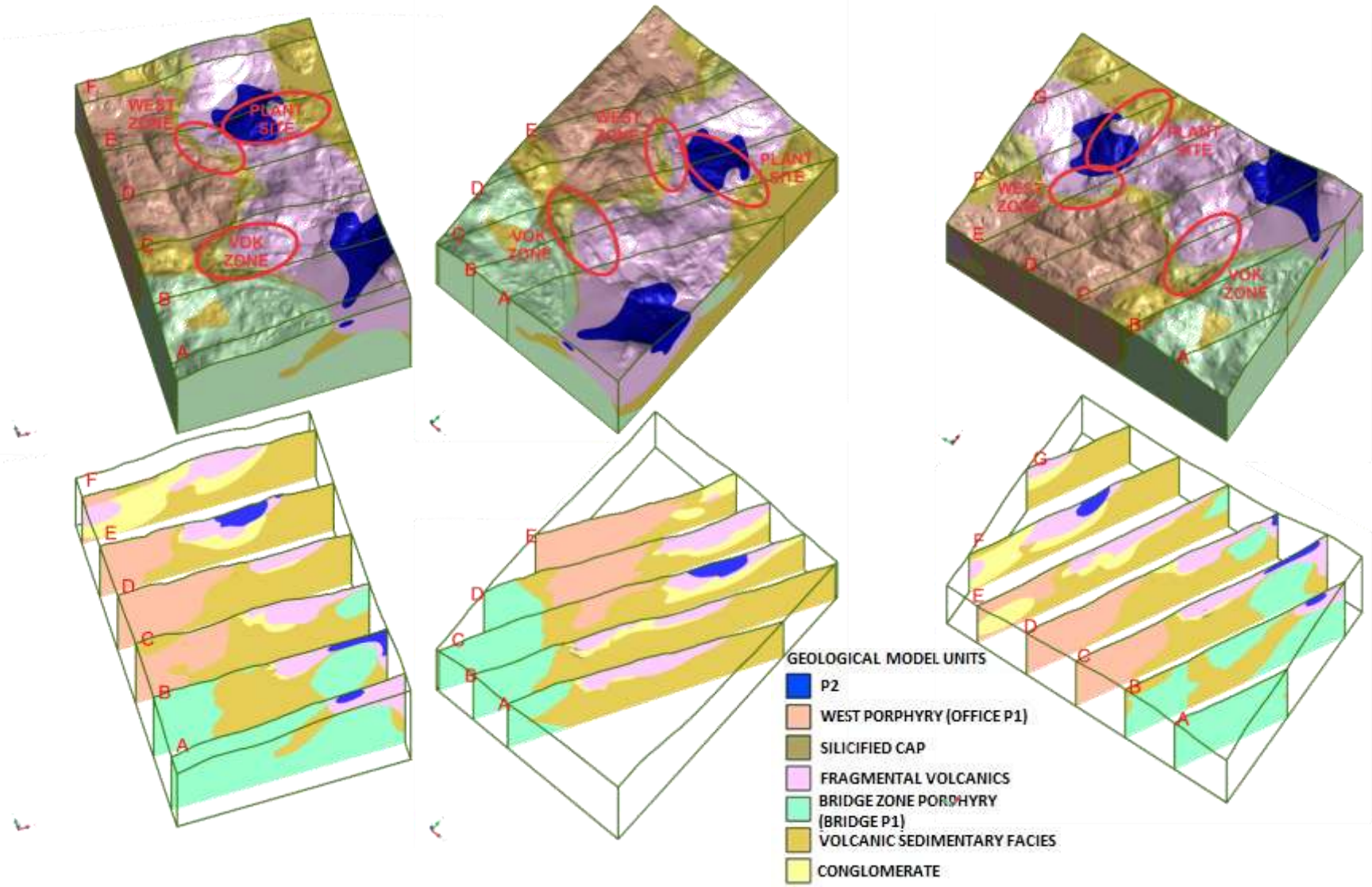


Figure 2-3. Geological model with cross-sections shown in 3-D view from different perspectives.

3.0 SAMPLING AND TESTING PROCEDURES

3.1. Sampling

To assess the ML/ARD characteristics of the materials that will be part of the mine development (mine-rock) mineralogical analyses as well as static and kinetic tests are used. Sampled materials include: waste rock, ore, flotation tailings, sludge and other materials that will be exposed for plant-site development, roads, and quarrying for construction materials.

In general, sample selection was based primarily on the 7 geological model units (Section 2.2.6), which form the basis of the Brucejack mine planning. The following sections will briefly outline the proposed mine plan and how it relates to the geological model units and discuss sample selection criteria for the various analytical tests.

3.1.1. Brucejack Mine Plan

Mine plans have been developed for the Brucejack project and are based on the 7 geological block model lithology groups (Section 2.2.6). The latest mine plan, provided by AMC (August 7, 2013), indicates the underground mine development will begin with a 2 year construction period. Following this period, mining operations will begin and ore extraction from the underground mine is planned for a period of 22 yrs. Figure 3-1 and Figure 3-2 presents the cumulative and monthly amount of ore and waste rock to be extracted from the underground mine (respectively) during the planned life-of-mine (LOM) operations.

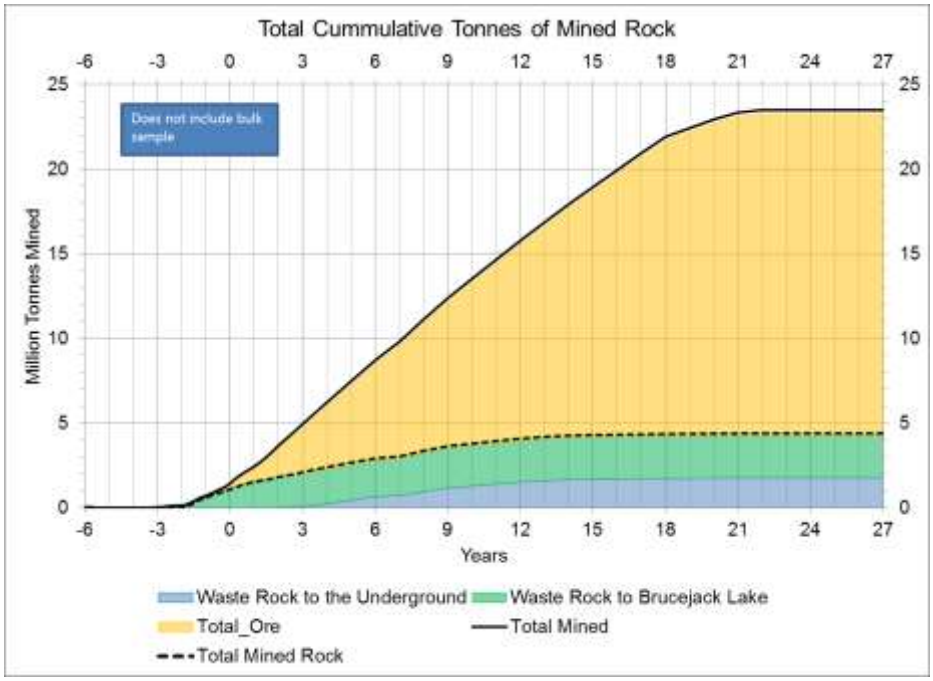


Figure 3-1. Total amount of ore and waste rock to be mined.

The daily ore production and waste rock generation (Figure 3-2) indicates waste rock generated during the construction period to the first two years of the mining phase is destined solely for Brucejack Lake. Following that initial 5 year period, most of the waste rock will be disposed in the underground and waste rock generation will decline to low levels beyond Year 14 of mine operations. By the end of mining operations (22 years) approximately 60% of the generated waste rock is destined for Brucejack Lake and 40% will be backfilled in the underground mine.

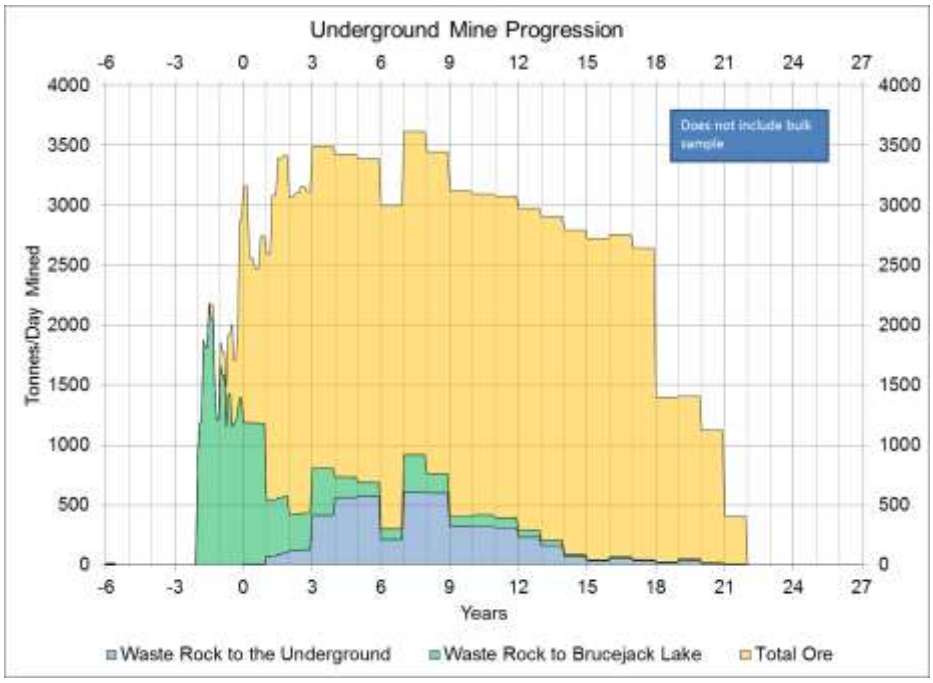


Figure 3-2. Planned daily ore production and waste rock generation.

The underground development is partitioned into the 7 geological model units and this solids model forms the basis for the planned distribution of waste rock and its final destination. These details are highlighted in Table 3-1, which partitions the mine plan between construction (-2 to 0 years) and mine operations (0 – 22 years).

Data shown in Table 3-1 demonstrate that VSF, Fragmental and Conglomerate units are the main contributors to the waste rock generated from the underground mine and also represent the majority of rock backfilled as paste. These details are also shown in Figure 3-3, which displays the cumulative contribution of each geological unit into the generated waste rock over the LOM.

Table 3-1. Composition and destination of waste rock mined from underground (UG).

Time *(yr)*	Total	Conglomerate	Fragmental	VSF	Bridge P1	P2	Silicified Cap	Office P1
accumulated tonnes of waste rock mined from underground (UG)								
0[1]	1,433,977	193,114	409,207	556,290	68,441	4,568	27,332	175,026
22[2]	23,497,235	4,263,303	7,292,629	8,380,331	1,928,198	344,811	433,199	854,766
accumulated tonnes of waste rock to Brucejack Lake								
0[1]	1,067,423	121,733	268,531	474,158	10,712	4,504	16,399	171,386
22[2]	2,385,829	305,207	678,114	1,052,360	58,738	17,515	40,334	233,562
accumulated tonnes of waste rock to underground (UG)[3]								
22[2]	1,991,040	410,984	421,970	872,961	127,721	35,261	38,151	83,993

[1] end of construction period; [2] end of operations; [3] waste rock is not stored in the underground during the construction period (i.e., t < 0 yrs)

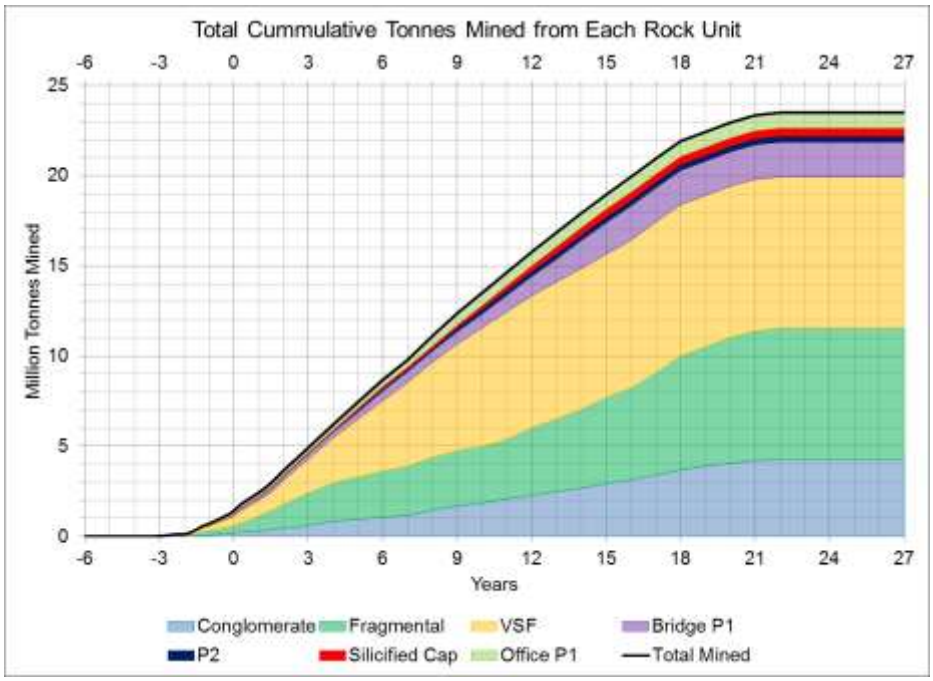


Figure 3-3. Contributions from geological model units to total generated waste rock.

3.1.2. Static Testing

3.1.2.1. Waste Rock

Waste rock samples for static testing were collected from available drill core located either on-site or in Stewart, BC during site visits in 2011 (late October) and 2012 (late June). Approximately 2 kg of sample was taken from each sample interval to ensure adequate sample volume for static testing and possible kinetic testing. A composite sample was taken over interval ranges greater than 0.5 m that did not show major changes in lithology, mineralogy, texture, veining or sulphide occurrence along the interval length. Some drill core samples taken from on-site storage were exposed to rain and snow for several years and, at the time of sampling, were completely buried under snow. As such, the degree of weathering ranged from fresh to slightly weathered (red to orange staining and slightly brittle).

In 2011, sampling involved selecting a variety of different rock types with varying degrees of alteration and mineralization from the high priority zones (VOK, West Zone and Gossan Hill). A total of 150 rock samples were collected from 29 diamond drillholes drilled between 2009 and 2011 (36 from the West Zone, 57 from the VOK, and 57 from Gossan Hill). In 2012, additional waste rock samples for ABA analysis were selected using the preliminary underground mine design provided by Pretivm. Drill holes that came in contact with, or were within 1 meter of proposed tunnels or stopes, were selected for static testing. Two hundred and forty-one samples were collected in 2012 (184 samples from VOK, and 57 samples from the West Zone). Fourteen of the 391 collected drill core samples were not used in this static test dataset as they were located outside the geological model (12) and/or mislabeled (2).

In 2013, an additional 51 waste rock samples were collected or chip-sampled from walls exposed in the underground workings of the Bulk Sample project. The majority of the 2013 samples (46 of 51) were taken from the newly developed VOK workings. The remaining samples (5) were taken from existing West Zone workings that were widened as part of the Bulk Sample project. Approximately 2-4 kg of material was sampled from each chip sample location for the purposes of ensuring adequate sample volume for static tests and additional analytical testing (e.g., kinetic testing, rinse pH, mineralogy).

Of the total 428 waste rock static test samples, 45 samples were from Gossan Hill, 93 samples from the West zone and 290 samples originated from the VOK. The breakdown of sample numbers versus geological model units from each mineralized zone is shown in Table 3-2.

A heavier weighting was placed on those units contributing to the bulk of the waste rock from the underground, as per proposed mine planning (Table 3-1). As such, static test samples from Fragmental, VSF and Conglomerate units constitute the majority of the sample suite (86%). The locations of the collected waste rock samples, relative to the planned underground mine and the geological model units, are shown as cross-sections in Appendix A. Figures are at regular depth intervals of the proposed underground mine level plans and show intersecting geological model units, drill hole projections, and static sample numbers (where present). Drill core sections showing static sample numbers correspond to a plan envelope, which includes the entire area located 20 m above and below the depth interval of the cross section. Except for the lower level (970-1120 m) of the VOK zone, the coverage of the planned underground workings by the collected waste rock samples from both ore zones is considered to be reasonable to good (Appendix A). Additional waste rock sampling required during the mining operations will address any remaining sampling issues.

Table 3-2. Brucejack sample selection relative to mineralized zone and geological model unit.

	Conglomerate	Fragmental	VSF	Bridge P1	P2	Silicified Cap	Office P1	
West Zone	17	49	9	0	17	0	1	*93*
VOK	29	53	170	17	0	6	15	*290*
Gossan Hill	15	26	1	0	3	0	0	*45*
TOTAL	**61**	**128**	**180**	**17**	**20**	**6**	**16**	**428**

3.1.2.2. Flotation Tailings

Six samples of flotation tailings (four from VOK and two from West Zone) were obtained from pilot plant tests managed by Pretivm and submitted for static testing. Each sample consisted of a wet filter cake, with wet weights between 1.25 to 1.38 kg. A split of the filter cakes were air-dried and the remainder was left ‘as is’. An additional composite sample of tailings solids (from VOK and West Zone tailings) was separated from the tailings slurry and analyzed by static testing.

3.1.2.3. Sludge

Two samples of sludge material were obtained from the on-site water treatment plant (WTP). Sludge material during mine operations is expected to differ from the composition of these samples, as proposed WTP designs include treatment for other parameters, however these samples (and results therein) reflect a foundation for identifying some of the major ML/ARD characteristics.

3.1.2.4. Ore

Samples of high-grade and low-grade ore were obtained from the ore produced in the Bulk Sample project. Ore material represents a negligible portion of the waste materials, which justifies the small sample suite. Specifically, ore will be processed on-site in the proposed Process Plant and ore will undergo crushing, grinding, gravity concentration and flotation. These processes will produce a gravity concentration and a bulk flotation concentrate, whereby the latter will be dewatered and transported off-site and the former processed into gold doré. The run-of-mine (ROM) ore will be stored in a temporary stockpile prior to processing.

3.1.2.5. Surface Materials

Other materials sampled for static tests include overburden, road materials (i.e., cut and fill) at the plant site, along the 63 km all-weather portion of the access road (ref. Section 1.3), the proposed quarry site, and materials exposed at infrastructure foundations. A total of 91 additional samples were taken over 3 site visits between 2012 and 2013 with 38 samples from the proposed mine site area, 40 samples along the access road, 9 samples from the quarry site and 4 samples in the planned aerodrome area. Construction of an airstrip and laydown pad is planned for 2015.

Based on their lithology, materials from road cuts were sampled at rock faces along the road. Several samples were taken in areas of significant lithological variation along the road. Sampling was conducted at the edge of the road, near the shoulder, in areas where the road was evidently composed of fill material, or if no road cuts were available. Additional samples were taken in specific priority areas along the 63 km all-weather portion of the access road (e.g. “Knipple Cut”, area of potential road widening, potential borrows for road fill material).

In areas of proposed infrastructure foundations, samples consisted of overburden and/or surficial material and, where available, drill core from previous geotechnical drill programs. Sample selection from drill core was based on lithology and degree of observed mineralization to ensure samples relevant to potentially exposed materials were analyzed. Overburden samples were collected at the surface and in areas representing the different geological model units exposed at the mine site.

3.1.3. Kinetic Testing

Kinetic tests included in this ML/ARD characterization involve humidity cells, subaqueous columns and field barrels. Waste rock was used in humidity cells, subaqueous columns and

field barrels, whereas tailings material was only used in humidity cells and subaqueous columns.

3.1.3.1. Humidity Cells

Waste Rock

Nineteen samples from the drill core samples submitted for static testing in 2011 were selected for humidity cell and/or subaqueous column testing. Pretivm's geological model was not available (refer to Table 2-1) at the time; therefore material was selected based on the following criteria:

- Originates from one of the 3 initial high-priority mineralized zones (VOK, WZ and Gossan Hill)
- Contains a mineral assemblage with generally high sulphide concentrations (≥2-3%)
- Contains a mineral assemblage with concentrations greater than 10 times the normal crustal abundance for select elements (e.g. As, Cu, Zn and Se)
- Previous static test results show a low neutralization potential and low sulphate-S
- Representative of one of the nine generalized groupings of logged lithologies (refer to Section 2.2.6).

A second suite of humidity cells were selected in 2012, including 17 additional waste rock bearing humidity cells. Pretivm's geological model became available in 2012 (ref. Table 2-1) and, as such, the main objective of the secondary suite of waste rock humidity cells was to adequately represent those geological model lithologies that would contribute to the bulk of the waste rock excavated from proposed underground workings. As was mentioned in Section 2.2.6, there were several difficulties with relating logged lithology to Brucejack stratigraphy and the generalized nomenclature of the geological model designations offered a better characterization of the available material compositions and was incorporated in the proposed mine plans. The following table (Table 3-3) presents a breakdown of the 36 waste rock humidity cells, as they pertain to both geological model and nine generalized groupings of logged lithologies.

Flotation Tailings

Two humidity cells were constructed of tailings material (T1 and T2). A limited amount of tailings material was available from the pilot plant and, as such, two composite samples (T1: 250g from each of the 4 VOK filter cakes; T2: 500g from each of the 2 WZ filter cakes) were combined for kinetic testing.

Table 3-3. Categorisation of waste rock materials used in humidity cells.

	Conglomerate	**Fragmental**	**VSF**	**P2**	**Bridge P1**	**Silicified Cap**	**Office P1**	***Total***
Felsic volcanics	--	2	4	--	--	0.5	--	6.5
Meta-sediments	0.5	--	4	--	--	--	--	4.5

Conglomerate	1.5	1	1	1	--	--	--	4.5
Andesite	--	3.5	2.5	--	--	--	--	6
Porphyry	1	0.5	--	1.5	2	--	1	6
Siliceous rocks	--	3	2	--	--	1.5	--	6.5
Granitoids	0.5	0.5	--	--	--	--	--	1
Meta-volcanics	--	1	--	--	--	--	--	1
Mafic volcanics	--	--	--	--	--	--	--	--
Total	3.5	11.5	13.5	2.5	2	2	1	***36***

Note: Some humidity cells are comprised of mixed material, which results in a 0.5 designation.

3.1.3.2. Subaqueous Columns

Disposal of waste in Brucejack Lake is presented as the lowest liability and environmental risk to the Brucejack area (Price, 2005). As such, mine planning indicates waste rock deposited in Brucejack Lake will have a minimum of 1 m water cover. Subaqueous columns were constructed to test the leaching behavior of mine waste in water-saturated conditions such as in lake disposal. Five columns were constructed containing waste rock (Column 1: Fragmental/Conglomerate (andesite) and Column 2: VSF (felsic volcanics)) and tailings (Column 3 to 5), as mine plans indicate both types of material will be deposited in Brucejack Lake.

3.1.3.3. Field Barrel Testing

The waste rock material selected for each of the eight field barrels was based on the following criteria:

- Material should be representative for the majority of waste generated
- Materials that are more likely to generate poor quality drainage water should be selected.

Field barrels were constructed after receiving Pretivm's geological block model and selected barrel materials represent five of the seven geological model units. These units were selected due to their projected contribution to the total waste produced during operations and their ARD potential. The following compositions (geological model lithology and logged lithology) were selected for the eight Brucejack field barrels.

1. P2/Fragmental – Porphyry (feldspar porphyry).
2. VSF – Felsic Volcanics (intermediate volcanics).
3. Bridge P1 – Porphyry (plagioclase-hornblende porphyry).
4. VSF – Meta-sediments (pelite).
5. Fragmental – Conglomerate.
6. Fragmental – Andesite (WZ).
7. Fragmental – Andesite (VOK).
8. Conglomerate – Conglomerate (polymictic conglomerate).

Six field barrels constructed in July 2012 contain crushed drill core with diameters between 2 inch and 2 mm, whereas two field barrels constructed in 2013 contain waste rock extracted during the Bulk Sample program. The waste rock material from the Bulk Sample program was crushed to less than 3" and 'cone-and quartered' prior to placement in the field barrel.

3.1.4. Mineralogical analyses

Three types of mineralogical analyses are employed in this ML/ARD characterization study; optical mineralogy, X-ray diffraction (XRD) and scanning electron microscopy (SEM). Details regarding the sample selection are described below.

3.1.4.1. Optical Mineralogy

Fifty-five samples were submitted for mineralogical analyses by optical mineralogy in 2012. Samples from 6 (of 7) geological model units were analyzed (Conglomerate: 2; Fragmental: 19; VSF: 24; Bridge P1: 7 and P2: 3) which constitute 8 (of 9) major logged lithology groupings (ref. Section 2.2.6).

3.1.4.2. X-ray Diffraction (XRD)

A total of 56 samples were submitted for XRD analyses in 2012, which were comprised of waste rock (48), tailings (4), paste/residue (3) and slugde (1) materials. Samples from all 36 humidity cell tests and 8 field barrels are included in this XRD sample suite, in addition to waste rock used in 2 subaqueous columns (Column 1, 2). Two waste rock duplicates were included in this dataset, which correspond to material used in field barrel 7 and 8. Tailings material used in tailings-bearing kinetic tests (humidity cells and subaqueous columns) underwent XRD analyses. Samples of paste, cured cemented paste, sludge and residue (following ore processing) were also analyzed.

3.1.4.3. Scanning Electron Microscopy (SEM)

The objective of SEM analyses is to identify possible secondary mineral phases on weathered rock surfaces. As such, samples include weathered material from two field barrels (Field barrels 4 and 6) and 7 samples obtained from exposed drift faces in the underground development. Samples were analyzed in two separate formats; unpolished and polished. Unpolished samples are analyzed under low vacuum to image secondary mineralization and alteration on sample surfaces. Polished 30 µm sections are carbon-coated and submitted for imaging of secondary mineral phases and alteration (in cross-section) and to obtain semi-quantitative SEM-EDS (Energy Dispersive Spectrometry) spectra of mineral chemistries.

3.2. Testing Procedures

3.2.1. Static Tests

3.2.1.1. Acid-Base Accounting (ABA)

Acid-base accounting (ABA) is used to determine the balance between the acidifying potential (AP) and acid neutralizing potential (NP) of mine wastes and other materials. In total, 428 waste rock samples from Brucejack were assessed by ABA. The ABA analyses included:

- Paste pH
- Total sulphur and sulphur species to calculate acidifying potential (AP)
- Acid neutralization potential (NP) using the standard Sobek method
- Total Inorganic Carbon (TIC).

Sulphur Species

Sulphur (S) species occur in one of four forms: sulphide-S or thiosalts (minerals containing S^{2-} or S_2^{2-}), sulphur species with intermediate oxidation states, organic S, and sulphate-S.

Sulphide-S (e.g. pyrite, chalcopyrite and arsenopyrite) is the predominant sulphur form that reacts with oxygen and water to generate acid rock drainage. Sulphur species with intermediate oxidation states, such as elemental S and thiosalts (e.g. $S_2O_3^{2-}$, $S_3O_6^{2-}$ and $S_4O_6^{2-}$), are usually present in low concentrations and naturally oxidize to sulphate under atmospheric conditions. Organic S is the form of sulphur which occurs in coal and other deposits with significant carbon content. Sulphate-S often occurs in partially weathered samples as minerals that are reaction by-products of sulphide mineral oxidation (e.g. sulphate salts, jarosite and alunite). Total-S is the sum of these four different sulphur forms.

The effects of the different sulphur species vary, as not all sulphur species produce acid and potentially acid generating sulphur species differ in the amount of acid produced per mole of sulphur. Therefore, the characterization of the various types of sulphur species is essential in the prediction of the drainage chemistry.

The total sulphur was determined by Leco induction furnace equipped with an IR detector (ASTM E1915-13). Sulphide-S and sulphate-S were determined by sequential extraction with HCl (ASTM D2492-02). The sulphide-S is generally used to calculate the acid generation potential by pyrite oxidation.

Neutralization Potential (NP)

The neutralization potential provides a measure of the available acid neutralizing constituents in a sample and is reported in kg $CaCO_3$/t. Carbonate minerals are the most important source of NP, and calcite is the most abundant carbonate mineral found in veins and veinlets.

The neutralization potential of a sample was determined by the standard Sobek method (section 13.3.2 in MEND, 2009). The objective of the Sobek NP method is to add sufficient acid to dissolve all of the carbonate plus the highly reactive silicate NP. Determination of the

NP involves titrating the sample with an excess of standardized hydrochloric acid and heating the acidified sample to ensure complete reaction. A fizz test is used to estimate if the amount of acid to be added will be sufficient to react with all the acid consuming minerals present. The unconsumed acid is titrated with standardized base to pH 7.0.

A limitation to this test method is the qualitative interpretation of the fizz test, which denotes the amount and normality of HCl acid to add for the NP procedure. Comparison of Sobek NP and carbonate-NP values will help evaluate the occurrence of such error in sample results.

Acid Potential (AP)

Acid-base accounting stoichiometry assumes the sulphur present is all pyrite and that complete oxidation and subsequent acid generation occurs. The calculation of AP is based on the following reaction:

Oxidation of pyrite:

$$FeS_2(s) + 7/2\ O_2(g) + H_2O = Fe^{2+} + 2H^+ + 2SO_4^{2-}$$

According to the equation, for each mole of pyrite that is oxidized, two moles of acid are produced. The acid potential (AP) is calculated from the % sulphide sulphur content of the sample (31.25 x % sulphide-S) and reported in kg $CaCO_3$/tonne.

The dominant sulphide mineral at Brucejack is pyrite; other sulphides that may contribute to the AP include arsenopyrite, galena, sphalerite and chalcopyrite. Limitations of this method include minimum detection limits related to analytical methods and the assumption that acidity is generated solely from sulphide minerals. For the latter, these limitations will be assessed by comparing total S % and sulphide-S % from static test results.

Net Neutralization Potential (NNP)

The NNP is the difference between NP and AP and represents the excess neutralization potential of a sample. Generally speaking, a positive NNP suggests that material is likely not acid generating and a negative NNP indicates that the material is likely acid generating.

Neutralization Potential Ratio (NPR)

The NPR is the ratio of NP over the AP and these ratios are established as screening criteria for materials to identify their potential for ARD generation. Materials with NPR less than 1.0 are likely to generate ARD whereas samples with NPR greater than 2.0 are not likely to generate ARD (MEND, 2009). A sample with NPR between 1.0 and 2.0 is capable of generating ARD. This is summarized in Table 3-4.

Using a conservative approach, materials with NPR≤2 are considered potentially acid generating (PAG) whereas materials with NPR>2 are designated as non-PAG.

Table 3-4. Acid rock drainage screening criteria (MEND, 2009).

Potential for ARD	NPR	Comments
Likely	NPR <1	Likely ARD generating unless sulphide minerals are non-reactive
Possibly	1≤NPR≤2	Possibly ARD generating if NP is insufficiently reactive or is depleted at a faster rate than sulphides
Low	NPR>2	Not likely ARD generating unless significant preferential exposure of sulphides along fracture planes, or extremely reactive sulphides in combination with insufficiently reactive NP

3.2.1.2. Metals by ICP-MS

Metal leaching (ML) is a problem commonly associated with ARD. Whole rock elemental analysis is used to quantify the elemental concentrations in materials that may be exposed at Brucejack. Multi-element inductively coupled plasma mass spectroscopy (ICP-MS) was used to analyze elemental concentrations in aqua-regia digests from Brucejack samples. The solid-phase elemental concentrations are used to identify samples with anomalous geochemical compositions that may have an adverse impact on drainage chemistries.

3.2.2. Shake Flask Extraction Tests

Shake flask extraction (SFE) tests are often used to assess the short term effects of metal leaching, which is particularly relevant for waste materials disposed in Brucejack Lake. To estimate the potential for metal leaching from weathering products accumulated on waste materials, SFE tests were conducted. The procedure used for the SFE tests is described in section 11.5 of MEND (2009).

3.2.3. Kinetic Tests

The objective of the kinetic testing program is to predict the long term weathering characteristics of mine waste at Brucejack. The results of the kinetic tests are used to:

- Verify the ARD potential established in static tests
- Assess the depletion rates of NP and AP and predict the onset of ARD, also known as the lag time
- Estimate the degree of metal leaching from waste materials.

3.2.3.1. Overall Design

Considering the different waste management strategies planned for the project, different kinetic testing procedures were selected to evaluate the weathering of waste materials disposed under both atmospheric and subaqueous conditions:

- Humidity cells to simulate weathering of waste material stored underground
- Subaqueous columns to simulate weathering of waste material stored in Brucejack Lake and waste material in the underground during post- closure (flooded workings)
- Field barrels to simulate weathering of waste material under local conditions.

3.2.3.2. Humidity Cells

Humidity cell tests were conducted using the procedure outlined in section 18.2 of MEND (2009). Humidity cells consist of 1 kg of sample placed in plexi-glass columns. The first flush involved irrigation with 750 mL of deionized water. Subsequent flushes were done with weekly irrigations of 500 mL of deionized water and analyzed as follows:

- pH, oxidation-reduction potential (ORP), conductivity – weekly
- Sulphate, fluoride, acidity and alkalinity – weekly for the first 5 weeks, then bi-weekly
- Metals by ICP-MS – first flush, weekly for the first five weeks, then bi-weekly.

3.2.3.3. Subaqueous Columns

Subaqueous columns consist of approximately 3-5 kg of material, crushed to less than ¼", and packed into 17 cm diameter columns. Columns are covered with a 30 cm water head, which is continuously circulated (1L per week) to allow for sampling and replacement of sampled water. Water for chemical analyses is sampled weekly from the top and bottom of the column. Aqueous samples collected at the column bottom are assumed to be analogous to pore water chemistries from waste deposited in the lake, while samples removed from the top of the column are assumed to be comparable to the lake water column. The typical make-up volume was around 500 ml per week.

The sampling frequency of subaqueous columns was initially similar to that of humidity cells (i.e., once per week). After 40 cycles, the sampling frequency of subaqueous columns was reduced to once every four weeks to allow for a longer residence time of the water in contact with waste material. Chemical analyses of subaqueous column samples were identical to those used in humidity cell tests.

3.2.3.4. Field Barrels

Drainage chemistry depends on primary mineral reactions as well as the precipitation and dissolution of secondary minerals. Humidity cell testing cannot simulate this type of behavior, which is why field based testing using field barrels is necessary.

The field barrels consist of 40 gallon plastic barrels (Figure 3-4A) with 6 aeration holes (d=1 cm) spaced at regular intervals along the height and around the circumference of each barrel. Leachate from each barrel is collected in a 5 gallon bucket (Figure 3-4B) via a thru-hull hose. Field barrels 1 through 6 were constructed by BGC in early July 2012, and field barrels 7 and 8 were constructed in July 2013. The first six field barrels contain crushed drill core while the last two barrels contain waste rock from the underground of the 2013 Bulk Sample program. The material from drill cores was crushed to a grain size of 2 inches or smaller using core splitters. Prior to manually filling of the barrels, the material was sieved in order to remove the <2mm size fraction. Waste rock from the underground was crushed to less than 3" and cone-and-quartered prior to placing the material in the field barrels. This method helped ensure a random particle size distribution within field barrels 7 and 8.

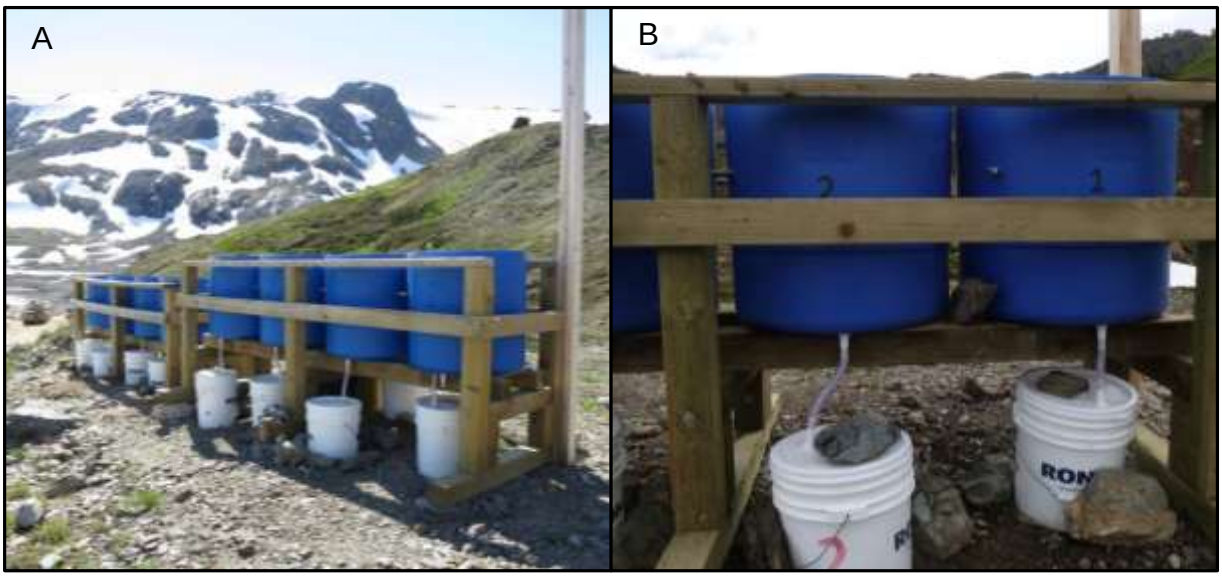


Figure 3-4. Brucejack field barrels, showing field barrels with crib set-up (A) and drainage outlets with collection buckets (B).

Field barrels are activated in summer months (May/June to Sept/Oct) and sampled regularly during this period for field parameters, volume amounts and aqueous chemistry. Aqueous samples are chemically analyzed for general parameters, nutrients and dissolved/total metals.

3.2.4. Mineralogy

3.2.4.1. Optical Mineralogy

Thin sections prepared for petrographic analyses were comprised mostly of chip-mounted samples, with two whole-rock slides. All polished thin sections were examined using transmitted and reflected light microscopy. The former is used to examine the gangue (or non-metallic) minerals (e.g., silicates, carbonates), whereas the latter examines minerals that do not transmit light (e.g., metallic-, oxide- and sulphide minerals).

3.2.4.2. X-ray Diffraction (XRD)

Sample submitted for X-ray Diffraction (XRD) underwent quantitative XRD with Rietveld analysis. All samples were reduced to the optimum grain size range for quantitative XRD analysis by grinding to less than 10 µm in a vibratory McCrone Micronizing Mill. Step-scan X-ray powder diffraction data was collected using Bruker D8 Focus Bragg-Brentano diffractometer and XRD diffractograms were refined with the Rietveld program Topas 4.2 (Bruker AXS). Final reported results represent relative amounts of crystalline phases per sample, normalized to 100%.

The focus of XRD study was two-part; (1) to identify the primary acid generating and neutralizing minerals and the metal-bearing phases that may play a role in metal leaching in

waste rock assemblages beyond their predicted lag times, and (2) to evaluate a range of mineralogical characteristics indicated by optical mineralogy.

3.2.4.3. Scanning Electron Microscopy (SEM)

Samples submitted for SEM were examined in two separate formats; unpolished and polished. Unpolished samples are analyzed under low vacuum to image secondary mineralization and alteration on sample surfaces. Polished 30 µm sections are carbon-coated and submitted for imaging of secondary mineral phases and alteration (in cross-section) and to obtain semi-quantitative SEM-EDS (Energy Dispersive Spectrometry) spectra of mineral chemistries.

4.0 WASTE ROCK CHARACTERIZATION

The development of sound waste management strategies requires an assessment of the ML/ARD characteristics of generated mine waste materials. Those ML/ARD characteristics are obtained from static and kinetic tests on waste materials. This section focuses on waste rock while tailings and other (surface) materials (e.g. overburden, roads) are discussed in Section 5.0 and Section 6.0, respectively.

Historical ML/ARD data, presented in a MEND report on waste rock dumped into Brucejack Lake in 1999 and other geochemical tests, is summarized in Section 4.1. Mineralogy of Brucejack assemblages is discussed in Section 4.2, whereas acid-base accounting (ABA) data of waste rock samples taken between 2011 and 2013 are described in Section 4.3. This data is ultimately used to present a detailed account of the quantity and quality (PAG or non-PAG) of the waste rock produced during the underground mine development. The total elemental content as well as soluble constituents of the waste rock are discussed in Section 4.4 and Section 4.5 respectively. Finally, results from kinetic tests (humidity cells, subaqueous columns and field barrels) are presented and discussed in Section 4.6.

4.1. Historical Data

4.1.1. Introduction

The Brucejack Project (formerly Sulphurets Project) first entered the provincial assessment process in 1987 when Newhawk Gold Mines Ltd applied for a Mine Development Certificate. Between 1986 and 1990, Newhawk excavated 124,000 tonnes (44,300 m^3) of waste rock and produced 5,276 m of underground workings within the West Zone Deposit.

In support of the mine proposal, ML/ARD information was obtained from waste rock, drill core, and sediment samples using static tests, kinetic tests (humidity cells), leach tests, shake flask extracts (SFE) and rinse pH (Price, 2005). The test work involved various rock types, which included; andesite, silicified andesite, quartz stockwork, quartz vein and quartz breccia.

Although the historical dataset is limited in scope, the results obtained from these tests do provide information regarding the dominant ML/ARD characteristics of Brucejack materials. The results discussed in this summary are described in greater detail in Price (2005).

4.1.2. Static Test Results

Waste rock material submitted for ABA testing was sampled along the underground workings of the West Zone. Results were compiled by Newhawk Gold Mines Ltd. (1989a) and NPR values from the majority of underground samples were less than 1.0 ($0.07 \leq NPR \leq 0.32$), indicating PAG materials. The NPR values from 33 of 35 drill core samples were also measured to be less than 1.0, similarly suggesting the majority of waste rock is PAG material.

Elemental analysis was conducted on West Zone waste rock and Brucejack Lake sediments. Waste rock metal concentrations exceeded upper limits of un-mineralized material for Ag (10x - 40x), As (5x - 113x), and Sb (40x - 125x), which are considered common elements of concern at mine sites in British Columbia. Trace metal concentrations of Pb and Zn were also elevated in silicified andesite, quartz stockwork and quartz breccia, relative to crustal abundances. Metal concentrations from Brucejack sediments were comparable to those from waste rock. Considering these similarities, it was suggested that metal concentrations would not increase in the local environment provided both materials were exposed to similar weathering and leaching conditions. However, the low NPR values from waste rock material suggest an increased likelihood for higher metal loads and trace metal mobility compared to 'natural' occurring materials.

4.1.3. Humidity Cell Test Results

Six humidity cells were constructed with waste rock from five lithologies (i.e., andesite, quartz, silicified andesite, quartz breccia, quartz stock work) and a composite assemblage. A review of the humidity cell report by Newhawk Gold Mines Ltd (1989b) highlighted a few issues in the procedures that should be considered when interpreting the results. Firstly, humidity cells were evaluated for a period of 10 weeks; a duration considerably shorter than the recommended minimum range of 40 weeks to 1 year to reach steady-state release rates. Secondly, sulphide-S was used to calculate AP values, which contrasts previous ABA test results using total sulphur values in AP calculations. Sulphate-S was not measured directly and was based on differences between total- and sulphide-S values. These inferred sulphate values indicate materials may contain a small, but significant amount, of sulphate minerals (e.g. jarosite) that may generate acidity. Finally, most metals analyzed in the Newhawk assessment contained 100-2000x higher detection limits (relative to current limits used in the BGC assessment) and many analytical results were reported below detection limits (e.g., Newhawk: Al, As, and Sb < 0.2 mg/L; BGC: Al < 0.03 mg/L, As and Sb < 0.0001 mg/L). As such, estimated metal release rates pertaining to those metals with below detection limit values may contain a considerable amount of uncertainty.

Humidity cell leachates were generally characterized by pH values between 7 and 8. The lowest measured pH (pH 6.5) was observed in the final week of the humidity cell containing andesite. Weekly sulphate loads generally decreased from high initial flushes, which were likely attributed to easily soluble sulphate mineral precipitates. Average sulphate loads ranged between 13.7 mg/kg/week (quartz vein) to 45.3 mg/kg/week (silicified andesite). This sulphate production rate corresponds to a theoretical calcite depletion rate of 0.7-2.4 kg $CaCO_3$/t (assuming a closed system and ($CaCO_3 + 2H^+ \rightarrow Ca^{2+} + H_2CO_3$)). Based on initial NP estimates from humidity cell materials, the NP would be depleted between 7 and 87 years.

4.1.4. Leach Tests

Laboratory Tests

Previous leach tests were conducted as part of the mine proposal, as described under the "Special Waste Extraction Procedure" (SWEP), using pH 5 solutions of acetic and sulphuric acid (Price, 2005). The purpose of the laboratory leach testing was to identify those metals with a higher leaching potential under weakly acidic (pH 5.0) conditions. Leach test were conducted on 4 waste rock samples obtained from the underground (i.e., east/west wall and hanging/foot wall and results identified As, Cr, Pb, and Zn as parameters of concern for Brucejack materials. However, these results were deemed invalid by Price (2005) for two reasons; (1) test leachate solutions were considered to be more acidic than field conditions, and (2) analytical procedures did not consider the contribution from waste rock weathering to the leachate chemistries.

Waste Rock Pad Standpipes

Two standpipes (west and east standpipes, WSP and ESP, respectively) were installed in the on-site waste rock pile in 1989 to monitor the progress of waste rock weathering and the impact on drainage quality. The waste rock pile was unsaturated and aqueous samples were obtained from the standpipe using a pump. Sampling was sporadic due to access difficulties and lack of site personnel.

Circumneutral (pH 6.6-7.2) drainage was measured from WSP and ESP following their installation. Drainage from WSP decreased to acidic values by 1991 and low pH values (pH 2.4-3.1) were continually measured until 1996. Drainage from ESP was erratic and did reach acidic conditions, similar to WSP, but over a much longer period (1991-1993: pH 5.1-6.6; 1994: pH 3.8-4.2; 1995-1998: pH 3.4-3.7). High sulphate and metal concentrations were measured from both standpipes, with WSP showing higher values. Metals with high maximum concentrations include Ag (15 ug/L), As (2.39 mg/L), Cd (92 ug/L), Mo (93 ug/L), Pb (566 ug/L) and Zn (4.47 mg/L).

Reported drainage chemistries signify the potential for waste rock to weather quickly under unsaturated conditions and produce ARD conditions. These results supported the ARD mitigation plan of a water cover, thereby limiting the release of significant acidity and dissolved metals from weathered waste rock.

4.1.5. Shake Flask Extraction Tests

Nine grab samples were collected at random locations from excavated waste rock and ore piles for analyses and analytical results were compiled by Hallam Knight Piesold Ltd (1999). One of the nine samples had an acidic rinse pH, whereas the remaining samples had a pH above 7. The majority of samples had pH values between 8.1 and 8.5, which suggests that neutralization potential is still available following 10 years of material exposure. The single acidic SFE sample was obtained from material near the WSP and suggests that the drainage

from the standpipes may not be representative for the majority of waste rock. Additionally, SFE samples were taken from trenches excavated along the surface of the waste rock pile.

Results from SFE testing were used to characterize the impact of waste rock disposed in Brucejack Lake. These results indicated waste rock disposal would result in little to no change in lake chemistry due to the dilution and alkalinity contribution from the lake volume. Several solutes (e.g. sulphate, Cu, Zn, and Mn) were highlighted as potential contaminants of concern if higher waste rock volumes were disposed in the lake. In the review by Price (2005), it was shown that SFE test materials were crushed to diameters less than 2 mm and may have biased results to conditions of significantly higher NP availability. As such, SFE results and their application in water quality predictions were considered inadequate and, at best, qualitative in scope.

4.1.6. Rinse pH

In 1999, twenty-two samples were taken from the waste rock pad for rinse pH testing (McLeod, 1999). The samples were collected from a horizontal transect along the excavated face. Measured rinse pH values did not show a strong association with location along the excavated face, as some locations included samples with values in all four rinse pH categories (pH 3.0-4.5, pH 4.5-7.0, pH 7.0-8.0, pH > 8.0).

Approximately 45% of waste rock samples had rinse pH values below pH 7.0; one-quarter of those samples had very acidic values (pH 3.0-4.5). Twenty-seven percent of the samples had rinse pH values similar to the pH values of SFEs (pH > 8.0). Assuming the SFE samples were not biased by crushing, the Price (2005) report attributed discrepancies between rinse pH and SFE pH results to accelerated weathering from slightly acidic groundwater intercepting the base of the waste rock pile. The results of this test illustrated the need to sample material at the base, as well as the surface, of the pile and the importance of considering hydrogeology and soil hydrology in selecting waste disposal sites.

4.1.7. Summary

According to Price (2005), the test work conducted in support of Newhawk's 1989 Mine Development Certificate is considered inadequate by current standard practices. Some notable omissions and testing errors include the lack of mineralogical data, carbon assays, sulphate-S analysis (for initial characterization of humidity cell material), short durations of humidity cell tests, crushing SFE samples, and no accountability for possible accelerated leaching of waste rock due to groundwater interaction. Additionally, tests were conducted on a small subset of the possible lithologies at the Brucejack site. However, results from this dataset suggest that Brucejack materials contain very little NP and present a strong ARD potential. Testing also indicated arsenic, silver, antimony, lead, zinc and sulphate were likely contaminants of concern for the water quality at Brucejack.

4.2. Mineralogy

The mineralogy of the Brucejack project was characterized using several information sources: a review of the geology and ore deposit (as described in Section 2.0), a review of MINFILE, and data acquired using several analytical techniques (i.e., optical mineralogy, X-ray diffraction (XRD) and scanning electron microscopy (SEM)). The relevant findings from these information sources and their implications for the ML/ARD characteristics of Brucejack materials are discussed in the sections below.

4.2.1. Literature Review

The regional and local geology of the Brucejack Project area was outlined previously in Section 2.0, however additional background information pertaining to the mineralogy in the area was obtained from MINFILE (104B 193). Specifically, information from MINFILE delineates mineralogy according to type, abundance and occurrence at the Brucejack project area. A list of minerals specified according to type, abundance and occurrence reported for the Brucejack Project are shown in Table 4-1.

Table 4-1. Minerals reported in MINFILE†.

Mineral	Class	Importance‡	Occurrence
Quartz	Silicate	Major	Veins
Plagioclase	Silicate	Major	Pervasively altered phenocysts
K-spar	Silicate	Minor	Phenocrysts
Hornblende	Silicate	Minor	Phenocrysts
Orthopyroxene	Silicate	Trace	Phenocrysts
Calcite	Carbonate	Major	Mainly disseminated, but also as veinlets
Dolomite	Carbonate	Trace	Unknown
Sericite	Alteration	Major	Fibrous
Chloritoid	Alteration	Trace	Fibrous
Serpentine	Alteration	Minor	Fibrous, restricted to sulphide mineralization zones
Anhydrite	Secondary	Minor	Mainly fracture fillings
Goethite	Secondary	Trace	Amorphous coatings
Ankerite	Secondary	Trace	Late vein replacement
Pyrite	Sulphide	Major	Mainly disseminated but also as veinlets
Sphalerite	Sulphide	Trace	Disseminated and as inclusions within pyrite
Chalcopyrite	Sulphide	Trace	Mainly as inclusions in pyrite

† MINFILE No. 104B 193

‡ Major: generally several percent; Minor: 0.1 – 1%; Trace: < 0.1 %.

The sulphide mineralogy is relatively simple, with pyrite as the dominant mineral and trace amounts of sphalerite and chalcopyrite. Pyrite is pervasive amongst all rock units at the Brucejack project and occurs as disseminations or veinlets. Calcite is the main carbonate

mineral and occurs either in the rock matrix or locally as veinlets. Phenocrystic plagioclase, with lesser K-feldspar and hornblende are the dominant silicate minerals, along with quartz.

4.2.2. Optical Mineralogy

The 55 polished thin sections analyzed represent 8 (of 9) general logged lithologies from five of the seven geological model units. Average mineral abundances for the different lithologies are presented in Table 4-2. Materials from the two remaining geological model units 'Silicified Cap' and 'Office P1' were not available at the time of analysis.

The major non-sulphide minerals identified are comparable to those of the MINFILE data. Most samples contain quartz, with minor plagioclase, sericite and lesser calcite. Potassium-feldspar, which was listed as a minor (0.1-1 %) mineral in MINFILE, was estimated at 16% in arenite samples. Quartz occurs mostly in veins or as large individual phenocrysts. Quartz veins are generally associated with sulphide minerals and may contain carbonate minerals.

The majority of plagioclase appears to be affected by sericite alteration. Sericite occurs as fine-grained, randomly oriented needles replacing plagioclase (Figure 4-1A) or as corrosive edges around larger quartz grains (Figure 4-1B). The high degree of sericitic alteration to plagioclase may result in a reduced neutralization potential (NP) since sericite neutralization potential is less than that of plagioclase (0.3 kg $CaCO_3$/t versus 0.5-2.6 $CaCO_3$/t (albite) and 5.3-12.5 $CaCO_3$/t (anorthite), respectively) (Blowes et al., 2003; Jambor, 2003).

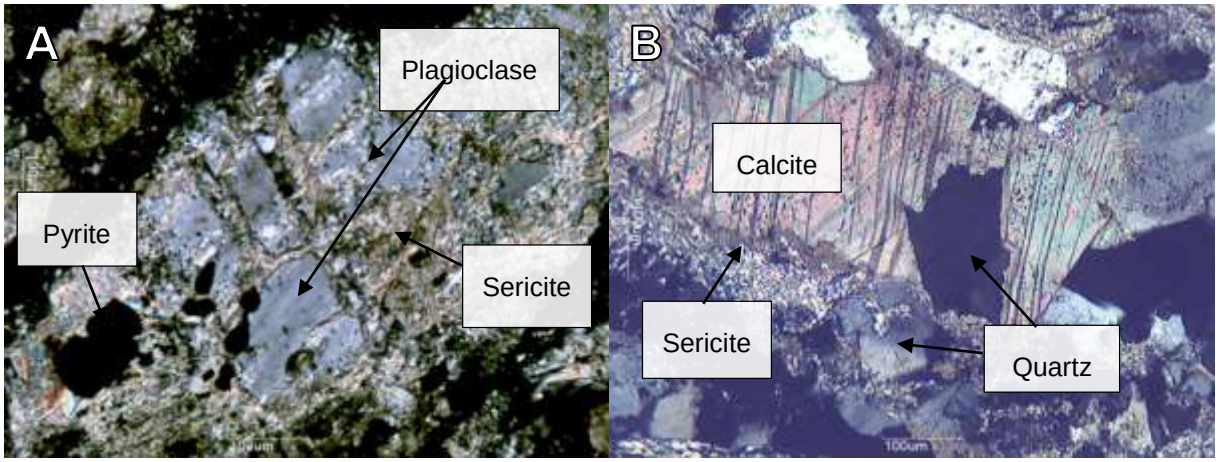


Figure 4-1. Transmitted light petrograph of sericite-altered plagioclase grains (A) and corroded boundaries of quartz (B).

Serpentine is a less abundant alteration mineral (relative to sericite) observed in Brucejack material and its association with sulphide minerals may indicate a potentially important localized neutralization source (Figure 4-2). Particularly, the neutralization potential range of serpentine is larger than that of plagioclase (15.1-87.6 kg $CaCO_3$/tonne, versus 0.5-2.6 kg/$CaCO_3$/t (albite) and 5.6-12.5 kg/$CaCO_3$/t (anorthite), respectively) (Blowes et al., 2003; Jambor, 2003).

Table 4-2. Average mineral abundances obtained from optical mineralogy.

Lithology		Silicates						Carbonates		Alteration			Second.	Sulphides				Oxid.	Total
		Quartz	Plagioclase	K-spar	Amphibole	Biotite	Opx	Calcite	Dolomite	Sericite	Chlorite	Serpentine	Anhydrite	Pyrite	Sphalerite	Chalcopyrite	Other†	Magnetite	
Andesite‡ (n=11)	Fragm. (n=8)	44	8				3	7		29	2	<1	Tr.	7	Tr.	Tr.			100
	VSF (n=3)	33	14					18		5		12	Tr.	6	Tr.	Tr.			88
Conglom.§ (n=5)	Fragm. (n=4)	34	Tr.¥	Tr.			Tr.	5	<5	46		Tr.	3	8	Tr.				100
	VSF (n=1)	30	35					10		15		3		7		Tr.			
Felsic volcanics (n=13)		42	14			Tr.		9		21		3	1	8	1	Tr.	Tr.	Tr.	99
Meta-volcanics (n=3)		32	38					13		12		0.3	Tr.	4	Tr.	Tr.			99
Meta-sediments	Pelite (n=4)	45	<2		4		<1	<7		34		2	1	8	Tr.	Tr.			
	Arenite (n=4)	25	28	16			<1	7		15		4	Tr.	4	1	Tr.	Tr.		100
Porphyry (n=9)		36	12	4			Tr.	8		27	Tr.	1	Tr.	6	1	Tr.			94
Siliceous rocks (n=2)		35	23					9		23		1	1	8	Tr.	Tr.			100
Granitoid (n=4)		40	19				1	26	Tr.	10		1	Tr.	3	Tr.	Tr.			100

† Includes pyrrhotite, arsenopyrite, bornite, chalcocite;

‡ Andesite samples were collected from Fragmental (n = 8) and VSF (n = 3) geological model units. Sericite alteration is dominant in the Fragmental unit (~ 29%), relative to the VSF unit, whereas serpentinization is dominant in the VSF unit (i.e., 12%)

§ Conglomerate samples were collected from Fragmental (n = 4) and VSF (n = 1) geological model units. Plagioclase is detected in trace amounts in the Fragmental unit and a major-contributing mineral in the VSF unit (Trace versus 35%, respectively).

¥ Tr. = Trace

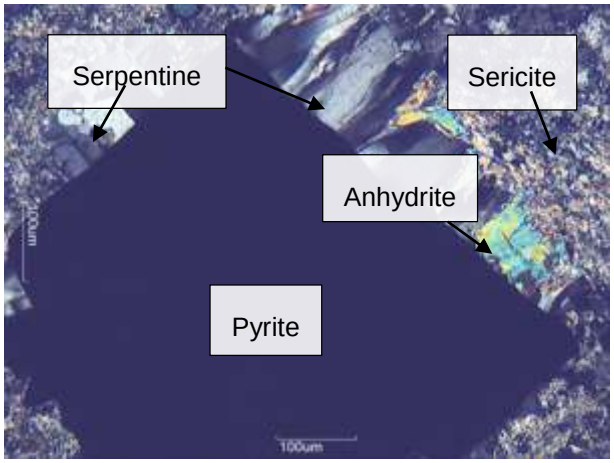


Figure 4-2. Transmitted light photomicrograph of pyrite grain showing serpentine alteration and pervasive sericite alteration of the surrounding matrix.

Calcite occurs in several forms throughout the samples; isolated crystals, small aggregates within the matrix and veins. Isolated grains are commonly large, anhedral crystals whereas calcite aggregates are finer-grained. Carbonate veins are generally thin and discontinuous within the matrix.

Pyrite is present in all samples, from trace amounts to greater than 10%, and is the dominant acid-generating mineral. Pyrite is typically euhedral to subhedral and occurs as isolated or disseminated grains. Other sulphides identified in thin sections include minor amounts of sphalerite and chalcopyrite, and trace amounts of pyrrhotite, chalcocite, arsenopyrite and bornite.

Secondary minerals were rarely identified within the sample set, but have been visually identified at site in drill core or on exposed rock surfaces. These minerals play an important role in water quality prediction due to their ability to retain/release metals by mineral precipitation and dissolution reactions and (for some) through adsorption/desorption reactions. Anhydrite and goethite were the only secondary minerals identified by petrography, with the latter associated with accumulations of both pyrite and calcite in many lithologies at various depths. Goethite was observed in association with pyrite (Figure 4-3) and its presence is restricted to samples from the upper few meters of drill core.

Optical mineralogy results are comparable to MINFILE mineral abundances, whereby quartz and plagioclase are the dominant silicate minerals and calcite is the dominant carbonate mineral. Similarly, pyrite is the dominant acid-generating mineral and sericite-alteration is observed to be more common than serpentinization in most lithologies and units (with the exception of the VSF geological model unit.

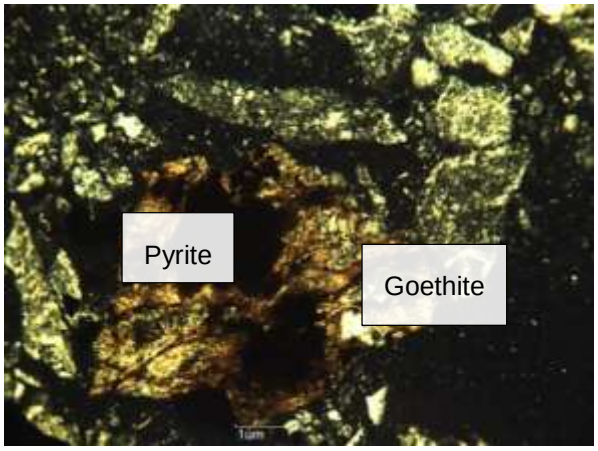


Figure 4-3. Transmitted light photomicrograph of weathered pyrite and secondary goethite.

4.2.3. X-ray Diffraction (XRD)

The 48 samples submitted for quantitative XRD (with Rietveld) analyses included material from 36 humidity cells, 4 samples from waste rock-bearing subaqueous columns, and the 8 field barrels. Table 4-3 presents the ideal mineral formulae identified by XRD analyses.

Table 4-3. Ideal formula of minerals identified with quantitative XRD.

Mineral	Ideal Formula
Anatase	TiO_2
Ankerite	$CaFe(CO_3)_2$
Apatite	$Ca_5(PO_4)_3(F, OH)$
Calcite	$CaCO_3$
Chlorite	$(Fe,(Mg,Mn)_5,Al)(Si_3Al)O_{10}(OH)_8$
Diopside	$CaMgSi_2O_6$
Dolomite	$CaMg(CO_3)_2$
Illite-Muscovite	$K_{0.65}Al_2(Al_{0.65}Si_{3.35}O_{10})(OH)_2 – KAl_2AlSi_3O_{10}(OH)_2$
Jarosite	$KFe_3(SO_4)_2(OH)_6$
K-feldspar	$KAlSi_3O_8$
Plagioclase	$NaAlSi_3O_8 – CaAl_2Si_2O_8$
Pyrite	FeS_2
Pyrochlore	$(Ca,Na)_2(Nb,Ta)_2O_6(O,OH,F)$
Quartz	SiO_2
Siderite	$FeCO_3$

The averaged mineral proportions in samples from 8 (of 9) grouped lithologies and 7 geological model units are shown in Table 4-4. Note, no samples of mafic volcanics (e.g., basalt, mafic dykes) were available at the time of analyses. Quartz, plagioclase, muscovite, calcite and pyrite

Table 4-4. Average mineral abundances† obtained from quantitative XRD analysis.

Lithology		Silicates					Carbonates				Alter.	Secon.	Sulph.	Phos.	Oxides		Total
		Quartz	Plagioclase	K-spar	Muscovite	Diopside	Calcite	Dolomite	Siderite	Ankerite	Chlorite	Jarosite	Pyrite	Apatite	Anatase	Pyrochlore	
Waste Rock																	
Andesite (n=11)		41	5.6	8.1	26		8.4	0.04	0.18		4.3	0.29	5.8		0.11		100
Meta-sediments (n = 5)	Arenite (n=2)	33	16	17	13		8.4	0.85			6.6	1.0	3.5	0.20	0.30		100
	Pelite (n=3)	44	11	0.36	29		9.3				1.8	0.20	5.1		0.27		101
Conglom. (n=8)	Conglom. (n=7)	39	5.1	5.5	35		4.8	0.30	0.06		2.3	0.23	6.9	0.06	0.27		100
	Poly-congl. (n=1)	81			3.1		4.4						11				100
Dense vein stockwork (n=4)		58	2.5	9.4	13		14				1.1		2.7				101
Felsic volcanics (n = 8)	Felsic volcs (n=4)	41	4.3	6.8	34		5.3	0.90			2.7		4.9				100
	Inter. Volcs (n=4)	54	1.3		30	0.65	2.4	0.06	0.05		3.2	0.23	7.9		0.41		100
Meta-volcanics (n=1)		64	2.2	4.9	19		1.0					3.3	5.2				100
Porphyry (n=9)	Plag-Hbl (n=7)	35	12	4.3	25	0.44	9.6	0.31	0.06	2.9	6.1	0.19	4.1		0.50		100
	Kspar-Hbl (n=1)	38	1.8	21	26		9.9						4.5				101
Siliceous rocks (n=3)		77	0.57		13		2.5				0.93		5.8				100

†Note: detection limits are 0.1% for individual samples, however averaged results may present values less than the detection limit.

are found in all waste rock samples. Sericite was not identified in the XRD analysis but is likely a component of the muscovite mineral proportion. Specifically, sericite can be used as a petrographic term used to reflect fine-grained micaceous minerals. According to Ebrel et al. (1987), XRD patterns of sericite are comparable to mixed layer illite/smectite patterns. The likelihood of sericite being displayed as illite-muscovite by XRD is also supported by comparable quantities of muscovite-illite (XRD) and sericite estimated using optical mineralogy. Both mineral species display high birefringence in cross-polarized light. Chlorite is present in the majority of the lithologies.

The transition from felsic to intermediate assemblages appears to result in a decrease of neutralizing minerals (carbonates, Ca-plagioclase and diopside) along with an increase in sulphides. The ratio of 'neutralizing to sulphide' minerals decreases from approximately 2:1 in felsic volcanics to 1:2 for intermediate volcanics and suggests a decrease of net neutralization potential (NNP). The siliceous rocks likely pose the greatest risk for acidification due to a low content of carbonate minerals and a modest amount of pyrite.

4.2.4. Scanning Electron Microscopy (SEM)

Several weathered rock samples were taken from exposed underground walls adjacent to observed seeps. A qualitative spectral analysis was conducted on material related to 3 seeps (observed in the underground development) and results suggest iron-aluminum hydroxy-sulphates (e.g. jarosite) and iron oxides are dominant secondary mineral species. Polished thin sections from one of the three seeps (Seep 8) indicated that As, Cu, Pb, and Sb are associated with secondary oxides and have likely accumulated at weathered surfaces (Figure 4-4) by sorption. A single spectra of seep 4 suggests metal-sulphide inclusions [$(Zn_{0.98}Cd_{0.02})S$] within fractured calcium carbonate grains (Figure 4-5). Similar to serpentine rimmed pyrite grains noted earlier in optical mineralogy, carbonates containing sulphide inclusions suggest localized neutralization sources and possible secondary metal-carbonate minerals (e.g., malachite [$Cu_2(OH)_2CO_3$], smithsonite [$ZnCO_3$], otavite [$CdCO_3$]).

4.2.5. Summary and Conclusions

- Sulphides: sulphide mineralogy is relatively simple, with pyrite as the most common and pervasive sulphide mineral, followed by trace amounts of sphalerite and chalcopyrite and rare amounts of pyrrhotite, arsenopyrite, bornite, and chalcocite
- Quartz, plagioclase and calcite contribute 40-100% of the total mineral assemblage of all rock types
- Carbonates:Calcite is the main carbonate, with trace occurrences of dolomite Biotite and amphibole minerals are present in trace to low amounts (0-5%) and limited to volcanic assemblages and pelites
- Orthopyroxene is rare and generally related to Fragmental or VSF geological model units
- K-feldspar is mostly associated with arenites (16%), and less common in felsic volcanics (1%) and porphyries (~ 4%)

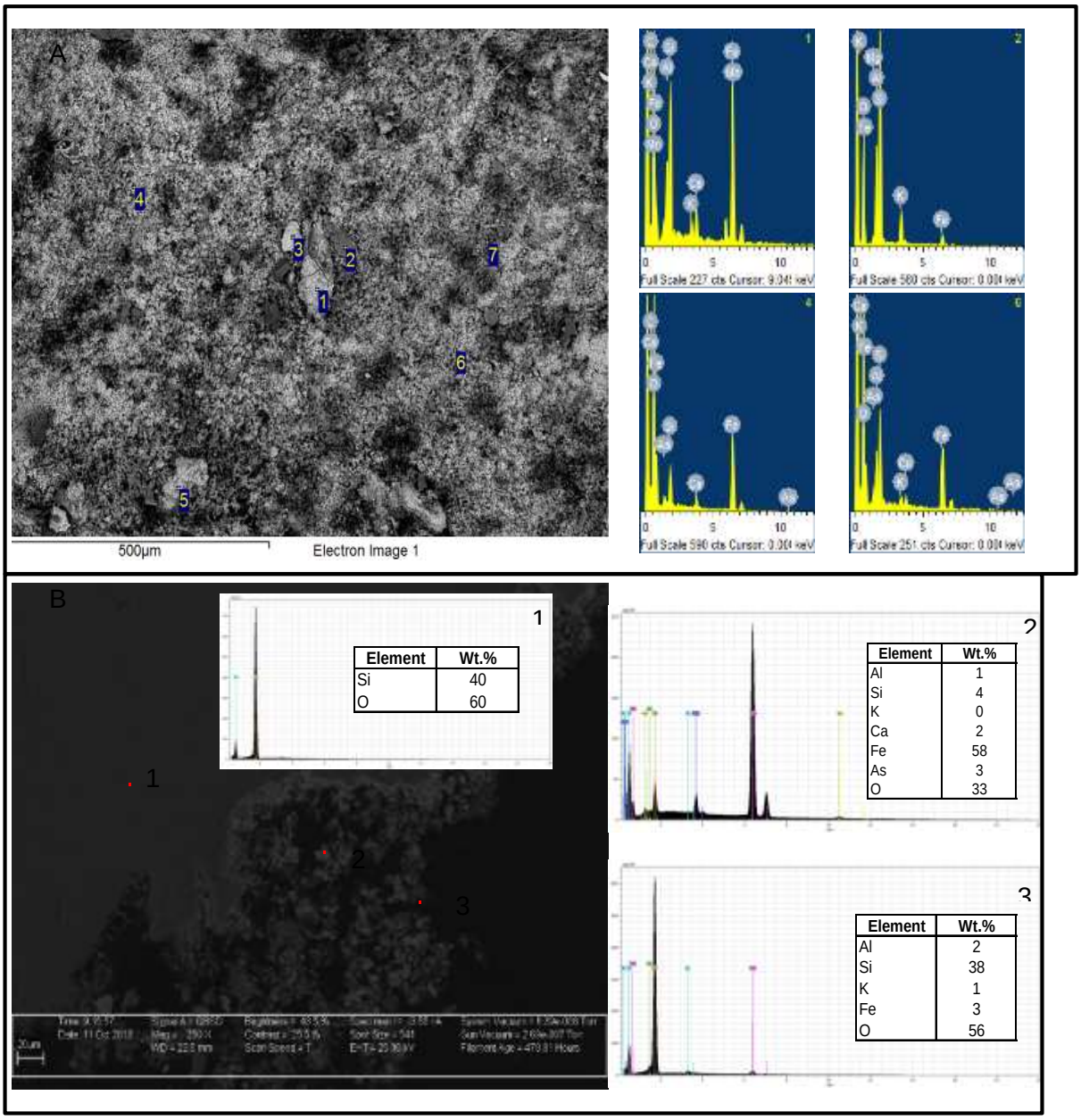
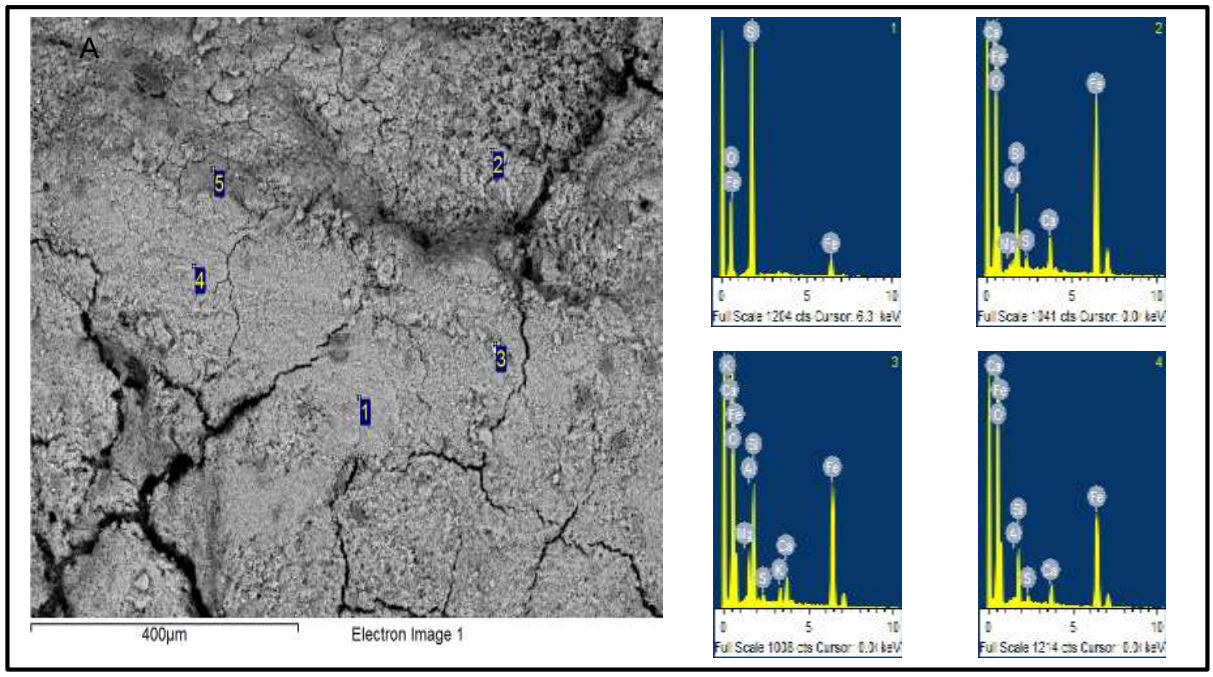


Figure 4-4. Qualitative (A) and semi-quantitative (B) spectra from Seep 8 surfaces.



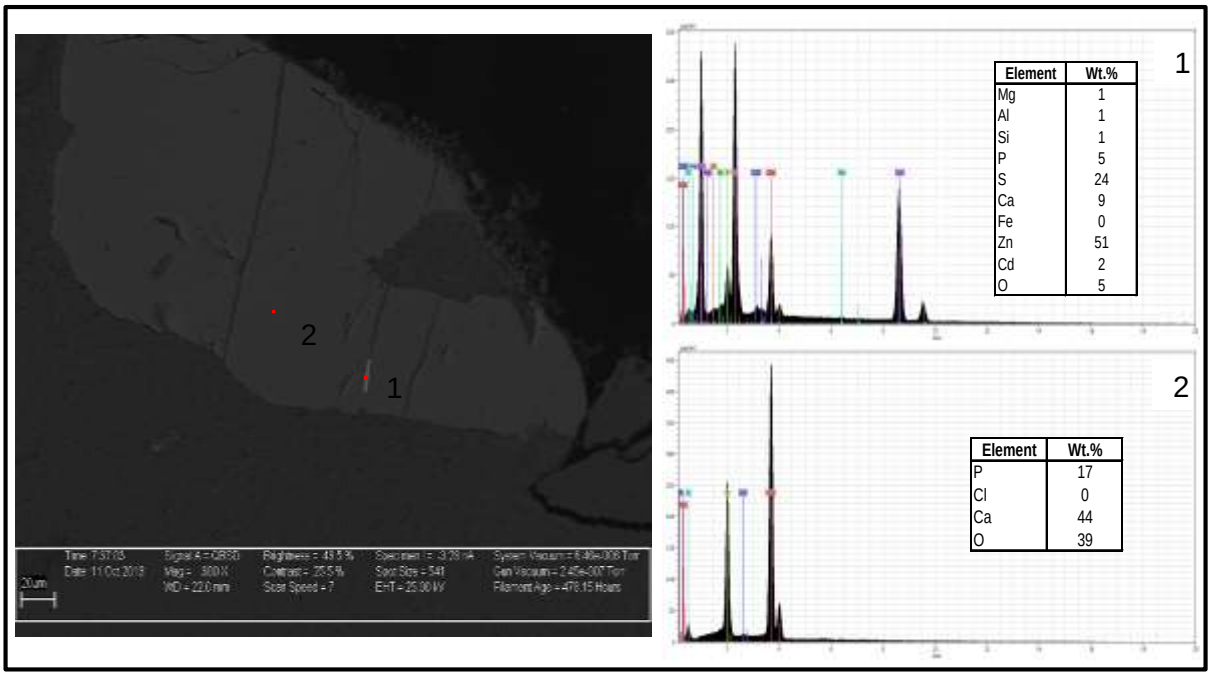


Figure 4-5. Qualitative (A) and semi-quantitative (B) spectra from Seep 4 surfaces.

- The majority of plagioclase is affected by sericite alteration, which contributes to the pervasive occurrence of sericite in rocks at Brucejack and likely contributes to a reduced neutralization potential of plagioclase
- Serpentine alteration is considerably less common than sericite and its association with pyrite grains suggests its potential to neutralize the acidification by weathering sulphides
- Andesites from Fragmental and VSF units show different alteration patterns with sericite dominant in the former and serpentine in the latter
- The most common secondary minerals are anhydrite, jarosite, and amorphous (Fe, Al)-oxides and iron hydroxyl sulphates, which play a role in retaining As, Cu, Zn, Pb and Sb.

4.3. Acid-Base Accounting (ABA)

ABA information is used to characterize the waste rock in the underground mine development. In developing waste management strategies, it is important to distinguish PAG from non-PAG materials as each require a different management approach. Therefore, it is important to estimate the proportion of PAG material of the waste rock generated at the Brucejack property. As explained earlier, materials with a neutralization potential ratio (NPR=NP/AP) equal to or less than 2 are considered PAG.

In total 428 waste rock samples were collected from across the Brucejack site. The collected samples represent the mineralized zones of Valley of the Kings (VOK), West Zone (WZ) and Gossan Hill. Although the latter is no longer part of the planned underground mine, the data are still relevant to the Brucejack Mine ML/ARD baseline database and assessment because they represent similar lithologies as at the Valley of the Kings and the West Zone. Pretivm developed a geological model consisting of seven model units to account for the wide range of logged rock lithologies obtained from Brucejack drill core. A single geological model unit may contain between 2 and 9 grouped lithologies (as per Section 2.2.6) and equally show a wide variation of ABA characteristics. Therefore, ABA data will be presented by geological model units (Section 4.3.1) and by dominant logged lithology (Section 4.3.2) in order to assess ABA trends in either grouping. Original analytical data for all 428 waste rock samples can be found in Appendix B.

4.3.1. Assessment by Geological Model Unit

4.3.1.1. General ABA Characteristics

General ABA characteristics of the geological model units are summarized in Table 4-5. Paste pH values are circumneutral to alkaline, with the exception of a few low pH values that represent minima. The high pH values are closely related to the presence of carbonates (measured as TIC). Most of the total sulphur (Tot-S) constitutes sulphide sulphur (Sulp-S) and a small contribution from sulphate sulphur (SO_4-S). Insoluble sulphur (Ins-S) can amount up to 12-20% of the total-S; the (Ins-S) reported as the maximum for VSF (7.6%) is an exception. The reported insoluble-S values likely represents highly insoluble sulphate minerals (e.g. barite, anglesite) or elemental sulphur (S^o).

Appendix D1 presents various scatterplots of ABA data from each geological model unit. Plots of Sobek NP versus Ca-NP (i.e., carbonate NP) shows carbonates are the main contributors to the NP of the waste rock, which is equally shown by similar Sobek-NPR and $CaCO_3$-NPR median values in Table 4-5. The Silicified Cap unit presents a range of higher Sobek NP values relative to Ca-NP values reflecting their higher silicate content. According Pretivm's geological model unit criteria (refer to Table 2-1) Silicified Cap material are identified as silicified rocks and generally constitute poorly sorted heterolithic conglomerate, sandstone and local mudstone.

These scatterplots also offer the ability to provide QA/QC of NP laboratory methods. Specifically, laboratory error/inconsistency may be attributed to those scenarios whereby Ca-NP values are significantly larger (> 5%) than Sobek NP values. Briefly, one step involved in Sobek NP methods involves a qualitative estimate to determine the strength/volume of acid titrated to a sample. Additionally, higher Ca-NP values may occur in scenarios whereby Fe-carbonates are present in samples. Iron-carbonates, such as siderite or ankerite, are considered a net-zero neutralization mineral as the alkalinity derived from dissolved carbonate is balanced by the acidity generated by iron hydrolysis.

Comparison of NP values shows Fragmental and VSF are the only two units with several samples containing larger Ca-NP values, relative to Sobek NP values. These two units are also considered lithologically-diverse, as they bear samples from all nine lithologies observed at Brucejack. As such, this data will be investigated further in the subsequent section (Section 4.3.2), which assesses ABA data by logged lithology and determines if mineralogy plays a role in larger Ca-NP values (relative to Sobek NP values).

Results in Table 4-5 suggest sulphide minerals present the majority of the total sulphur measured in waste rock samples. These results are also shown graphically as scatterplots of Total-S versus sulphide-S by geological model unit (Appendix D1). In general, all geological model units conform to a near 1:1 ratio between total sulphur and sulphide—sulphur, and supports the previous observation that sulphide minerals constitute the majority of acid-generating minerals. This relationship also verifies the use of sulphide-S in calculating AP values, which are used in NPR and NNP calculations.

Comparison of median NPR and NNP values indicates Office P1 is the only unit with a significant excess of NP, whereas the remaining units show a small surplus or deficit of NP. Office P1 also shows most samples have sulphur values less than 4% and NP values between 100 and 150 kg $CaCO_3$/t.

4.3.1.2. Frequency Analysis

A frequency analysis was conducted on various ABA parameters (Total S, AP, Sobek NP and NPR) to characterize the variation within each geological model unit. Statistical results from the frequency analyses are shown in Table 4-6, which reveal mode, median, mean, standard deviation, 90th percentile and p-values from each geological unit.

Table 4-5. Summary of ABA characteristics of the geological model units.

Geological Model Unit	Paste pH	TIC	Tot-S	Sulp-S	SO_4-S	Ins-S	AP	Sobek NP	$CaCO_3$ NP	NNP	Sobek NPR	$CaCO_3$ NPR
		%	%	%	%	%	← kg $CaCO_3$/t →					
VSF *(N=180)*												
Minimum	3.38	0.005	0.20	0.18	0.005	0.00	5.6	-1.7	0.4	-255	0.0	0.0
Median	**8.43**	**0.75**	**2.89**	**2.64**	**0.005**	**0.24**	**82.5**	**66.0**	**62.5**	**-15.0**	**0.8**	**0.7**
Maximum	9.62	3.27	13.8	8.91	0.14	7.62	278	262	273	220	11.3	7.7
Conglomerate *(N=61)*												
Minimum	4.96	0.01	0.14	0.12	0.00	0.01	3.8	4.0	0.4	-159	0.0	0.0
Median	**8.40**	**0.52**	**2.94**	**2.75**	**0.01**	**0.18**	**85.9**	**45.9**	**43.3**	**-36.3**	**0.5**	**0.4**
Maximum	9.50	8.02	5.33	5.48	0.06	0.51	171	648	668	617	57.7	46.1
Office P1 *(N=16)*												
Minimum	8.34	0.79	0.18	0.13	0.01	0.03	4.1	74.1	65.8	22.5	1.4	1.3
Median	**8.87**	**1.28**	**1.08**	**0.96**	**0.01**	**0.12**	**30.0**	**126**	**107**	**104**	**4.5**	**4.1**
Maximum	9.33	1.96	2.29	2.07	0.03	0.46	64.7	154	163	143	28.8	25.0
Bridge P1 *(N=17)*												
Minimum	7.77	0.10	0.73	0.73	0.01	0.01	22.8	12.9	8.3	-107	0.1	0.1
Median	**8.72**	**0.87**	**3.14**	**2.83**	**0.01**	**0.24**	**88.4**	**81.3**	**72.5**	**16.1**	**1.2**	**1.1**
Maximum	9.28	1.74	4.23	4.27	0.02	0.53	133	157	145	64.7	2.7	2.3
Silicified Cap *(N=6)*												
Minimum	5.73	0.01	0.55	0.51	0.01	0.04	15.9	5.4	0.8	-213	0.0	0.0
Median	**7.98**	**0.34**	**4.11**	**3.46**	**0.02**	**0.45**	**108**	**26.0**	**28.3**	**-73.2**	**0.3**	**0.3**
Maximum	9.40	0.52	7.55	6.99	0.03	0.72	218	49.6	43.3	18.6	2.2	2.1
Fragmental *(N=128)*												
Minimum	5.62	0.01	0.16	0.15	0.01	0.01	4.7	0.6	0.4	-237	0.0	0.0
Median	**8.37**	**0.32**	**3.94**	**3.69**	**0.01**	**0.24**	**115**	**34.0**	**26.3**	**-70.0**	**0.3**	**0.2**
Maximum	9.62	2.69	8.45	8.12	0.04	1.02	254	226	224	217	26.2	19.7
P2 *(N=20)*												
Minimum	4.36	0.01	2.83	2.40	0.01	0.00	75.0	1.7	0.8	-285	0.0	0.0
Median	**8.41**	**0.84**	**3.97**	**3.67**	**0.02**	**0.31**	**115**	**81.1**	**69.6**	**-32.3**	**0.7**	**0.6**
Maximum	9.02	1.62	9.82	9.22	0.08	0.53	288	126	135	34.6	1.5	1.6

Notes: TIC=total inorganic carbon; Tot-S=total sulphur; Sulp-S=sulphide sulphur; SO_4-S=sulphate sulphur; Ins-S=insoluble sulphur; AP=acid potential; Sobek-NP=Sobek neutralization potential; $CaCO_3$-NP=carbonate NP; NNP=NP-AP; NPR=net potential ratio; $CaCO_3$-NPR=carbonate NPR

A frequency analysis was conducted on various ABA parameters (Total S, AP, Sobek NP and NPR) to characterize the variation within each geological model unit. Statistical results from the frequency analyses are shown in Table 4-6, which reveal mode, median, mean, standard deviation, 90th percentile and p-values from each geological unit.

Table 4-6. Statistical summary of key ABA parameters.

Geol. Unit	Tot-S	AP	Sobek-NP	NPR
	%	*kg $CaCO_3$/t*		*--*
Bridge P1 *(N=17)*				
mode				
median				
mean	**2.8**	**80.8**	**79.9**	**1.21**
stdv	*1.0*	*31.5*	*36.6*	*0.73*
90th perct.	3.8	115	124	2.01
p-value	*0.055*	*>0.200*	*>0.200*	*>0.200*
Conglomerate *(N=61)*				
mode			8.6	0.04
median			39.4	0.6
mean	**2.8**	**82.3**	**84.3**	**2.4**
stdv	*1.4*	*42.2*	*159*	*9.4*
90th perct.	4.6	138	191	5.1
p-value	*>0.200*	*>0.200*	*>0.200*	*>0.200*
Fragmental *(N=128)*				
mode			7.9	0.02
median			29.8	0.4
mean	**3.7**	**109**	**58.1**	**1.4**
stdv	*2.0*	*60.2*	*96.9*	*5.4*
90th perct.	6.3	191	131	3.0
p-value	*0.077*	*0.090*	*0.029*	*>0.200*
Office P1 *(N=16)*				
mode				2.1
median				5.3
mean	**1.1**	**30.0**	**124**	**8.6**
stdv	*2.1*	*63.6*	*52.7*	*10.7*
90th perct.	2.0	56.9	154	18.6
p-value	*>0.200*	*>0.200*	*>0.200*	*>0.200*

Geol. Unit	Tot-S	AP	Sobek-NP	NPR
	%	kg $CaCO_3$/t		--
P2 *(N=20)*				
mode	3.8	109		
median	4.1	120		
mean	**4.3**	**125**	**80.8**	**0.8**
stdv	*1.2*	*38.4*	*37.1*	*0.4*
90th perct.	5.9	176	124	1.3
p-value	*>0.200*	*>0.200*	*>0.200*	*>0.200*
Silicified Cap *(N=6)*				
mode				0.007
median				0.19
mean	**4.3**	**122**	**24.7**	**1.0**
stdv	*2.7*	*80.3*	*17.2*	*5.0*
90th perct.	7.2	214	42.1	2.0
p-value	*>0.200*	*>0.200*	*>0.200*	*>0.200*
VSF *(N=180)*				
mode			49.8	0.4
median			70.9	0.9
mean	**2.9**	**81.7**	**84.7**	**1.3**
stdv	*1.4*	*40.5*	*55.2*	*1.4*
90th perct.	4.4	130	152	2.8
p-value	*>0.200*	*0.117*	*>0.200*	*>0.200*

Notes: total-S, AP, NP and NPR as in Table 4-5
Outliers were removed from raw data
p-value from (Kolmogorov-Smirnov) normality test
mode, mean and median of a log-normal distribution are different
mode, mean and median of a normal distribution are the same

Commonly, ABA characteristics are either normal or lognormal distributed, which are demonstrated by the absence and presence (respectively) of values for mode and median statistics. The frequency distribution of parameter-specific tests results may then be used for a probability analysis and an appropriate statistical analysis of the observed variation. The cumulative frequency distributions of NPR values are shown graphically in Figure 4-6 to Figure 4-9.

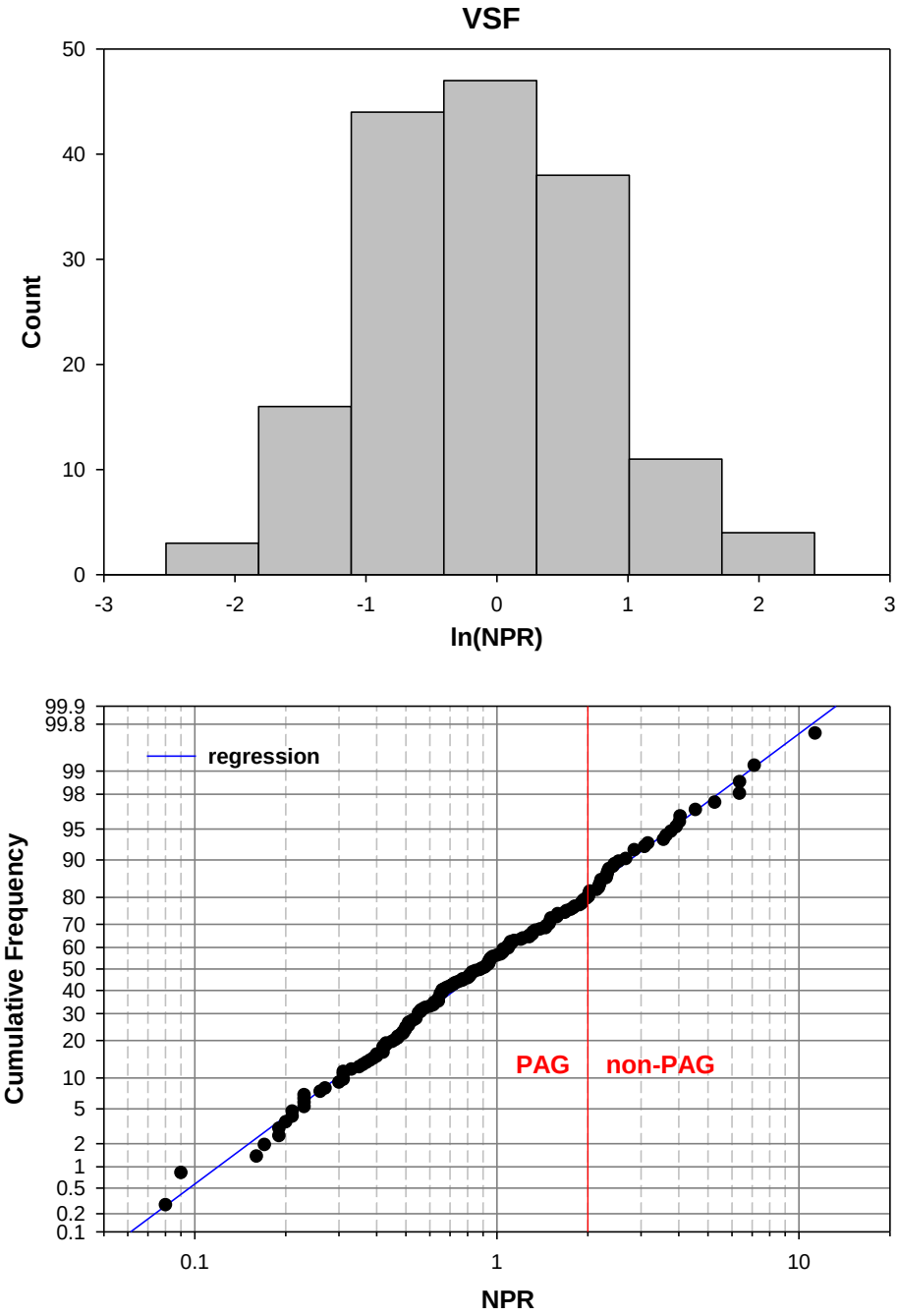


Figure 4-6. Frequency analysis of NPR values of waste rock from the VSF unit.

Figure 4-6 presents frequency data of waste rock samples from the VSF unit. The histogram data (in Figure 4-6 (top)) show that ln(NPR) values are normal distributed which implies that the NPR values are log-normally distributed. This was confirmed by the (Kolmogorov-Smirnov) normality test on the distribution of ln(NPR) with p-values greater than 0.2 (i.e., P>0.200).

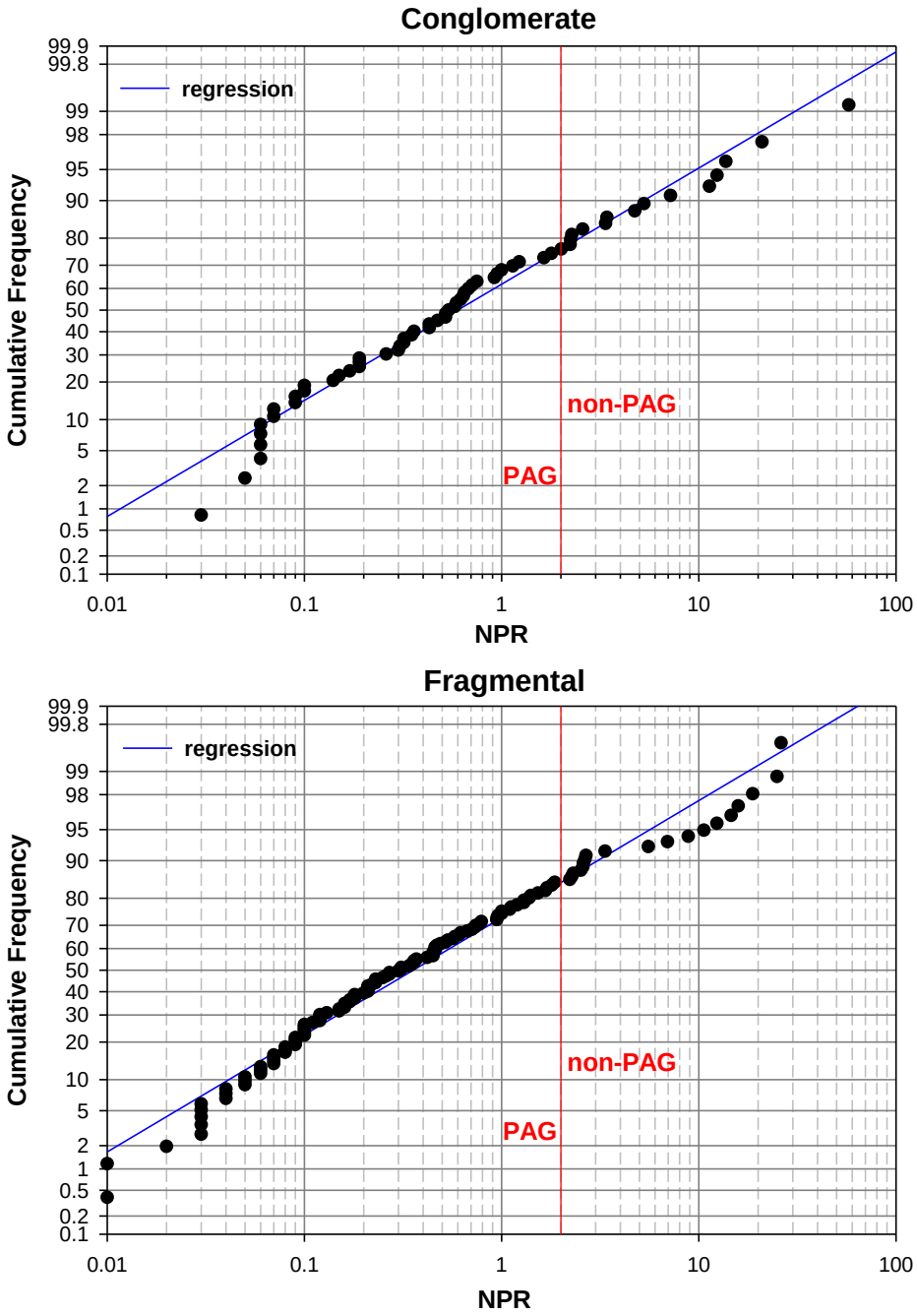


Figure 4-7. Frequency distributions of NPR values of waste rock from the Conglomerate and Fragmental units.

Using a logarithmic scale for the x-axis, a plot of the NPR values against their cumulative frequency in Figure 4-6 (bottom) shows a linear relationship if NPR values are log-normal distributed. The linear regression of the data (fractile diagram) represents both a frequency and probability distribution. According to the analyzed frequency distribution, 81.5% of VSF samples are PAG material (NPR≤2) and implies that a high percentage of the waste rock material from the VSF geological unit will be PAG.

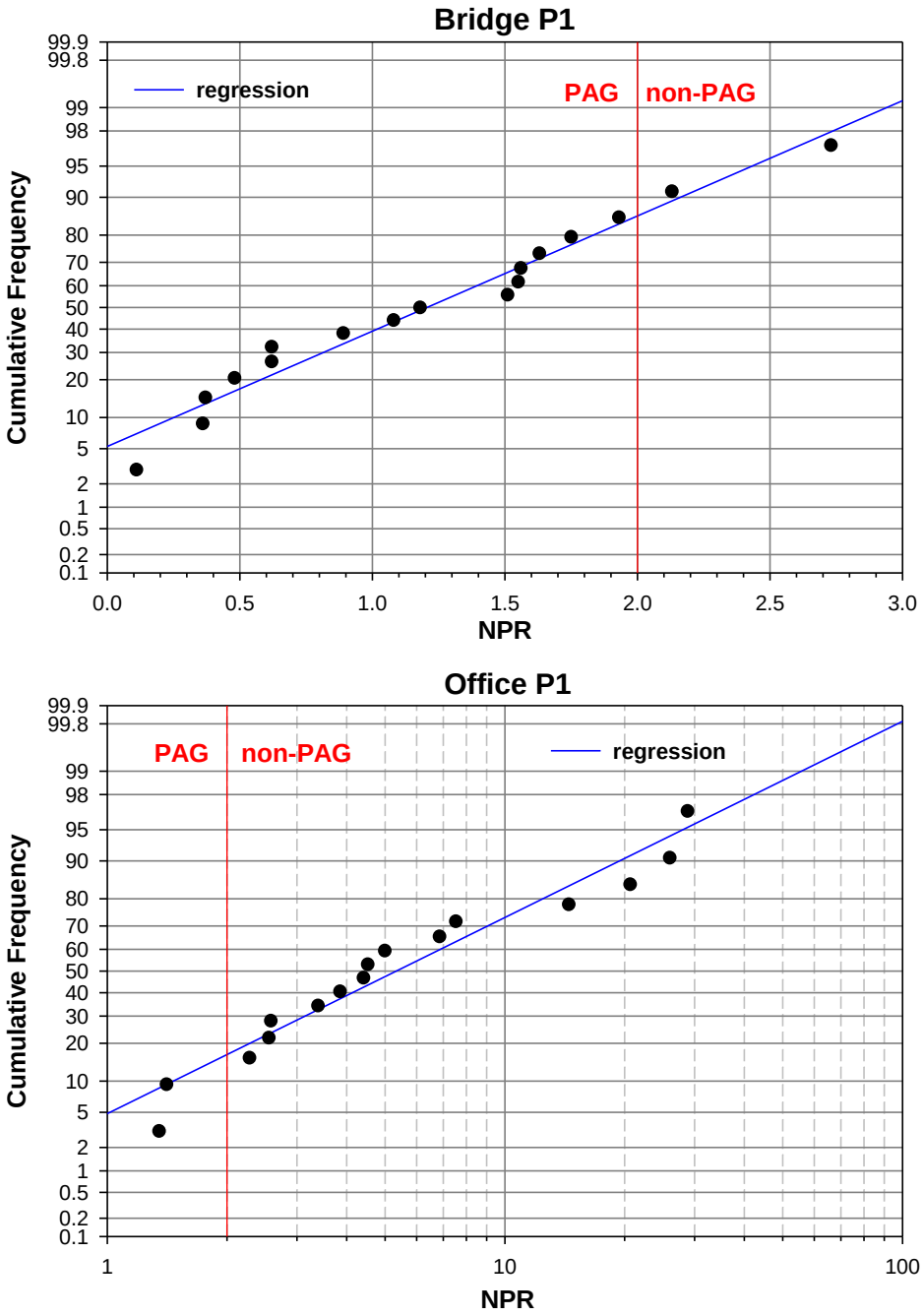


Figure 4-8. Frequency distributions of NPR values of waste rock from the Bridge P1 and Office P1 units.

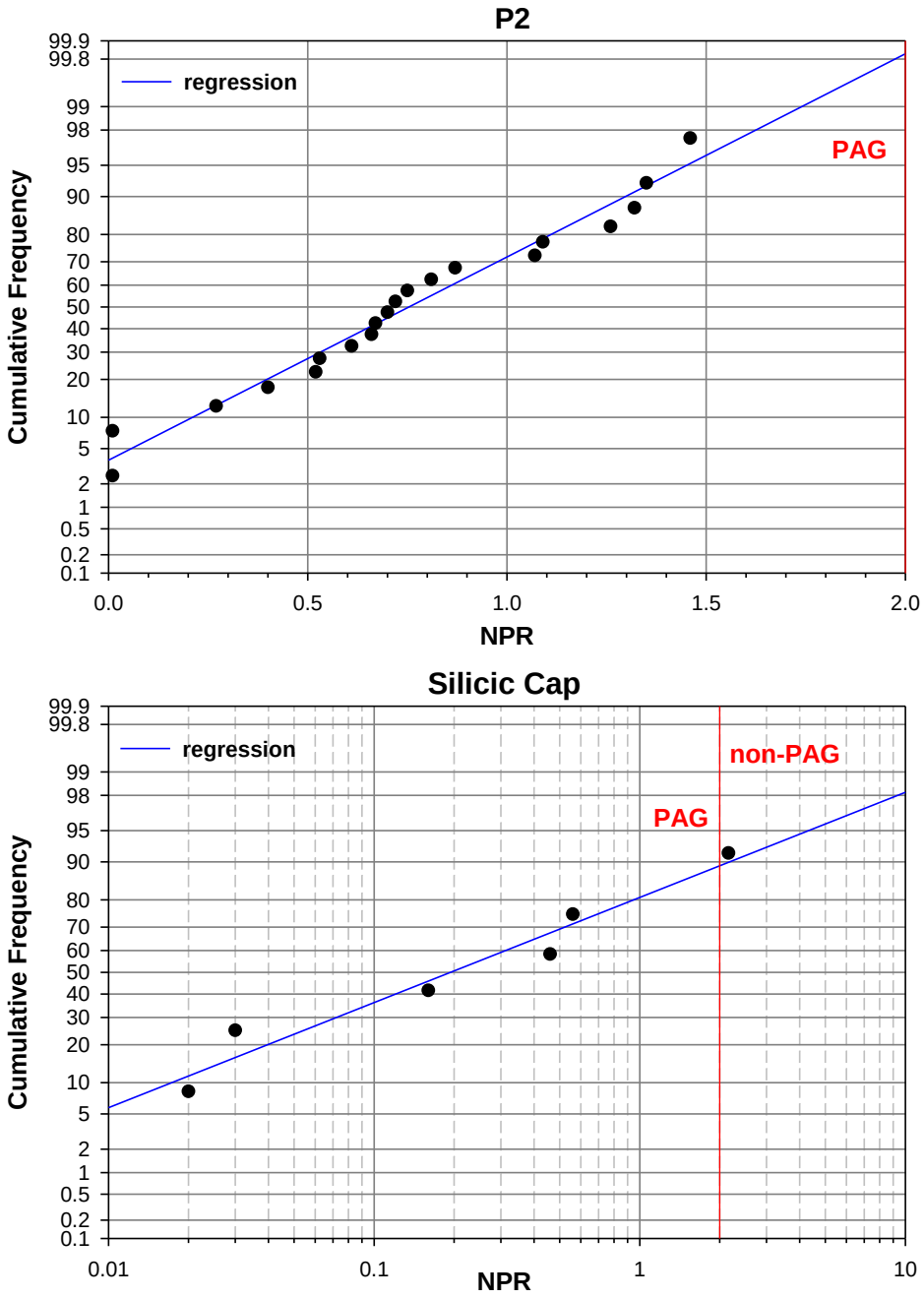


Figure 4-9. Frequency distributions of NPR values of waste rock from the P2 and Silicified Cap units.

Cumulative frequency distributions of NPR values of waste rock from the other units of the geological model are shown in Figure 4-7 to Figure 4-9. The figures show that geological model units present log-normal distributions and at least 76.5% of the waste rock is PAG material. The one exception is the Office P1, unit which only contains 16.0% PAG material and is normally distributed (Figure 4-8 (bottom)). The highest percentage of PAG material (99.8%) occurs in the P2 unit while the Silicified Cap, Bridge P1 and Fragmental units contain

respectively 90.0%, 89.6% and 85.0% PAG material. As mentioned earlier, the VSF and Conglomerate units contain respectively 81.5% and 76.5% PAG material.

From Table 4-6, total-S and AP values present normal distributions in all units except P2 (log-normal distributed) and all geological units shows a similar large variability in measured values. The highest average total-S and AP values were observed from P2 and Silicified Cap (4.3% (both) and 122 kg $CaCO_3$/t (P2) and 125 kg $CaCO_3$/t (Silicified Cap)). Office P1 has the lowest average total-S content and AP (1.1% and 30 $CaCO_3$/t, respectively).

Except for the NP values of the Silicified Cap, the populations of NP values of the different geological model units overlap considerably. The same applies to the populations of AP values of the different geological model units. This will make a distinction between the different geological model units based on their AP and NP values, difficult.

The observed variation in NPR values for each of the different geological model units is very high and average NPR values may not be useful to differentiate between the geological model units. Median and mode values of NPR for the different geological model units, shown in Table 4-6, suggest that only Office P1 is non-PAG material (NPR>2) and all other units would classify as PAG. This result corresponds with the earlier assessment of the high percentage PAG material in most geological model units.

4.3.2. Assessment by Logged Lithology Groups

ABA data is reorganized according to the nine general lithology groups (refer to Section 2.2.6) and a summary of this data is provided in Table 4-7. Scatterplots of lithology-specific NP versus AP values and carbonate NP versus Sobek NP for the nine lithology groups are shown in Appendix D2. Data pertaining to these graphs and ABA data are discussed below.

Paste pH values of the different lithology groups are generally circumneutral to alkaline and comparable to those of the geological model units. Similar to discussions in the previous section, carbonate minerals appear to constitute the majority of a sample's neutralizing potential.

The plots of NP against AP values in Appendix D2 show that most of the samples (66-92%) from each lithology group are PAG. Mafic volcanics (basalt and mafic dykes) are the one exception to this trend as only two (of 12) samples are characterized as PAG material.

Scatterplots of Carbonate NP (Ca-NP) versus Sobek NP (Appendix D2) demonstrate that those lithology groups containing several unique logged lithologies sometimes present higher Ca-NP values than Sobek NP values. This particular observation applies to the felsic volcanics (intermediate volcanics) and andesite. Although a few samples within the meta-sediments and porphyry group show higher Ca-NP values, many of these are within the 5% error range and are not considered significant.

Table 4-7. Summary of ABA data of the different lithology groups.

	Paste pH	Tot-S	SO_4-S	Sulp-S	Ins. S	AP	Sobek NP	$CaCO_3$ NP	Sobek NPR	$CaCO_3$ NPR
		%	%	%	%	← kg $CaCO_3$/t →				
Mafic volcanic		***(N=11)***								
min	7.54	0.17	0.005	0.14	0.005	4.4	10.4	0.80	0.10	0.08
median	8.92	0.35	0.005	0.35	0.03	10.9	153	128	12.4	8.4
max	9.41	5.0	0.03	4.8	0.25	149	253	207	57.7	46.1
Andesite		***(N=78)***								
min	5.70	0.19	0.005	0.17	0.005	5.3	0.60	0.40	0.01	0.00
median	8.46	3.9	0.01	3.6	0.19	112	46.4	37.1	0.45	0.40
max	9.58	9.6	0.04	8.9	1.0	278	256	224	7.1	14.9
Conglomerate		***(N=52)***								
min	3.64	0.55	0.005	0.52	0.005	16.3	-0.20	0.40	0.00	0.00
median	8.26	3.8	0.02	3.4	0.24	105	38.6	33.8	0.32	0.26
max	9.29	9.8	0.12	9.2	1.1	288	181	154	8.9	7.7
Felsic volcanic		***(N=109)***								
min	5.62	0.19	0.005	0.18	0.005	5.6	3.5	0.40	0.03	0.00
median	8.49	3.2	0.005	2.9	0.2	91.3	57.8	52.5	0.65	0.58
max	9.62	7.7	0.04	7.3	0.9	227	197	198	26.2	19.7
Granitoid		***(N=9)***								
min	8.10	1.8	0.005	1.5	0.00	47.2	39.0	34.2	0.30	0.27
median	8.71	3.4	0.005	3.3	0.16	104	73.7	69.2	0.70	0.64
max	9.24	5.0	0.08	4.3	0.84	133	371	382	7.2	7.4
Meta-sediments		***(N=81)***								
min	3.38	0.16	0.005	0.15	0.00	4.7	-1.7	0.40	-0.02	0.00
median	8.42	2.9	0.005	2.6	0.26	81.3	63.9	58.3	0.8	0.70
max	9.28	13.8	0.14	8.2	7.6	257	262	273	6.4	6.9
Porphyry		***(N=44)***								
min	6.80	0.18	0.005	0.13	0.03	4.1	7.0	2.5	0.03	0.01
median	8.73	2.3	0.005	2.1	0.25	65.3	109	91.3	1.5	1.4
max	9.33	6.6	0.03	6.5	0.53	202	174	176	28.8	25.0
Siliceous rock		***(N=31)***								
min	6.34	0.35	0.005	0.26	0.01	8.1	1.5	0.8	0.02	0.02
median	8.30	2.6	0.005	2.2	0.22	69.4	32.8	25.8	0.46	0.32
max	9.42	7.6	0.05	7.0	0.72	218	648	668	20.9	21.6
Metavolcanic		***(N=13)***								
min	7.24	0.14	0.005	0.12	0.005	3.8	6.2	0.40	0.06	0.01
median	8.00	3.5	0.005	3.2	0.11	99.1	14.9	8.3	0.37	0.18
max	9.24	6.2	0.04	6.5	0.59	204	69.9	66.7	2.4	1.4

Notes: TIC; Tot-S; Sulp-S; SO_4-S=; Ins-S; AP; Sobek-NP; $CaCO_3$-NP; NNP; NPR; $CaCO_3$-NPR as in Table 4-5.

These higher Ca-NP values may be attributed to the presence of iron carbonates (e.g., siderite [$FeCO_3$], ankerite [$CaFe(CO_3)_2$]), which are considered a net-zero neutralization mineral. As the Ca-NP is derived by calculation from the carbonate content, the latter may overestimate the real carbonate neutralization capacity in assemblages containing iron carbonates. Mineralogy data for waste rock samples (as discussed in Section 4.2) confirm the presence of small amounts of siderite in andesite (0.18%), intermediate volcanics (0.05%), plag-hbl porphyry (0.06%) and conglomerate (0.06%). Siderite was not detected in meta-sediment samples. In addition to siderite, a relatively high concentration (2.9%) of ankerite was found in porphyry samples. As such, it is likely that iron-carbonates may have contributed to the higher observed Ca-NP values relative to Sobek NP values in these lithologies.

In a follow-up to the previous section, these lithologies (andesite and felsic volcanics (i.e., sub-lithology: intermediate volcanics) are likely the main contributors to higher Ca-NP (relative to Sobek NP) values noted in Fragmental and VSF units. Specifically, of the 66 andesitic samples, 50% are labeled Fragmental and 33 % are VSF. Similarly, of the 45 intermediate volcanic samples, 56 % are Fragmental and 16% are VSF.

Sulphide is the main sulphur species (>90%), whereas sulphate-S and insoluble sulphur (<10%) make up relatively small components of the total sulphur content of most samples. The highest insoluble sulphur value was observed in meta-sediments (pelite; 7.6% Ins-S). High arsenic values (from total metal analyses, Section 4.4) suggest the insoluble sulphur value may be correlated to arsenopyrite. However, these high As values correspond to ~ 0.3 % As-bearing sulphide. As another possibility, insoluble sulphate percentages (e.g., barite, celestite, anglesite) were calculated by assuming all Ba, Sr, and Pb concentrations contribute to these mineral species. Results from these calculations show the high insoluble sulphur amount is not likely attributed to insoluble sulphates, as per percent sulphur values of less than 0.01 %. Although the origin of the high insoluble sulphur percentage is not known, compilation of all insoluble sulphur values indicates this sample is likely an outlier (95^{th} percentile=0.57 %) and suggests material with similar insoluble sulphur amounts are not likely to be encountered in Brucejack assemblages.

The data shown in Table 4-7 and the figures of Appendix D2 indicate there is considerable overlap between ABA parameter values from the nine lithological groups. The absence of a clear distinction between ABA parameters from most lithology groups makes it difficult to propose lithology-specific trends and/or waste segregation recommendations. However, these results, coupled with previous mineralogical investigations, do highlight lithology-specific trends for andesitic and felsic volcanic materials.

The mineralogy of andesitic samples from VSF and Fragmental geological model units were investigated using optical petrography and XRD analyses. Results from these analyses suggest andesites from the VSF unit have higher amounts of serpentine, which (in association with pyrite) may act as a localized neutralization source due to its high neutralization potential (15.1-87.6 kg CaCO3/t; Blowes et al., 2003; Jambor, 2003). Conversely, andesitic samples from the Fragmental unit have higher amounts of sericite, which typically replaces the

plagioclase proportion of the assemblage and therefore reduces its neutralization potential. These mineralogical observations can be supported or confirmed by ABA data from the andesite lithology. Specifically, andesite samples from the VSF unit have higher median and average NPR values (1.01 and 1.42, respectively), relative to those from the Fragmental unit (0.17 and 0.50, respectively).

The felsic volcanic lithology is comprised of several sub-lithologies (rhyolite, intermediate volcanics, dacite). However, the transition from felsic to intermediate volcanic material appears to relate to a decrease in acid-neutralizing mineral, and an increase in acid-generation mineral proportions (refer to Section 4.2.3). Median NPR values from felsic and intermediate volcanic samples are shown to be comparable (0.61 versus 0.56, respectively) and are not considered significantly different. However, scatterplots of Sobek NP and Ca-NP values of felsic and intermediate volcanic were close to 1:1 for the former lithology and extremely erratic for latter lithology (refer to Appendix D2). Therefore, the presence of iron-carbonates in intermediate volcanic samples (as discussed earlier) and a much higher silicate-buffering capacity (from Sobek NP > Ca-NP) suggests NPR values for intermediate volcanic material may be overestimated.

4.4. Total Elemental Content

Aqua-regia digests of 415 waste rock samples were analyzed by ICP-MS for elemental content. The waste rock samples were obtained from three mineralized zones (VOK, West Zone and Gossan Hill), all seven geological model lithologies and the nine generalized lithology groups. Results will be discussed by grouping results by geological model lithology (Section 4.4.1) and lithology groups (Section 4.4.2) and complete results can be found in Appendix C.

4.4.1. Assessment by Geological Model Units

The median concentrations of elements for each geological model unit were compared to averaged elemental concentrations reported for continental crust (used as an analog for non-mineralized rock) and are shown in Figure 4-10. Continental crust averages were reported from Ronov and Yaroshevsky (1972) and were used in historical ML/ARD studies by Price (2005) at Brucejack. Note, in scenarios whereby continental crust averages were presented as a range, the minimum value was applied for these calculations.

Several elements show significant (≥ 10x) enrichment (silver (Ag), arsenic (As), bismuth (Bi), antimony (Sb), selenium (Se) and sulphur (S)). Enrichment of other elements, that were specific to a geological unit, included:

- Cadmium (Cd), molybdenum (Mo), and lead (Pb): all units except Office P1
- Chromium (Cr), mercury (Hg): Silicified Cap
- Zinc (Zn): Silicified Cap, Fragmental, Conglomerate, Bridge P1.

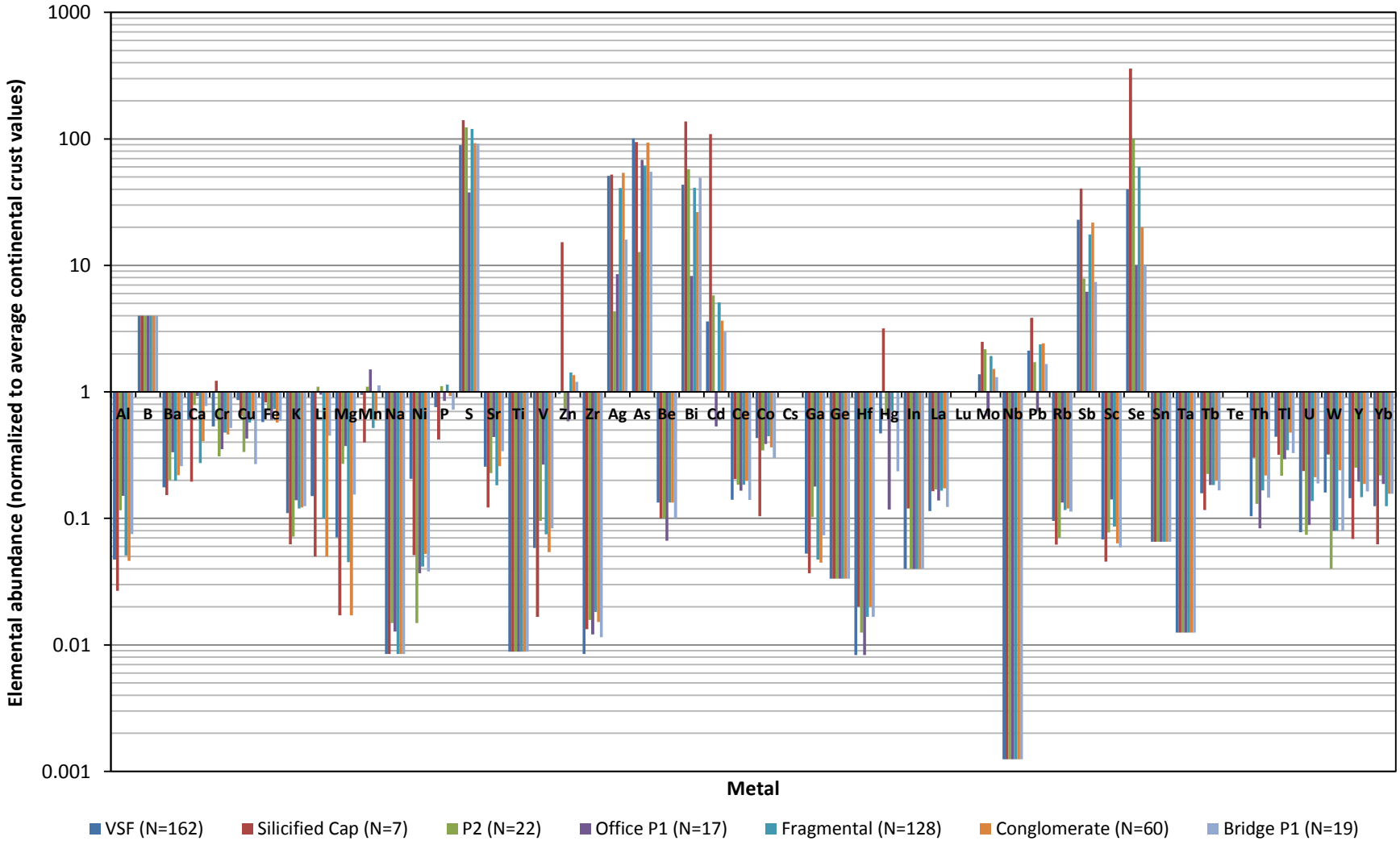


Figure 4-10. Waste rock elemental abundance (relative to continental crust) from each of the seven geological model units.

Among the elements that are enriched, the abundance of elements that form oxyanions is noticeable (e.g., Se, Sb, As, Mo). It should be mentioned that solid-phase enrichments are not, on their own, measures of the potential aqueous concentrations in drainage or a defined threat. However, these analyses highlight possible parameters of concern (POC), which will require kinetic testing to better evaluate their impact to the environment.

4.4.1.1. Statistical Analysis of Selected Metal Data

Similar to the approach described in Section 4.3.1.2, a frequency and statistical analysis was also performed on solid phase concentrations of five elements (Cu, Zn, As, Cd, and Pb). Most of these elements are highlighted as possible parameters of concern (POC) based on enriched values described above and presented in Figure 4-10. Notably, silver, mercury and selenium data were not included in the frequency analyses as too many results were below the detection limit. Copper and zinc were included as they were highlighted as POCs in previous work by Price (2005). Table 4-8 presents a statistical summary of measured solid phase metal concentrations, and median and mode values suggest several trends between metal concentrations and geological model units.

Results from Table 4-8 indicate that most elements present log-normal distributions and the following trends:

- Arsenic (As) concentrations are highest for the Conglomerate, Silicified Cap and VSF units and lowest for the P2 geological model unit. Arsenic concentrations of the remaining geological model units are similar.
- The Silicified Cap and Office P1 have the highest and lowest (respectively) cadmium concentrations, while all other units have similar concentrations.
- The highest copper concentrations are observed for the VSF unit and the lowest copper concentrations occur in the Bridge P1, Office P1 and P2 units. Similar copper concentrations are reported for the other remaining units.
- The highest lead concentrations occur in the Silicified Cap unit and the lowest concentrations are observed in the Office P1 unit. All other units have similar lead concentrations.
- Very high zinc concentrations are measured in the Silicified Cap unit, whereas Office P1 and P2 have the lowest Zn concentrations. The remaining units have comparable Zn concentrations

The preceding indicates that the highest metal concentrations occur in the Silicified Cap and occasionally in the VSF and Conglomerate units. The lowest metal concentrations are generally encountered in the Office P1 and P2 units. Metal concentrations in the other units are more variable, with intermediate concentrations.

Table 4-8. Statistical summary of select trace metal concentrations.

	Cu	Zn	As	Cd	Pb
	ppm	*ppm*	*ppm*	*ppm*	*ppm*
Bridge P1 *(N=19)*					
mode	10.3	28.7	23.3	0.09	11.1
median	16.0	85.8	86.5	0.41	29.4
mean	**19.9**	**148**	**167**	**0.88**	**47.9**
stdv	*14.7*	*209*	*275*	*1.68*	*61.7*
90th perct.	37.2	328	376	2.00	104
p-value	*0.039*	*>0.200*	*>0.200*	*>0.200*	*>0.200*
Conglomerate *(N=60.5)*					
mode		10.2	67.1	0.04	9.2
median		80.0	157	0.5	33.3
mean	**38.5**	**224**	**239**	**1.8**	**63.3**
stdv	*22.0*	*583*	*276*	*6.3*	*102*
90th perct.	71.3	502	509	4.0	142
p-value	*>0.200*	*>0.200*	*>0.200*	*>0.200*	*>0.200*
Fragmental *(N=128.5)*					
mode	13.7	32.9	24.6	0.08	8.6
median	33.1	88.5	96.5	0.6	29.8
mean	**51.4**	**145**	**191**	**1.7**	**55.4**
stdv	*61.0*	*189*	*327*	*4.3*	*86.8*
90th perct.	110	317	432	3.8	124
p-value	*>0.200*	*0.079*	*>0.200*	*>0.200*	*0.011*
Office P1 *(N=17)*					
mode		33.36	8.89	0.03	5.95
median		49.8	98.2	0.12	10.8
mean	**22.9**	**60.8**	**327**	**0.2**	**14.5**
stdv	*46.0*	*42.6*	*1035*	*0.4*	*13.1*
90th perct.	30.9	112	716	0.5	28.9
p-value	*>0.200*	*>0.200*	*>0.200*	*>0.200*	*>0.200*
P2 *(N=19.5)*					
mode	18.9	36.9	15.1	0.3	15.1
median	21.4	51.8	29.8	0.8	22.7
mean	**22.7**	**61.4**	**41.7**	**1.3**	**27.9**
stdv	*8.2*	*38.9*	*40.9*	*1.7*	*19.9*
90th perct.	33.5	109	85.3	2.8	51.7
p-value	*0.063*	*>0.200*	*0.018*	*>0.200*	*0.108*

	Cu	Zn	As	Cd	Pb
	ppm	*ppm*	*ppm*	*ppm*	*ppm*
Silicified Cap *(N=7)*					
mode	13.3	11.8	69.4	0.020	36.8
median	35.6	513	167	10.3	81.5
mean	**58.2**	**3389**	**259**	**233**	**121**
stdv	*75.5*	*22132*	*307*	*5275*	*134*
90th perct.	127	6189	555	253	256
p-value	*>0.200*	*>0.200*	*>0.200*	*>0.200*	*>0.200*
VSF *(N=163.5)*					
mode	27.5	14.4	77.8	0.08	14.8
median	52.2	66.4	175	0.6	31.7
mean	**71.9**	**143**	**263**	**1.7**	**46.4**
stdv	*68.2*	*272*	*295*	*4.4*	*49.5*
90th perct.	146	325	557	3.9	96.9
p-value	*>0.200*	*>0.200*	*0.104*	*0.126*	*0.186*

4.4.2. Assessment by Logged Lithology Groups

Total metal analyses for all samples were re-assessed by logged lithologies, for the purposes of identifying lithology-specific trends. Table 4-9 presents the minimum, median and maximum for the 9 lithology groupings classes. The previously mentioned elemental enrichments are re-assessed for lithology-specific trends, which are listed below:

- Arsenic (As) – all units, with the highest values from felsic volcanics, meta-volcanics and andesite
- Silver (Ag) – all units with the highest values from siliceous rocks and meta-volcanics;
- Antimony (Sb) – all units, with the highest values from siliceous rocks and conglomerate
- Cadmium (Cd) – all units except mafic volcanics, and the highest values from conglomerate, felsic volcanics and siliceous rocks;
- Lead (Pb) – all units except mafic volcanics and the highest values from granitoid and conglomerate
- Molybdenum (Mo) – all units except mafic volcanics and the highest values from siliceous rocks and conglomerate
- Zinc (Zn) – limited to andesite, mafic volcanics, conglomerate, felsic volcanics, siliceous rocks and granitoids, with the highest values observed in mafic volcanics and granitoids.

The listed trace metals with elevated concentrations are the same as those reported by Price (2005) for waste rock samples from the Brucejack (*formerly* Sulphurets) Project.

4.5. Shake Flask Extraction Tests

Soluble constituents of waste rock will be released when the waste rock comes into contact with water in Brucejack Lake. Shake flask extracts (SFE) provide an estimate of the soluble constituents of waste rock. Shake flask tests were conducted on 47 waste rock samples from the Brucejack project. The majority of the samples (41) were taken from drill cores during the 2011 and 2012 sampling program. The remaining samples are chip samples collected in the underground of the bulk sample program. The 47 samples represent 14 different (logged) lithologies and all seven geological model units. A summary of the SFE results, organized according to geological model units, is shown in Table 4-10. The complete list of SFE results is provided in Appendix E.

4.5.1. pH and Sulphate

Only two samples had low pH values (pH 5.84 and pH 6.36) and all other samples had pH values between 7.23 and 8.83. These results show a similar alkaline trend as those samples included in the Price (2005) study, but display a wider pH range. Specifically, previous SFE results indicated the majority of samples had pH values between 8.1 and 8.5.

Sulphate concentrations ranged between 3 mg/L and 223 mg/L, which is comparable to sulphate concentrations from the Price (2005) study (52-355 mg/L). No obvious trends could be detected in the sulphate concentrations from different geological units or from different lithologies.

4.5.2. Metals

Among the SFE results, only 3 samples showed significantly elevated metal concentrations (more than 1% of total metal content). These samples were COMP-4 (andesite-Fragmental: Cd & Mn), COMP 13-17 (conglomerate-Conglomerate: Co, Ni and Mn) and COMP 13-15 (plag-hbl porphyry-P2: Sb & As), shown in Appendix E. Considering the metal content of waste rock and the results of the SFE tests, arsenic, antimony, silver and cadmium may be of concern for metal leaching when waste rock is exposed to water.

Table 4-9. Summary of elemental composition of waste rock samples (bold median values are greater than continental crust averages)

Lithology	Al %	Ba ppm	Ca %	Cr ppm	Cu ppm	Fe %	K %	Mg %	Mn ppm	Ni ppm	Zn ppm	Ag ppm	As ppm	Bi ppm	Cd ppm	Co ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Se ppm	Sn ppm
Continental Crust	*8.23*	*425*	*4.15*	*102*	*60*	*5.63*	*2.085*	*2.33*	*950*	*84*	*70*	*0.075*	*1.8*	*0.0085*	*0.15*	*25*	*0.085*	*1.2*	*14*	*0.2*	*0.05*	*2.3*
Andesite (N=76)																						
Minimum	0.17	26.0	0.21	5.0	5.00	0.42	0.09	0.02	54.0	0.25	8.0	0.19	16.0	0.01	0.04	1.30	0.005	0.33	3.20	0.83	0.5	0.15
Median	0.44	75.0	1.87	47.0	42.2	4.19	0.26	0.12	545	6.45	**72.5**	**3.78**	**162**	**0.32**	**0.56**	12.7	0.05	**2.03**	**30.9**	**3.93**	**2.5**	0.15
Maximum	2.86	301	8.84	176	263	8.84	0.59	1.81	3190	95.0	1290	10.0	3060	2.15	13.5	38.7	0.97	81.4	193	66.7	40.0	1.40
Meta-sediments (N=84)																						
Minimum	0.06	14.0	0.02	14.0	3.70	0.19	0.04	0.005	17.0	0.25	0.5	0.13	9.00	0.04	0.02	0.90	0.005	0.35	6.50	0.45	0.5	0.15
Median	0.39	68.5	2.51	51.5	51.6	3.12	0.23	0.14	894	16.6	59.5	**3.83**	**156**	**0.45**	**0.55**	10.6	0.035	**2.18**	**33.5**	**4.07**	**2.0**	0.15
Maximum	1.68	337	11.0	247	297	7.99	0.40	2.02	4060	57.1	1930	10.0	734	2.30	62.8	33.9	4.61	17.7	382	67.4	33.0	0.80
Mafic volcanics (N=11)																						
Minimum	0.19	39.0	0.16	4.00	0.90	0.32	0.03	0.02	23.0	0.25	2.0	0.04	2.00	0.01	0.07	3.20	0.005	0.11	1.50	0.49	0.5	0.15
Median	2.48	98.0	**4.98**	21.0	24.9	4.80	0.20	1.46	**1910**	11.4	**129**	**0.61**	**29.0**	**0.04**	0.13	**26.8**	0.02	0.71	6.30	**1.77**	**0.5**	0.15
Maximum	9.05	310	9.01	187	161	8.39	0.49	9.27	10000	80.1	713	8.40	185	3.02	0.47	40.2	0.25	2.09	29.2	6.77	2.0	0.60
Conglomerate (N=52)																						
Minimum	0.07	25.0	0.10	14.0	0.25	0.84	0.04	0.01	22.0	0.25	5.0	0.18	10.0	0.03	0.06	0.60	0.005	0.45	5.30	0.63	0.5	0.15
Median	0.40	89.0	1.60	47.0	36.8	3.61	0.22	0.07	487	5.50	**91.0**	**4.01**	**144**	**0.38**	**1.18**	9.30	0.085	2.67	**42.0**	**5.20**	**3.0**	0.15
Maximum	1.27	397	6.42	157	364	8.93	0.37	1.34	3430	64.2	3430	10.0	1150	2.50	23.1	95.9	5.24	19.9	1300	39.9	21.0	2.20
Felsic Volcanics (N=87)																						
Minimum	0.13	44.0	0.08	8.00	0.25	0.66	0.07	0.005	28.0	0.25	7.0	0.21	3.00	0.01	0.01	0.80	0.005	0.08	2.00	0.33	0.5	0.15
Median	0.52	95.0	2.04	49.0	39.4	3.89	0.25	0.25	747	6.10	**91.0**	**2.83**	**170**	**0.33**	**0.73**	11.5	0.05	**1.44**	**28.2**	**3.56**	**2.0**	0.15
Maximum	3.19	684	8.11	236	277	9.11	0.48	1.64	3480	64.4	6290	10.0	1010	2.56	465	28.4	1.58	23.7	364	22.1	32.0	1.00
Meta Volcanics (N=13)																						
Minimum	0.25	51.0	0.18	11.0	5.70	0.18	0.17	0.01	44.0	0.25	9.0	0.70	23.0	0.06	0.12	0.40	0.01	0.45	9.20	0.63	0.5	0.15
Median	0.36	75.0	0.69	55.0	30.5	3.36	0.24	0.03	186	3.20	57.0	**6.03**	**168**	**0.22**	**0.60**	8.50	0.05	**1.27**	**30.2**	**4.34**	**2.0**	0.15
Maximum	1.66	119	2.90	119	299	5.78	0.31	1.25	1510	36.9	552	10.0	506	2.14	5.25	14.0	0.11	6.56	124	23.2	15.0	0.15
Porphyry (N=49)																						
Minimum	0.26	47.0	0.36	19.0	3.00	2.13	0.11	0.03	110	0.25	7.0	0.09	9.00	0.01	0.01	5.70	0.005	0.42	2.70	0.31	0.5	0.15
Median	0.95	113	3.70	39.0	17.9	3.38	0.24	0.63	**1310**	2.90	62.0	**0.61**	**45.0**	**0.16**	**0.47**	8.60	0.02	**1.73**	**20.4**	**1.35**	**0.5**	0.15
Maximum	1.98	530	6.77	85.0	61.1	6.18	0.34	1.22	3290	22.9	648	10.0	2290	2.29	5.97	14.1	0.94	11.5	140	50.0	13.0	2.60
Siliceous Rocks (N=33)																						
Minimum	0.05	19.0	0.07	18.0	5.60	0.37	0.04	0.005	38.0	0.25	5.0	0.88	30.0	0.04	0.03	0.50	0.005	0.45	10.1	1.51	0.5	0.15
Median	0.26	66.0	1.27	94.0	37.0	2.50	0.16	0.05	522	6.90	**73.0**	**5.50**	**135**	**0.37**	**0.71**	6.10	0.06	**2.81**	**41.9**	**5.46**	**2.0**	0.15
Maximum	0.92	145	15.0	252	763	6.65	0.31	0.66	8740	61.0	4580	10.0	455	4.16	48.0	61.5	2.93	18.9	351	118	33.0	1.90
Granitoid (N=10)																						
Minimum	0.08	59.0	1.62	26.0	6.30	0.74	0.05	0.03	394	0.25	9.0	0.12	17.0	0.06	0.09	7.50	0.01	0.57	6.90	0.73	0.5	0.15
Median	0.38	81.0	3.21	44.5	20.9	3.40	0.25	0.17	**1855**	3.90	**134**	**2.82**	**95.5**	**0.39**	**0.54**	9.65	0.07	**1.69**	**50.3**	**4.81**	**1.5**	0.15
Maximum	1.22	114	10.3	108	135	4.53	0.30	0.85	3270	10.8	7520	10.0	280	0.86	75.1	14.6	1.99	9.9	1200	46.7	6.0	0.15

Table 4-10. Summary of SFE results organized according to geological model units.

	Physical Parameters				Major Ions				Dissolved Metals														
Geological Model Unit	**pH**	**Conductivity uS/cm**	**Alkalinity mg CaCO3/L**	**Sulphate mg/L**	**Ca mg/L**	**Mg mg/L**	**K mg/L**	**Na mg/L**	**Al mg/L**	**Sb mg/L**	**As mg/L**	**Ba mg/L**	**Cd ug/L**	**Cu ug/L**	**Fe mg/L**	**Pb mg/L**	**Mn mg/L**	**Hg ug/L**	**Mo ug/L**	**Se ug/L**	**Ag ug/L**	**Sr mg/L**	**Zn mg/L**
Bridge P1 (N=4)																							
Minimum	7.8	105	49.7	9	1.54	0.11	2.92	8.50	0.141	0.004	0.0033	0.0097	0.0015	0.25	0.004	0.12	0.003	0.005	0.87	0.50	0.005	0.053	0.0005
Median	7.9	127	52.3	11	1.79	0.17	4.02	17.1	0.276	0.004	0.0049	0.0112	0.004	0.25	0.0065	**0.25**	0.006	0.005	1.84	2.13	0.005	0.056	0.0005
Maximum	8.0	136	54.8	24	7.09	1.63	10.1	25.6	0.406	0.009	0.0065	0.0224	0.010	1.00	0.008	**0.64**	0.044	0.01	2.22	5.01	0.01	0.287	0.0005
Conglomerate (N=8)																							
Minimum	6.4	112	3.29	3	1.80	0.15	4.28	2.16	0.021	0.002	0.0028	0.0059	0.009	0.25	0.0015	0.03	0.017	0.005	0.15	1.21	0.005	0.058	0.0005
Median	7.7	242	46.4	73	18.5	1.11	8.62	24.7	0.098	0.015	0.0072	0.0363	0.026	0.38	0.0028	**0.62**	0.111	0.005	1.90	2.80	0.03	0.528	0.0015
Maximum	8.2	535	75.5	223	54.2	12.5	11.9	45.4	0.322	0.027	0.0272	0.0957	5.05	9.10	0.94	**25.0**	1.93	0.01	5.25	31.1	0.16	2.160	**0.552**
Fragmental (N=15)																							
Minimum	5.8	98	1.45	8	1.65	0.09	2.43	1.59	0.019	0.001	0.0016	0.0034	0.0015	0.25	0.0015	0.01	0.003	0.005	0.1	0.95	0.005	0.023	0.0005
Median	7.7	221	49.9	45	14.1	0.93	6.06	9.63	0.103	0.008	0.0115	0.0373	0.009	0.80	0.003	**0.20**	0.081	0.005	1.48	2.66	0.01	0.428	0.002
Maximum	8.7	318	75.5	141	38.9	5.89	12.0	53.4	0.973	0.038	**0.252**	0.0907	21.9	5.90	1.45	**23.0**	2.61	0.01	7.45	6.88	0.13	0.791	**0.525**
VSF (N=14)																							
Minimum	7.5	119	34.2	9	0.75	0.06	1.88	1.19	0.024	0.006	0.0048	0.0073	0.0015	0.25	0.0015	0.01	0.002	0.005	0.41	0.55	0.005	0.040	0.0005
Median	7.8	171	60.3	37	9.34	0.92	7.21	18.4	0.134	0.013	0.0313	0.0210	0.007	0.65	0.0015	0.08	0.040	0.005	4.11	1.67	0.02	0.355	0.0005
Maximum	8.8	480	116	155	28.9	2.89	10.1	51.9	0.496	0.031	**0.210**	0.0802	0.272	1.50	0.018	**0.27**	0.173	0.01	28.2	28.1	0.06	0.815	0.002
Office P1	7.6	96	36.2	11	10.9	1.15	4.75	3.16	0.295	0.006	0.0091	0.0970	0.011	0.25	0.004	0.05	0.022	0.005	1.7	0.27	0.005	0.165	0.0005
Office P1	7.6	364	63.8	128	60.8	0.57	2.02	6.88	0.004	0.007	0.0045	0.0265	0.061	0.80	0.0015	0.03	1.38	0.17	26.7	1.42	0.09	0.691	0.001
P2	7.8	215	52.5	65	28.6	1.05	2.79	6.68	0.055	0.009	0.0275	0.0454	0.010	0.90	0.0015	0.09	0.089	0.01	0.41	6.73	0.005	1.01	0.0005
P2	7.8	173	46.8	46	6.50	0.36	2.14	25.8	0.329	0.020	**0.272**	0.0197	0.0015	0.50	0.0015	0.05	0.018	0.005	0.89	7.85	0.005	0.281	0.0005
P2/Frag.	7.6	361	40.1	148	17.8	1.18	4.88	49.2	0.097	0.013	0.0729	0.0368	0.016	0.25	0.0015	0.07	0.144	0.005	0.58	5.94	0.005	0.713	0.0005
Silicified Cap	7.4	184	24.4	62	18.6	0.98	1.66	9.90	0.006	0.004	0.0016	0.0293	11.6	0.50	0.0015	**0.25**	0.418	0.005	1.05	9.30	0.12	0.674	0.208

Notes: Values reported as < detection limit were included in statistics summary and calculations as 0.5*(detection limit); see appendix for all data including <detection limit values

4.6. Kinetic Tests

Kinetic tests involve humidity cells, subaqueous columns and field barrels. Weathering processes under optimal weathering conditions are investigated using humidity cells tests. Weathering processes under subaqueous or saturated conditions are investigated using subaqueous column experiments. Short- and long-term drainage chemistries are also assessed with field barrels. Their setup allows equilibrium-controlled secondary mineral reactions to be incorporated in estimated leach rates, in contrast to the humidity cell setup. Results obtained with these three kinetic tests will be discussed in the sections below.

4.6.1. Humidity Cells

An overview of the static test characteristics of waste rock materials (by geological model unit and lithology) used in the kinetic tests was described previously in Section 4.3 (ABA) and Section 4.4 (Total Elemental Content). The static test characteristics pertaining to the 36 humidity cells with waste rock are shown in Table 4-11 (ABA) and Table 4-12 (metals). The waste rock samples selected for 36 humidity cells represent the seven geological model units and 8 lithologies. The majority of the kinetic tests are conducted on samples from the Fragmental and VSF units, which constitute the major part (approximately 67%) of the waste rock that will be generated (refer to Section 3.1.1).

4.6.1.1. Temporal Variation of pH and SO_4 Concentration

Leachate samples are collected weekly from the different humidity cells and graphs showing temporal changes in pH and sulphate concentrations are presented in Appendix F1. All laboratory-measured (or raw) analytical data obtained from kinetic test leachates can be found in Appendix G. The graphs for each humidity cell are organized according to the logged lithology of the waste rock.

Most humidity cells show minor temporal changes in pH (Appendix F1), or within 1 pH unit, for the entire duration of the test. However, four humidity cells (HC 2, 4, 22 and 26) present leachate pH decreases of two units or more during the first 20 weeks. The andesite and felsic volcanics (intermediate volcanics) materials used in those humidity cells are all characterized by paste pH values less than 7, a very low NP (≤10 kg CaCO3/t) and a relative high total-S content (5.6-8.4%) (Table 4-11). The combination of a high acid potential (AP), low neutralization potential (NP) of these materials likely causes a rapid drop of the leachate pH.

Mineralogical tests conducted on Brucejack samples (refer to Section 4.2.5) support these observed kinetic test trends of andesitic material and intermediate volcanics. Firstly, Fragmental-andesite assemblages have a higher degree of sericite alteration (relative to VSF-andesite), which results in a lower overall neutralization potential. Secondly, mineralogical analyses suggest intermediate volcanic material tend to have higher and lower proportions of acid-generating and acid-neutralizing minerals, relative to those from felsic volcanic material.

Table 4-11. Model unit, lithology and ABA characteristics of the kinetic test materials.

HCT #	Model Unit	Lithology	Paste	TIC	Tot-S	SO_4-S	Sulp-S	AP	NP	NNP	NPR
			pH	%	%	%	%	kg $CaCO_3$/t			
Waste Rock - Humidity Cells											
1	Frag/VSF	Andesite (Gossan Hill)	8.40	0.62	4.98	0.01	4.26	133	54	-79	0.40
2	Fragmental	Andesite (Gossan Hill)	6.93	0.11	5.60	0.03	4.97	155	10	-146	0.06
3	VSF	Andesite (VOK)	9.23	1.76	2.14	<0.005	1.83	57	170	113	2.98
4	Fragmental	Andesite (WZ)	6.40	0.03	6.08	0.03	5.54	173	5	-168	0.03
5	Fragmental	Siliceous rocks (WZ)	8.61	1.12	1.24	<0.01	1.1	34	87	52	2.52
6	Frag/Cong	Granitoid (WZ)	8.60	3.05	3.22	<0.005	2.53	79	254	175	3.21
7	VSF	Meta-sediments (WZ)	9.00	0.64	2.70	<0.01	2.43	76	61	-15	0.80
8	Fragmental	Siliceous rocks (VOK)	8.74	0.16	2.18	<0.01	1.94	61	16	-45	0.27
9	Fragmental	Meta-volcanics (VOK)	8.54	0.05	3.78	<0.01	3.55	111	6	-105	0.06
10	VSF	Andesite (VOK)	7.90	0.27	9.64	0.03	8.91	278	23	-255	0.08
11	VSF	Felsic volcanics (VOK)	8.80	0.64	2.89	<0.01	2.88	90	59	-31	0.66
12	VSF	Meta-sediments (VOK)	8.96	0.90	2.42	<0.005	2.13	67	74	7	1.11
13	VSF	Meta-sediments (VOK)	8.90	0.69	2.64	<0.005	2.20	69	61	-8	0.89
14	VSF	Siliceous rocks (VOK)	8.42	0.30	3.37	<0.01	2.92	91	30	-62	0.33
15	VSF	Felsic volcanics (VOK)	7.78	0.10	4.01	0.01	3.46	108	11	-97	0.10
16	Fragmental	Felsic volcanics (WZ)	8.67	1.06	4.01	<0.01	3.86	121	90	-31	0.74
17	VSF	Felsic volcanics (VOK)	8.23	0.17	2.63	<0.01	2.26	71	16	-54	0.23
18	VSF	Conglomerate (VOK)	7.83	0.41	6.36	0.02	5.51	172	35	-137	0.20
19	Conglomerate	Porphyry (Gossan Hill)	8.38	1.12	2.88	<0.005	2.44	76	91	15	1.19
20	VSF	Meta-sediments (VOK)	8.05	1.02	4.10	0.01	3.87	121	97	-24	0.80
21	Conglomerate	Conglomerate (VOK)	7.99	0.22	3.80	0.02	3.64	114	24	-90	0.21
22	Silicified Cap	Felsic volcanics (VOK)	6.81	0.05	7.02	0.03	6.84	214	7	-207	0.03
23	P2	Conglomerate (WZ)	7.75	0.64	4.95	0.07	4.69	147	59	-88	0.40
24	Fragmental	Conglomerate (WZ)	8.50	0.94	4.34	0.02	4.32	135	101	-34	0.75
25	Conglomerate	Cong/Meta-sed. (WZ)	8.04	0.13	3.93	0.03	3.86	121	16	-104	0.14
26	Fragmental	Felsic volcanics (VOK)	6.86	0.03	8.39	0.05	8.21	257	8	-248	0.03
27	Office P1	Porphyry (VOK)	8.36	1.30	1.63	<0.005	1.42	44	117	73	2.64
28	Bridge P1	Porphyry (VOK)	8.78	1.10	2.63	0.01	2.29	72	103	31	1.44
29	VSF	Felsic volcanics (VOK)	8.28	0.51	5.15	0.03	4.70	147	51	-96	0.35
30	P2/Frag	Porphyry (WZ)	7.96	0.69	4.06	0.03	3.73	117	65	-51	0.56
31	Fragmental	Andesite (WZ)	7.94	0.22	2.81	0.02	2.64	83	21	-61	0.26
32	Fragmental	Siliceous rocks (WZ)	8.34	1.40	3.69	0.02	3.54	111	127	17	1.15
33	VSF	Siliceous rocks (VOK)	8.63	2.04	1.36	<0.005	1.23	38	178	139	4.62
34	P2	Porphyry (WZ)	8.19	0.99	3.53	0.02	3.05	95	103	8	1.08
35	Bridge P1	Porphyry (VOK)	8.88	1.31	1.98	<0.005	1.67	52	118	65	2.25
36	Silicified Cap	Siliceous rocks (VOK)	8.13	0.40	2.59	0.01	2.22	69	32	-37	0.46

Table 4-12. Model unit, lithology and metal concentration in the kinetic test materials.

HCT #	Model Unit	Lithology	Al	Ba	Cu	Fe	Zn	Ag	As	Cd	Hg	Pb	Se
			%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Waste Rock - Humidity Cells													
1	Frag/VSF	Andesite (Gossan Hill)	0.33	88	60	4.20	138	6.46	246	1.52	0.04	51	3
2	Fragmental	Andesite (Gossan Hill)	0.87	72	67	6.57	74	3.14	915	0.44	0.04	41	2
3	VSF	Andesite (VOK)	1.23	108	36	3.01	33	1.15	76	0.49	<0.01	27	9
4	Fragmental	Andesite (WZ)	0.31	57	34	5.51	282	5.47	126	2.18	0.35	76	4
5	Fragmental	Siliceous rocks (WZ)	0.10	37	18	1.19	162	>10	85	2.86	0.20	351	2
6	Frag/Cong	Granitoid (WZ)	0.17	114	96	2.56	4530	>10	96	54.9	1.58	769	4
7	VSF	Meta-sediments (WZ)	0.58	42	102	3.03	184	3.76	85	1.87	0.03	47	3
8	Fragmental	Siliceous rocks (VOK)	0.21	94	47	2.08	72	6.44	259	0.89	0.10	38	6
9	Fragmental	Meta-volcanics (VOK)	0.25	94	140	3.36	139	>10	506	1.67	0.07	38	15
10	VSF	Andesite (VOK)	0.27	37	33	8.84	1290	5.44	2350	13.5	0.25	172	40
11	VSF	Felsic volcanics (VOK)	0.43	75	53	5.75	145	>10	135	1.15	0.07	105	5
12	VSF	Meta-sediments (VOK)	0.65	64	41	2.85	58	4.73	219	0.26	0.08	20	<1
13	VSF	Meta-sediments (VOK)	0.48	78	70	2.85	88	3.70	224	0.58	0.09	40	1
14	VSF	Siliceous rocks (VOK)	0.24	53	28	3.23	5	1.76	104	0.05	0.04	10	3
15	VSF	Felsic volcanics (VOK)	0.39	77	33	3.69	81	2.85	394	2.48	0.06	22	6
16	Fragmental	Felsic volcanics (WZ)	0.36	84	57	4.02	104	2.96	118	0.86	0.04	38	3
17	VSF	Felsic volcanics (VOK)	0.32	94	24	2.78	600	6.46	360	6.12	0.14	77	<1
18	VSF	Conglomerate (VOK)	0.07	25	144	6.02	15	>10	1150	0.23	0.37	55	2
19	Conglomerate	Porphyry (Gossan Hill)	0.29	65	59	2.63	316	>10	206	2.18	0.83	102	<1
20	VSF	Meta-sediments (VOK)	0.33	115	19	3.31	76	1.47	57	1.29	0.02	60	1
21	Conglomerate	Conglomerate (VOK)	0.39	147	316	3.35	290	6.82	374	2.32	0.14	172	3
22	Silicified Cap	Felsic volcanics (VOK)	0.24	83	100	6.11	1630	4.48	215	44.9	0.40	54	32
23	P2	Conglomerate (WZ)	0.82	109	30	4.31	137	0.95	24	4.79	0.26	111	8
24	Fragmental	Conglomerate (WZ)	1.01	115	16	3.78	44	0.36	18	0.43	0.05	25	3
25	Conglomerate	Cong/Meta-sed. (WZ)	0.34	112	28	3.44	8	5.47	97	0.10	0.02	15	3
26	Fragmental	Felsic volcanics (VOK)	0.44	64	31	7.07	131	2.24	368	1.47	0.05	88	<1
27	Office P1	Porphyry (VOK)	1.05	142	29	3.36	24	2.79	211	0.07	0.09	9	<1
28	Bridge P1	Porphyry (VOK)	0.62	117	37	2.80	91	0.52	21	0.50	0.02	23	<1
29	VSF	Felsic volcanics (VOK)	0.68	114	45	4.66	129	4.95	572	1.81	0.13	52	18
30	P2/Frag	Porphyry (WZ)	1.03	138	21	3.89	52	1.73	22	0.85	0.07	28	6
31	Fragmental	Andesite (WZ)	0.37	100	16	2.59	60	5.12	98	0.53	0.04	40	1
32	Fragmental	Siliceous rocks (WZ)	0.29	82	74	3.22	76	>10	110	1.08	0.05	55	4
33	VSF	Siliceous rocks (VOK)	0.35	62	41	1.27	46	4.54	148	0.31	0.02	29	2
34	P2	Porphyry (WZ)	1.00	163	18	3.35	48	0.23	23	1.09	0.11	25	5
35	Bridge P1	Porphyry (VOK)	0.63	119	29	2.26	63	2.11	180	0.50	0.01	97	2
36	Silicified Cap	Siliceous rocks (VOK)	0.17	64	39	2.50	1070	6.30	76	16.4	0.27	39	10

Interestingly, there are several other humidity cells with low neutralization potentials (NP<20 kg $CaCO_3$/t) that do not exhibit a noticeable drop in leachate pH (e.g. humidity cells 9 (Fragmental-mafic volcanics) and 15 (VSF-felsic volcanics)). As such, it is possible that NP and AP

depletion rates also play a role in the observed differences between leachate pH trends from humidity cells with similar static test characteristics. This will be discussed in greater detail in the section on NP and AP depletion rates below (Section 4.6.1.2).

Most humidity cell temporal graphs (Appendix F1) show a similar trend of initial high sulphate concentrations that decline rapidly and reach (pseudo) steady-state concentrations for the remainder of the test. Similar to observations made for the pH trends, there is a difference in the magnitude of the sulphate concentration decline during the initial phase (up to cycle 6). For most humidity cells that maintain circumneutral or neutral pH conditions, initial sulphate concentrations are approximately 100 to 200 mg/L higher than those concentrations measured following flush periods (> cycle 6). However for several humidity cells, including those that showed a large decrease in pH, the observed drop in sulphate concentration during the initial flush is much more than 200 mg/L. The changes in pH and sulphate concentrations suggest that the weathering of some waste rock materials, particularly materials with a low NP, generate acidity and increase sulphate concentrations.

4.6.1.2. Depletion of NP and AP

Based on specific assumptions outlined in Table 18.1 of the 'Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials' (MEND, 2009), the depletion of the AP and NP during each humidity cell test was calculated. Calculation of the remaining AP assumed that the measured sulphate was produced by oxidation of sulphide. Estimation of the NP consumption assumed an open system (to atmosphere) around neutral pH. Open system NP consumption rates are calculated from the theoretical NP consumption plus the alkalinity production rate minus any acidity production rate. The theoretical NP consumption assumes the sulphate produced is equivalent to a hypothetical amount of $CaCO_3$ being consumed to balance the protons (or acidity) generated by sulphide oxidation.

The graphs that show the temporal changes of the estimated AP and NP of the waste rock materials used in the different humidity cells are presented in Appendix F2. After examination of the estimated depletion of NP, it appears that waste rock materials with the smallest NP (<10 kg $CaCO_3$/t) also appear to have the highest NP depletion rates. This applies to humidity cells 2, 4, 22 and 26 that also showed a rapid and steep decline in pH and sulphate concentration. The same applies to humidity cells 9, 15 and 25 although the rate of NP depletion appears to be smaller. Hence, based on the results from the humidity cell tests, the strongest decline of the NP is predicted for the humidity cells with andesite, felsic volcanics (intermediate volcanics), meta-volcanics, conglomerate and siliceous rocks. These waste rock materials used in the specific humidity cells are characterized by a low carbonate content, low NP and often a high AP which results in a relative high NP depletion rate.

These results will be re-investigated in Section 4.6.4, which will discuss lag-times or time to 'onset of acid generation' based on all kinetic test data.

4.6.1.3. Leachate Chemistry

Figure 4-11 presents minimum, average and maximum values of selected leachate concentrations (pH, sulphate, Al, Ag, As, Cd, Cu, Fe, Mo, Pb, and Zn) from humidity cells representing each geological model unit. Temporal graphs of selected metal concentrations from humidity cell tests can be found in Appendix F1, whereas weekly to bi-weekly leachate chemistries of all measured analytes can be found in Appendix G.

The Fragmental and Silicified Cap units have the lowest average pH because some of their humidity cells have already gone acidic (minimum pH values 3.02, 4.71). For all other geological model units the average pH is circumneutral. Average sulphate concentrations for the model units are generally low (<70 mg/L) while aluminum and iron concentrations are only high for the Fragmental (Al, Fe) and Silicified Cap (Fe) units.

Only to highlight possible POCs from humidity cell results, leachate concentrations are compared to CCME water quality guidelines. It is recognized that humidity cell tests are examples of optimal conditions for sulphide weathering and field conditions may present significantly different scenarios in regards to dilution, soluble mineral controls, dissolved oxygen, to name a few. However, the objective of using these guideline values is to provide a datum with which to compare concentrations between humidity cells and identify those parameters that, under optimal conditions, may pose a risk to drainage quality.

Average and maximum concentrations of lead, cadmium, and zinc are above CCME guidelines (Pb=0.001 mg/L; Cd=0.00017 mg/L; Zn=0.03 mg/L) for Fragmental and Silicified Cap humidity cells only. Average and maximum copper concentrations from Fragmental, Silicified Cap, and Bridge P1 humidity cells surpass CCME guidelines of 0.002 mg/L. Only maximum copper concentrations from VSF units surpass CCME guidelines. Arsenic and selenium often behave differently due to the increased mobility at neutral pH conditions. Arsenic concentrations are observed to be above CCME water quality guidelines (As=0.005 mg/L) from several geological model units including Fragmental, VSF, P2 and Office P1. Selenium concentrations are the highest in leachates from the P2 and Silicified Cap units, which also corresponds to ≥100x enrichment in these units relative to continental crust averages (Figure 4-10). Water quality guidelines for selenium are 0.001 mg/L, which indicates Fragmental, Silicified Cap, VSF, Conglomerate, and P2 surpass recommended concentrations.

Data displayed in Figure 4-11 show elevated metal concentrations are generally encountered in leachates from Fragmental and Silicified Cap humidity cells, or those humidity cells with high sulphide concentrations and low NP values. Elements with elevated concentrations above recommended guidelines (i.e., arsenic, cadmium, copper, lead, selenium and zinc) are comparable to those highlighted by enriched metal concentrations from static test samples (as shown in Figure 4-10) or were noted in the previous ML/ARD study (Price, 2005). The absence of clear trends between leachate concentrations and total elemental content (based on aqua-regia digests Table 4-12) suggests leachate chemistries are likely governed by mineral stability controls as opposed to relative modal abundance.

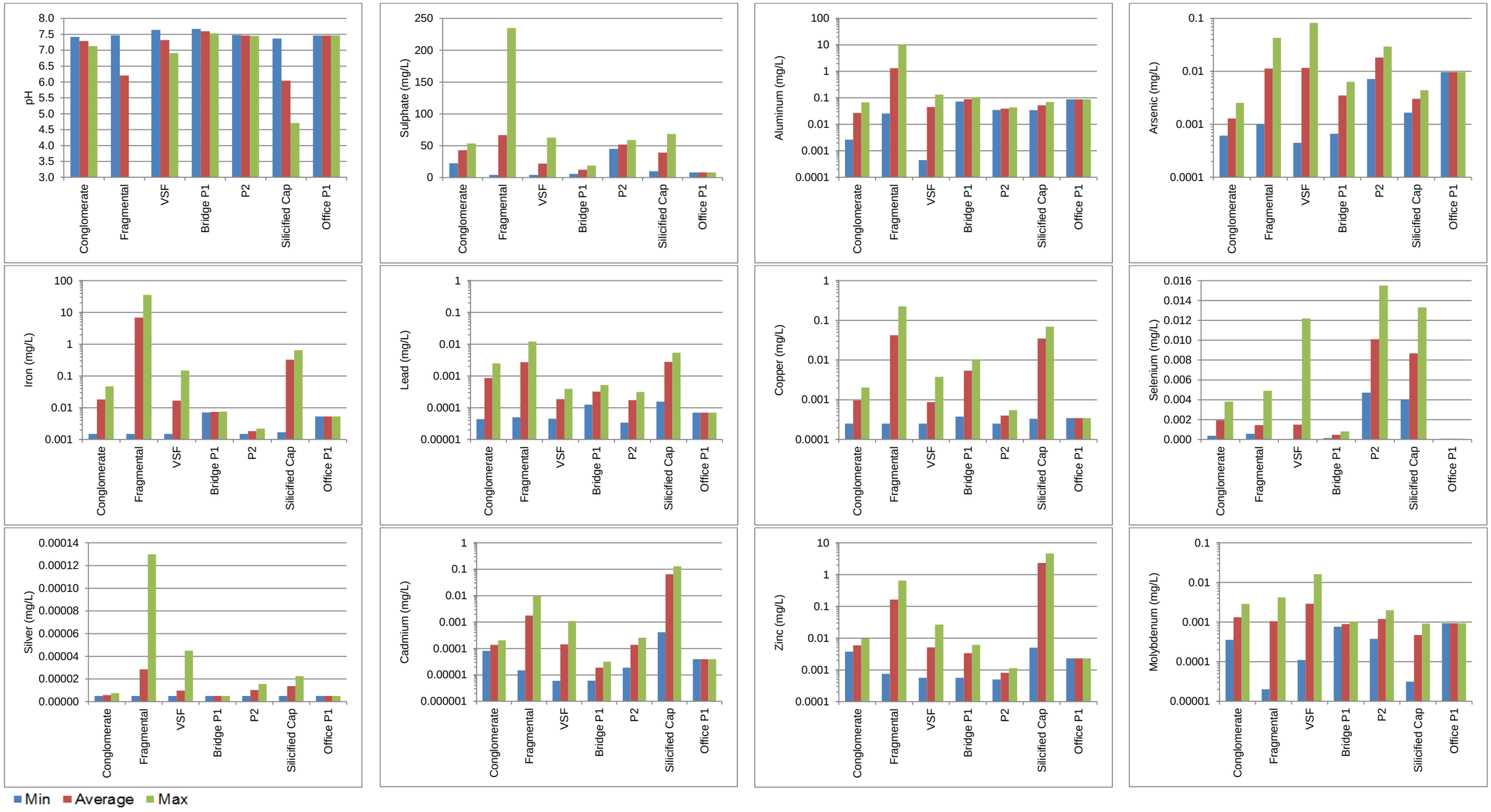


Figure 4-11. Minimum, average and maximum values of selected parameters of the dissolved leachate chemistry representing the different geological model units.

These trends will be discussed further in the following section and in Section 4.6.4. Highest final leaching rates for particular parameters are often observed for the same geological model units. Specifically, final leaching rates of iron, cadmium, copper, lead and zinc are highest in leachates from waste rock representing the Fragmental and Silicified Cap units, as shown in Table 4-13. Arsenic, antimony and selenium show a different leaching behavior. Highest final leaching rates of antimony and selenium occur in the humidity cell test with materials from the P2 and Silicified Cap units. For arsenic the highest final leaching rates are observed in tests with materials representing the Fragmental, VSF, P2 and Office P1 units.

Those metals with high leaching rates over the last weeks from Fragmental and Silicified Cap units are similarly higher (in comparison to other units) over the first five weeks. This trend is observed from Fe, Cd, Cu, Pb, Zn. For antimony the highest final initial rates are now observed in tests with materials representing the VSF and P2 units.

Observed leach rates of sulphate, aluminum, antimony, arsenic, molybdenum and selenium show a decreasing trend over the duration of the humidity cell test (initial rates > final rates). Conversely, an opposite trend is observed for several parameters (cadmium, cobalt, copper, iron, lead and zinc) whereby final leaching rates are similar or larger than the initial leaching rates.

From the preceding discussion of the data from the humidity cells it appears oxyanions (e.g. arsenic, selenium, antimony and molybdenum) generally show a different leach behavior relative to other elements (cadmium, copper, lead and zinc). This different behavior can likely be attributed to (1) a difference in chemical mobility and (2) a difference in retention mechanism. Specifically, oxyanion elements have an increased mobility at circumneutral to slightly alkaline pH conditions, whereas trace metals like cadmium, copper, lead and zinc form positively charged ions in solution and are more mobile under acidic pHs.

For the second behavior attribute, the source of most of these element is from dissolution of primary minerals (e.g., sulphides) or secondary minerals (e.g. sulphates, (hydr)oxides etc) that formed on mineral surfaces. Secondary minerals can also retain elements by ‘sorption’ which includes both adsorption and surface precipitation. Potential adsorbents among secondary minerals in the waste rock include ferrihydrite, gibbsite and calcite. Adsorption of elements as cations or anions will depend on pH, ionic strength, the adsorbent and the adsorbate. At circumneutral pHs, oxyanion adsorption (e.g. AsO_4^{3-}, SeO_4^{2-}) is limited compared to adsorption of trace metal cations (e.g., Cu^{2+}, Zn^{2+}) and vice versa at acidic pH conditions. This behavior is comparable to the higher leaching rates of oxyanions during the initial phase, relative to the final phase, and indicates circumneutral pHs will favor oxyanion mobility and release over that of the trace metals.

4.6.2. Subaqueous Columns

The weathering of material in a subaqueous environment was evaluated because proposed waste disposal strategies involve: 1) the disposal of waste rock under a water cap in Brucejack Lake; and, 2) disposal of the waste material in the underground workings, which will be flooded

Table 4-13. Final leaching rates (mg/kg/week) for selected parameters from humidity cell samples representing the different geological model units.

Block Model	Conglomerate			Fragmental			VSF			Bridge P1			P2			Silicified Cap			Office P1		
Sample Size	3			10			13			2			2			2			1		
Statistic	Min	Average	Max	Min	Average	Max	Min	Average	Max	Min	Average	Max	Min	Average	Max	Min	Average	Max	Min	Average	Max
Parameter																					
Acidity	1.8	2.2	2.6	1.9	17.2	80.0	1.7	2.3	2.7	1.7	1.9	2.0	2.1	2.2	2.2	1.9	4.6	7.3	1.9	1.9	1.9
Alkalinity	2.0	4.0	6.2	0.0	3.7	6.8	1.6	5.4	8.8	7.7	8.0	8.3	5.9	6.8	7.6	0.1	2.6	5.1	8.4	8.4	8.4
Sulphate	9.9	19.0	24.0	1.8	29.5	100.0	1.9	9.9	28.0	2.4	5.7	9.0	20.0	23.0	26.0	4.4	17.7	31.0	3.6	3.6	3.6
Aluminum	0.0012	0.0118	0.0300	0.0120	0.5922	4.7000	0.0002	0.0204	0.0590	0.0340	0.0405	0.0470	0.0160	0.0180	0.0200	0.0160	0.0235	0.0310	0.0400	0.0400	0.0400
Antimony	0.00026	0.00109	0.00180	0.00005	0.00110	0.00320	0.00035	0.00126	0.00290	0.00068	0.00070	0.00071	0.00320	0.00325	0.00330	0.00005	0.00142	0.00280	0.00096	0.00096	0.00096
Arsenic	0.0003	0.0006	0.0011	0.0005	0.0050	0.0190	0.0002	0.0053	0.0370	0.0003	0.0016	0.0028	0.0032	0.0081	0.0130	0.0008	0.0014	0.0020	0.0044	0.0044	0.0044
Cadmium	3.7E-05	6.1E-05	9.1E-05	6.7E-06	7.9E-04	4.4E-03	2.7E-06	6.4E-05	4.8E-04	2.7E-06	8.9E-06	1.5E-05	8.4E-06	5.9E-05	1.1E-04	1.9E-04	2.9E-02	5.8E-02	1.8E-05	1.8E-05	1.8E-05
Chromium	0.0001	0.0001	0.0001	0.0001	0.0002	0.0010	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Cobalt	0.00030	0.00103	0.00160	0.00003	0.00334	0.01200	0.00003	0.00071	0.00410	0.00004	0.00004	0.00004	0.00003	0.00004	0.00005	0.00005	0.00128	0.00250	0.00006	0.00006	0.00006
Copper	0.0001	0.0004	0.0009	0.0001	0.0191	0.1000	0.0001	0.0004	0.0017	0.0002	0.0025	0.0049	0.0001	0.0002	0.0003	0.0002	0.0156	0.0310	0.0002	0.0002	0.0002
Iron	0.0007	0.0081	0.0210	0.0007	3.1344	16.0000	0.0007	0.0076	0.0670	0.0031	0.0033	0.0034	0.0007	0.0008	0.0010	0.0008	0.1454	0.2900	0.0024	0.0024	0.0024
Lead	0.00002	0.00038	0.00110	0.00002	0.00121	0.00540	0.00002	0.00008	0.00018	0.00006	0.00014	0.00023	0.00002	0.00008	0.00014	0.00007	0.00124	0.00240	0.00003	0.00003	0.00003
Mercury	2.2E-06	3.0E-06	3.9E-06	2.2E-06	3.9E-06	9.0E-06	2.2E-06	2.5E-06	3.5E-06	2.5E-06	2.8E-06	3.0E-06	2.5E-06	2.5E-06	2.5E-06	2.2E-06	2.2E-06	2.2E-06	3.4E-06	3.4E-06	3.4E-06
Molybdenum	0.0002	0.0006	0.0013	8.9E-06	0.0005	0.0019	4.8E-05	0.0013	0.0078	0.0004	0.0004	0.0005	0.0002	0.0005	0.0009	1.4E-05	0.0002	0.0004	0.0004	0.0004	0.0004
Selenium	0.00017	0.00086	0.00170	0.00026	0.00066	0.00230	0.00003	0.00068	0.00550	0.00007	0.00021	0.00036	0.00210	0.00445	0.00680	0.00180	0.00390	0.00600	0.00003	0.00003	0.00003
Zinc	0.0017	0.0027	0.0043	0.0003	0.0736	0.2900	0.0003	0.0023	0.0120	0.0003	0.0016	0.0029	0.0002	0.0004	0.0005	0.0023	1.0512	2.1000	0.0010	0.0010	0.0010

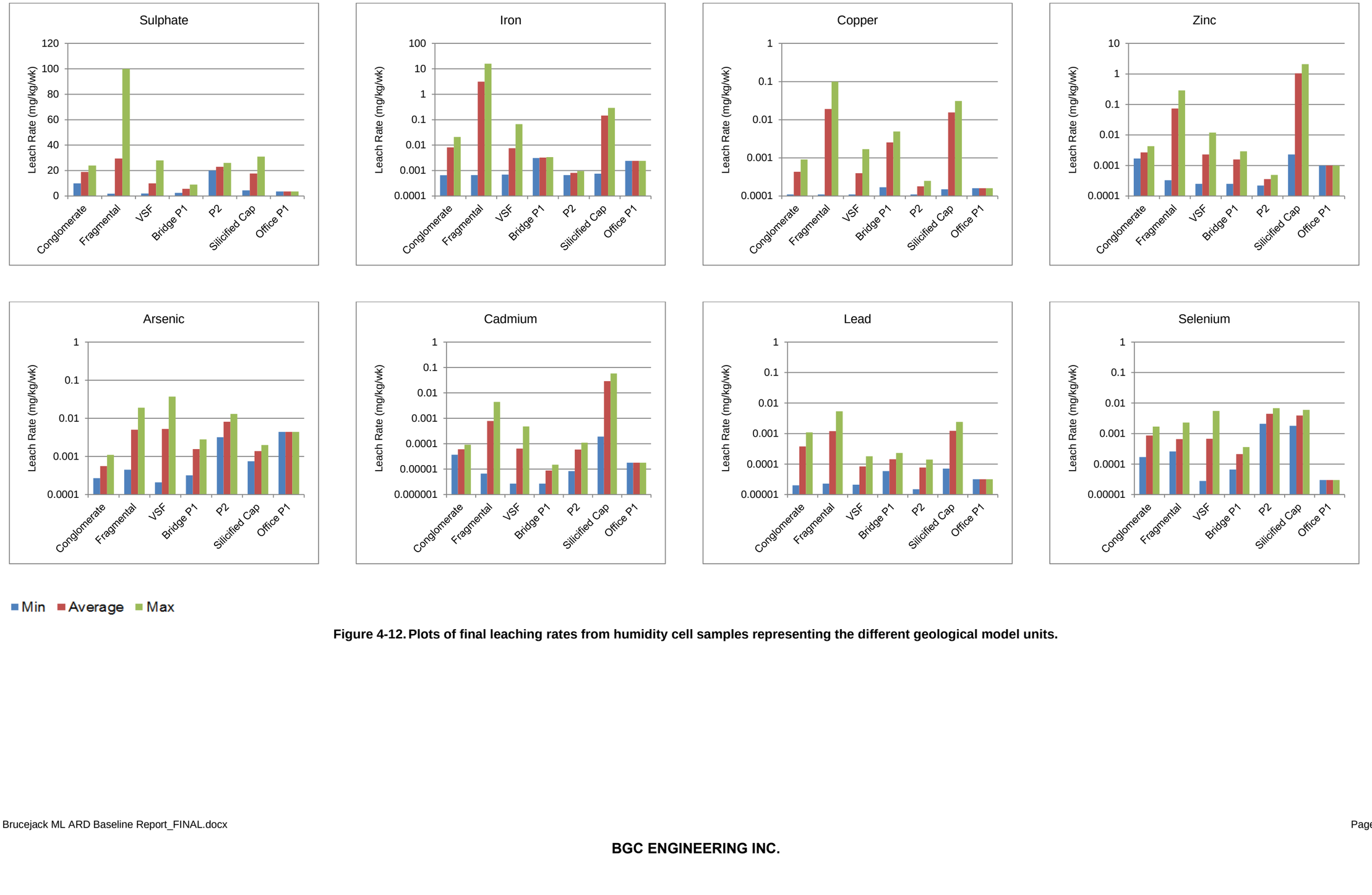


Figure 4-12. Plots of final leaching rates from humidity cell samples representing the different geological model units.

during closure. This approach is in accordance with the policy for ML/ARD at mine sites in British Columbia, where underwater storage is one of the recommended measures to prevent or reduce ML/ARD.

4.6.2.1. Static Test Characteristics

The weathering of waste rock during underwater storage was examined in subaqueous column experiments conducted in the laboratory (SGS). Waste rock from the two major geological model units were used in the subaqueous column experiments. Specifically, Fragmental (andesite) material was used in column 1 and VSF (felsic volcanics) material was used in column 2. The ABA characteristics and metal concentrations of these materials are presented in Table 4-14. The waste rock materials used in the column experiments are PAG materials, as per low NPR values (NPR= 0.11 and 0.31, for Column 1 and 2, respectively). The materials have a high sulphide-S content (6.1% and 3.8%), a low neutralization potential (NP= 20 and 37 kg $CaCO_3$/t) and high acidifying potential (AP= 120 and 190 kg $CaCO_3$/t). The mineralogy of these waste rock materials is dominated by quartz, muscovite (*i.e.* sericite, plagioclase, K-feldspar, chlorite (alteration) and pyrite with minor amounts of carbonates.

The static test characteristics of these columns are in agreement with results from the larger waste rock dataset, which indicated Fragmental and VSF material have high percent-PAG materials (85% and 81.5 %, refer to Section 4.3.1.2. Additionally, andesitic and felsic volcanic material typically show low median NPR values (0.45 and 0.66, respectively), as per high sulphide percentages and low carbonate (and lesser silicate) buffering mineral proportions.

4.6.2.2. Simulated Conditions

<u>Dissolved oxygen concentrations in subaqueous columns</u>

As explained earlier (Section 3.2.3.3), waste rock packed in a column was submerged by a 30 cm water layer and samples were periodically collected from the top (water cover) and the bottom (pore water) of the column. The objective of these columns is to simulate two possible closure conditions; subaqueous waste rock disposal in a lake or paste backfill in an underground mine. To monitor the conditions replicated in the laboratory, dissolved oxygen (DO) concentrations were collected from the top and bottom of the columns and results are shown in Figure 4-13. Dissolved oxygen concentrations in samples from the top of the columns fluctuate between 5-7 mg/L while samples from the bottom of the columns have DO concentrations of 1-3 mg/L.

High DO concentrations from the column top indicate oxygen invasion, and subsequent transport through a relative shallow water cover (30 cm), has occurred during the kinetic test. Three possible reasons for the oxygen (air) ingress include; the introduction of air during the frequent sampling and replacement of sampled water, deionized water (replacing sampled liquid volume) was not properly de-aerated, column and tubing materials may not be gas impermeable and allow for air leakages.

Table 4-14. Select ABA and metal characteristics of two waste rock-bearing subaqueous columns.

Col. #	Model Unit	Lithology	Paste pH	TIC	Tot-S	SO_4-S	Sulp-S	AP	NP	NNP	NPR	Al	Ba	Cu	Fe	Zn	Ag	As	Cd	Hg	Pb	Se
				%	%	%	%	kg $CaCO_3$/t				%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
1	Fragmental	Andesite (WZ/VOK)	7.93	0.20	6.78	0.02	6.09	190	20	-170	0.11	0.40	48	52	6.15	71	>10	163	0.97	0.12	50	5
2	VSF	Felsic volcanics (VOK)	8.50	0.46	4.40	<0.005	3.84	120	37	-83	0.31	0.44	75	52	4.55	38	3.90	503	0.68	0.02	67	5

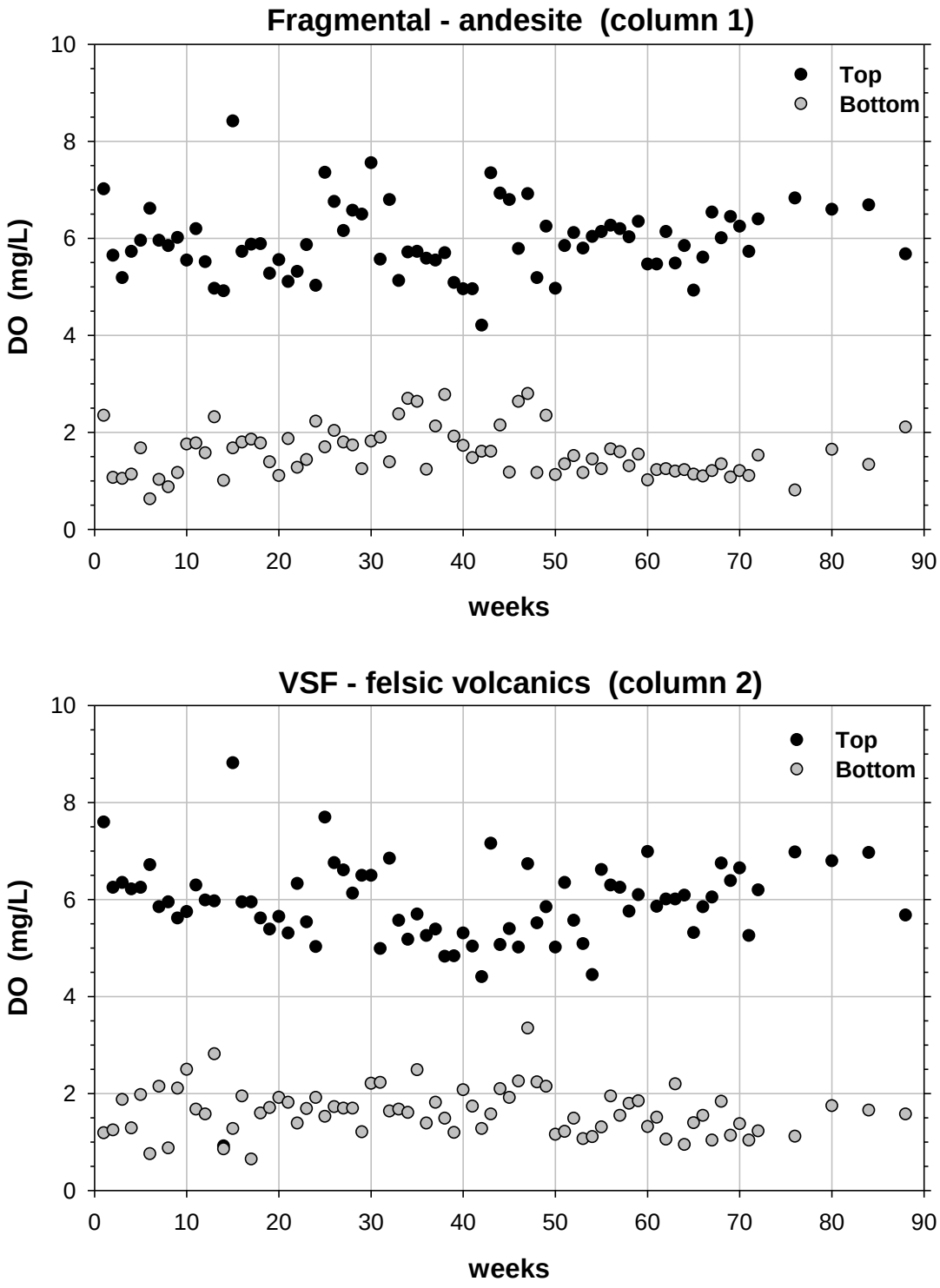


Figure 4-13. Dissolved oxygen (DO) concentrations from top and bottom column ports.

Apart from a minimum depth of water cover that effectively limits transport of dissolved oxygen, processes that consume dissolved oxygen are also important in limiting levels of dissolved oxygen. This is illustrated by the DO levels in the samples collected at the bottom of the column that represent the waste rock pore water. The observed decrease of the DO concentration in the pore water is due to a limited diffusion of dissolved oxygen and biogeochemical processes occurring within the pore-space that consume dissolved oxygen.

Although it is difficult to simulate a water cover of several meters on top of the waste rock in Brucejack Lake, a water cover of one meter already severely limits dissolved oxygen reaching the underlying waste rock. The measured moderate DO levels do not suggest anoxic (or suboxic) conditions were achieved in the laboratory with a 30 cm water cover. However, DO concentrations of 6.6 mg/L were measured at the bottom (64 m depth) of a seasonally stratified Brucejack Lake water column in early July 2012. The preceding suggests data received from these kinetic tests may require more time to determine the limitations of the column test procedure and how these lab conditions apply to field conditions. As such, column data in this report will only highlight the trends observed from subaqueous columns and will not describe leaching rates. A summary of the chemistry of leachate from the top and bottom of columns 1 and 2 is shown in Table 4-15.

4.6.2.1. Temporal Variation of pH and SO_4 Concentration

The temporal variation of pH and sulphate concentrations in samples collected at the top and bottom of each column is shown in Figure 4-14. For both columns the pH values of samples from the top and the bottom of the column vary between pH 7.5 and pH 8.0. The pH values of samples from the bottom seem to fluctuate less than those from the top and show a very gradual decline in pH values.

At the start of the columns tests there is a large difference between sulphate concentrations measured from the top and the bottom of the columns. Minimum sulphate concentration values reported in Table 4-15 reflect the initial concentrations of sulphate in leachate from the tops of both columns, whereas maximum values correspond to early sulphate concentrations from the bottom of the columns. However, measured sulphate values from both ports reach a similar concentration level after 20 weeks (40-50 mg/L (Column 1) and 20-30 mg/L (Column 2)). Interestingly, the observed initial flush of sulphate from pore waters is comparable to high flush concentrations from the humidity cells (Appendix F1) and likely represents the dissolution of weathering products accumulated on waste rock surfaces. The presence of similar sulphate concentrations in the water cover and pore water suggests equilibrium has been established in the exchange between the water cover and the pore water.

4.6.2.2. Depletion of NP and AP

Similar to the humidity cells (Section 4.6.1), the depletion of the AP and the NP during each column test was calculated using averages of sulphate concentrations from the top and bottom of the column. The NP consumption is calculated by assuming a closed system with a pH

above 6.5 (Table 18.1 in MEND, 2009). The results for the two column tests are shown in Figure 4-15. As noted earlier, the waste rock materials used in the columns are PAG materials with a large surplus of acidifying potential (NP-AP<-100).

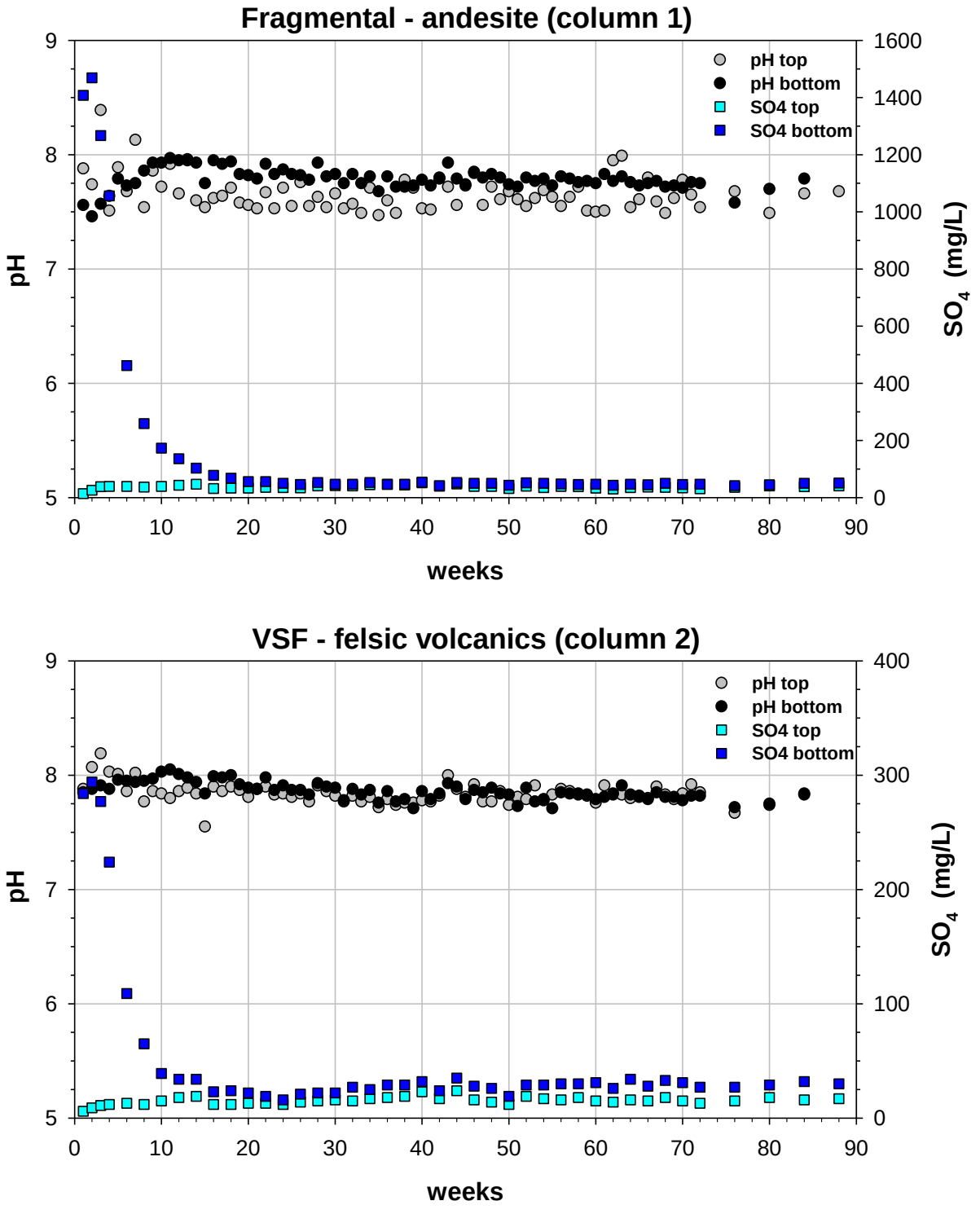


Figure 4-14. Temporal variation of pH and SO_4 concentration in subaqueous column tests.

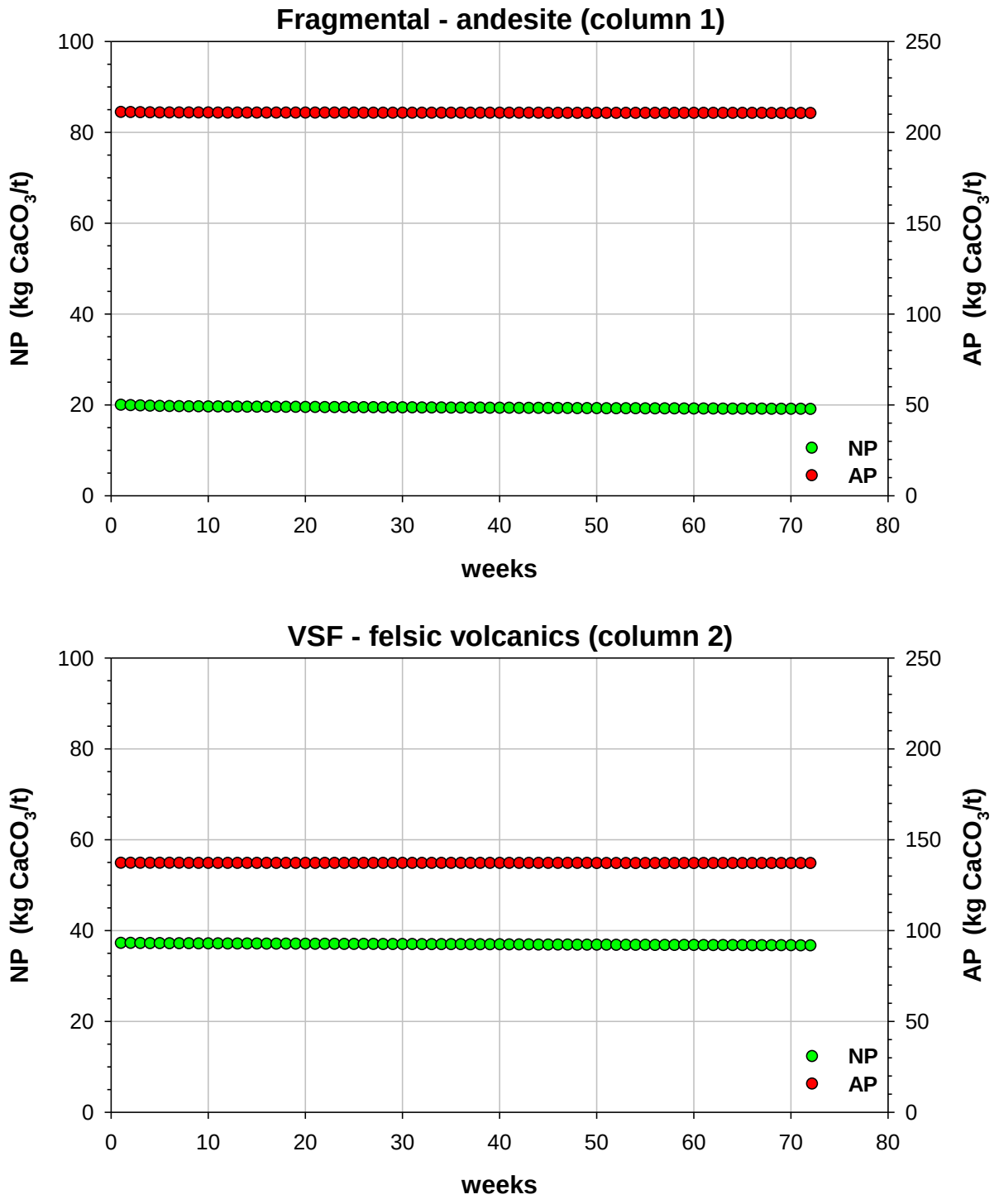


Figure 4-15. Estimated depletion of AP and NP in subaqueous column tests.

Table 4-15. Summary of the leachate chemistry of samples from the top and bottom of columns.

Fragmental – andesite (column 1)							
Chemical Parameters	**Units**	**Maximum**		**Minimum**		**Median**	
		Top	**Bottom**	**Top**	**Bottom**	**Top**	**Bottom**
Conductivity	uS/cm	205	2850	54	203	171	263
Acidity (to pH 8.3)	$CaCO_3$ mg/L	8.75	16.4	1.5	4.27	4.78	6.54
Sulphate	mg/L	52	1470	14	42	38	50
Total Alkalinity	$CaCO_3$ mg/L	57.9	281	11.3	63.9	47.7	90.5
Aluminum	mg/L	0.146	0.114	0.0027	0.0026	0.0227	0.0193
Antimony	ug/L	5.6	30.1	0.4	0.3	3.7	0.6
Arsenic	ug/L	87	114	0.8	10.5	8.7	75
Cadmium	ug/L	0.306	1.52	0.0015	0.0015	0.0265	0.003
Cobalt	ug/L	0.636	25.3	0.017	0.018	0.359	0.0645
Copper	ug/L	10	43	0.25	0.25	1.05	0.6
Iron	mg/L	0.034	1.42	0.0015	0.0015	0.0015	0.0365
Lead	ug/L	2.25	2.67	0.01	0.01	0.095	0.05
Mercury	ug/L	0.02	0.04	0.005	0.005	0.005	0.005
Molybdenum	ug/L	8.96	4.47	0.23	1.1	0.95	2.51
Selenium	ug/L	1.76	75.7	0.17	0.02	0.8	0.205
Silver	ug/L	0.12	0.22	0.005	0.005	0.005	0.005
Zinc	mg/L	0.009	0.058	0.001	0.0005	0.004	0.0025
VSF – felsic volcanics (column 2)							
Chemical Parameters	**Units**	**Maximum**		**Minimum**		**Median**	
		Top	**Bottom**	**Top**	**Bottom**	**Top**	**Bottom**
Conductivity	uS/cm	170	839	32	178	132	210
Acidity (to pH 8.3)	$CaCO_3$ mg/L	9.4	10.5	2.14	3.07	4.45	5.2
Sulphate	mg/L	24	294	6	16	15	29
Total Alkalinity	$CaCO_3$ mg/L	69.4	145	10.8	71.2	55.3	90.5
Aluminum	mg/L	0.128	0.129	0.0038	0.0067	0.028	0.025
Antimony	ug/L	17.6	13.7	3	1.3	11.4	2.6
Arsenic	ug/L	35	27.9	4	5.6	19	169
Cadmium	ug/L	0.343	0.162	0.0015	0.0015	0.007	0.0023
Cobalt	ug/L	3.25	5.21	0.018	0.028	0.393	0.0595
Copper	ug/L	4.8	2.4	0.25	0.25	0.7	0.6
Iron	mg/L	0.042	0.075	0.0015	0.0015	0.0015	0.010
Lead	ug/L	0.74	0.78	0.01	0.01	0.09	0.065
Mercury	ug/L	0.21	0.05	0.005	0.005	0.005	0.005
Molybdenum	ug/L	3.09	25.7	0.63	2.02	1.45	2.48
Selenium	ug/L	2.62	37.1	0.8	0.06	1.41	0.24
Silver	ug/L	0.11	0.27	0.005	0.005	0.005	0.005
Zinc	mg/L	0.019	0.011	0.0005	0.0005	0.003	0.002

The depletion rates of NP and AP are rather small. Estimated NP consumption rates based on data from the last 10 weeks, range from 2.6 mg $CaCO_3$/kg/week (column 2) to 5.4 mg $CaCO_3$/kg/week (column 1). These consumption rates are likely overestimated as sulphate concentrations continue to decrease very gradually.

4.6.3. Field Barrels

The climate at Brucejack is typical of northwestern BC, with annual temperature ranges of +20°C to -20°C. Annual precipitation within the region is between 1,600 mm to 2,000m and the majority of precipitation is received between September and February. Given the high elevation of the Brucejack area (≥ 1500 m), much of the precipitation falls as snow during winter months. Summers tend to be cool and wet, whereas winters are moderate in regards to temperatures and precipitation.

As was mentioned in Section 3.1.3.3, field barrel testing is incorporated in the kinetic testing program to estimate short- and long-term drainage chemistries primarily resulting from equilibrium-controlled secondary mineral reactions at site-specific conditions. The following will discuss the initial characteristics (static testing, mineralogy, particle size distribution (field barrel 7 and 8, only) of field barrel materials and leachate results from the first 1-2 years.

4.6.3.1. Initial Conditions

Representative samples were selected from field barrel material prior to final construction. These samples were submitted for static testing, mineralogy (XRD) and particle size distribution (PSD; only field barrels 7 and 8). The results are summarized in Table 4-16 along with other characteristics.

Eight field barrels were constructed containing five of the seven geological model units (i.e., Conglomerate, Fragmental, VSF, Bridge P1 and P2) and generally include materials identified as the more commonly logged lithologies. The majority of field barrel material originates from the Fragmental and VSF units, which represents the majority of waste rock material produced during proposed mine operations. Note that Silicified Cap material was not included in the test suite due to limited material availability and its small contribution to the total estimated waste rock. Office P1 was excluded due to its low % PAG.

All field barrel materials contained approximately 200 kg of material with an estimated porosity of 0.34-0.41 and similar total S percentages (Tot S = 3 %-5 %). Calculated NPR values characterize the eight field barrel materials as PAG materials (NPR < 2). The highest NPR value (1.11) occurs from Bridge P1 material (Field barrel 3), which has the highest paste pH value (9.18) and the highest carbonate NP value (101 kg $CaCO_3$/t). The lowest paste pH (7.66) occurred in the field barrel with the lowest NP (17 kg $CaCO_3$/t).

As was mentioned in Section 3.1.3.3, six field barrels were initiated in 2012, whereas field barrels 7 and 8 were constructed in 2013. The latter two field barrels differ from the first set as they contain waste rock excavated from the underground with particle size distributions closely related to waste rock that will be generated during the mine life.

Table 4-16. Material characteristics of field barrels.

Field Barrel		1	2	3	4	5	6	7	8
Start date		July 2012						July 2013	
Material characteristics									
Material	**Zone**	WZ	VOK	VOK	VOK	WZ	WZ	VOK	VOK
	Block Model	P2/ Fragmental	VSF	Bridge P1	VSF	Fragmental	Fragmental	Fragmental	Conglomerate
	Logged Lithology	Porphyry	Felsic Volcanics	Porphyry	Meta-sediments	Conglomerate	Andesite	Andesite	Conglomerate
Weight	kg	215	208	239	179	223	218	218	193
Volume[1]	(L)	135	137	137	122	127	119	127	111
Total porosity[2] **(θ_T)**	$m^3 \cdot m^{-3}$	0.37	0.41	0.37	0.39	0.36	0.34	0.32	0.36
Residual porosity[3] **(θ_r)**	$m^3 \cdot m^{-3}$	0.071	0.077	0.070	0.078	0.070	0.069	0.10	0.12
% passing 2 mm sieve[4]	%	--	--	--	--	--	--	10	13
Static test results[5]									
Paste pH	-	8.83	8.12	9.18	8.24	8.29	7.66	8.48	8.26
CaNP	kg CaCO3/t	65	32	101	82	63	14	78	55
Sobek NP	kg CaCO3/t	74	44	110	86	73	17	84	63
Total S	%	3.43	4.65	3.16	4.45	3.86	2.97	5.54	4.06
Sulphide-S	%	3.05	4.28	2.75	4.05	3.42	2.71	5.15	3.86
Insoluble S	%	0.37	0.36	0.41	0.4	0.43	0.24	0.37	0.17
SO_4-S	%	0.015	0.015	0.005	0.005	0.011	0.013	0.02	0.03
CaNPR	CaNP/TAP	0.61	0.22	1.02	0.59	0.52	0.15	0.45	0.43
Sobek NPR	Sobek NP/TAP	0.69	0.30	1.11	0.62	0.61	0.18	0.49	0.50
Al	%	1.1	0.54	0.55	0.33	0.77	0.33	0.91	0.53
Ag	ppm	1.8	4.3	0.50	1.5	0.52	5.0	4.7	4.3
As	ppm	33	437	15	60	14	87	401	378
Ba	ppm	96	95	113	87	102	81	79	93
Ca	%	2.8	1.7	3.8	3.4	2.6	0.73	3.6	2.5
Cd	ppm	1.5	2.2	0.47	1.1	1.3	0.61	1.5	1.4
Co	ppm	8.5	12	8.0	8.0	8.0	5.4	20	18
Cr	ppm	30	55	54	47	27	53	76	63
Cu	ppm	18	42	21	20	14	15	86	71
Fe	%	3.9	4.4	3.2	4.0	3.7	2.8	5.9	4.1
Hg	ppm	0.046	0.12	0.023	0.030	0.097	0.030	0.080	0.090
K	%	0.17	0.19	0.22	0.27	0.20	0.26	0.19	0.19
Mg	%	0.77	0.23	0.53	0.04	0.54	0.046	0.49	0.24
Mn	ppm	1125	645	1329	1043	747	181	1150	786
Mo	ppm	1.9	0.97	1.8	2.8	3.3	3.6	3.2	2.9
Na	%	0.038	0.045	0.040	0.020	0.049	0.010	0.040	0.030
Ni	ppm	0.25	6.4	2.8	0.88	0.83	0.94	10	10
Pb	ppm	22	43	23	68	26	33	57	50
Zn	ppm	127	166	88	80	85	66	176	377

Field Barrel		1	2	3	4	5	6	7	8
***Mineralogical composition*[6]**									
Silicates									
Quartz	SiO_2	35.5	45.8	24.4	31.9	33.8	49.2	32.6	33.5
Plagioclase	$NaAlSi_3O_8 – CaAl_2Si_2O_8$	2.8	--	23.0	5.8	--	--	--	--
Albite	$NaAlSi_3O_8$	--	--	--	--	--	--	8.9	8.1
K-feldspar	$KAlSi_3O_8$	9.1	--	5.2	1.1	0.5	1.8	--	--
Chlorite	$(Fe,(Mg,Mn)_5,Al)(Si_3Al)O_{10}(OH)$	--	--	--	--	--	--	7.5	4.7
Paragonite 2M1	$NaAl_2AlSi_3O_{10}(OH)_2$	0.6	--	--	--	--	--	--	--
Illite-Muscovite 2M1	$K_{0.65}Al_{2.0}(Al_{0.65}Si_{3.35}O_{10})(OH)_2$-$KAl_2AlSi_3O_{10}(OH)_2$	27.7	29.2	20.7	31.6	39.0	29.5	32.9	40.3
Illite-Muscovite 1M		4.8	9.4	5.7	13.0	8.7	11.7	--	--
Clinochlore	$(Mg,Fe^{2+})_5Al(Si_3Al)O_{10}(OH)_8$	4.8	2.1	3.1	--	2.6	--	--	--
Carbonates									
Calcite	$CaCO_3$	6.6	3.4	8.8	8.2	5.3	1.5	10.3	7.2
Dolomite	$CaMg(CO_3)_2$	--	0.2	2.2	--	2.1	0.5	--	--
Ankerite	$CaFe(CO_3)_2$	1.6	--	--	--		--	--	--
Siderite	$FeCO_3$	0.2	0.2	0.2	--	0.1	--	--	--
Phosphates, Oxides									
Hydroxylapatite	$Ca_5(PO_4)_3(OH)$	--	--	--	--	0.4	--	--	--
Anatase	TiO_2	--	0.6	--	0.2	0.3	0.4	--	--
Sulphides									
Pyrite	FeS_2	6.3	9.1	6.8	8.2	7.2	5.4	7.8	6.2

[1] Includes pore-space

[2] Total porosity is calculated by the following equation, using initial flush volumes (Cycle 1): $\theta_T = \left[\frac{(Vol_{add})}{Vol_{rock}}\right]$

[3] Residual porosity is estimated by using initial flush volumes (Cycle 1): $\theta_r = \left[\frac{(Vol_{add} - Vol_{extr})}{Vol_{add}}\right](\theta_T)$

[4] Fine-grained material (i.e,. < 2 mm) was removed from broken core and was not placed in field barrels 1 – 6. Material used in Field Barrel 7 and 8 was submitted for Particle Size distribution (PSD) testing and 10% and 13% of the total material volume is finer than 2 mm (diameter).

[5] Field barrels 1 – 6 contain samples from multiple sources; therefore static test results presented above reflect a weighted average of individual sample results.

[6] Analyses conducted by SGS Canada Inc (Vancouver) and University of British Columbia (Vancouver, BC).

Their PSD curves, shown in Figure 4-16, are similar and indicate materials are relatively coarse or rock-like (10% and 13% material < 2 mm; Field barrel 7 and 8, respectively).

The mineralogy of field barrel materials was also comparable, with quartz, illite/muscovite (i.e., sericite; refer to Section 4.2.3), and lesser K-feldspar and calcite. Field barrel 3 was the only material to present high proportions of plagioclase, which is attributed to its rock assemblage (plagioclase–hornblende porphyry). Pyrite is the main acid-generating mineral, at proportions of 5-9 %. Siderite was detected in low amounts (< 0.2 %) in four field barrels (field barrel 1-3, 5) and ankerite was detected in field barrel 1 (only) at 1.6%.

4.6.3.2. Leachate Chemistry

Leachate samples taken from field barrels are analyzed for general parameters, nutrients and total/dissolved metals. The temporal variation of selected parameters of the leachate chemistry from all eight field barrels is shown in Figure 4-17. The complete data sets for each field barrel can be found in Appendix H.

Measured pH values from field barrels are neutral to alkaline and generally between pH 7.5 to 9.0. The lowest pH (7.23) was measured in leachate from field barrel #6. Most field barrels show relatively stable pH values. The two field barrels that contain ‘real’ waste rock, from the underground workings of the bulk sample project, show up to 10x higher dissolved sulphate nitrate and nitrite concentrations in leachates than the field barrels containing drill core (Field barrel 1 – 6). The higher concentrations of nitrogen-species, observed in the ‘real’ waste rock leachates (Field barrel 7 and 8) are attributed to leaching of blasting residues.

Particle size distribution results indicate that Field barrels 7 and 8 contain a larger fine fraction than the other field barrels. As was shown in Figure 4-16, these field barrels contain 10% and 13% material (Field barrel 7 and 8, respectively) with a particle size less than 2 mm (Appendix H). Material less than 2 mm is within the sand-silt-clay fraction size and is the most reactive material (Strömberg and Banwart, 1999). As such, the higher sulphate concentrations in leachate from these field barrels suggest ‘real’ waste rock is considerably more reactive than the drill core and likely more representative of the actual conditions.

The concentrations of Cu, Cd and Zn show increasing trends and are also considered POC’s for waste rock drainage in unsaturated conditions. The copper data from the barrels show a 10x increase in concentration per year (approximately every 4 cycles) and all field barrels show concentrations above CCME guidelines (0.002 mg/L). Similarly, cadmium values from all barrels are at or above CCME guidelines (1.7×10^{-6} – 1.6×10^{-4} mg/L, hardness dependent) and show a 5-10x increase over the duration of eight cycles. Zinc concentrations gradually increase with time from field barrel 6-8, with values remaining below CCME guideline limits of 0.03 mg/L.

Of those elements with either stable or decreasing trends, the oxyanions As and Se present concentrations above maximum allowable (CCME) guidelines (0.005 mg/L and 0.001 mg/L, respectively) and are also highlighted as parameters of concern (POCs).

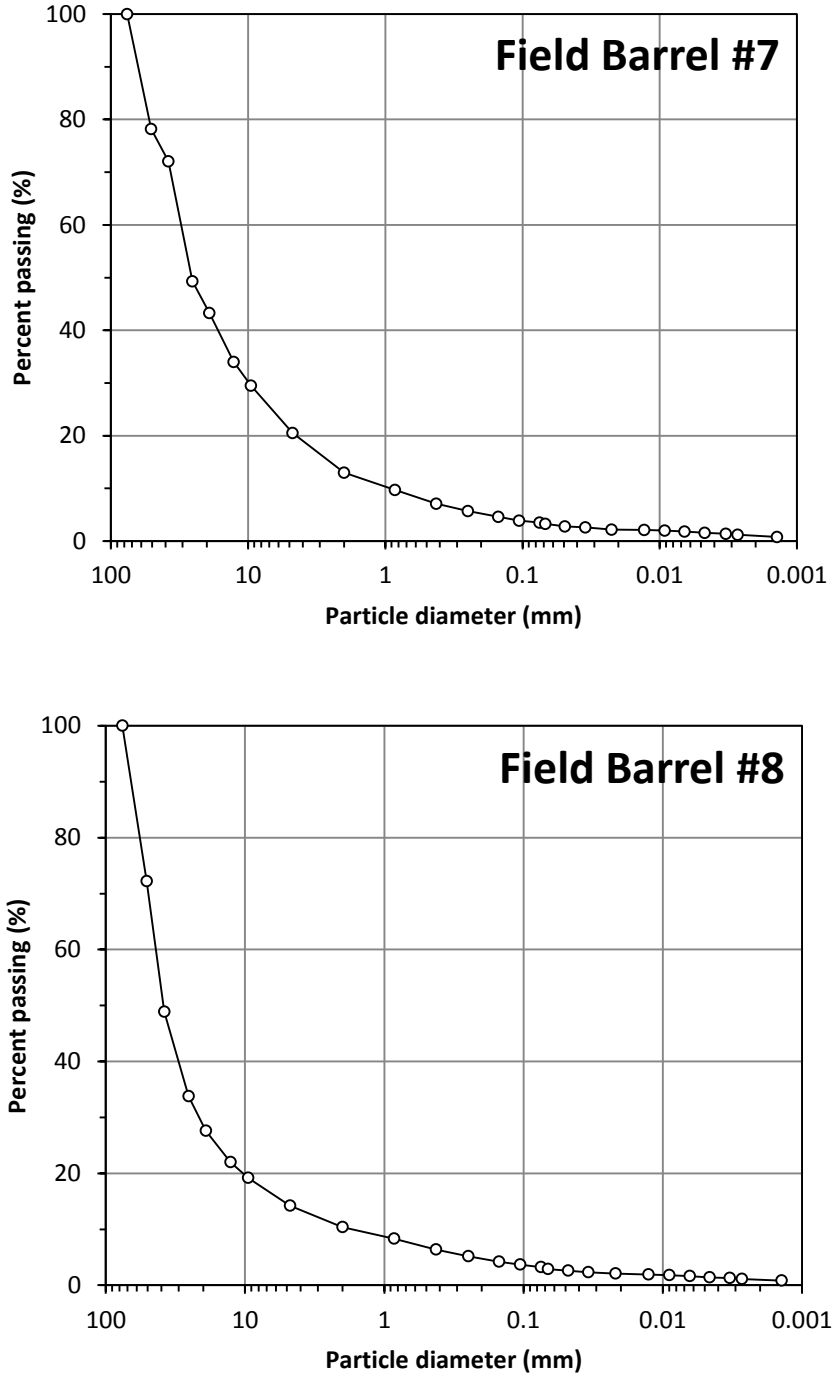
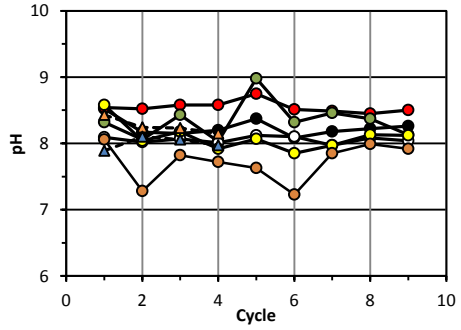
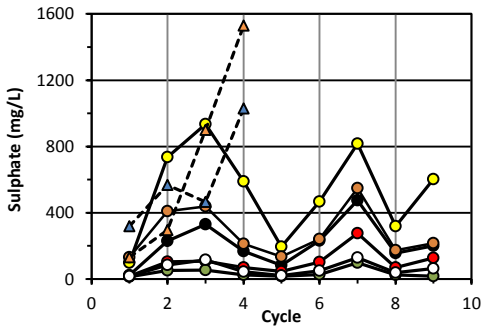
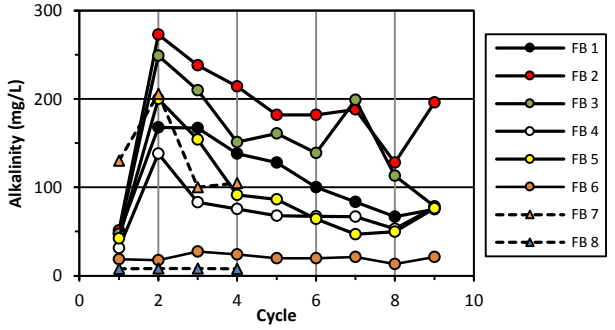
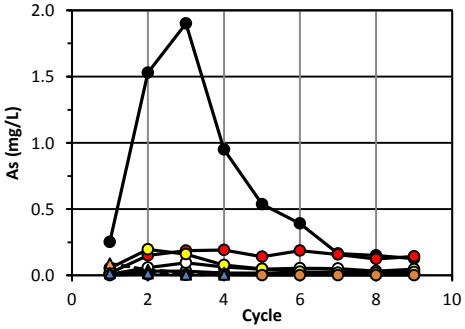


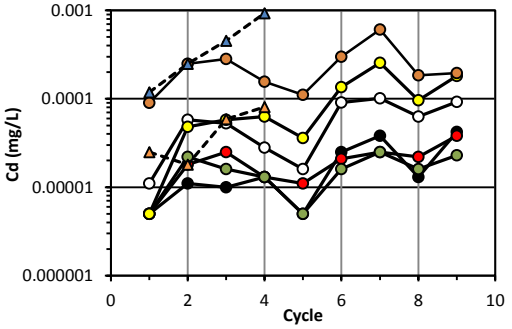
Figure 4-16. Particle size distribution curves of field barrel 7 (top) and 8 (bottom) waste rock.

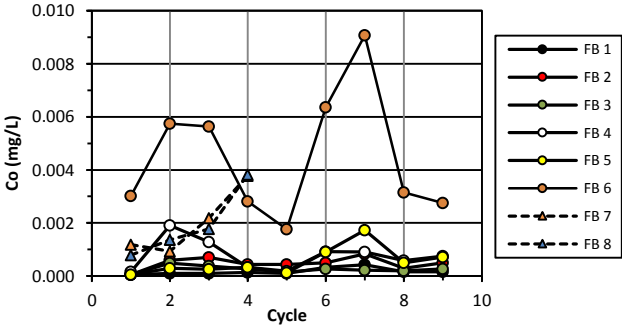

pH
Cycle

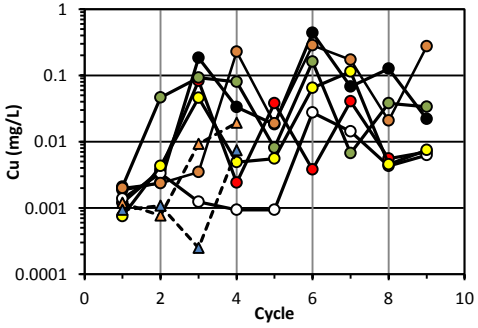

Sulphate (mg/L)
Cycle

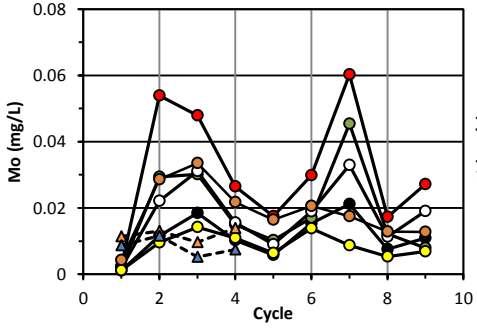

Alkalinity (mg/L)
Cycle
FB 1
FB 2
FB 3
FB 4
FB 5
FB 6
FB 7
FB 8

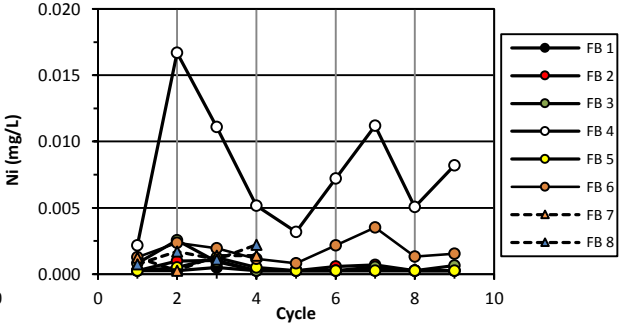

As (mg/L)
Cycle


Cd (mg/L)
Cycle


Co (mg/L)
Cycle
FB 1
FB 2
FB 3
FB 4
FB 5
FB 6
FB 7
FB 8


Cu (mg/L)
Cycle


Mo (mg/L)
Cycle


Ni (mg/L)
Cycle
FB 1
FB 2
FB 3
FB 4
FB 5
FB 6
FB 7
FB 8

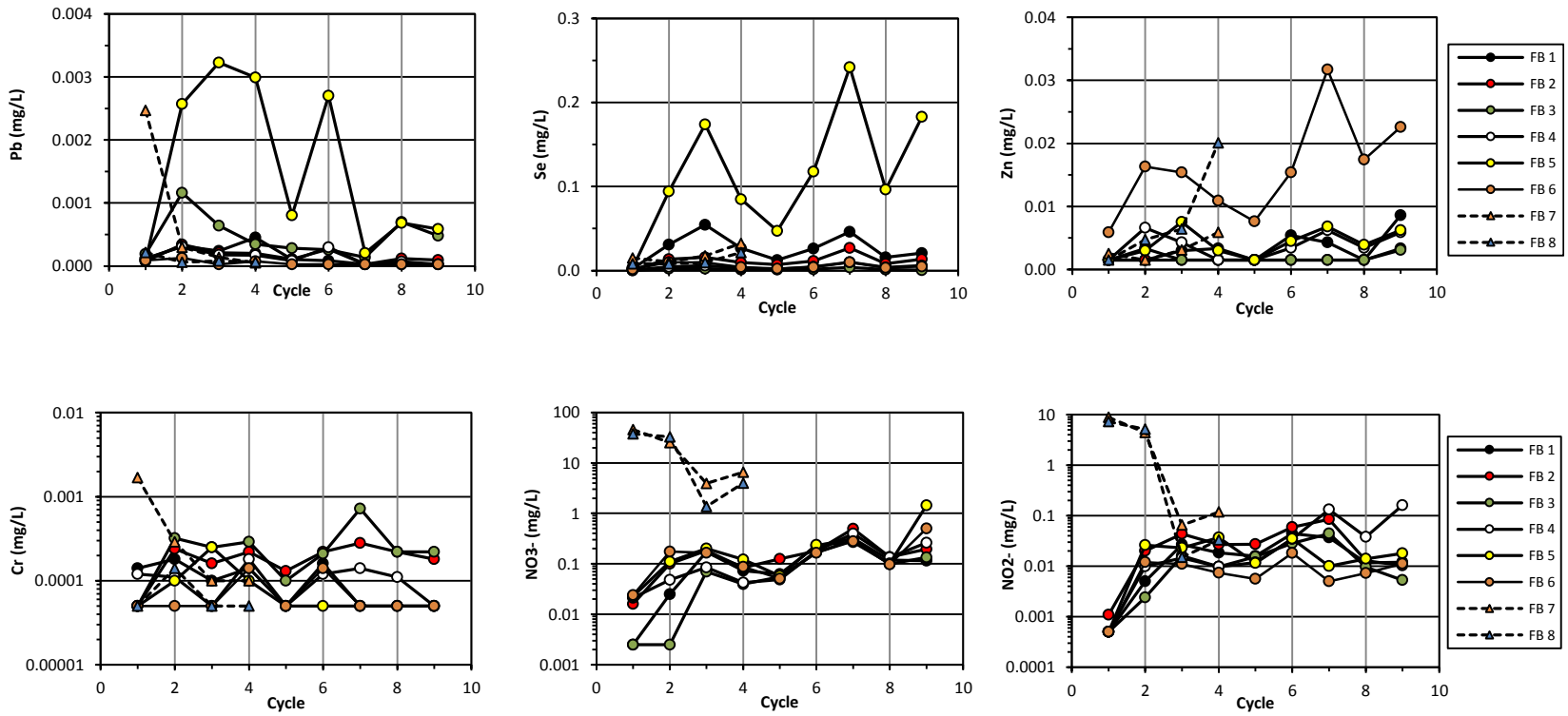


Figure 4-17. Temporal variation of leachate chemistry from field barrels.

4.6.3.3. Solubility Controls

Leachate chemistry from field barrels was evaluated with the geochemical modeling program PHREEQC (Parkhurst and Appelo, 1999) to determine potential solubility controls on the leachate chemistry. Simulation results provide mineral saturation indices (SI) whereby SI values near equilibrium (SI=0) indicate mineral saturation which may control leachate chemistry through mineral precipitation. All simulations applied the wateq4f database and input chemistries produce charge balances with less than 5% error. Fourteen secondary minerals identified as possible solubility controls to field barrel drainage chemistries are shown Table 4-17.

Simulation results suggest the metals Cu, Cr, Pb and Mo may be passively attenuated by the precipitation of selected secondary minerals. Copper concentrations in the leachate are comparable between field barrels and are shown to be controlled by malachite and (lesser) $Cu(OH)_2$ precipitation. Low Cr concentrations (<1 ug/L) coupled with SI values for $Cr(OH)_2$ near equilibrium support the likelihood of dissolved Cr being controlled by mineral precipitation. SI values of wulfenite approach equilibrium only in leachate of field barrel #5, which shows elevated Pb concentrations in leachate relative to the other 7 field barrels and the lowest Mo concentrations.

The likelihood of these secondary minerals attenuating Cu, Cr, Pb, and Mo in various field barrels suggests observed concentrations likely underestimate the true leaching rate of these metals from their primary sources. Aluminum and iron concentrations are possibly controlled by several secondary minerals, ranging from amorphous (boehmite, ferrihydrite) to more crystalline (gibbsite, goethite) phases. Given the presence of these secondary minerals, it is likely that As, Zn, Cu and Ni concentrations are partially controlled by metal adsorption to oxy-hydroxide precipitates of iron and aluminum. Additional simulations were conducted, by assuming only one-tenth of the precipitated ferrihydrite (aka hydrous ferric oxide or HFO) would act as an adsorbent and the HFO-precipitate was then equilibrated with the field barrel leachate chemistry. The model results show that As, Cu, Ni, Pb, and Zn likely adsorb to precipitated HFO or ferrihydrite.

4.6.3.4. Leaching Rates

Leaching rates will be discussed for Field barrel 1 through 6 only, as the latter two barrels have been initiated for less than 1 year at the time of this report. Table 4-18 presents trends pertaining to those elements previously discussed as likely POCs and those elements involved in secondary mineral attenuation mechanisms (refer to Section 4.6.3.3).

Most of these metals present similar weekly mass loads from the field barrels; Mo=10^{-4} mg/kg/wk, Ni and Cu=10^{-4}-10^{-3} mg/kg/wk, Cr=10^{-6} mg/kg/wk (Table 4-18). Among the elements that show either stable or decreasing trends, arsenic and selenium are the only elements with concentrations above maximum (CCME) guidelines (0.005 and 0.001 mg/L, respectively) and are considered parameters of concern (POC's). Leach rates of As and Se

Table 4-17. Modeled secondary mineral controls on observed field barrel drainage chemistries.

Field Barrel		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Zone		WZ	VOK	VOK	VOK	WZ	WZ	VOK	VOK
Geological Model		P2/ Frag	VSF	Bridge P1	VSF	Fragmental	Fragmental	Fragmental	Conglomerate
Lithology		Porphyry	Felsic Volcanics	Porphyry	Meta-sediments	Conglomerate	Andesite	Andesite	Conglomerate
$Al_4(OH)_{10}SO_4$	$Al_4(OH)_{10}SO_4$	X	X	X	X	X	X	X	X
Barite	$BaSO_4$	X	X	X	X	X	X	X	X
Boehmite	AlOOH	X	X	X	X	X	X	X	X
$Cr(OH)_{3(a)}$	$Cr(OH)_{3(a)}$	X	X	X	X	X		X	X
$Cu(OH)_2$	$Cu(OH)_2$	X					X		
Diaspore	AlOOH	X	X	X	X	X	X	X	X
$Fe_3(OH)_8$	$Fe_3(OH)_8$	X		X				X	
Ferrihydrite	$Fe(OH)_3$	X	X	X	X	X	X	X	X
Gibbsite	$Al(OH)_3$	X	X	X	X	X	X	X	X
Goethite	FeOOH	X	X	X	X	X	X	X	X
Halloysite	$Al_2Si_2O_5(OH)_4$	X	X	X	X	X		X	X
Lepidocrocite	FeOOH	X	X	X	X	X	X	X	X
Malachite	$Cu_2(OH)_2CO_3$	X	X	X	X	X	X	X	X
Wulfenite	$PbMoO_4$					X			

are typically between 10^{-4} – 10^{-3} mg/kg/wk. Exceptions to these high release rates are Field barrel 6 and Field Barrel 3, which have 10–100x lower As and Se rates.

Observed results (Table 4-19) are suggestive of material-specific trends, with significantly higher concentrations noted from; FB-1 (As), FB-2 (Mo), FB-4 (Ni), FB-5 (Pb and Se), and FB-6 (Cd, Co and Zn). Depletion rates of these elements were calculated to determine if higher measured concentrations were associated with metal enrichment in waste rock materials specific to the field barrel. Depletion rates were calculated by comparing their initial elemental masses, from total metal compositions obtained prior to field barrel initiation (Table 4-16), and their cumulative mass load losses in the leachates losses. Results are presented in Table 4-19.

Those barrels with the highest concentrations also present the highest depletion percentages (Depletion rates=1x). The highest depletion rates are not associated with enriched elemental compositions as the highest As, Cd, Co, Pb, Mo, Ni, Se and Zn proportions were observed in FB-2 (As, Cd ,Se), FB-6 (Mo), FB-7 (Co, Pb, Ni) and FB-8 (Zn). As such, release rates are more likely governed by a kinetic control as opposed to a higher metal content within the tested materials. These results do show that high concentrations and faster depletion (depletion rates=1x) appear to be more commonly related to Fragmental material. To identify possible material-specific metal release trends, a continuation of the field barrel tests for up to 2 more years is recommended**.**

4.6.3.5. Comparison between Kinetic Tests

A comparison of apparent leaching rates of possible POCs (As, Cd, Cu, Pb, Se, and Zn) from field barrel tests to their leaching rates from corresponding humidity cells is shown in Table 4-20. Results from field barrels 7 through 8 are excluded from this comparison since their datasets are limited to less than one year. As expected, humidity cell leaching rates are higher than field (barrel) leaching rates due to optimal weathering conditions and less solubility control in the latter tests.

Results shown in Table 4-20 indicate that the solubility of the suggested copper minerals may not have much control over the dissolved copper concentrations in (field) leachates as copper leaching rates in field barrel and humidity cell are very similar. Although no As, Cd, Se, or Zn -bearing minerals could be identified by geochemical modeling as controlling dissolved concentrations in the leachates, field barrel leachates were consistently supersaturated with respect to ferrihydrite. PHREEQC model simulations do indicate that ferrihydrite can act as adsorbent for several metals, specifically As – Zn – Se/Cd (in decreasing order). Results in Table 4-20 support this potential adsorption effect on leachate chemistry as As, Zn, Se, Cd leaching rates from field barrels are generally 1 to 3 orders of magnitude lower than those from humidity cell tests. This is supported by the comparison of sulphate leaching rates between field barrels and humidity cells, which shows values that are 8 – 20x lower in the former. This disparity in sulphate rates is at the lower end of magnitude difference of metal release rates from both kinetic tests, and may support a secondary

Table 4-18. Average mass loads (mg/kg/wk; ± 1.0 S.D.) of elements with stable concentrations.

Field Barrel	Se	As	Mo	Ni	Cu	Cd	Zn	Pb	Cr
1	$4.2 \pm 1.6 \times 10^{-4}$	$9.4 \pm 6.5 \times 10^{-3}$	$1.9 \pm 1.0 \times 10^{-4}$	$4.6 \pm 2.3 \times 10^{-6}$	$2.4 \pm 3.8 \times 10^{-3}$	$3.1 \pm 2.2 \times 10^{-7}$	$5.9 \pm 4.6 \times 10^{-5}$	$2.3 \pm 2.4 \times 10^{-6}$	$1.6 \pm 1.2 \times 10^{-6}$
2	$1.4 \pm 0.9 \times 10^{-4}$	$1.9 \pm 1.4 \times 10^{-3}$	$3.5 \pm 1.9 \times 10^{-4}$	$5.0 \pm 3.3 \times 10^{-6}$	$2.9 \pm 2.5 \times 10^{-4}$	$2.5 \pm 2.1 \times 10^{-7}$	$2.1 \pm 1.6 \times 10^{-5}$	$1.8 \pm 1.5 \times 10^{-6}$	$2.5 \pm 2.2 \times 10^{-6}$
3	$2.3 \pm 1.1 \times 10^{-5}$	$2.9 \pm 1.3 \times 10^{-4}$	$2.7 \pm 1.2 \times 10^{-4}$	$8.8 \pm 9.7 \times 10^{-6}$	$1.0 \pm 1.0 \times 10^{-3}$	$2.4 \pm 1.4 \times 10^{-7}$	$2.7 \pm 1.3 \times 10^{-5}$	$7.8 \pm 7.2 \times 10^{-6}$	$3.8 \pm 2.0 \times 10^{-6}$
4	$8.0 \pm 3.7 \times 10^{-5}$	$9.7 \pm 3.9 \times 10^{-4}$	$3.3 \pm 1.2 \times 10^{-4}$	$1.4 \pm 0.8 \times 10^{-4}$	$1.5 \pm 2.5 \times 10^{-4}$	$1.1 \pm 0.8 \times 10^{-6}$	$6.8 \pm 3.7 \times 10^{-5}$	$2.9 \pm 2.7 \times 10^{-6}$	$2.0 \pm 1.5 \times 10^{-6}$
5	$1.7 \pm 0.8 \times 10^{-3}$	$9.3 \pm 7.6 \times 10^{-4}$	$1.4 \pm 0.9 \times 10^{-4}$	$5.8 \pm 3.2 \times 10^{-6}$	$4.0 \pm 5.3 \times 10^{-4}$	$1.5 \pm 1.1 \times 10^{-6}$	$6.3 \pm 3.5 \times 10^{-5}$	$2.7 \pm 2.2 \times 10^{-5}$	$1.2 \pm 0.6 \times 10^{-6}$
6	$8.1 \pm 3.3 \times 10^{-5}$	$3.4 \pm 2.0 \times 10^{-5}$	$3.1 \pm 1.4 \times 10^{-4}$	$2.7 \pm 1.5 \times 10^{-5}$	$2.0 \pm 2.4 \times 10^{-3}$	$3.7 \pm 2.1 \times 10^{-6}$	$2.6 \pm 1.5 \times 10^{-4}$	$6.8 \pm 5.7 \times 10^{-7}$	$1.3 \pm 1.1 \times 10^{-6}$

Table 4-19. Comparison of metal depletion rates[1]

	1	**2**	**3**	**4**	**5**	**6**	**7[2]**	**8[2]**
Block Model	P2/ Frag.	VSF	Bridge P1	VSF	Fragmental	Fragmental	Fragmental	Conglom.
Logged Lithology	Porphyry	Felsic Volcs	Porphyry	Meta-sediments	Conglom.	Andesite	Andesite	Conglom.
As	*1.0*	62	16	21	3.9	704	186	699
Cd	34	49	13	6.9	6.3	*1.0*	11	1.0
Co	40	25	32	8.5	15	*1.0*	9.0	8.0
Pb	6.4	15	2.9	18	*1.0*	27	3.0	22
Mo	4.8	*1.0*	3	3.9	11	5.3	5.1	5.9
Ni	7.2	133	36	*1.0*	20	4.9	91	73
Se	5	35	9	11	*1.0*	6.8	12	17
Zn	8.8	19	10	4.4	5.2	*1.0*	10	9.4

[1] Field barrels with 1.0x factor represent barrels with the highest depletion percentages (e.g., FB-1 has a 40x lower Co depletion rate than FB-6).

Factors are calculated by the following: $Factor\ (x) = \frac{[1-FB^*]}{[1-FB_i]}$, where $FB_i = \frac{\sum_{t=0}^{x} c_i V_i}{M_{element}}$

[2] Factors for FB 7 and 8 are compared to the mass depleted at the same experiment duration ($FB^*_{cycle\ 4}$).

Table 4-20. Comparison of field barrels and humidity cell leaching rates (mg/kg/wk).

Field Cell #		1			2			3			4			5			6	
	P2/ Fragmental			VSF			Bridge P1			VSF			Fragmental			Fragmental		
	Field Rate	Cell Rate[1]	Mineral Control[2]	Field Rate	Cell Rate[1]	Mineral Control[2]	Field Rate	Cell Rate[1]	Mineral Control[2]	Field Rate	Cell Rate[1]	Mineral Control[2]	Field Rate	Cell Rate[1]	Mineral Control[2]	Field Rate	Cell Rate[1]	Mineral Control[2]
As	1.6×10^{-6}	3.1×10^{-3}	Ferri-hydrite	1.9×10^{-3}	6.3×10^{-3}	Ferri-hydrite	2.9×10^{-4}	1.6×10^{-3}	Ferri-hydrite	9.7×10^{-4}	2.0×10^{-3}	Ferri-hydrite	9.3×10^{-4}	2.7×10^{-3}	Ferri-hydrite	3.4×10^{-5}	1.8×10^{-3}	Ferri-hydrite
Cu	2.4×10^{-3}	1.1×10^{-4}	$Cu(OH)_2$ Malachite Ferrihydr.	2.9×10^{-4}	2.4×10^{-4}	Malachite Ferrihydrite	9.5×10^{-4}	4.0×10^{-3}	Malachite Ferrihydrite	1.5×10^{-4}	1.8×10^{-4}	Malachite Ferrihydr.	4.0×10^{-4}	1.4×10^{-4}	Malachite Ferrihydr.	2.0×10^{-3}	1.4×10^{-4}	$Cu(OH)_2$ Malachite Ferrihydr.
Cd	3.1×10^{-7}	1.7×10^{-5}	Ferri-hydrite	2.5×10^{-7}	1.8×10^{-5}	Ferri-hydrite	2.4×10^{-7}	1.2×10^{-5}	Ferri-hydrite	1.1×10^{-6}	1.3×10^{-5}	Ferri-hydrite	1.5×10^{-6}	2.3×10^{-5}	Ferri-hydrite	3.7×10^{-6}	1.1×10^{-5}	Ferri-hydrite
Pb	2.3×10^{-6}	2.1×10^{-5}		1.8×10^{-6}	7.4×10^{-5}		7.8×10^{-6}	1.4×10^{-4}		2.9×10^{-6}	1.2×10^{-4}		2.7×10^{-5}	1.8×10^{-5}	Wulfenite	6.8×10^{-7}	1.1×10^{-4}	
Se	4.2×10^{-4}	1.1×10^{-3}		1.4×10^{-4}	4.1×10^{-4}		2.3×10^{-5}	2.1×10^{-4}		8.0×10^{-5}	1.9×10^{-4}		1.7×10^{-3}	2.2×10^{-3}	Ferri-hydrite	8.1×10^{-5}	2.9×10^{-4}	
Zn	5.9×10^{-5}	6.7×10^{-4}		2.1×10^{-5}	1.1×10^{-3}		2.7×10^{-5}	2.4×10^{-3}		6.8×10^{-5}	3.4×10^{-4}		6.3×10^{-5}	7.8×10^{-4}		2.6×10^{-4}	6.3×10^{-4}	
SO_4	3.4	73		1.2	13		0.49	16		1.1	15		7.7	66		4.1	83	

[1] Obtained from complementary humidity cells, specifically, FB-1 = HC 30; FB-2 = HC 29; FB-3 = average of HC 28, 35; FB-4 = avg of HC 13, 20; FB-5 = HC 24; FB-6 = HC 31; release rates represent average of the last 5 cycles at the time of this report (HC ≥ 20: average of cycle 21 – 25; HC 13 = average of cycle 56 – 61)

[2] From geochemical speciation modeling, discussed previously

Shading denotes less than 3 x difference between HC's and field barrels, or where field barrel rates are larger than cell rates.

mineral (as opposed to mineral dissolution rate) control. Similar or higher release rates for Pb and Se, and Zn are achieved from Fragmental material (FB-5 and FB-6). This demonstrates that Fragmental material poses a greater metal leaching risk relative to other tested material (VSF, Bridge P1, P2).

It should be stressed that information provided by a two-year dataset is considered to be rather limited and results are deemed 'preliminary'. However, results may be refined by a larger dataset (~4 years) and mineralogical analyses of waste rock material following cessation of experiment. The mineralogical analyses will help to identify soluble mineral controls on measured leachate chemistries.

4.6.4. Time to Onset of Acid Generation

Based on the depletion rates of AP and NP, the lag time or time to onset of acid generation was estimated for each humidity cell and subaqueous column with waste rock. For humidity cells NP consumption in an open system with neutral pH was assumed while for subaqueous columns NP depletion in a closed system with pH above 6.5 was used. The estimated lag times are shown in Table 4-21 long with other characteristics of the tested waste rock materials.

Considering the high percentage of PAG materials at the Brucejack Project site it may be more helpful to designate materials that are 'hot' and will likely generate ARD relatively fast when exposed to local environmental conditions. For this assessment the estimated lag times can be used.

The shortest lag times (<15 yrs) in the humidity cell tests are estimated for waste rock from the Fragmental (3 of 10 HCs), VSF (2 of 13 HCs), Silicified Cap (1 of 2 HCs) and Conglomerate (1 of 3 HCs) units. These geological units correspond to andesite (2 of 6 HCs), felsic volcanics (3 of 7 HCs), siliceous rock (1 of 6 HCs) and conglomerate/arenite (1 of 1 HCs). Materials with the shortest lag times typically have paste pH values below 7 and very low NP values (5-15 kg $CaCO_3$/t) in combination with high sulphide-S values (3-8%). These materials weather readily and quickly.

According to the data in Table 4-21 non-PAG materials (NPR>2) have lag times in excess of 220 yrs (HC-27). These non-PAG materials often have a paste pH above pH 8.5, contain more than 1% TIC and have a large excess of neutralization potential. Based only on the data in Table 4-21 it appears that non-PAG materials at Brucejack have sulphide-S contents less than 2% (exception: HC-6).

The lag times estimated for subaqueous columns 1 and 2 (Table 4-21) are respectively 274 yrs and 71 yrs. These estimates are based on sulphate concentrations that have not yet reached their final values. Considering that the ongoing column tests have not yet attained equilibrium these estimated lag times should be interpreted with caution.

Table 4-21. Model unit, lithology and estimated lag time for the kinetic test materials.

No.	Model Unit	Lithology	Lag time	NP consump.	Paste pH	TIC	Tot-S	SO_4-S	Sulp-S	AP	NP	NPR
			yrs	mg/kg/wk		%	%	%	%	kg $CaCO_3$/t	kg $CaCO_3$/t	
Waste Rock - Humidity Cells												
1	Frag/VSF	Andesite (Gossan Hill)	99	10	8.40	0.62	4.98	0.01	4.26	133	54	0.40
2	Fragmental	Andesite (Gossan Hill)	5	29	6.93	0.11	5.60	0.03	4.97	155	10	0.06
3	VSF	Andesite (VOK)	433	7.5	9.23	1.76	2.14	<0.005	1.83	57	170	2.98
4	Fragmental	Andesite (WZ)	4	17	6.40	0.03	6.08	0.03	5.54	173	5	0.03
5	Fragmental	Siliceous rocks (WZ)	294	5.7	8.61	1.12	1.24	<0.01	1.1	34	87	2.52
6	Frag/Cong	Granitoid (WZ)	never	15	8.60	3.05	3.22	<0.005	2.53	79	254	3.21
7	VSF	Meta-sediments (WZ)	94	12	9.00	0.64	2.70	<0.01	2.43	76	61	0.80
8	Fragmental	Siliceous rocks (VOK)	44	6.8	8.74	0.16	2.18	<0.01	1.94	61	16	0.27
9	Fragmental	Meta-volcanics (VOK)	27	4.3	8.54	0.05	3.78	<0.01	3.55	111	6	0.06
10	VSF	Andesite (VOK)	29	15	7.90	0.27	9.64	0.03	8.91	278	23	0.08
11	VSF	Felsic volcanics (VOK)	129	8.8	8.80	0.64	2.89	<0.01	2.88	90	59	0.66
12	VSF	Meta-sediments (VOK)	117	12	8.96	0.90	2.42	<0.005	2.13	67	74	1.11
13	VSF	Meta-sediments (VOK)	106	11	8.90	0.69	2.64	<0.005	2.20	69	61	0.89
14	VSF	Siliceous rocks (VOK)	2	22	8.42	0.30	3.37	<0.01	2.92	91	30	0.33
15	VSF	Felsic volcanics (VOK)	11	19	7.78	0.10	4.01	0.01	3.46	108	11	0.10
16	Fragmental	Felsic volcanics (WZ)	139	12	8.67	1.06	4.01	<0.01	3.86	121	90	0.74
17	VSF	Felsic volcanics (VOK)	67	4.6	8.23	0.17	2.63	<0.01	2.26	71	16	0.23
18	VSF	Conglomerate (VOK)	22	29	7.83	0.41	6.36	0.02	5.51	172	35	0.20
19	Conglomerate	Porphyry (Gossan Hill)	61	28	8.38	1.12	2.88	<0.005	2.44	76	91	1.19
20	VSF	Meta-sediments (VOK)	177	11	8.05	1.02	4.10	0.01	3.87	121	97	0.80
21	Conglomerate	Conglomerate (VOK)	37	12	7.99	0.22	3.80	0.02	3.64	114	24	0.21
22	Silicified Cap	Felsic volcanics (VOK)	5	25	6.81	0.05	7.02	0.03	6.84	214	7	0.03
23	P2	Conglomerate (WZ)	36	31	7.75	0.64	4.95	0.07	4.69	147	59	0.40

No.	Model Unit	Lithology	Lag time	NP consump.	Paste pH	TIC	Tot-S	SO_4-S	Sulp-S	AP	NP	NPR
			yrs	mg/kg/wk		%	%	%	%	kg $CaCO_3$/t	kg $CaCO_3$/t	
Waste Rock - Humidity Cells												
24	Fragmental	Conglomerate (WZ)	59	33	8.50	0.94	4.34	0.02	4.32	135	101	0.75
25	Conglomerate	Cong/Meta-sed. (WZ)	13	24	8.04	0.13	3.93	0.03	3.86	121	16	0.14
26	Fragmental	Felsic volcanics (VOK)	3	47	6.86	0.03	8.39	0.05	8.21	257	8	0.03
27	Office P1	Porphyry (VOK)	220	10	8.36	1.30	1.63	<0.005	1.42	44	117	2.64
28	Bridge P1	Porphyry (VOK)	127	15	8.78	1.10	2.63	0.01	2.29	72	103	1.44
29	VSF	Felsic volcanics (VOK)	84	12	8.28	0.51	5.15	0.03	4.70	147	51	0.35
30	P2/Frag	Porphyry (WZ)	40	32	7.96	0.69	4.06	0.03	3.73	117	65	0.56
31	Fragmental	Andesite (WZ)	55	7.4	7.94	0.22	2.81	0.02	2.64	83	21	0.26
32	Fragmental	Siliceous rocks (WZ)	161	15	8.34	1.40	3.69	0.02	3.54	111	127	1.15
33	VSF	Siliceous rocks (VOK)	never	10	8.63	2.04	1.36	<0.005	1.23	38	178	4.62
34	P2	Porphyry (WZ)	75	26	8.19	0.99	3.53	0.02	3.05	95	103	1.08
35	Bridge P1	Porphyry (VOK)	263	8.6	8.88	1.31	1.98	<0.005	1.67	52	118	2.25
36	Silicified Cap	Siliceous rocks (VOK)	78	7.8	8.13	0.40	2.59	0.01	2.22	69	32	0.46
Waste Rock -Columns												
1	Fragmental	andesite (WZ/VOK)	274	5.4	7.93	0.20	6.78	0.02	6.09	190	20	0.11
2	VSF	felsic volcanics (VOK)	71	2.6	8.50	0.46	4.40	<0.005	3.84	120	37	0.31

Note: NP consumption rates: HCs = Open systems, mean of the last 10 sampling events; Columns = open systems, mean of final flush.

5.0 TAILINGS, PASTE, SLUDGE AND ORE CHARACTERIZATION

Over the operating life of the mine (22 yrs) an estimated 18,99 Mt of ore will be extracted which will produce 18.07 Mt of flotation tailings. From these tailings 8.55 Mt (47%) will be returned to the underground mine as paste backfill and 9.52 Mt (53%) will be deposited into Brucejack Lake. Approximately 8.1% or 1.54 Mt of the processed ore will be trucked to an off-site facility as concentrate for secondary processing. The mineralogy, static and kinetic test results of the flotation tailings, paste backfill and ore are discussed below.

5.1. Mineralogy and Particle Size Distribution

The mineral composition of tailings, paste and sludge samples was evaluated using X-ray diffraction with Rietveld analyses and results are shown in Table 5-1. The mineralogy of the tailings is dominated by quartz (54%), muscovite (15%), K-feldspar (13%) with smaller amounts of calcite (8%), plagioclase (6%), chlorite (4%) and minor amounts of pyrite (0.2%) jarosite (0.1%). The main differences in mineralogy between tailings from the West Zone and from the VOK are the relative contributions of plagioclase and muscovite (dominant at VOK) versus K-feldspar (dominant at WZ). Paste samples have a similar mineralogy as the tailings samples, with the exception for the higher calcite content. The higher carbonate content is likely attributed to the addition of a thickener (binder or cement) to flotation tailings to create the paste material. Sludge samples reflect a similar silicate-to-calcite ratio as tailings, but with significantly higher pyrite contents.

Table 5-1. Mineral composition (%) of paste, tailings and sludge by quantitative XRD analysis.

	Quartz	Plagioclase	K-spar	Muscovite	Calcite	Chlorite	Jarosite	Pyrite	Total
Paste									
Raw Paste	46.7	6.2	14.4	17.3	11.3	3.6	0.2	0.3	100
Cemented Paste	48.2	0.6	17.5	15.6	16.0	2.0	0.0	0.1	100
Average	**47.5**	**3.4**	**16.0**	**16.5**	**13.7**	**2.8**	**0.1**	**0.2**	**100**
Tailings									
VOK/WZ (Column 3)	52.3	8.9	11.0	13.7	8.5	5.3	0.1	0.2	100
VOK/WZ (Column 5)	53.4	3.5	11.1	20.7	8.6	2.5	0.0	0.2	100
VOK (T1)	55.3	10.2	5.4	16.9	7.3	4.5	0.1	0.2	100
WZ (T2)	53.5	2.1	26.0	7.4	8.6	2.0	0.3	0.1	100
Average	**53.6**	**6.2**	**13.4**	**14.7**	**8.3**	**3.6**	**0.1**	**0.2**	**100**
Sludge	**39.5**	**0.0**	**7.2**	**27.6**	**10.0**	**11.5†**	**0.0**	**4.2**	**100**

† Clay minerals: Chlorite (11.3%) and Kaolinite (0.2%).

A detailed analysis (sieve and hydrometer) of the particle size distribution of the flotation tailings is shown in Figure 5-1. The analyzed tailings are similar to those used in subaqueous column 5 and contain 19% clay (<2 µm), 46% silt (2-50 µm) and 35% sand (50µm-2 mm). Simple sieve analysis of the tailings in humidity cells T1 (VOK) and T2 (WZ) showed that the tailings contain respectively 22% (VOK) and 35% (WZ) silt plus clay (<50µm). Approximately 67% (VOK) and 83% (WZ) of the tailings are finer than 75 µm while generally more than 98% of the tailings are finer than 150 µm. The preceding indicates that the tailings of the humidity cells are coarser than those of column 5.

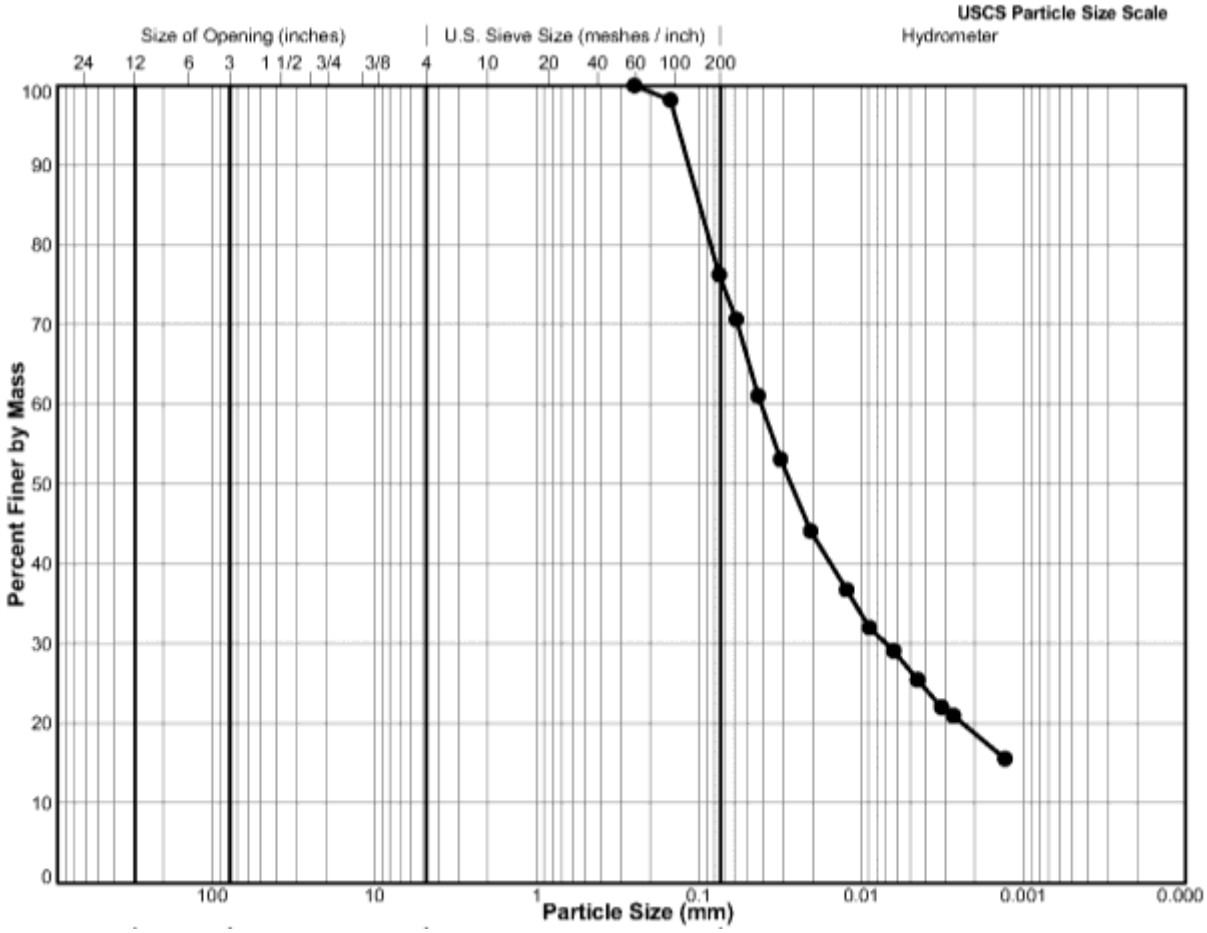


Figure 5-1. Particle size distribution of flotation tailings (column 5).

5.2. Acid-Base Accounting (ABA)

The ABA characteristics of ore (high- and low-grade), flotation tailings, paste (raw and with cement added) and sludge samples are shown in Table 5-2. Data are shown separately for tailings samples used in humidity cells T1 (VOK) and T2 (WZ) and tailings samples (mixtures VOK & WZ) used in subaqueous columns 3 and 5. The paste pH of ore and most tailings is generally alkaline, with pH values of 9. Paste pHs from raw versus cemented paste differs considerably between pH 8.54 and pH 12.02 (respectively). Sludge shows consistent paste pH of ~ pH 7.82 – 7.84. All samples show a modest TIC content (0.50 % – 1.56 %), which

minimum values from sludge (0.5 %) and upper ranges from high-grade ore and paste samples (~1.5%). The higher inorganic carbon for ore materials may be related to carbonate veining that is generally associated with ore zones (refer to Section 2.2.5). Mineralogical analyses (Table 5-1) suggest thickeners added to tailings material (to create paste) likely contain carbonate and subsequently increase TIC content, as per higher calcite percentages in paste (relative to tailings) samples.

The sulphur content of most samples is comprised of sulphides, as per similar total-S and sulphide-S values, with the exception of high-grade ore and paste samples. Although the high-grade ore sample has a similarly high sulphide-S content (> 3% sulphide-S) as the low-grade ore sample, there is a significantly higher insoluble-S content in the former and is likely attributed to elemental-S. The high grade-ore has a relative small amount of insoluble-S which may be elemental-S. The paste backfill with cement has a small amount of SO_4-S which likely represents gypsum precipitation during the paste curing process.

Apart from the ore and sludge, the acid potential of samples shown in Table 5-2 is insignificant (AP ≤ 2 kg $CaCO_3$/t). The Sobek neutralization potential of the samples varies between 40 and 90 kg $CaCO_3$/t except for the high-grade ore and the paste with cement, which have the highest neutralization potential (165 kg $CaCO_3$/t) and highest carbonate (TIC) contents. Ore and sludge samples have NPR values smaller than 2 and are PAG materials; the tailings samples as well as the paste samples are non-PAG materials.

5.3. Total Elemental Content

The total elemental content of the ore, tailings, paste and sludge samples is also shown Table 5-2 Compared to non-mineralized rock (refer to Table 4-9), the elements silver (Ag), arsenic (As), cadmium (Cd), molybdenum (Mo) lead (Pb), antimony (Sb), manganese (Mn) and possibly selenium (Se) are enriched in the ore, tailings, paste and sludge. Copper (Cu) and zinc (Zn) are enriched in the ore and ore and sludge while chromium (Cr) and nickel (Ni) are only enriched in the tailings and paste. Sludge presents maximum values of Cd, Pb and Zn, relative to other materials.

5.4. Shake Flask Extraction Tests

Results of shake flask extraction tests (SFE) with ore, tailings, paste and sludge samples are shown in Table 5-3 below. The tailings, raw paste and sludge samples have circumneutral pH values (pH~7.5) while the ore samples have alkaline pH values (pH 8.5-9.0). The cemented paste sample had a high pH value (pH 11), which may be attributed to the addition of a thickener to cure tailings materials. The alkalinity of sample extracts follows a similar trend as pH, whereby tailings, raw paste and sludge samples have similar alkalinities, and ore and cemented paste samples present higher and the highest (respectively) measured alkalinity values. Sulphate concentrations are low (24-86 mg/L) for most samples, with the exception of a 1.5x-5x higher value from the cemented paste sample (114 mg/L) and up to 24 X higher values for sludge. The higher sulphate in cemented paste may be a result of gypsum

dissolution, which may have formed during the tailings curing process and supported by higher sulphate-S values from ABA results. Sludge samples present modest sulphate-S values (~10% of total S) and its significantly finer grain-size may result in a higher reactivity (sulphate from sulphide dissolution)

Table 5-2. Static test results of ore, tailings, paste and sludge samples.

		Ore		Tailings				Paste		Sludge	
Parameter	**Units**	High-grade	Low-grade	VOK T1	WZ T2	VOK/WZ Col 3	VOK/WZ Col. 5	Raw	ce-ment	FC-01	FC-02
ABA Characteristics											
paste pH		9.10	9.13	8.92	9.08	9.04	7.72	8.54	12.02	7.82	7.84
TIC	%	1.56	0.75	0.90	0.84	0.85	0.94	1.07	1.43	0.50	0.55
$CaCO_3$-NP	kg $CaCO_3$/t	130.0	62.5	74.8	69.9	71.0	78.3	89.2	119.2	41.7	45.8
tot-S	%	3.33	3.44	0.04	0.06	0.06	0.09	0.05	0.17	1.20	1.20
SO4-S	%	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.12	0.10	0.08
sulph-S	%	3.09	3.37	0.02	0.04	0.04	0.07	0.04	0.06	1.02	0.95
insol. S	%	0.23	0.07	0.02	0.02	0.02	0.02	0.01	<0.01	0.08	0.17
AP	kg $CaCO_3$/t	96.6	105.3	0.8	1.4	1.2	2.2	1.3	1.9	31.9	29.7
Sobek-NP	kg $CaCO_3$/t	161.5	64.2	76.9	69.2	71.0	89.3	91.0	165.4	49.3	42.4
NNP	kg $CaCO_3$/t	64.9	-41.1	76.1	67.8	69.8	87.1	89.8	163.5	17.4	12.7
NPR	-	1.67	0.61	96.1	49.4	57.2	40.8	72.8	88.2	1.55	1.43
Elements (aqua-regia)											
Al	%	1.58	1.11	0.74	0.24	0.35	0.41	0.59	0.71	1.16	1.10
Ba	ppm	160	143	112	93	97	69	183	181	358	357
Ca	%	**5.8**	2.9	3.2	2.8	2.9	2.9	3.8	**6.5**	2.1	2.3
Cr	ppm	27	68	**301**	**477**	**436**	21	**303**	**250**	23	24
Cu	ppm	**111**	**61.6**	11.4	15.9	14.8	17.4	55.4	47.2	57.2	60.5
Fe	%	4.86	4.52	0.92	0.36	0.50	1.01	0.67	0.62	1.84	1.89
K	%	0.16	0.21	0.23	0.17	0.18	0.11	0.2	0.23	0.28	0.26
Mg	%	1.11	0.56	0.43	0.08	0.16	0.28	0.3	0.25	0.38	0.40
Mn	ppm	**1990**	**1020**	**1061**	**996**	**1011**	**1080**	**1190**	923	759	805
Na	%	0.05	0.04	0.02	0.01	0.01	0.01	0.02	0.05	0.04	0.05
Ni	ppm	7.5	6.9	**127**	**206**	**188**	5.8	**139**	**110**	11.9	12.6
Zn	ppm	**89**	**95**	22	14	16	**90**	29	46	**141**	**146**
Ag	ppm	**2.02**	**7.62**	**1.09**	**6.08**	**4.91**	**4.67**	**7.28**	**>10**	**8.96**	**9.46**
As	ppm	**402**	**644**	**24**	**10**	**14**	**30**	**25**	**18**	**118**	**119**
Cd	ppm	**0.34**	**2.66**	**0.21**	0.15	**0.16**	**0.97**	**0.39**	**0.85**	**1.43**	**1.49**
Co	ppm	18	13.8	4.3	4.5	4.4	1.9	3.3	3.7	5.9	6.3
Hg	ppm	<0.01	0.05	0.02	0.02	0.02	<0.01	0.08	**0.19**	<0.01	<0.01
Mo	ppm	0.63	**2.82**	**6.06**	**9.67**	**8.83**	**7.79**	**6.64**	**7.53**	**2.41**	**2.31**
Pb	ppm	**22.8**	**22.3**	12.6	**33.8**	**28.8**	**19**	**39.9**	**41.7**	**44.1**	**45.2**
Sb	ppm	**2.39**	**3.57**	**1.02**	**2.04**	**1.80**	**2.30**	**1.84**	**3.20**	**2.29**	**2.47**
Se	ppm	**5**	**18**	<1	<1	<1	<1	<1	<1	**3**	**2**
Sn	ppm	<0.3	<0.3	1.2	0.4	0.6	0.8	0.3	0.9	0.4	0.4

Note: Bolded metal values represent elemental enrichment overall continental crust averages (refer to Table 4-9).

Table 5-3. Chemistry of shake flask extracts with samples of ore, paste and sludge.

		Ore		Tailings		Paste		Sludge	
Parameter	**Units**	High-grade	Low-grade	VOK/WZ Column 3	VOK/WZ Column 5	Raw	Cement	FC-01	FC-02
Volume Water	mL	750	750	300	750	750	600	750	750
Sample Weight	g	250	250	100	250	250	200	250	250
pH		8.50	9.09	7.62	7.73	7.39	11.1	7.56	7.64
Conductivity	uS/cm	350	235	278	229	204	1094	1128	1094
Total Acidity	mg $CaCO_3$/L	--	--	3.2	3.1	8.6	--	7.2	7.9
Alkalinity	mg $CaCO_3$/L	72.7	78.4	47.1	49.4	38.9	260	37.6	43.1
Sulphate	mg/L	58	24	86	45	60	114	583	544
Dissolved Metals									
Al	mg/L	0.91	0.97	0.11	0.08	0.05	3.26	0.0320	0.0320
Sb	mg/L	0.010	0.008	0.010	0.004	0.011	0.006	0.0097	0.0130
As	mg/L	0.216	0.100	0.058	0.001	0.037	0.002	0.0116	0.0145
Ba	mg/L	0.082	0.053	0.026	0.066	0.028	0.064	0.0492	0.0505
B	mg/L	0.023	0.024	0.0319	0.0143	0.0193	0.0293	0.0745	0.0883
Cd	ug/L	<0.003	<0.003	< 0.003	0.058	0.027	0.005	0.108	0.093
Ca	mg/L	1.8	0.77	31.3	24.6	25.5	115	151	134
Cr	mg/L	0.0011	<0.0005	0.0026	0.0107	<0.0005	0.143	< 0.0005	< 0.0005
Co	mg/L	0.0002	0.0001	0.0001	0.0002	0.0001	0.0001	0.0004	0.0003
Cu	mg/L	<0.0005	<0.0005	0.0009	0.0018	0.0026	0.0069	0.0021	0.0019
Fe	mg/L	0.062	0.024	< 0.003	0.550	< 0.003	0.009	0.005	< 0.003
Pb	mg/L	0.00036	0.00036	0.00004	0.00002	0.00022	0.00074	0.00004	0.00004
Li	mg/L	0.071	0.104	0.018	0.007	0.006	0.047	0.071	0.070
Mg	mg/L	0.14	0.038	5.04	2.31	2.55	0.006	18.5	17.3
Mn	mg/L	0.0041	0.0036	0.0493	0.0273	0.0585	0.0009	0.466	0.380
Hg	ug/L	<0.01	<0.01	0.01	< 0.01	< 0.01	0.03	< 0.01	< 0.01
Mo	mg/L	0.0023	0.0022	0.0063	0.074	0.0062	0.11	0.0323	0.0503
Ni	mg/L	0.0001	0.0001	0.0009	0.0048	< 0.0001	0.0009	0.0014	0.0013
K	mg/L	5.0	3.4	9.2	19.3	10.2	93.1	17.4	17.4
Se	mg/L	0.0050	0.0016	0.0050	0.0021	0.0036	0.0030	0.00586	0.00813
Si	mg/L	1.9	2.0	3.8	0.9	2.8	5.4	4.16	4.67
Ag	mg/L	0.0001	0.00005	< 0.00001	0.00036	< 0.00001	<	0.0019	0.0013
Na	mg/L	66.7	48.0	7.2	4.3	1.6	38.8	42.9	49.0
Sr	mg/L	0.16	0.05	0.64	0.58	0.44	0.41	2.74	2.64
Tl	mg/L	0.00007	0.00006	0.00007	0.00015	0.00007	0.00010	0.00021	0.00020
Sn	mg/L	0.00060	0.00040	0.00021	0.00041	0.00009	0.00003	0.00004	0.00006
U	mg/L	0.0009	0.0008	0.0012	0.0003	0.0010	0.00001	0.00214	0.00321
Zn	mg/L	0.002	<0.001	0.002	0.002	< 0.001	< 0.001	0.002	0.002

The concentrations of dissolved antimony, arsenic, molybdenum and selenium in the extracts of ore, tailings, paste and sludge are observed to be relatively high and may be of concern. Similar to their concentrations in the solid phase (aqua-regia extracts), the concentrations of dissolved chromium and nickel are higher in tailings extracts relative to ore and paste samples. Cemented paste presents higher dissolved metal concentrations (e.g. copper, molybdenum and chromium) than the raw paste extracts. This is due to high metal concentrations in cement material, which is common phenomenon that is often observed. Sludge material presents higher Ag (10x–20x) relative to ore and higher Cd (2x–3x) concentrations relative to tailings.

5.4.1. Possible Tailings Supernatant Chemistry

The chemistry from tailings extracts was compared to the tailings slurry provided by Pretivm (F. Wright). The tailings slurry was comprised of material comparable to Column 5 material and was transported in two 5-gallon buckets containing a relatively high liquid-to-solid ratio of slurry water and tailings sediment. The composition of each bucket was combined and homogenized, and an aliquot of the supernatant was analyzed for the same analytes as tailings SFE extracts. Supernatant results are shown in Table 5-4.

Table 5-4. Chemistry of the tailings supernatant.

pH	**Cond.**	**Alk**	**Cl**	**NO_3**	**NH_3**	**SO_4**	**Al**	**Sb**
	uS/cm	mg $CaCO_3$/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
8.09	131	53.5	2.1	0.06	< 0.1	11	0.112	0.0075
As	**Ba**	**B**	**Cd**	**Ca**	**Cr**	**Co**	**Cu**	**Fe**
mg/L	mg/L	mg/L	ug/L	mg/L	ug/L	ug/L	mg/L	mg/L
0.0045	0.0360	0.0158	0.007	8.32	< 0.5	0.027	0.0008	0.061
Pb	**Mg**	**Mn**	**Hg**	**Mo**	**Ni**	**K**	**Se**	**Si**
mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L
0.00021	0.507	0.0094	< 0.01	0.135	0.0003	15.9	0.00013	0.93
Ag	**Na**	**Sr**	**Tl**	**Sn**	**Ti**	**U**	**V**	**Zn**
ug/L	mg/L	mg/L	ug/L	mg/L	mg/L	ug/L	mg/L	mg/L
< 0.01	7.08	0.284	< 0.02	0.00024	0.0005	0.064	0.00066	0.003

The chemistry of the tailings supernatant presents concentrations of several elements within the same magnitude as those from SFE tests. However, several metals/anions are measured at lower concentrations in the supernatant, relative to those measured in SFE results (e.g., sulphate, Cd, Co, Cu, Ni, Se, Ag). The soluble constituent loads associated with tailings deposition in Brucejack Lake may be estimated using the results of these tests; from a 3:1 ratio for SFE results to an unknown and much more dilute ratio (as per the Pretivm-provided tailings slurry). These may be further constrained following the finalization of an operational liquid-to-solid ratio for tailings slurries.

5.5. Kinetic Tests

The tailings-bearing kinetic tests included two humidity cells and two subaqueous columns. Tailing material used in the humidity cells was obtained from the VOK (T1) and the WZ (T2) areas. The two subaqueous columns contained mixtures of tailings from the VOK and WZ, whereby material from humidity cell T1 and T2 was combined and used in Column 3 (refer to Table 5-2) and separate mixture of VOK and WZ tailings was used for Column 5. All original analytical data obtained from kinetic tests containing tailings material can be found in Appendix G and the results of these tests will be described in the succeeding sections.

5.5.1. Humidity Cells

Mineralogical and geochemical (static test) characteristics of the tailings materials used in humidity cells T1 and T2 are shown in Table 5-1 and Table 5-2 (respectively). Figures showing temporal changes in measured parameters are shown in Appendix F1 and F2.

5.5.1.1. Temporal Variation of pH and SO_4 Concentration

Graphs that show temporal changes in pH and sulphate concentrations of leachate samples collected weekly from the two humidity cells are presented in Appendix F1. These temporal graphs demonstrate the pH remains very close to pH 7.9 for both humidity cells, while sulphate concentrations drop from around 400 mg/L to 5 mg/L within the first few cycles (3-4 weeks). These results reflect the extremely low acid potential (AP) of the tailings materials and the low content of soluble constituents that have accumulated since material processing.

5.5.1.2. Depletion of NP and AP

Depletion of NP and AP during each humidity cell test with tailings was calculated in the same way as for waste rock, outlined in Section 4.6.1. Graphs displaying the depletion of NP and AP in humidity cells T1 and T2 are found in Appendix F2. The results show the NP depletion rate is larger than the AP depletion rate. However, due to the very low AP of the tailings materials (Table 5-2) the available AP will be depleted before the available NP.

5.5.1.3. Leachate Chemistry

The leachate chemistry of selected parameters from humidity cells T1 and T2 are summarized in Table 5-5. In addition to these concentration ranges, initial and final phase means (averaged over the first and last 5 weeks of the 57-week humidity cell tests) are also shown in Table 5-5. The leachate chemistry from both humidity cells is very similar. Generally parameter concentrations are higher during the initial 5 weeks and decline thereafter. The parameters sulphate, arsenic and antimony show the largest differences between mean concentrations of the initial and final phases. The elements arsenic, antimony, molybdenum and selenium are highlighted as possible POC due to high mean concentrations during the final phase or when concentrations approach constant values. Of those parameters, arsenic and selenium present concentrations that surpass CCME water quality guidelines (As=0.005 mg/L; Se=0.001 mg/L).

Table 5-5. Summary of leachate chemistry from humidity cells tests with tailings samples.

Tailings (VOK)	Units	Maximum	Minimum	Median	Mean	Mean
Humidity Cell T1					**Initial Phase**	**Final Phase**
pH		8.19	7.28	7.83	7.81	7.75
Conductivity	uS/cm	874	70.6	126	321	126
Acidity (to pH 8.3)	CaCO3 mg/L	18.3	3.9	7.0	4.8	12.9
Sulphate	mg/L	391	2	4	104	3.8
Total Alkalinity	CaCO3 mg/L	92.9	23.5	71.4	73.6	69.1
Aluminum	ug/L	74	22	43	61	24
Antimony	ug/L	26	2.4	3.9	20	2.9
Arsenic	ug/L	252	15	54	**204**	**16**
Cadmium	ug/L	0.199	0.002	0.008	0.006	0.009
Cobalt	ug/L	5.7	0.03	0.09	0.14	0.04
Copper	ug/L	3.3	0.3	0.3	1.8	0.3
Iron	ug/L	190	1.5	1.5	6.0	1.5
Lead	ug/L	0.8	0.01	0.06	0.06	0.07
Mercury	ug/L	0.08	0.005	0.005	0.009	0.005
Molybdenum	ug/L	24	1.5	3.1	8.2	5.2
Selenium	ug/L	20	0.14	1.4	**6.8**	**1.1**
Silver	ug/L	8.6	0.005	0.005	0.006	0.005
Zinc	ug/L	38	0.5	1.0	2.6	0.8
Tailings (WZ)	**Units**	**Maximum**	**Minimum**	**Median**	**Initial**	**Final**
Humidity Cell T2					**Phase**	**Phase**
pH		8.03	7.28	7.84	7.86	7.86
Conductivity	uS/cm	1350	71	121	332	126
Acidity (to pH 8.3)	CaCO3 mg/L	20.1	2.8	5.5	4.8	11.2
Sulphate	mg/L	418	2	5	107	5
Total Alkalinity	CaCO3 mg/L	104	41	66	79	66
Aluminum	ug/L	121	49	81	69	60
Antimony	ug/L	32	2.4	4.2	22.6	3.3
Arsenic	ug/L	232	16	37	**181**	**17**
Cadmium	ug/L	0.1	0.002	0.009	0.016	0.012
Cobalt	ug/L	2.5	0.013	0.043	0.078	0.033
Copper	ug/L	2.4	0.3	0.6	1.6	0.4
Iron	ug/L	42	1.5	1.5	4.1	7.8
Lead	ug/L	0.8	0.1	0.3	0.24	0.25
Mercury	ug/L	0.07	0.005	0.005	0.009	0.005
Molybdenum	ug/L	41	1.8	7.6	13	13
Selenium	ug/L	6.3	0.02	0.6	**2.2**	0.8
Silver	ug/L	0.05	0.005	0.005	0.008	0.005
Zinc	ug/L	16	0.5	1.0	3.4	0.8

Note: bolded values present concentrations above CCME water quality guidelines.

5.5.1.4. Leaching Rates

Leaching rates of selected parameters are summarized in Table 5-6 and temporal trends in these parameters are shown in Appendix F1. The highest leaching rates are generally observed during the initial phase, with lower leaching rates mostly during the final phase. Apart from aluminum and iron, the highest leaching rates are observed for arsenic, antimony, molybdenum and selenium and apply to the initial and final phases when leaching rates of parameters are compared for each phase.

Table 5-6. Summary of leaching rates from humidity cell tests with tailings samples.

Tailings (VOK) - Humidity Cell T1					
Leaching Rate	**Units**	**Maximum**	**Minimum**	**Mean Initial Phase**	**Mean Final Phase**
Aluminum	ug/kg/wk	110	11	31	12
Antimony	ug/kg/wk	13	1.1	10	1.4
Arsenic	ug/kg/wk	18	7	100	8
Cadmium	ug/kg/wk	0.098	0.001	0.003	0.004
Cobalt	ug/kg/wk	2.8	0.016	0.07	0.02
Copper	ug/kg/wk	1.6	0.10	0.9	0.12
Iron	ug/kg/wk	91	0.6	3.4	0.7
Lead	ug/kg/wk	0.38	0.005	0.03	0.03
Mercury	ug/kg/wk	0.004	0.002	0.005	0.002
Molybdenum	ug/kg/wk	16	0.7	4.4	2.5
Selenium	ug/kg/wk	12	0.06	3.7	0.5
Silver	ug/kg/wk	4.3	0.002	0.003	0.002
Zinc	ug/kg/wk	19	0.21	1.3	0.4
Tailings (WZ) - Humidity Cell T2					
Leaching Rate	**Units**	**Maximum**	**Minimum**	**Mean Initial Phase**	**Mean Final Phase**
Aluminum	ug/kg/wk	57	24	34	27
Antimony	ug/kg/wk	16	1.1	11	1.5
Arsenic	ug/kg/wk	120	7	90	8
Cadmium	ug/kg/wk	0.043	0.001	0.008	0.005
Cobalt	ug/kg/wk	1.1	0.007	0.039	0.015
Copper	ug/kg/wk	1.2	0.1	0.8	0.2
Iron	ug/kg/wk	41	0.7	2.1	3.6
Lead	ug/kg/wk	0.4	0.07	0.12	0.12
Mercury	ug/kg/wk	0.035	0.002	0.005	0.002
Molybdenum	ug/kg/wk	21	0.9	6.5	5.9
Selenium	ug/kg/wk	3.2	0.009	1.1	0.4
Silver	ug/kg/wk	0.024	0.002	0.004	0.002
Zinc	ug/kg/wk	7	0.2	1.7	0.4

5.5.2. Subaqueous Columns

The two proposed tailings disposal strategies for the Brucejack Project are: 1) the disposal of flotation tailings under a water cap in Brucejack Lake; and 2) disposal of the tailings as paste backfill in the underground workings, which will be flooded during closure. The objective of subaqueous columns with tailings material is to characterize possible leachate chemistries from either of these scenarios. As per the discussion in Section 4.6.2, the applicability of the column test procedure to field conditions has some limitations. As such, data from subaqueous columns containing tailings material will highlight observed trends in measured variables and will not be used to describe leaching rates at this time.

Mineralogical and geochemical (static test) characteristics of tailings materials used in the subaqueous columns 3 and 5 were shown previously in Table 5-1 and Table 5-2 respectively.

Elements that form oxyanions have increased mobility at circumneutral conditions, which are the prevailing conditions in humidity cells T1 and T2. As such, these elements (As, Se, Sb, Mo) have the highest leachate concentrations and the highest leaching rates in these humidity cells, as shown in Table 5-5 and Table 5-6. A similar trend was observed in waste rock humidity cells with circumneutral conditions (Section 4.6.1).

5.5.2.1. Dissolved Oxygen

Dissolved oxygen (DO) concentrations in the samples collected from the top and bottom of columns 3 and 5 are shown in Figure 5-2. The DO concentrations in samples from the top of the columns fluctuate between 5-7 mg/L (Column 3) and 4.5-6.5 mg/L (Column 5). Conversely, samples taken from the column bottom have lower DO concentrations and are similar between columns (1.0-3.5 mg/L for both Column 3 and 5).

The difference in DO concentration between the top and bottom of tailings columns is similar to the DO patterns observed from columns bearing waste rock (refer to Section 4.6.2.2). The set-up and procedure of subaqueous tailings columns is identical to those for waste rock columns. As such, oxygen diffusion and transport through a shallow water cover may contribute to higher DO concentrations at column tops. Similarly, the ingress of oxygen (air) may also be attributed to the introduction of air during the frequent sampling, replacement of sampled water with possible insufficiently de-aerated nano-pure water, and/or air leakages through column walls and tubing.

A detailed discussion on the use of the subaqueous columns to simulate the prevailing conditions in the lake was described in Section 4.6.2. In the disposal of tailings under a (lake) water cover, the lake water column will likely be partially oxic conditions and reach anoxic levels near the tailings-water interface or at shallow depth in the tailings pore water. As such, the DO trends noted in these subaqueous columns may be comparable to possible field scenarios that depend on the hydrodynamic stability of the lake water column.

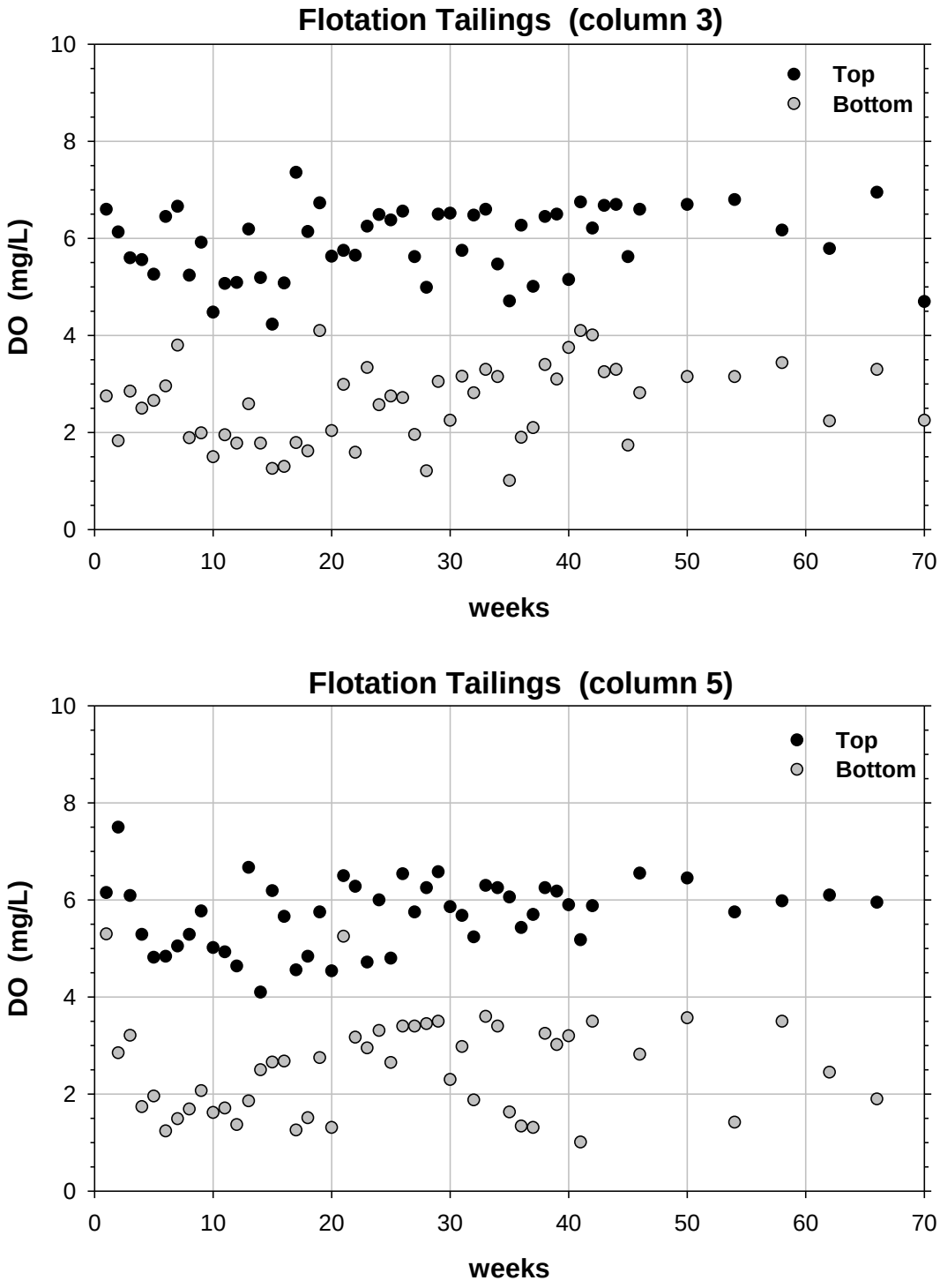


Figure 5-2. Dissolved oxygen (DO) concentrations from tailings-bearing subaqueous columns.

5.5.2.2. Temporal Variation of pH and SO_4 Concentration

The temporal variation of pH and SO_4 concentration in samples collected at the top and bottom of each column is shown in Figure 5-3. For both columns the pH values of samples from the top and the bottom of the column gradually increase from pH 7.5 to pH 7.9. Measured pH values from either end of the column approach a constant value following 20 weeks and are coincident with relatively stable sulphate concentrations.

Sulphate concentrations show large increases in leachate from the column base at the initiation of these tests (0 mg/L to 550-580 mg/L for both columns). Conversely, a small increase in sulphate concentration is observed in leachate from the top of columns. This difference in sulphate concentrations decreases rapidly and after about 20 weeks, whereby both sulphate measurements are similar and appear to approach steady-state concentrations of 15-30 mg/L (Column 3) and 15-20 mg/L (Column 5).

The dilution at the top of the column is large, due to the 30 cm water cap, and likely contributes to low concentrations. The observed spike in sulphate concentrations from the base of the column, likely represents the dissolution of soluble minerals accumulated by processing (initially) and weathering in tailings pore-space. The equilibration between tailings porewater and sulphate concentrations in the water cover likely contributes to the observed decrease in bottom concentrations to steady-state values that are comparable to values measured at the column top.

5.5.2.3. Leachate Chemistry

The chemistry of samples collected from the top and bottom of the subaqueous columns is summarized in Table 5-7. Minimum, median and maximum values of relevant chemical parameters are shown for samples from the top and bottom. Complete analytical data of the two column tests are provided in Appendix G along with all the other kinetic test data.

Similar to the leachate chemistry from tailings in the humidity cells, concentrations of arsenic, antimony, molybdenum, selenium are often elevated in the leachate from the columns. Particularly the concentrations of arsenic (Column 3 and 5), selenium (Column 3) and molybdenum (Column 5) remain quite high and surpass CCME water quality guidelines.

5.5.3. Time to Onset of Acid Generation

Based on the depletion rates of AP and NP, the lag time or time to onset of acid generation was estimated for each humidity cell and subaqueous column with tailings. For humidity cells (T1 & T2) NP consumption in an open system with neutral pH was assumed while for subaqueous columns (3 & 5) NP depletion in a closed system with pH above 6.5 was used. The estimated lag times are shown in Table 5-8 along with other characteristics of the tested tailings.

As per the extremely low acidifying potential (AP) values of tailings material, the AP will be depleted in advance of the neutralization potential (NP) and the tailings are not likely to generate ARD conditions.

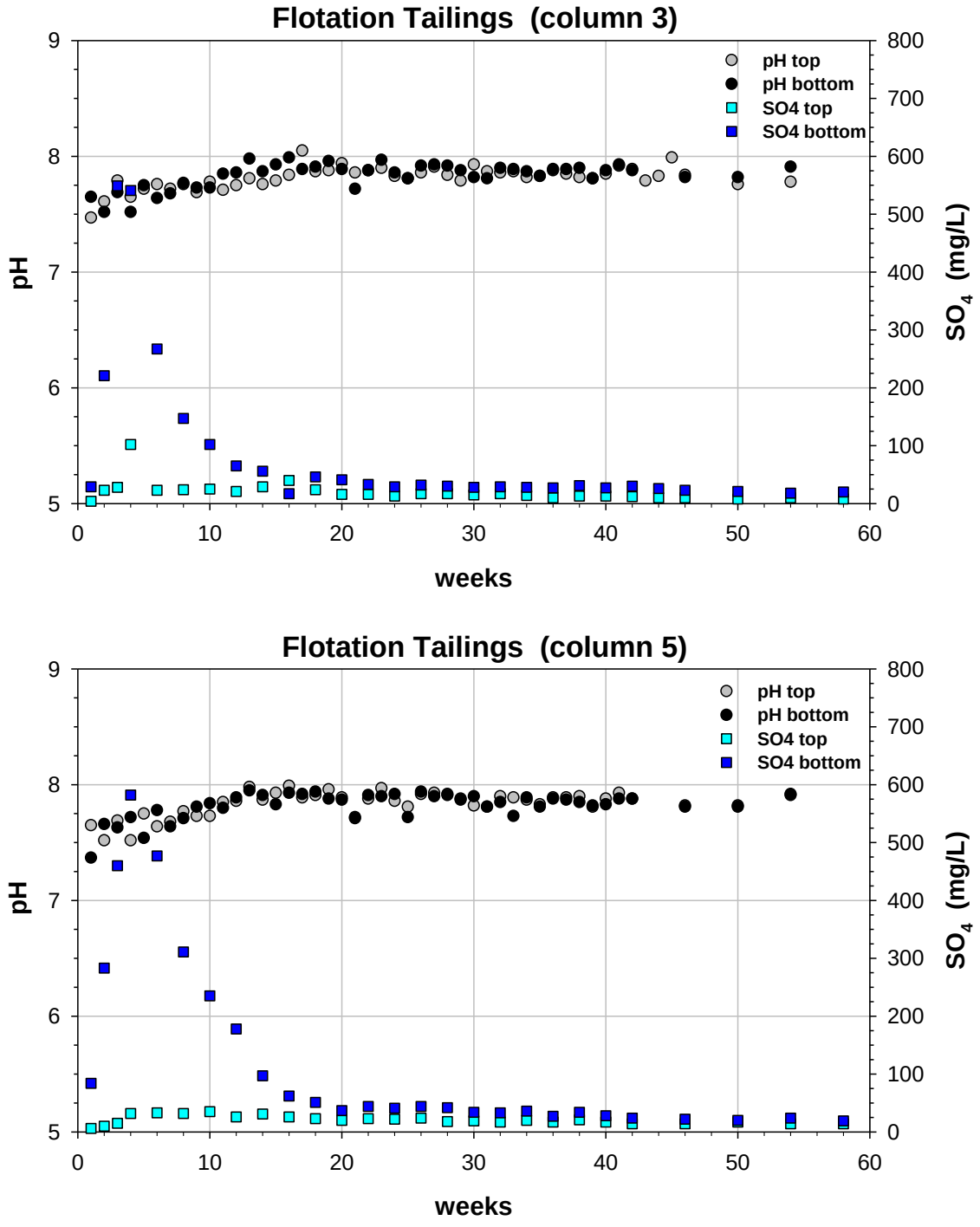


Figure 5-3. Temporal variation of pH and sulphate concentration in subaqueous column tests.

Table 5-7. Summary of leachate chemistry from subaqueous columns with tailings.

Tailings - VOK/WZ (Column 3)							
Chemical Parameters	**Units**	**Maximum**		**Minimum**		**Median**	
		Top	**Bottom**	**Top**	**Bottom**	**Top**	**Bottom**
Conductivity	uS/cm	351	1070	24.7	103	153	260
Acidity (to pH 8.3)	CaCO3 mg/L	9.2	10.2	3.1	3.8	5.0	6.0
Sulphate	mg/L	102	549	4	17	16	30
Total Alkalinity	CaCO3 mg/L	75	102	8.4	20.6	63.8	90.5
Aluminum	ug/L	137	146	20	9	42	29
Antimony	ug/L	20.3	27.1	2.1	1.6	4.0	2.5
Arsenic	ug/L	227	255	11	16	**17**	**213**
Cadmium	ug/L	0.025	0.145	0.002	0.002	0.003	0.004
Cobalt	ug/L	0.14	0.32	0.002	0.006	0.006	0.008
Copper	ug/L	10.8	12.5	0.25	0.25	0.9	1.0
Iron	ug/L	24	37	1.5	1.5	1.5	11
Lead	ug/L	4.5	0.3	0.01	0.01	0.04	0.04
Molybdenum	ug/L	24	41	1.7	2.6	2.6	7.7
Selenium	ug/L	20.3	9.5	0.8	0.5	**1.2**	0.9
Silver	ug/L	0.06	0.07	0.005	0.005	0.005	0.005
Zinc	ug/L	8	10	0.5	0.5	2	3
Tailings - VOK/WZ) (Column 5)							
Chemical Parameters	**Units**	**Maximum**		**Minimum**		**Median**	
		Top	**Bottom**	**Top**	**Bottom**	**Top**	**Bottom**
Conductivity	uS/cm	190	1430	30.6	194	148	253
Acidity (to pH 8.3)	CaCO3 mg/L	8.92	10.1	2.89	3.87	5.27	7.11
Sulphate	mg/L	35	582	6	20	20	44
Total Alkalinity	CaCO3 mg/L	67.7	124	8.22	28.5	58.4	89.7
Aluminum	ug/L	133	107	7.1	4.2	17.1	12
Antimony	ug/L	1.3	2.7	0.1	0.5	1	0.7
Arsenic	ug/L	5.9	5	0.1	0.7	**1.9**	**4.2**
Cadmium	ug/L	0.032	0.147	0.0015	0.004	0.01	0.018
Cobalt	ug/L	0.121	0.286	0.002	0.035	0.039	0.088
Copper	ug/L	3.3	23.5	0.25	0.25	0.6	0.8
Iron	ug/L	13	20	1.5	1.5	1.5	1.5
Lead	ug/L	0.22	0.82	0.01	0.01	0.01	0.03
Molybdenum	ug/L	28.5	147	3.92	72.4	22.9	**86.1**
Selenium	ug/L	0.42	3.77	0.12	0.12	0.26	0.2
Silver	ug/L	0.15	7.52	0.005	0.005	0.005	0.005
Zinc	ug/L	10	18	0.5	1	2	4

Note: bolded values present concentrations above CCME water quality guidelines.

Table 5-8. Estimated lag times and characteristics of the tailings.

No.	Zone	Lag time	Paste pH	TIC	Tot-S	SO_4-S	Sulp-S	AP	Sobek NP	NPR
		yrs		%	%	%	%	kg $CaCO_3$/t	kg $CaCO_3$/t	
Humidity Cells										
T1	VOK	never	8.92	0.90	0.04	<0.01	0.02	0.8	77	96
T2	WZ	never	9.08	0.84	0.06	<0.01	0.04	1.4	69	49
Subaqueous Columns										
3	VOK/WZ	never	9.04	0.85	0.06	<0.01	0.04	1.2	71	57
5	VOK/WZ	never	7.72	0.94	0.09	<0.01	0.07	2.2	89	41

6.0 SITE CHARACTERIZATION MATERIALS

6.1. Overall Design and Objective

A site characterization program was designed to assess the ML/ARD characteristics of surface materials in the following four areas (Drawing 3):

1. The proposed operational mine site layout, hereafter referred to as “plant site”.
2. The proposed aerodrome.
3. The Brucejack Access Road, which connects Hwy 37 to the Brucejack mine site.
4. The proposed quarry site.

This program was carried out in three site visits, one sampling trip by Pretivm in 2012, and two sampling trips by BGC in 2013 (August and October).

6.2. Field Program

A total of 93 samples were submitted for the site characterization (static testing and SFE tests) of the four areas. The focus of the first two site visits was to sample surficial material or those materials that may be exposed during construction and operations in three areas: the proposed mine site, the proposed airstrip and the 63 km all-weather portion of the Brucejack Access Road. The third site visit involved a geotechnical drill program, which included sampling in the proposed quarry area. All samples were submitted for static testing; a smaller subset was submitted for SFE tests. The quarry samples were also submitted for mineralogical analysis (XRD and petrography).

6.2.1. Sample Selection

The sampled materials included overburden (soil, regolith, detritus), road materials (cut and fill) and drill core (where available). Overburden samples were collected in areas representing the various exposed geological model units and materials were removed from the surface to a depth of 0.4 m. Road materials were generally sampled at the edge of the current road or near the road shoulder in areas of evident fill material or in the absence of road cuts. Sample frequency along roads was increased in areas of significant lithological variation and additional samples were taken in high priority areas along the current access road (e.g., Knipple cut). Drill core samples from the proposed plant site and quarry areas were submitted for ML/ARD characterization. Drill core of the proposed plant site was available from a previous geotechnical drilling program. Plant site samples were taken from depth intervals representative of expected foundation pad elevations (1395 m.a.s.l) and sample frequency was dictated by variations in lithology and mineralization. At the time of this report, the boundaries of the quarry area were not finalized. As such, the October 2013 quarry drill program included three drill holes located spatially across the proposed area. The upper 25 m from each drill hole were combined and crushed and three sub-samples were randomly selected from each drill hole for analysis for the purposes of providing a general characterization of the quarry materials.

Plant Site

Forty samples were taken from the plant site area (Drawing 4), whereby half of the samples represent the mill site area and the proposed foundation pads (21) and the other half represent the roads surrounding the mill site (19). Samples contain both fresh and weathered material and include 6 unique mineral assemblages that may be exposed during construction and operations. Intermediate volcanic material (11) is the dominant lithology at the plant site, with less common latite flow assemblages (9), arenite (7), and fragmental volcanic rocks (6). The remainder of the data set includes conglomerate (3), porphyry (3) and till (1) materials.

Aerodrome

Four samples were taken from the planned aerodrome area northeast of Bowser Lake and north of Bowser camp. A relatively thick till blanket overlies the area directly within and around the Bowser camp. This material will be exposed during construction activities and may be used in the construction of a lay-down, within the proposed aerodrome area. As such, two till samples were taken for static testing and SFE tests. These till samples will augment the number of till samples taken in other areas associated with the Brucejack project.

A safe landing and takeoff stretch for aircraft requires the removal of a section of a south-facing, steep hill near Bowser Camp. The hill is composed of intermediate volcanic rock and will be exposed during the construction period. Access and sampling difficulties resulted in only two samples being removed from the hillside outcrop, which were submitted for static testing and SFE testing. Construction of an airstrip and laydown pad is planned for 2015.

Access Road

Forty samples were taken along the access road, extending 75 km from Brucejack camp to Wildfire Camp (adjacent Highway 37) (Drawing 5). Samples include 8 different lithologies, ranging from volcanic to sedimentary materials and unconsolidated sediments (till), from either the Hazelton Group (Brucejack to Bowser Lake) or the Bowser Lake Group (Bowser to Wildfire Camp).

These groups are described in detail in a compiled MINFILE map (NTS 104A, Bowser Lake) (Coombe and Jakobsen, 1993). Specifically, the Hazelton Group consists of three main formations: the Unuk Rover Formation, the Betty Creek Formation and the Salmon River Formation (Coombe and Jakobsen, 1993). In general, these formations grade from dominantly volcanic assemblages (andesites/basalts, breccia, tuffaceous material) to sedimentary material (conglomerate, sandstone, siltstone, shale, limestone and chert) with increasing age.

The Bowser Lake Group similarly contains three main formations: the Currier Formation, the McEvoy Formation, and the Devils Claw Formation. The Bowser Lake Group consists of non-marine sedimentary material (conglomerate, sandstone, siltstone, mudstone, and shale) and rare carbonate material.

In total, 25 of the 40 access road samples were taken from the Bowser Lake Group and the remainder from the Hazelton Group. A detailed breakdown of the sampled lithologies along the access road is shown in Table 6-1.

Table 6-1. Dominant lithology and origin of access road samples.

Dominant Lithology	Hazelton Group	Bowser Lake Group
	Brucejack Camp to Bowser Camp	Bowser Camp to Wildfire Camp
Fragmental volcanic rocks	1	--
Intermediate volcanic rocks	2	--
Porphyry	2	--
Conglomerate	1	1
Till	3	3
Mudstone	2	1
Sandstone	--	5
Shale	4	16†
Total	*15*	*25*

† includes 6 shale samples taken along the access road during the first 2012 visit.

Quarry site

In October 2013, a short diamond drill program was conducted in the proposed quarry site area. The quarry is located near the southeast end of Brucejack Lake (Drawing 3) and quarry material is planned for use as structural fill and/or concrete aggregate. Three drill holes were spaced across the proposed pit and drilled to a total depth of 50 m (Drawing 6). Drill hole total depths relate to maximum anticipated slope exposures of 50 m. Core assemblages were predominantly volcanic (plagioclase-hornblende) porphyry (P1) with no observed major discontinuities and negligible sulphide mineralization. Drill core from the upper 25 m of each hole was combined and sub-sampled three times for a total of 9 samples. Samples were submitted for static testing and SFE testing.

6.3. Results

The following sections will describe the mineralogy, static tests, and SFE results for all samples related to the site characterization sampling program. Detailed analytical results may be found Appendix I (Static Tests and SFE for areas: Plant Site, Aerodrome, and Access Road) and Appendix J (Static Tests, SFE, and Petrographic and XRD reports for Quarry materials).

6.3.1. Mineralogy

Samples from the quarry drill program were submitted for Rietveld X-ray diffraction (XRD) and petrography. As a preliminary phase, detailed logging was conducted during the drill program on material from each drill hole.

6.3.1.1. Detailed Core Logs

In general, drill core material is fine to medium grained, meta-intermediate volcanic rock containing hornblende ± feldspar phyric flows (trachyandesite). Pervasive replacement-style silica alteration is observed in the drill core and shows strong hematite alteration occurring as stringers and as replacement of matrix and clasts. The intensity of hematization varies vertically in each drill hole, but host lithology was consistent. Veining is observed in most samples showing minor (≤5%) quartz ± calcite veins; sulphide minerals were not observed. Material did not vary considerably between locations and spatial variations, where noted, are minor.

6.3.1.2. Optical Mineralogy

A petrographic analysis of the coarse fraction (with diameters between 5 mm and 28mm) from the three drill holes (SU-614, SU-615, and SU-616) were performed by Golder Associates (Burnaby, B.C.) (Appendix J-2). Each hole consisted of rhyolite of varying shades (medium to dark grey/purple, medium purple/green and medium grey/yellow/green) containing feldspathic phenocrysts with hematite inclusions and giving the rock a porphyritic (phyric) texture. Groundmass was dominantly aphanitic. Small calcite grains are pervasively present in small amounts within the groundmass and as a minor component in quartz veins. Iron sulphides are observed as single grains in thin stringlets and associated with veins in material from all three drill holes. Veining occurred in variable amounts across the three holes, with layered and/or braided dark red (possibly hematitic), slightly calcitic veins (0.5-18mm thick) and quartz ± calcite veins (2-15mm thick).

6.3.1.3. X-ray Diffraction (XRD)

Results from XRD for the 9 samples (three composites per drill hole) are shown in Table 6-2 (detailed results in Appendix J-3) and confirm the visual observation of little spatial variability in mineralogy between the three drill holes. The mineralogy of quarry material is primarily comprised of: muscovite (28%-33%), quartz (27%-32%), and albite (20%-26%). Similar to the XRD analysis described in Section 4.2.3, the muscovite XRD pattern is comparable to sericite. Minor minerals in each sample include clinozoisite (epidote; 3.2-9.0%) and K-feldspar (orthoclase, 6.5 %-10.2 %). Iron carbonate minerals are noted in small proportions (siderite, 0.6%-1.0%; ankerite, 0.2%-0.4%), in addition to calcite (1.5%-2.6%). Hematite content is consistent throughout the nine samples, at 1.1% to 1.7%. Sulphide mineralization consists of minor to trace amounts of pyrite (0.09%-0.14%) and was noted in eight of the nine samples.

6.3.2. Acid-Base Accounting (ABA)

Minimum, maximum and median values from lithology-specific samples, broken down into each of the four characterized areas (plant site, aerodrome, access road, quarry) are shown in Table 6-3. In general, approximately 50% of samples have NPR values less than 2.0 and are considered PAG material. Sulphide-S values ranged from below detection (< 0.01%) to 13.6% and in several cases sulphate-S constitutes a significant proportion of total sulphur

values. High sulphate values likely originate from exposed/weathered materials that contain soluble sulphate-bearing secondary precipitates. These precipitates may generate acidity upon dissolution and should be incorporated in AP calculations. As such, AP from samples with greater than 20% sulphate-S and paste-pH values less than 7.0 are calculated from total sulphur values. This modified AP method was applied to 7 samples from the plant site area, which included 5 overburden samples (arenite (2), latite flow (2), fragmental volcanics (1)) and 2 road samples (intermediate volcanics) samples. Acid potential (AP) values from all other samples was calculated from sulphide-S values.

Table 6-2. X-ray diffraction mineralogical analysis of quarry samples.

Mineral	Ideal Formula	SU-614			SU-615			SU-616		
		1	2	3	1	2	3	1	2	3
Albite low	$NaAlSi_3O_8$	20.9	21.8	20.3	22.4	22.4	23.2	26.4	23.4	25.2
Ankerite	$Ca(Fe^{2+},Mg,Mn)(CO_3)_2$	0.38	0.34	0.32	0.28	0.38	0.34	0.25	0.36	0.34
Calcite	$CaCO_3$	1.8	2.0	1.5	2.6	2.6	2.6	2.4	2.0	1.9
Clinozoisite	$Ca_2Al_3(SiO_4)_3(OH)$	8.2	9.0	4.2	6.0	6.0	5.4	3.4	3.2	3.4
Hematite	Fe_2O_3	1.2	1.1	1.4	1.2	1.2	1.2	1.7	1.6	1.6
Illite Muscovite	$K_{0.65}Al_{2.0}(Al_{0.65}Si_{3.35}O_{10})(OH)_2$ $KAl_2AlSi_3O_{10}(OH)_2$	2.5	3.5	2.8	2.3	2.3	2.3	2.5	2.3	2.4
Illite Muscovite	$K_{0.65}Al_{2.0}(Al_{0.65}Si_{3.35}O_{10})(OH)_2$ $KAl_2AlSi_3O_{10}(OH)_2$	26.0	24.2	30.4	26.9	26.9	26.4	26.3	28.0	27.5
Orthoclase	$KAlSi_3O_8$	6.5	7.0	8.2	9.2	9.2	10.2	9.2	9.9	9.3
Pyrite	FeS_2	0.10	0.11	0.14	0.12	n.d	0.10	0.14	0.12	0.09
Quartz low	SiO_2	31.7	30.4	29.9	28.4	28.5	27.6	27.0	28.4	27.8
Siderite	$(Fe^{2+},Ca)CO_3$	0.62	0.66	1.0	0.60	0.53	0.67	0.72	0.71	0.56
Total		*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Table 6-3. Summary of ABA data of the site characterization samples.

Lithology	Site Area		Paste pH	$CaCO_3$ NP	Sobek NP	Total S	SO_4-S	S^{2-}-S	AP†	NPR‡
		Units	--	kg $CaCO_3$/t	kg $CaCO_3$/t	%	%	%	kg $CaCO_3$/t	--
Arenite (n = 7)	**Plant Site (n = 7)**	Min	5.94	<0.40	2.30	0.09	0.01	0.04	2.81	0.064
		Max	8.09	168	168	7.25	0.04	6.92	216	3.68
		Median	7.38	5.00	13.9	3.02	0.03	2.89	90.3	0.41
Conglomerate (n = 5)	**All samples (n = 5)**	Min	8.03	29.2	41.5	0.04	<0.01	0.01	0.16	0.38
		Max	8.52	165	162	14.0	0.03	13.60	425	998
		Median	8.26	105	127	0.96	0.02	0.83	25.9	2.99
	Plant Site (n = 3)	Min	8.03	105	127	0.04	<0.01	0.01	0.16	0.38
		Max	8.52	165	162	14.0	0.03	13.60	425	998
		Median	8.08	146	156	7.63	0.02	6.78	212	0.60
	Access Road (n = 2)	Min	8.26	29.2	41.5	0.06	<0.01	0.02	0.63	2.99
		Max	8.36	72.5	77.6	0.96	<0.01	0.83	25.9	66.4
Fragmental Volcanic Rocks (n = 7)	**All samples (n = 7)**	Min	5.37	<0.40	0.00	0.05	0.01	<0.01	0.16	<0.13
		Max	8.92	106	108	2.11	0.14	1.85	57.8	551
		Median	7.69	40.8	50.6	0.31	0.04	0.23	7.19	2.11
	Plant Site (n = 6)	Min	5.37	<0.40	0.00	0.05	0.01	<0.01	0.16	<0.13
		Max	8.92	106	108	2.11	0.14	1.85	57.8	551
		Median	7.50	36.3	54.6	0.36	0.04	0.29	9.06	1.83
	Access Road (n = 1)		8.64	40.8	50.6	0.10	<0.01	0.06	1.90	27.0
Intermediate Volcanic Rocks (n = 15)	**All samples (n = 15)**	Min	5.22	<0.40	3.00	0.03	<0.01	<0.01	0.16	0.31
		Max	9.31	141	165	4.10	0.23	3.88	121	<239
		Median	8.16	23.3	37.3	0.20	0.03	0.15	4.69	2.01
	Plant site (n = 11)	Min	5.22	<0.40	3.00	0.08	<0.01	0.03	0.94	0.64
		Max	8.48	141	165	4.10	0.08	3.88	121	65.9
		Median	8.14	23.3	39.6	0.54	0.02	0.49	15.3	1.84
	Access Road (n = 2)	Min	7.35	23.3	27.7	0.05	<0.01	0.04	1.25	0.31
		Max	9.31	27.5	42.2	3.34	0.23	2.82	88.1	33.8
	Aerodrome (n = 2)	Min	8.91	5.00	29.8	0.03	<0.01	<0.01	<0.16	<191
		Max	9.15	14.2	37.3	0.05	<0.01	<0.01	<0.16	<239
Latite Flow (n = 9)	**Plant Site (n = 9)**	Min	4.20	<0.40	4.20	0.02	<0.01	<0.01	<0.16	<0.061
		Max	9.35	68.3	9.35	2.18	0.17	2.02	63.1	<342
		Median	7.61	6.67	7.61	0.19	<0.01	0.07	5.94	1.15
Undifferentiated Porphyry (n = 5)	**All samples (n = 5)**	Min	7.96	12.5	24.9	<0.01	0.03	<0.01	<0.16	0.39
		Max	9.33	102	96.4	5.52	0.03	5.12	160	<617
		Median	8.97	60.8	63.0	0.03	0.03	<0.01	<0.16	<159
	Plant site (n = 3)	Min	7.96	60.8	63.0	0.01	0.03	0.01	0.16	0.39
		Max	9.33	102	96.4	5.52	0.03	5.12	160	617
		Median	9.26	90.0	89.9	0.07	0.03	0.06	1.88	48.0
	Access Road (n = 2)	Min	8.91	12.5	24.9	0.03	<0.01	<0.01	<0.16	159
		Max	8.97	26.7	26.1	0.03	<0.01	<0.01	<0.16	167
Volcanic Porphyry (n = 9)	**Quarry (n = 9)**	Min	8.61	10.0	9.4	<0.01	<0.02	<0.03	<0.16	<58.8
		Max	9.42	21.7	31.9	0.01	<0.02	<0.03	<0.16	<199
		Median	9.32	16.7	27.5	<0.01	<0.02	<0.03	<0.16	<172
Mudstone (n = 3)	**Access Road (n = 3)**	Min	5.64	<0.40	8.90	0.35	<0.01	0.26	8.13	0.12
		Max	8.33	62.5	99.9	2.94	0.06	2.42	75.6	6.46
		Median	7.63	37.5	52.5	1.08	0.06	0.87	27.2	3.67
Sandstone (n = 5)	**Access Road (n = 5)**	Min	7.13	3.33	16.0	0.06	<0.01	0.03	0.94	1.11
		Max	9.09	65.8	72.9	0.58	<0.01	0.49	15.3	46.7
		Median	8.64	5.00	25.9	0.12	<0.01	0.07	2.19	14.3
Shale (n = 19)	**Access Road (n = 19)**	Min	4.91	<0.40	4.60	0.05	<0.01	<0.01	0.31	0.22
		Max	9.02	130	145	4.49	0.12	4.00	125	106
		Median	7.89	23.8	34.7	0.75	<0.01	0.68	21.3	1.08
Till (n = 9)	**All samples (n = 9)**	Min	7.15	<0.40	8.70	0.08	<0.01	0.03	0.94	2.18
		Max	8.30	46.7	54.6	0.87	0.02	0.80	25.0	36.0
		Median	8.12	19.2	33.1	0.22	<0.01	0.17	5.31	5.88
	Plant Site (n = 1)		7.98	46.7	54.6	0.87	0.02	0.80	25.0	2.18
	Aerodrome (n = 2)	Min	8.30	10.8	29.6	0.21	<0.01	0.15	4.69	4.51
		Max	8.30	17.5	32.5	0.28	<0.01	0.21	6.56	6.93
	Access Road n = 6)	Min	7.15	<0.40	8.70	0.08	<0.01	0.03	0.94	2.78
		Max	8.30	25.8	38.3	0.27	<0.01	0.20	6.25	36.0
		Median	8.06	20.4	33.4	0.20	<0.01	0.15	4.69	6.55

† AP calculated from Sulphide-S if Sulphate S represents less than 20% of total sulphur. In samples with greater than 20% Sulphate-S, total S was used for AP calculation in order to account for acidity generated from soluble sulphate-bearing secondary precipitates common to exposed (or weathered) materials.

‡ Sobek NP and AP values are used primarily in NPR calculations. Samples with '0' values for Sobek NP, apply CaNP values in NPR calculation

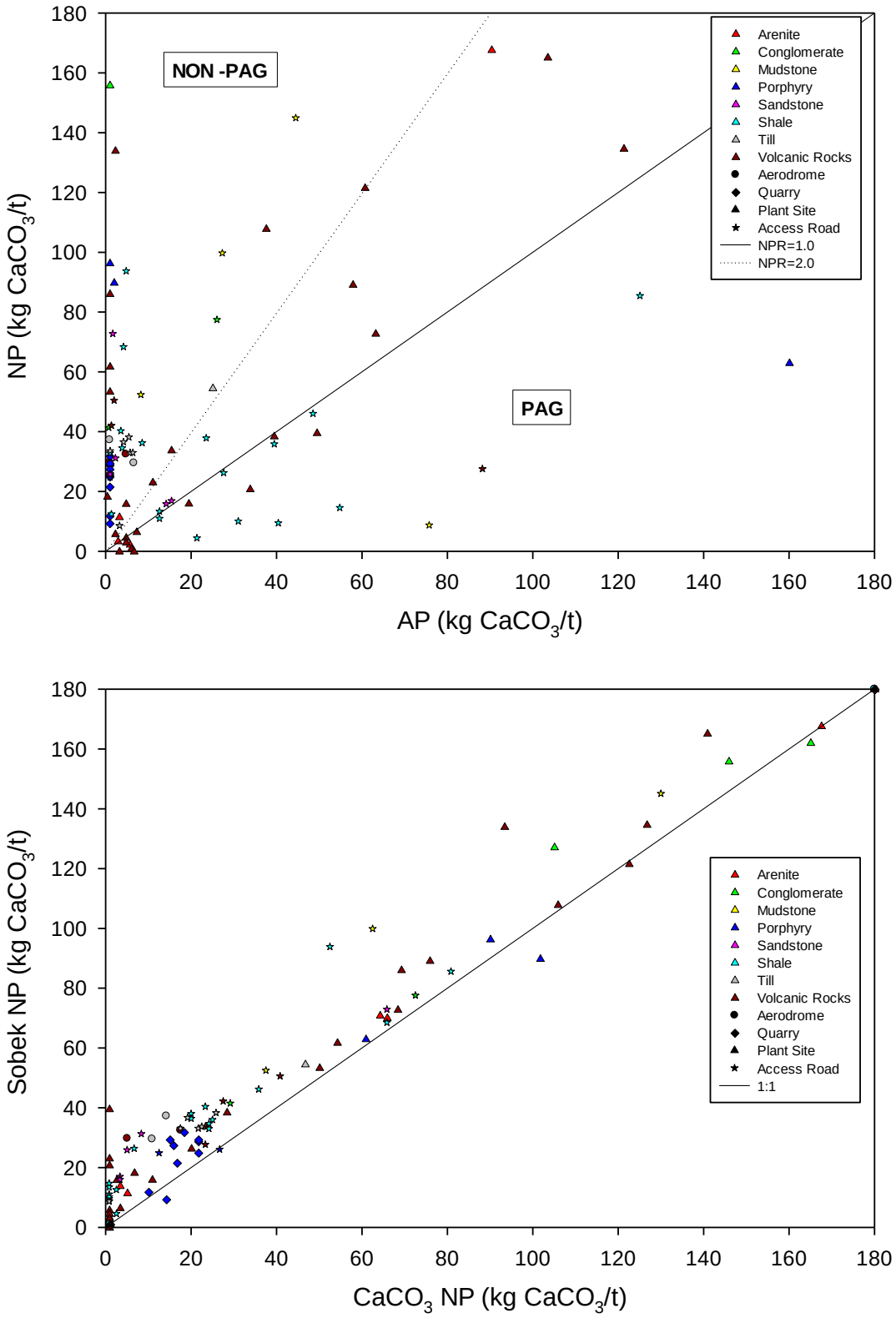


Figure 6-1. Scatter plots of NP versus AP and carbonate NP versus total NP.

6.3.2.1. Plant Site

Analyses of 40 samples indicate a wide range of ABA characteristics from plant site materials. Sulphide-S concentrations vary from below detection (< 0.01%) to 13.6 % and median values of 0.29%. NP also varies significantly, with values varying from below detection (<0.5 kg $CaCO_3$/t) to 168 kg $CaCO_3$/t. As a result NPR values range between 0.6 and 998. Twenty-three of the 40 samples present NPR values less than 2.0 and are characterized as PAG material. Distinct trends between NPR values and lithology were not observed.

Paste pH values are generally between 7.5 and 9.5, with the exception of a few lithologies. Arenite, latite flow and intermediate volcanic assemblages present frequent occurrences of acidic paste pH values (pH 4.0-6.5) and are generally attributed to the absence of carbonates and significant sulphate values. Most samples showing acidic paste pHs were obtained from overburden material.

Other lithologies in the plant site area include conglomerate, porphyry, fragmental volcanics, and till. Drill core samples used in datasets pertaining to the first two lithologies differ considerably from surficial samples and highlight incongruities in subsurface samples used for site characterization. Specifically, the two conglomerate drill core samples contained significantly higher sulphide percentages than the three non-drill core samples (6.78% and 13.6% for drill core versus average of 0.29% for non-drill core) and therefore contributed to the only PAG characterization in the conglomerate dataset.

6.3.2.2. Access Road

The majority of access road samples has NPR values greater than 2.0 and is generally considered non-PAG materials (Table 6-3). In these samples, sulphide-S values are normally less than 2% and contain a significant carbonate buffering potential (Table 6-3). Shale material poses the greatest risk to ARD as over half of the samples show NPR values below 2.0. Contributing to the low shale NPR values is a low to very low (below detection limit) carbonate content. These samples are shown in Figure 6-1 and point towards an increased risk for generating acidity. Shale samples were taken from the Hazelton and Bowser Lake groups and both show comparable ABA characteristics.

6.3.2.3. Aerodrome and Quarry

The samples taken from the aerodrome and quarry are characterized as non-PAG. Quarry samples show significant carbonate-buffering capacity and low sulphide-S contents. Carbonate minerals make up less than 50% of the total buffering capacity from aerodrome samples as shown in Table 6-3. However, the low sulphide-S percentages (less than 0.21%) in the small aerodrome data suggest materials in the area may have sufficient buffering capacity to overcome acid generated by the sulphide oxidation.

6.3.3. Total Elemental Content

Several metals are highlighted as elemental enrichments based on concentrations greater than average crustal abundances. Specifically, the metals As, Ag, Hg and Sb are found at high concentrations in almost all lithologies sampled. The metals Mo, Pb, Zn, Cd and Mo are found at moderate to high concentrations in many samples while only a few lithologies show exceedances of Cr and Ni. Summary statistics of metal concentrations from the 11 sampled lithologies are shown in Table 6-4. Of the metals with high concentrations, the largest exceedances are reported for:

- Ag, Pb, Sb – latite flow
- As, Cu – conglomerate
- Mo, Cd – shale
- Co – mudstone
- Hg – arenite
- Ni, Cr – sandstone.

Most metals do not show a clear association with lithology, with the exception of nickel and chromium. Nickel and chromium occur at concentrations well above crustal abundances in sedimentary rocks (mudstone, shale, sandstone).

6.3.4. Shake Flask Extraction Tests

A total of 36 samples were submitted for SFE testing; with 13 from the plant site and 13 from the access road, one from the aerodrome and the 9 composite samples from the quarry site. Nine sample lithologies were included in this analysis and complement the sample lithologies analyzed with static testing. The minimum, maximum and median values from SFE testing are shown in Table 6-5. Note that average statistics for metals are not included for reasons of smaller sample sets than used in static testing.

Most samples (33 of 36) have pH values between pH 7.5 and 9.4. Two samples show acidic pH values (pH 5.63 and 6.12) and are associated with intermediate volcanic material along a plant site road and the access road. Alkalinity is generally high in SFE tested samples, with values between 20 and 45 mg $CaCO_3$/L. A few lithology-specific trends are noted:

- Al: all sample lithologies (minus arenite) have moderate Al concentrations in the several 100 ppb range.
- As: high As concentrations are observed for most lithologies with the exception of conglomerate; shale and plant site porphyry. The highest As concentration is from the intermediate volcanic material and the highest median value is observed in the quarry material.
- Cd: likely a concern with arenite and possibly with quarry samples as concentrations are 10x higher relative to other lithologies.
- Co, Fe, Mn, Zn: present much higher concentrations in those samples displaying acidic pH values, and may be of concern for those previously described plant site materials with high sulphate-S and low paste pHs.
- Se: arenite and shale samples show approximately 10x higher median concentrations relative to other materials.

Table 6-4. Summary statistics of total metal concentrations from site characterization samples.

Sample Lithology		Al	Ba	Ca	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Zn	Ag	As	Cd	Co	Hg	Mo	Pb	Sb	Se
		%	ppm	%	ppm	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Average Crustal Abundance		**8.23**	**425**	**4.15**	**102**	**60**	**5.63**	**2.09**	**2.33**	**950**	**2.36**	**84**	**70**	**0.08**	**1.8**	**0.15**	**25**	**0.09**	**1.2**	**14**	**0.2**	**0.05**
Arenite (n = 7)	Min	0.49	55	0.06	18	16	2.8	0.11	0.19	147	0.02	1.8	32	0.05	17	0.12	5.8	0.10	0.9	9.0	0.75	<1
	Med	0.94	77	0.41	33	34	4.5	0.12	0.37	1400	0.02	13	70	0.29	49	0.24	11	0.30	2.0	13	2.9	1.0
	Avg	0.96	75	1.9	37	40	4.8	0.13	0.41	1450	0.02	22	83	0.39	96	0.23	13	0.45	1.9	13	3.1	2.0
	Max	1.6	94	6.7	62	90	6.3	0.15	0.71	2240	0.04	74	145	1.1	355	0.38	24	1.5	2.5	22	8.2	3.0
Conglomerate (n = 5)	Min	0.68	47	1.4	12	0.70	2.1	0.09	0.27	743	0.02	1.2	52	0.01	2	0.07	6.1	<0.01	0.2	2.9	0.27	<1
	Med	1.3	116	4.2	21	18	4.4	0.17	1.12	1370	0.02	9.1	69	0.07	13	0.12	12	0.09	0.6	14	0.63	<1
	Avg	1.4	144	4.1	26	41	5.9	0.15	0.93	2503	0.02	26	71	0.07	415	0.16	12	0.09	0.7	11	1.3	<1
	Max	2.3	310	6.1	43	100	12	0.19	1.33	5640	0.04	72	87	0.13	1170	0.31	19	0.11	1.9	20	3.4	5.0
Fragmental Volcanic Rocks (n = 7)	Min	0.28	89	0.01	20	3.8	2.5	0.10	0.03	38	0.01	0.5	15	0.03	2	0.07	0.6	<0.01	0.4	4.1	0.19	<1
	Med	1.1	359	2.3	30	15	3.8	0.13	0.56	1000	0.03	2.0	62	1.0	42	0.11	8.0	0.14	1.1	12	1.7	<1
	Avg	1.3	350	2.0	31	13	3.9	0.15	0.64	852	0.02	2.7	73	1.9	30	0.13	7.4	0.30	1.2	15	2.0	<1
	Max	3.0	898	4.4	56	22	6.6	0.29	1.3	1560	0.03	5.5	141	7.5	63	0.26	11	0.64	2.3	44	7.2	5.0
Intermediate Volcanic Rocks (n = 15)	Min	0.37	41	0.03	16	2.5	2.0	0.05	0.07	220	0.01	1.1	23	0.02	<1	0.07	2.1	<0.01	0.2	1.4	0.03	<1
	Med	1.2	134	1.5	30	23	4.1	0.14	0.63	1200	0.02	3.1	77	0.70	22	0.15	7.3	0.03	0.7	11	1.6	<1
	Avg	1.4	169	2.2	32	24	4.0	0.15	0.89	1165	0.03	4.8	75	2.3	47	0.17	9.6	0.10	1.0	17	1.8	<1
	Max	3.2	482	6.0	56	75	5.8	0.31	2.7	2170	0.08	24	141	15	243	0.36	25	0.31	4.1	51	7.2	2.0
Latite Flow (n = 9)	Min	0.26	75	0.03	22	0.90	0.62	0.11	0.01	50	<0.01	0.9	5.0	<0.01	8	0.07	0.8	<0.01	0.3	2.2	0.82	<1
	Med	0.73	167	0.98	32	22	3.1	0.17	0.24	740	0.02	1.8	36	1.4	68	0.09	6.7	0.09	1.2	14	1.7	<1
	Avg	0.73	216	1.1	32	21	3.0	0.18	0.30	834	0.02	3.5	53	6.1	94	0.19	6.8	0.19	1.8	37	6.7	<1
	Max	1.3	509	3.0	45	39	6.1	0.29	0.74	1910	0.05	13	140	26	220	0.54	13	0.64	4.3	153	30	1.0
Undifferentiated Porphyry (n = 3)	Min	0.43	66	0.46	27	<0.5	2.1	0.13	0.23	561	0.01	1.0	27	0.04	2	0.02	3.0	<0.01	0.2	2.8	1.5	<1
	Med	0.55	68	0.72	30	1.8	2.2	0.32	0.25	807	0.02	1.3	41	0.18	2	0.06	3.9	<0.01	1.5	8.8	2.6	<1
	Avg	0.79	185	1.3	32	12	3.1	0.27	0.50	730	0.02	2.1	39.0	0.24	24	0.31	5.6	0.36	1.5	9.6	2.3	<1
	Max	1.4	421	2.8	39	22	5.0	0.37	1.0	831	0.03	3.9	49	0.51	67	0.86	10	0.36	2.7	17	2.8	3.0
Sandstone (n = 5)	Min	1.4	91	0.28	106	27	2.2	0.14	1.3	173	0.03	84	64	0.10	4	0.19	11	0.02	0.8	3.1	0.29	<1
	Med	2.1	129	0.38	165	51	3.6	0.17	1.8	358	0.03	127	94	0.19	5	0.44	15	0.08	1.6	6.5	0.34	<1
	Avg	2.2	134	0.84	160	47	3.5	0.17	1.9	378	0.03	123	94	0.19	6	0.39	15	0.13	1.5	6.1	0.39	6.0
	Max	2.8	191	2.5	195	70	4.3	0.21	2.3	650	0.03	173	129	0.29	11	0.53	19	0.39	2.3	8.0	0.60	6.0
Shale (n = 19)	Min	0.42	80	0.09	18	1.1	1.2	0.10	0.13	113	0.02	0.6	36	0.02	3	0.1	1.4	0.02	0.6	5.7	0.11	<1
	Med	2.0	133	0.74	102	54	4.3	0.20	1.4	464	0.02	104	118	0.26	11	0.31	15	0.11	1.7	9.0	0.54	1.0
	Avg	1.9	147	1.1	99	46	3.9	0.19	1.3	505	0.02	92	121	0.31	12	0.54	15	0.12	3.7	11	0.74	1.6
	Max	2.6	277	5.7	164	76	5.3	0.25	2.1	1240	0.05	162	251	0.66	21	2.9	24	0.30	22	26	2.7	3.0
Mudstone (n = 3)	Min	2.1	102	0.18	75	46	3.8	0.14	1.3	465	0.02	111	99	0.27	17	0.18	19	0.11	1.6	8.6	0.41	<1
	Med	2.1	108	1.6	82	52	4.7	0.16	1.4	697	0.03	124	104	0.34	19	0.2	19	0.11	2.3	16	0.81	1.0
	Avg	2.2	114	1.5	106	55	4.7	0.15	1.5	628	0.03	130	104	0.47	23	0.23	23	0.22	2.4	17	1.2	3.5
	Max	2.3	133	2.7	160	67	5.5	0.16	1.7	721	0.03	154	109	0.80	32	0.32	32	0.44	3.3	27	2.3	6.0

Sample Lithology		Al	Ba	Ca	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Zn	Ag	As	Cd	Co	Hg	Mo	Pb	Sb	Se
		%	ppm	%	ppm	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Average Crustal Abundance		**8.23**	**425**	**4.15**	**102**	**60**	**5.63**	**2.09**	**2.33**	**950**	**2.36**	**84**	**70**	**0.08**	**1.8**	**0.15**	**25**	**0.09**	**1.2**	**14**	**0.2**	**0.05**
Till (n = 9)	Min	1.2	124	0.37	38	13	3.4	0.12	0.53	605	0.02	2.7	74	0.12	8	0.22	9.0	0.04	0.78	6.1	0.57	<1
	Med	2.2	143	1.3	68	40	4.3	0.15	1.4	854	0.04	36	95	0.19	8	0.33	15	0.05	1.5	8.1	0.93	<1
	Avg	2.1	157	1.3	69	38	4.3	0.15	1.3	846	0.04	41	97	0.35	12	0.33	15	0.08	2.7	8.4	0.98	<1
	Max	2.8	312	2.2	123	55	5.2	0.19	1.6	1080	0.05	121	124	1.4	35	0.48	18	0.23	13	13	1.5	<1
Quarry - Porphyry (n = 9)	Min	0.42	150	0.72	65	<1	0.48	0.25	0.03	203	0.02	2.0	1	<0.3	14	<0.5	<1	<1	<1	<3	<3	
	Med	0.45	195	1.0	70	2.0	0.51	0.28	0.03	249	0.03	2.0	2	<0.3	24	<0.5	<1	<1	<1	<3	<3	n/a
	Avg	0.46	202	1.0	72	1.8	0.52	0.28	0.03	278	0.03	2.0	2	<0.3	23	<0.5	<1	<1	<1	<3	<3	
	Max	0.49	272	1.2	83	2.0	0.59	0.30	0.03	392	0.03	2.0	3	<0.3	31	<0.5	<1	<1	1	<3	3	

Highlighted values in red represent concentrations greater than crustal abundances.

Highlighted values in blue represent those metals with laboratory detection limits above normal crustal abundances and metal concentrations may exceed these crustal concentrations.

Selenium was not included in the static testing of quarry samples, due laboratory-specific analytical limitations or differences.

Table 6-5. Summary statistics of shake flask extraction results from site characterization samples.

		pH	Redox	Conductivity	Total Acidity (to pH 8.3)	Alkalinity	SO_4	Hardness CaCO3	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Hg	K	Li	Mg
	Units	--	mV	uS/cm	mg CaCO3/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	mg/L	mg/L		ug/L	mg/L	mg/L
Arenite (n = 3)	Min	7.52	304	167	4.66	21.0	57	67.2	< 0.00001	0.027	0.0032	0.012	0.025	< 0.00002	< 0.00001	24.6	0.000015	0.00046	< 0.0005	< 0.0005	< 0.003	< 0.01	1.21	0.004	1.39
	Max	7.71	374	373	6.63	37.9	163	180	0.00001	0.068	0.0098	0.026	0.032	< 0.00002	< 0.00001	69.5	0.000051	0.00052	< 0.0005	0.0006	0.071	< 0.01	3.19	0.006	3.53
	Median	7.53	321	208	5.21	35.6	66	80.8	< 0.00001	0.030	0.0081	0.013	0.026	< 0.00002	< 0.00001	26.6	0.00003	0.000495	< 0.0005	< 0.0005	0.0375	< 0.01	2.18	0.004	1.59
Conglomerate (n=4)	Min	7.35	357	64.6	4.77	31.7	5	29.9	< 0.00001	0.007	0.0006	0.003	0.017	< 0.00002	< 0.00001	11.2	< 0.000003	0.000006	< 0.0005	< 0.0005	< 0.003	< 0.01	0.93	< 0.001	0.492
	Max	7.75	374	1021	10.3	37.4	572	582	< 0.00001	0.271	0.0044	0.010	0.12	< 0.00002	< 0.00001	225	0.00014	0.00236	< 0.0005	< 0.0005	0.01	< 0.01	2.31	0.004	4.71
	Median	7.71	369	93.8	4.96	34.5	19	43.4	< 0.00001	0.240	0.0012	0.008	0.039	< 0.00002	< 0.00001	16.0	< 0.000003	0.000023	< 0.0005	< 0.0005	< 0.003	< 0.01	1.68	< 0.001	0.862
Fragmental Volcanic Rocks		7.79	353	65.8	4.37	32.4	8	26.5	< 0.00001	0.330	0.0063	0.007	0.068	< 0.00002	< 0.00001	9.17	0.000005			< 0.0005	< 0.0005		< 0.01	2.32	0.003
Intermediate Volcanic Rocks (n = 7)	Min	5.63	245	36.2	4.65	1.14	4	6.9	< 0.00001	0.045	0.0008	0.005	0.003	< 0.00002	< 0.00001	2.09	< 0.000003	0.000007	< 0.0005	< 0.0005	< 0.003	< 0.01	0.50	< 0.001	0.406
	Max	7.81	429	1159	13.8	43.3	751	781	0.00001	0.292	0.1120	0.012	0.150	0.00038	< 0.00001	295	0.00115	0.0161	< 0.0005	0.0017	4.26	< 0.01	2.33	0.004	10.9
	Median	7.78	331	58.3	4.78	27.7	8	26.3	< 0.00001	0.113	0.0029	0.007	0.048	< 0.00002	< 0.00001	9.85	< 0.000003	0.000053	< 0.0005	0.0005	0.01	< 0.01	1.60	< 0.001	0.435
Latite Flow (n = 2)	Min	7.65	363	54.5	4.58	29.1	5	22.1	< 0.00001	0.244	0.0046	0.010	0.137	< 0.00002	< 0.00001	8.33	< 0.000003	0.000008	< 0.0005	0.0006	0.006	< 0.01	2.44	< 0.001	0.194
	Max	7.74	380	54.9	4.92	29.2	5	23.3	< 0.00001	0.335	0.0065	0.015	0.207	< 0.00002	< 0.00001	8.99	< 0.000003	0.000011	< 0.0005	0.0007	0.008	< 0.01	2.49	< 0.001	0.308
Undifferentiated Porphyry (n = 2)	Min	7.66	360	57.3	4.70	31.4	4	28.3	< 0.00001	0.052	< 0.0002	0.006	0.004	< 0.00002	< 0.00001	8.39	< 0.000003	0.000019	< 0.0005	< 0.0005	< 0.003	< 0.01	1.49	< 0.001	1.23
	Max	7.79	364	59.8	5.28	31.9	5	29.0	< 0.00001	0.220	0.0004	0.008	0.176	< 0.00002	< 0.00001	9.61	< 0.000003	0.000048	< 0.0005	< 0.0005	0.004	< 0.01	2.60	0.006	1.78
Shale		7.75	356	76.3	5.46	34.8	10	36.6	< 0.00001	0.157	0.0007	0.008	0.014	< 0.00002	< 0.00001	10.7	< 0.000003			< 0.0005	< 0.0005		< 0.01	1.17	0.003
Till		7.96	297	48.9	4.44	29.7	4	21.5	< 0.00001	0.430	0.0074	0.007	0.098	< 0.00002	< 0.00001	8.31	0.000005			< 0.0005	< 0.0005		< 0.01	1.21	< 0.001
Quarry-porphyry (n = 9)	Min	7.89	146	50.0	<0.5	21.5	0.70	n/a	<0.00008	0.588	0.0098	<0.01	0.010	<0.0001	<0.0001	4.84	<0.00001	<0.0001	< 0.0005	<0.0005	<0.02	<0.5	4.88	0.0016	0.099
	Max	9.40	209	54.0	6.00	23.5	2.6		<0.00008	0.946	0.0160	0.020	0.052	<0.0001	<0.0001	5.22	0.00002	<0.0001	< 0.0005	0.0015	0.02	<0.5	5.57	0.0022	0.193
	Median	9.02	172	50.5	<0.5	23.0	1.5		<0.00008	0.731	0.0115	0.020	0.018	<0.0001	<0.0001	5.01	<0.00001	<0.0001	< 0.0005	0.0008	<0.02	<0.5	5.17	0.0019	0.171

***Table 6-5 cont'd*. Summary statistics of shake flask extraction results from site characterization samples.**

		Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	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	mg/L	mg/L	mg/L	mg/L	mg/L
Arenite (n = 3)	Min	0.0894	0.0002	0.87	0.0008	< 0.009	0.00004	19.8	0.0048	0.00016	0.89	< 0.00001	0.085	< 0.0001	0.00005	0.000028	0.00012	< 0.001	< 0.00001
	Max	0.707	0.0005	3.37	0.0087	< 0.009	0.00006	55.3	0.0104	0.00225	1.00	0.00002	0.96	< 0.0001	0.00009	0.000299	0.00026	< 0.001	0.00001
	Median	0.496	0.0004	0.95	0.0027	< 0.009	0.00005	23.8	0.0052	0.0019	0.94	0.00002	0.76	< 0.0001	0.00005	0.000059	0.00021	< 0.001	< 0.00001
Conglomerate (n=4)	Min	0.0062	0.0001	0.29	0.0001	< 0.009	< 0.00002	1.18	< 0.0002	< 0.00004	1.27	< 0.00001	0.046	< 0.0001	< 0.00002	0.000056	0.00007	< 0.001	< 0.00001
	Max	4.08	0.0045	1.37	0.0005	< 0.009	0.00002	192	0.0022	0.00025	1.93	0.00002	0.36	0.0003	0.00003	0.000464	0.00132	0.001	0.00003
	Median	0.02165	0.0015	0.71	0.0003	< 0.009	< 0.00002	5.91	0.0013	0.00016	1.65	< 0.00001	0.25	0.0001	< 0.00002	0.000125	0.00046	< 0.001	< 0.00001
Fragmental Volcanic Rocks			0.013	0.0042	1.74	0.0001	< 0.009	0.00004	1.80	0.0007	1.18	< 0.00001	0.30	0.0005	< 0.00002	0.000006	0.00083	< 0.001	< 0.00001
Intermediate Volcanic Rocks (n = 7)	Min	0.0007	0.0000	0.28	0.0001	< 0.009	< 0.00002	0.40	< 0.0002	0.00005	0.99	< 0.00001	0.012	< 0.0001	< 0.00002	0.000003	< 0.00003	< 0.001	< 0.00001
	Max	1.93	0.0015	1.27	0.014	0.026	0.00021	274	0.0148	0.00041	1.60	0.00003	0.90	0.0004	0.00017	0.000254	0.00515	0.065	0.00003
	Median	0.0166	0.0003	0.75	0.0003	< 0.009	0.00004	1.96	0.0003	0.00007	1.18	0.00001	0.049	0.0002	< 0.00002	0.000023	0.000925	< 0.001	< 0.00001
Latite Flow (n = 2)	Min	0.0073	0.0003	0.64	< 0.0001	0.015	< 0.00002	0.81	0.0003	0.00006	1.82	< 0.00001	0.068	0.0003	< 0.00002	0.000145	0.0007	< 0.001	0.00001
	Max	0.0137	0.0012	0.94	0.0001	0.028	0.00006	0.97	0.0004	0.0001	2.10	0.00002	0.082	0.0003	< 0.00002	0.000218	0.001	< 0.001	0.00001
Undifferentiated Porphyry (n = 2)	Min	0.0052	0.0010	0.36	0.0002	< 0.009	< 0.00002	0.48	0.0005	0.00008	1.17	< 0.00001	0.042	< 0.0001	< 0.00002	0.000125	0.00006	< 0.001	< 0.00001
	Max	0.0131	0.0016	1.19	0.0002	0.01	< 0.00002	0.88	0.0013	0.00013	1.80	0.00003	0.060	< 0.0001	< 0.00002	0.000134	0.00066	< 0.001	0.00003
Shale			0.03	0.0092	0.95	0.0003	< 0.009	< 0.00002	2.76	0.0013	1.57	< 0.00001	0.087	0.0002	0.00002	0.000026	0.00102	< 0.001	< 0.00001
Till			0.018	0.0001	1.00	0.0001	< 0.009	0.00002	0.49	0.0006	1.91	< 0.00001	0.11	0.0007	< 0.00002	0.000348	0.00155	< 0.001	0.00009
Quarry-porphyry (n = 9)	Min	0.001	0.0008	1.55	<0.0005	<0.05	<0.0005	<0.5	0.0002	<0.0005	2.16	<0.0005	0.050	0.0051	<0.00005	0.00014	0.0027	< 0.001	0.0001
	Max	0.0047	0.0026	1.94	<0.0005	<0.05	<0.0005	1.00	0.0014	<0.0005	2.35	<0.0005	0.076	0.015	<0.00005	0.00023	0.0059	0.008	0.0007
	Median	0.0017	0.0012	1.77	<0.0005	<0.05	<0.0005	<0.5	0.0002	<0.0005	2.26	<0.0005	0.063	0.0108	<0.00005	0.00019	0.0039	< 0.001	0.0003

7.0 CONCLUSIONS

The main objective of the ML/ARD prediction baseline program is to provide an understanding of the geochemical characteristics of the materials that are disturbed, excavated or exposed as a result of the planned mining activities. The main conclusions of this ML/ARD baseline report for the Brucejack Project are as follows:

Waste Rock

- Approximately 1.76 Mt (40%) of the waste rock that is produced will be returned to the underground while 2.52 Mt (60%) will be deposited in Brucejack Lake, predominantly during the construction phase.
- Assessment of the ML/ARD characteristics of waste rock is done according to the seven geological model units because the mine plan is based on the geological model, not on logged lithologies.
- The 24 different logged lithologies used by Pretivm have been reorganized into nine lithological groups by combining similar rock types. A single geological model unit may contain between 2 and 9 lithological groups according to an inventory of collected drill core samples.
- Although the reorganized logged lithologies of the collected core samples used for the ABA assessment can be assigned to the different geological model units, it is impossible to specify the contribution of the reorganized logged lithologies (m^3 or %) to the composition of each geological model unit.
- Assessment of the ML/ARD characteristics of waste rock is also done according to the nine lithological groups to identify if potential correlations between ABA characteristics and lithology apply across the different geological model units.
- Whether the ABA assessment of waste rock is done according to geological model or according to lithological group, both show that the majority of waste rock at Brucejack is PAG material except one particular unit or lithological group.
    - A statistical analysis of the ABA data demonstrates that only the Office P1 unit contains predominantly (84%) non-PAG waste rock while all the other sampled geological model units contain predominantly (77%-100%) PAG material.
    - Similarly, most of the samples (66-92%) from each of the nine lithology groups are PAG. Mafic volcanics are the one exception to this general trend as only two of 12 samples (17%) are characterized as PAG material.
    - A comparison between Sobek NP and Carbonate NP values indicates carbonates are the main NP contributors in Brucejack waste rock.
    - For andesitic and felsic materials, the main contributors to the samples representing the Fragmental and VSF units, lithology-specific trends in ABA characteristics are apparent. These trends involve specific contributions from serpentine, sericite and iron carbonates to the neutralization potential of the materials.
    - Andesites from the VSF unit generally show a higher content of serpentine, whereas andesites from the Fragmental unit show higher contents of sericite;

as such, NPR values are generally higher for VSF-andesites as per the higher neutralization potential associated with serpentine, relative to sericite.

- The presence of iron carbonates and the higher silicate buffering capacity suggest that the NPR values for intermediate volcanic material may be overestimated.
- The VSF, Fragmental and Conglomerate units account for 85% of the total generated waste rock and contain 77% to 85% PAG material. These three geological model units constitute 87% and 88% of the waste rock destined for the underground mine and Brucejack Lake, respectively.
- Data suggests there is considerable overlap between ABA parameter values from the nine lithological groups or between ABA parameter values from the seven geological model units. The absence of a clear distinction between lithology groups or geological units makes it difficult to propose recommendations for waste segregation based on ABA testing and parameter values specific for lithological groups or geological model units.

- Compared to 'average' concentrations in continental crust, significant enrichment (≥10x) of Ag, As, Cd, Mo, Pb, Sb, Se and Zn is observed in waste rock samples from most geological model units and from most lithological groups.
- Shake flask test results for only 3 of the 47 tested waste rock samples show elevated metal concentrations (>1% of total metal content). Considering the reported metal content of waste rock, As, Sb, Ag and Cd may be a concern for metal leaching when waste rock is exposed to water.
- The shortest lag times (<15 yrs) in the humidity cell tests are estimated for waste rock from the *Fragmental* (3 of 10 HCs), *VSF* (2 of 13 HCs), *Silicified Cap* (1 of 2 HCs) and *Conglomerate* (1 of 3 HCs) units. These geological units correspond to *andesite* (2 of 6 HCs), *felsic volcanics* (3 of 7 HCs), *siliceous rock* (1 of 6 HCs) and *conglomerate/arenite* (1 of 1 HCs). Materials with the shortest lag times typically have paste pH values below 7 and very low NP values (5-15 kg $CaCO_3$/t) combined with high sulphide-S values (3-8%). These materials weather readily and quickly.
- Relative elevated concentrations of As, Cd, Cu, Pb, Se and Zn are most often encountered in leachates from humidity cells with waste rock from the Fragmental and Silicified Cap units. Humidity cell materials from these units have the highest sulphide concentrations and the lowest NP values which suggest that these materials weather readily releasing metals into leachates.
- The highest (final) leaching rates (Fe, Cd, Cu, Pb and Zn) were observed from Fragmental and Silicified Cap humidity cells. Leaching rates of oxyanions (As, Sb and Se) present a different behavior than transition metals, as per increased mobility at circumneutral pH conditions.
- Observed leaching rates of SO_4, Al, Sb, As, Mo and Se show a decreasing trend over the duration of the humidity cell test (initial rates > final rates). Conversely, an opposite trend is observed for Cd, Co, Cu, Fe, Pb and Zn.

- The weathering of waste rock during underwater storage was examined in subaqueous column experiments conducted in the laboratory. Water was sampled from the top (water cover) and from the bottom (pore water) of the column. Initially differences in leachate concentrations between samples from the top and bottom were large, but concentrations reached similar values with time, suggesting that equilibrium has been established in the exchange between the water cover and the pore water.
- Based on median values of leachate concentrations from the top and bottom of the subaqueous columns with waste rock, concentrations of As, Sb, Mo, Se and Zn are elevated, with As and Mo concentrations of greatest concern.
- The lag times estimated for the two subaqueous columns with waste rock are respectively 274 yrs and 71 yrs. These estimates are based on sulphate concentrations that have not yet reached their final values. Considering that the ongoing column tests have not yet attained equilibrium these estimated lag times should be interpreted with caution.
- The eight field barrels contain five of the seven geological model units (Conglomerate, Fragmental, VSF, Bridge P1 and P2) and generally include waste rock materials identified as the more common lithologies. Two barrels (7-8) contain true waste rock obtained from the Bulk Sample Project while the remaining six barrels contain drill core chips (2 mm – 2 inch).
    - Among the elements that show either stable or decreasing trends in the leachate concentrations from the field barrels, As and Se are the only elements with concentrations occasionally above maximum CCME guidelines and are considered parameters of concern (POC's). The concentrations of Cu, Cd and Zn show increasing trends and are also considered POC's for waste rock drainage in unsaturated conditions.
    - A comparison of the leaching rates of POC's (As, Cd, Cu, Pb, Se and Zn) from field barrel tests with their leaching rates from corresponding humidity cells shows that humidity cell leaching rates are higher than field (barrel) leaching rates due to optimal weathering conditions and less solubility control in the humidity cell tests.
    - The information provided by the two-year dataset (for barrels 1-6; 1 yr. for barrels 7-8) is considered to be rather limited. The results may be refined by a larger dataset from a longer monitoring period (approximately 4 years).

Flotation Tailings, Paste, Sludge and Ore

- Approximately 8.55 Mt (47%) of the flotation tailings will be returned to the underground mine as paste backfill and 9.52 Mt (53%) will be deposited into Brucejack Lake.
- In contrast to ore and sludge, the acidifying potential of the tailings and (tailings) paste is insignificant (AP<2 kg $CaCO_3$/t). The (Sobek) neutralization potential of the samples varies between 40 and 90 kg $CaCO_3$/t
- The samples of the high-grade ore and paste backfill with cement have the highest neutralization potential (165 kg $CaCO_3$/t) and the highest carbonate contents.

- Ore and sludge samples are PAG materials; the tailings samples as well as the paste samples are non-PAG materials.
- Compared to non-mineralized rock, Ag, As, Cd, Mo, Pb, Sb, Mn and possibly Se are enriched in the ore, tailings paste and sludge. Cu and Zn are enriched in ore and ore and sludge (respectively). Cr and Ni are enriched in tailings and paste. Sludge contains the highest enrichments of Cd, Pb and Zn (relative to tailings, paste and ore)
- The concentrations of dissolved Sb, As, Mo and Se in the shake flask extracts of ore, tailings, paste and sludge are relatively high and may be of concern when tailings are discharged into Brucejack Lake. Sludge material presents the highest concentrations of Ag and Cd and may be of concern during lake deposition.
- Parameters of concern in the leachate from humidity cells with tailings are As, Sb, Mo and Se. The concentrations of these oxyanions are still relatively high during the final phase when concentrations in leachates generally approach constant values. This suggests that the particular elements are still being released from the solid phase into the dissolved phase. Possibly these oxyanions are retained in the solid phase by sorption to secondary minerals like ferrihydrite or calcite.
- Apart from Al and Fe, the highest leaching rates for both the initial and final phases in the humidity cell tests are observed for As, Sb, Mo and Se.
- Similar to the leachate chemistry from tailings in the humidity cells, concentrations of As, Sb, Mo and Se are often elevated in leachate from the subaqueous columns.
- Considering the extremely low acidifying potential (AP) of the tailings it is evident that the AP will be depleted long before the neutralization potential is exhausted. Therefore the tailings in the humidity cell and subaqueous column tests are not expected to generate ARD.

Site Characterization Materials

- The ML/ARD characteristics of surface materials were assessed for (1) the mine site (plant foundation, overburden and local roads); (2) the proposed air strip; (3) the access road connecting Wildfire camp to Brucejack camp; (4) the proposed quarry site.
- Almost 60% of the samples collected from the mine site are PAG material.
- The majority of access road samples are non-PAG material. Shale material poses the greatest risk to ARD as over half of the shale samples are PAG materials.
- Samples taken from the aerodrome and quarry are characterized as non-PAG.
- The metals As, Ag, Hg and Sb are found at high concentrations in almost all lithologies of the sampled surface materials. The metals Mo, Pb, Zn, Cd and Mo are found at moderate to high concentrations in many samples while only a few lithologies show exceedances of Cr and Ni.

Summary

The main conclusions of the ML/ARD baseline study can be summarized as follows:

- The ABA assessments of waste rock according to geological model units and lithology groupings both show the majority of waste rock at Brucejack is PAG material, with the exception of one geological model unit and one lithological group. Specifically:
    - The Office P1 unit contains predominantly non-PAG waste rock, as per results from frequency analyses conducted on waste rock static tests.
    - Mafic volcanics are generally non-PAG material, as 83% of samples submitted for static testing present NPR values greater than 2.
- The VSF, Fragmental and Conglomerate units account for 85% of the total generated waste rock and contain 77%-85% PAG material. These three geological model units constitute 87% and 88% of the waste rock destined for the underground mine and Brucejack Lake, respectively.
- Due to the absence of a clear distinction in ABA characteristics between lithology groups or geological units it is difficult to propose recommendations for waste rock segregation. Exceptions to this general observation are the andesites from the VSF and Fragmental units that clearly have different ABA characteristics.
- Materials with the shortest lag times (<15 yrs) typically have paste pH values below 7, very low NP values (5-15 kg $CaCO_3$/t) and high sulphide-S values (3-8%) and weather readily and quickly.
- The elements As, Cd, Cu, Pb, Se and Zn are considered parameters of concern (POCs), based on leachate concentrations from humidity cells and field barrels containing waste rock.
- Subaqueous columns with waste rock material present elevated leachate concentrations of As, Sb, Mo, Se and Zn, which may be a concern under more reducing conditions.
- Only ore samples are characterized as PAG materials, whereas tailings and paste samples are considered non-PAG materials.
- Tailings in the humidity cells and subaqueous column tests are not expected to generate ARD.
- Parameters of concern (POCs) in the leachates from humidity cells and subaqueous columns bearing tailings are As, Sb, Mo and Se.

8.0 CLOSURE

We trust the above satisfies your requirements at this time. Should you have any questions or comments, please do not hesitate to contact us.

Yours sincerely,

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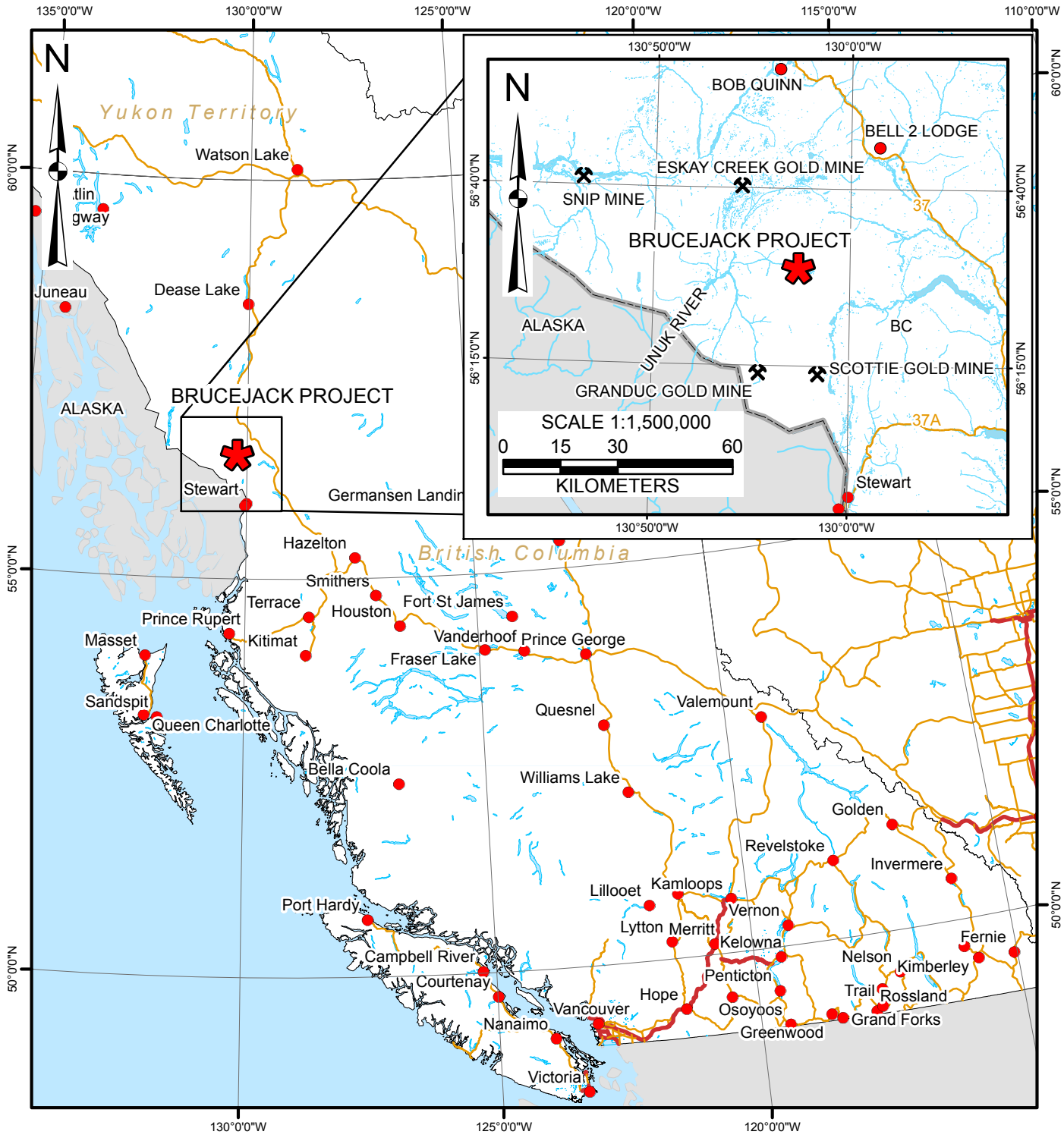
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DRAWINGS



NOTES:
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CLIENT: PRETIUM RESOURCES INC.

PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT ML/ARD BASELINE REPORT

TITLE: PROJECT LOCATION

PROJECT No.:	DWG No.:
1008-010-03	01

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BRUCEJACK LAKE

FUEL STORAGE

BATCH PLANT

PRE-PRODUCTION ORE/WASTE ROCK TRANSFER STORAGE

SITE DRAINAGE COLLECTION POND

SUMP PUMP

MILL BUILDING INCLUDING ADMIN, WAREHOUSE, MINE DRY AND WATER TREATMENT

MINE PORTAL

TRUCK SHOP

SUBSTATION AND GENERATORS

GALENA HILL

CAMP

PORTAL FUEL STORAGE

EXHAUST AIR RAISE LOCATION

DETONATORS STORAGE (PRELIMINARY POSITION)

GARBAGE AND INCINERATOR AREA

TEMPORARY WATER TREATMENT PLANT

ALTERNATE ACCESS ROAD

WEST ZONE

EXPLOSIVES STORAGE (PRELIMINARY POSITION)

EXHAUST AIR RAISE LOCATION

VOK

6259000 6258500 6258000 6257500

427000

426500

6258500 6258000

SCALE 1:5,000

100 50 0 100 200 300

METRES

LEGEND

- AS BUILT UNDERGROUND
- PROPOSED UNDERGROUND
- INFRASTRUCTURE
- FILL SLOPE
- CUT SLOPE

LITHOLOGIC UNITS

- P2
- OFFICE P1
- SILICIFIED CAP
- FRAGMENTAL VOLCANICS
- BRIDGE P1
- VSF
- CONGLOMERATE

NOTES:
1. SURVEYS OF THE HISTORIC UNDERGROUND WORKINGS WERE PROVIDED BY PRETIUM RESOURCES INC. ON MARCH 23, 2012. PROPOSED UNDERGROUND WORKINGS AND PROPOSED MINE WORKINGS PROVIDED BY AMC ON FEBRUARY 27, 2013. PLANT SITE LAYOUT RECEIVED FROM TETRA TECH ON NOVEMBER 12, 2013.
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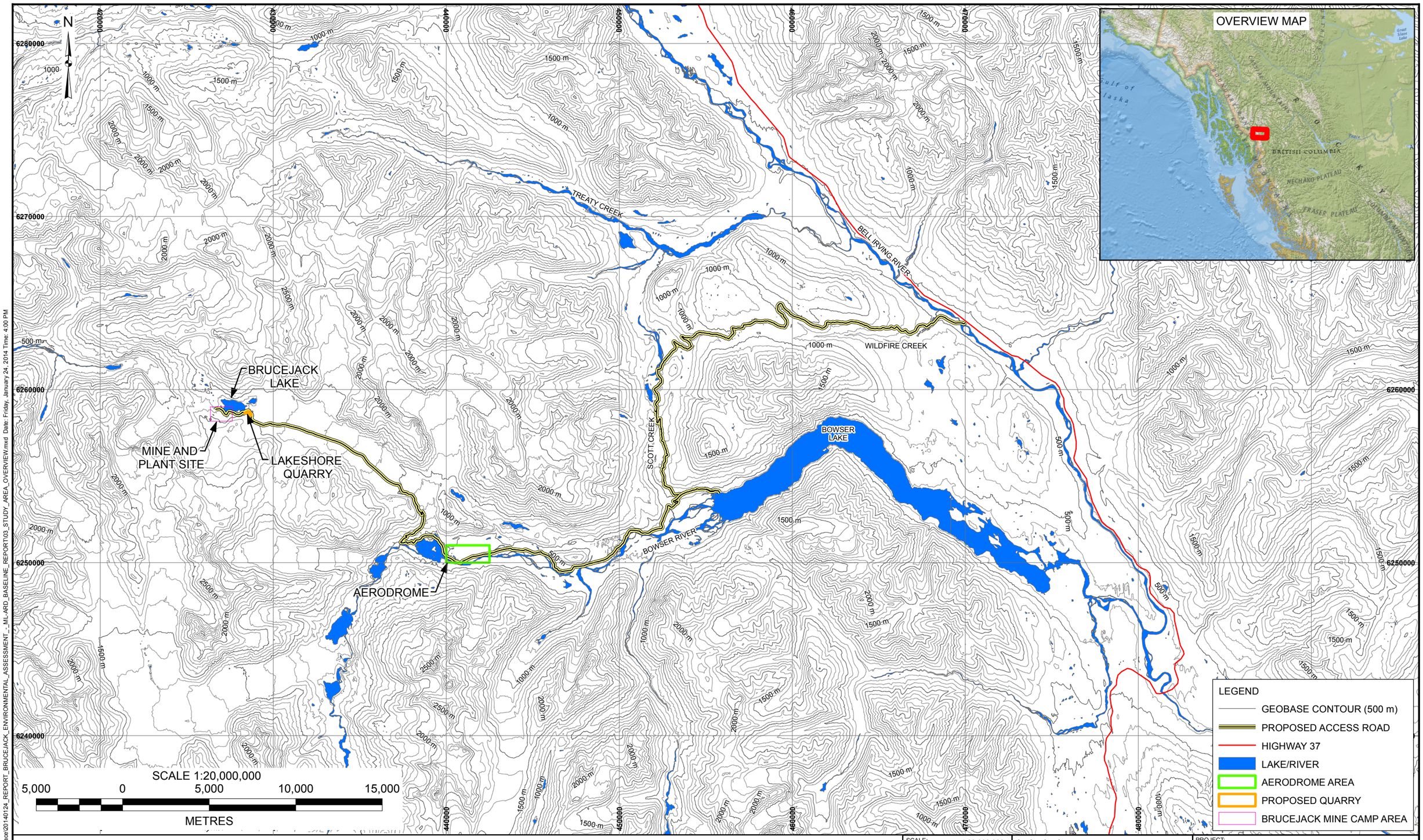
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PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT ML/ARD BASELINE PREDICTION REPORT

TITLE: GEOLOGY PLAN

PROJECT No.:	DWG No.:
1008-010-03	02

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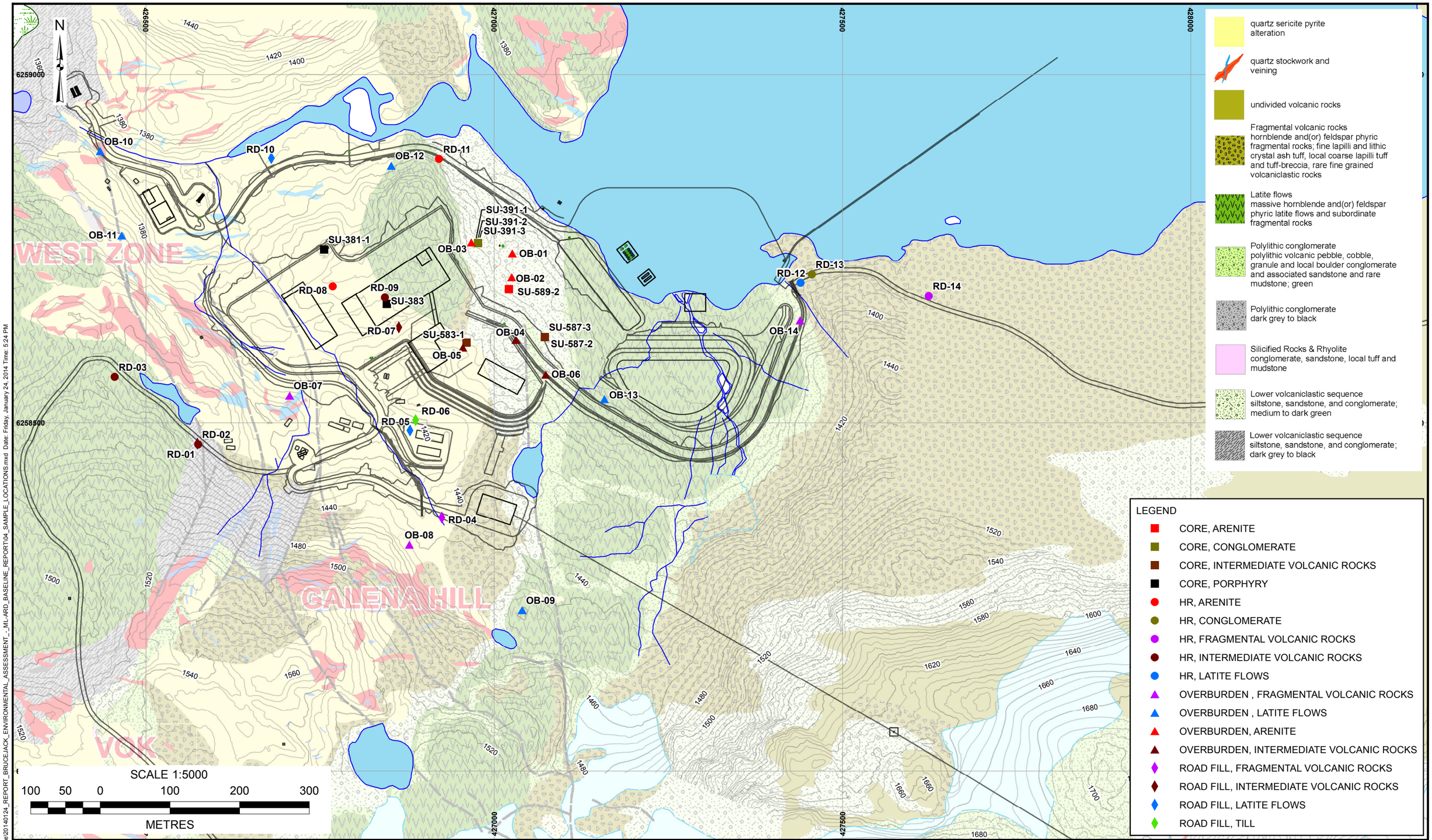
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PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT ML/ARD BASELINE REPORT

TITLE: STUDY AREA OVERVIEW

PROJECT No.:	DWG No.:
1008-010-03	03

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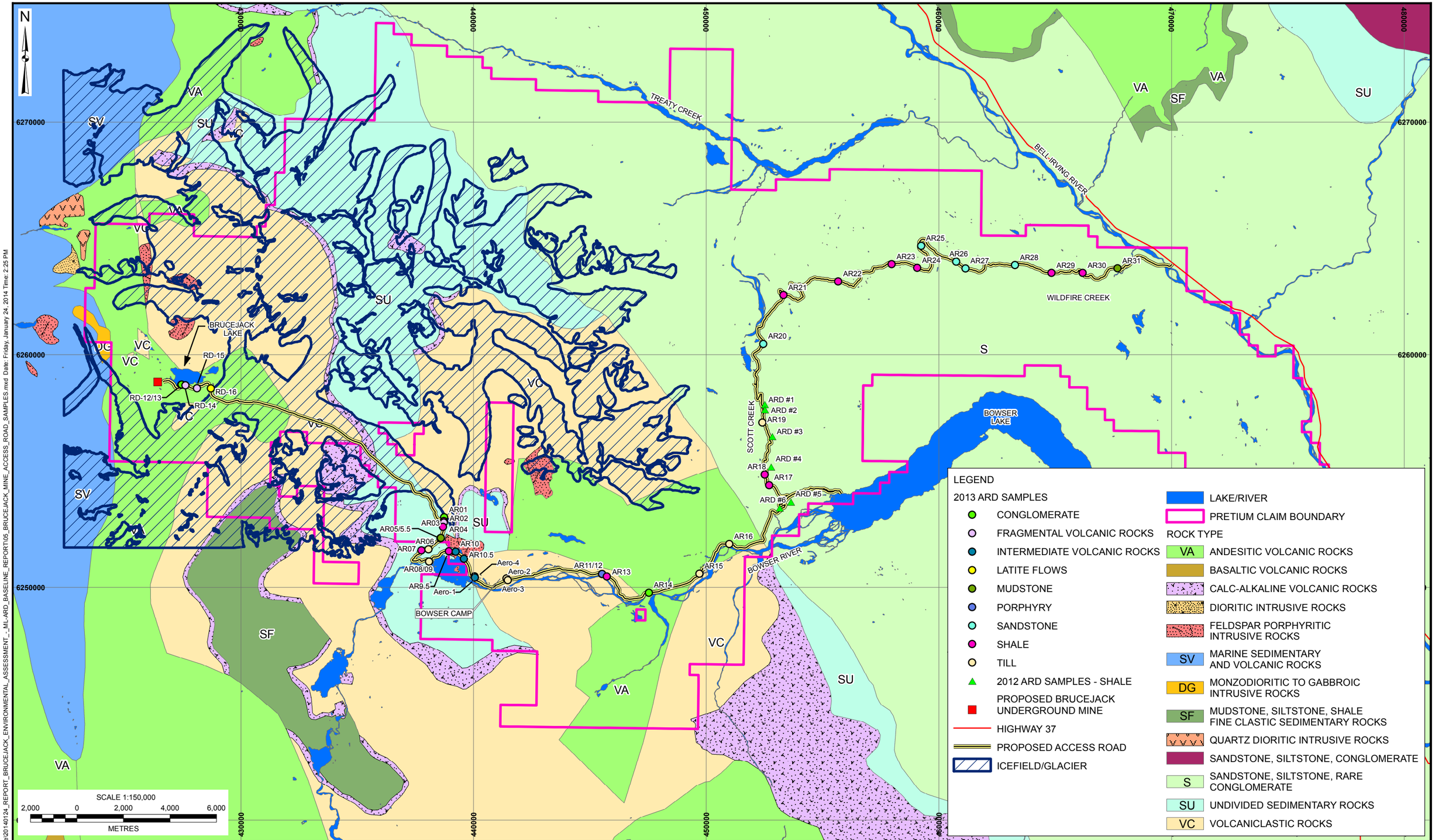
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PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT ML/ARD BASELINE REPORT

TITLE: SAMPLE LOCATIONS - NOVEMBER 2013 INFRASTRUCTURE

PROJECT No.:	DWG No.:
1008-010-03	04

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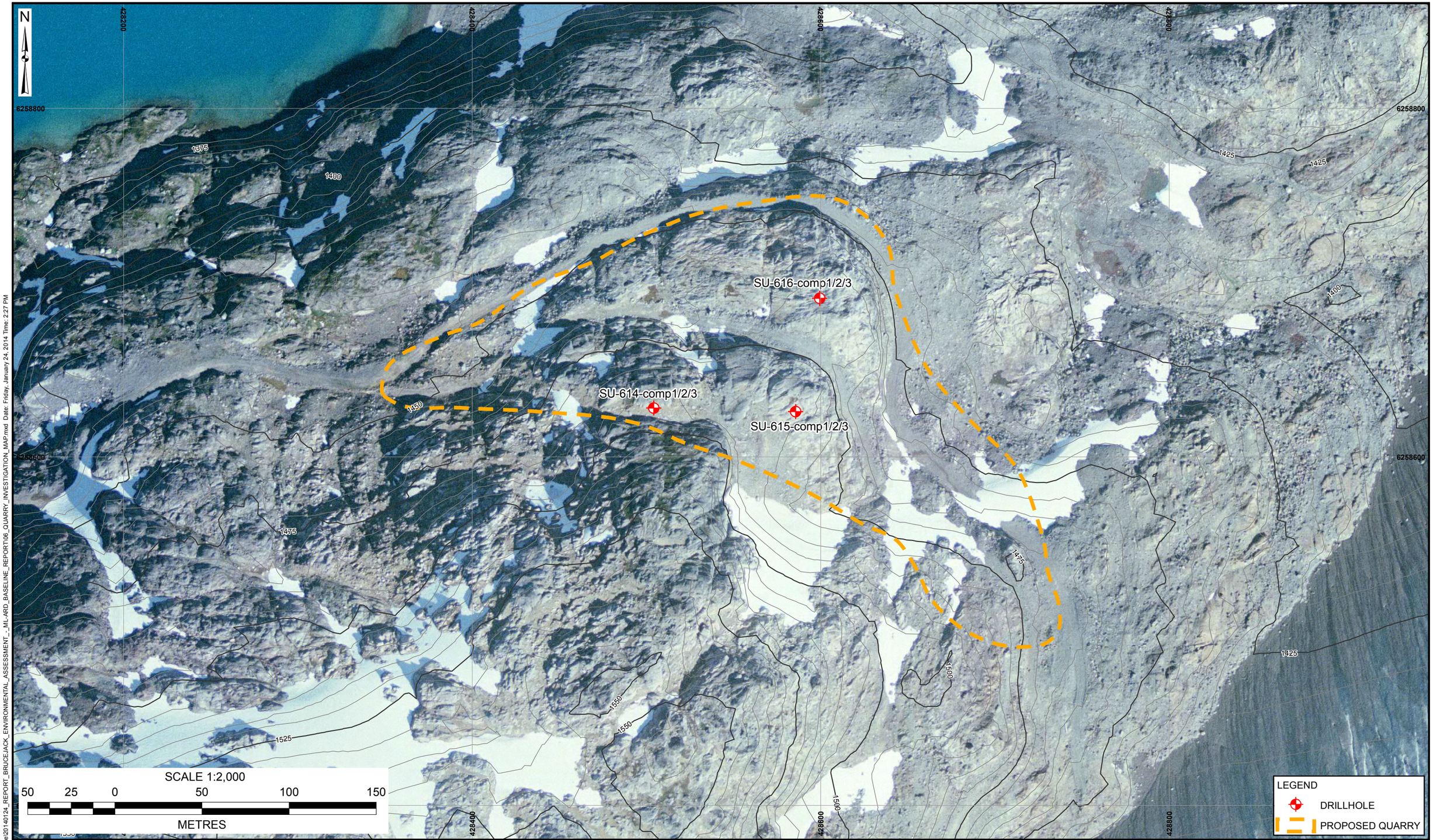
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TITLE: BRUCEJACK MINE ACCESS ROAD ML/ARD SAMPLE LOCATIONS

PROJECT No.:	DWG No.:
1008-010-03	05



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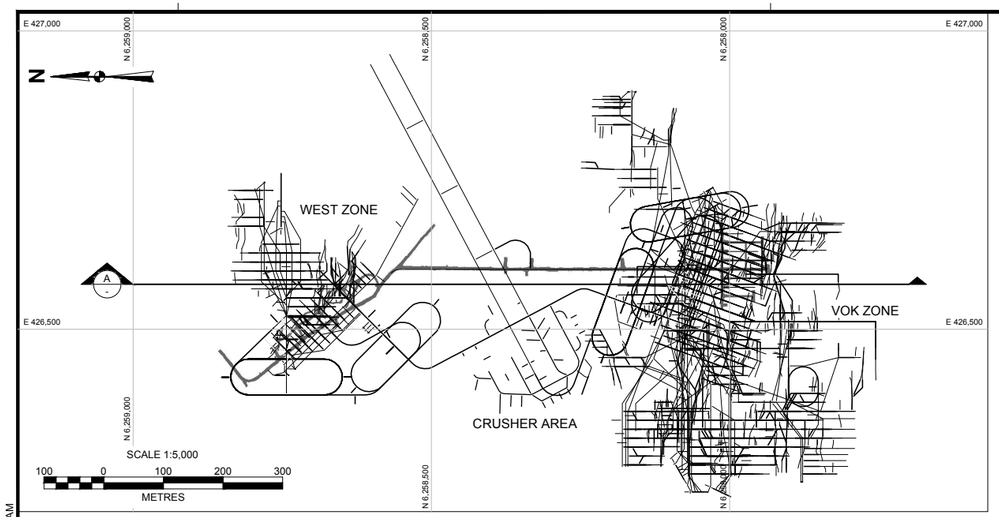
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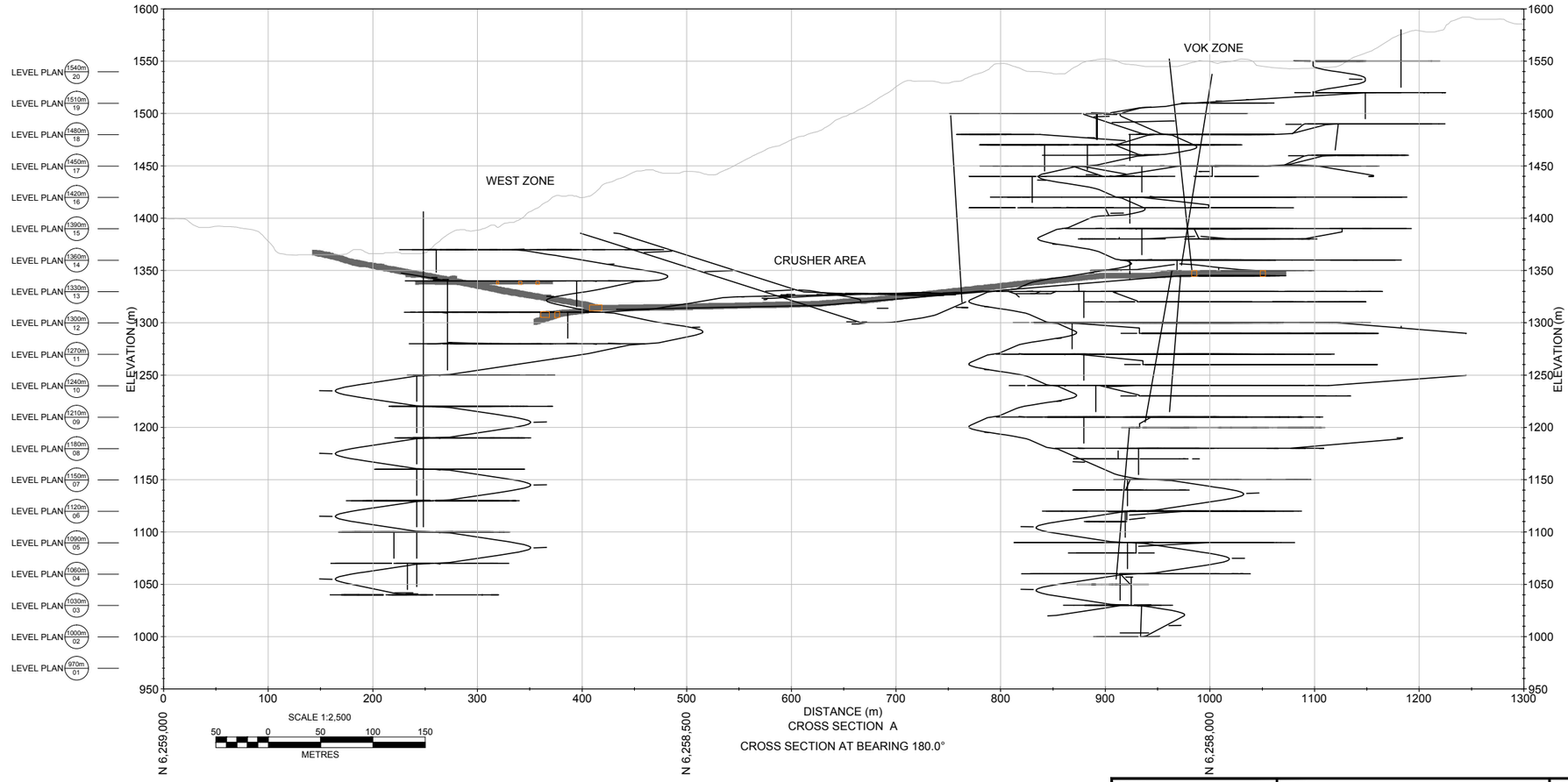
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APPENDIX A
SAMPLE PLAN



LEGEND
- SECTION TOPOGRAPHY
- DESIGN UNDERGROUND
- EXISTING UNDERGROUND (INTERSECTED ON SECTION)
- EXISTING UNDERGROUND



CROSS SECTION A

CROSS SECTION AT BEARING 180.0°

NOTES:
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PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT ML/ARD BASELINE REPORT

TITLE: LEVEL PLAN LOCATIONS

PROJECT No.: 1008-010-03

DWG No.: 07

THIS BAR MEASURES 100 mm AT FULL SIZE. ALL SCALES REFERENCED TO FULL SIZE.

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N 6,258,000

E 427,000
E 426,500
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SU-290-016
SU-123-04
SU-123-05
SU-036-04
SU-121-04

WEST ZONE
VOK ZONE
CRUSHER AREA

LEGEND

STATIC TEST SAMPLE LOCATION (COLOURED BY ROCK TYPE)
DRILL HOLE TRACE
DESIGN UNDERGROUND DEVELOPMENT
DESIGN STOPE
EXISTING UNDERGROUND

LITHOLOGIC UNITS - 3D SOLID MODEL

P2
WEST PORPHYRY (OFFICEP1)
SILICIFIED CAP
FRAGMENTAL VOLCANICS
BRIDGE ZONE PORPHYRY (BRIDGEP1)
VOLCANIC SEDIMENTARY FACIES
CONGLOMERATE

LITHOLOGIC UNITS - DRILL HOLE

OVERBURDEN
FAULT ZONE
QUARTZ VEIN
HYDROTHERMAL REPLACEMENT
CONGLOMERATE
META-SEDIMENT
META-FELSIC VOLCANIC
FELSIC VOLCANIC
BASALT
MAFIC INTRUSIVE
ANDESITE
GRANITOID
PORPHYRY
RHYOLITE
DACITE

THIS BAR MEASURES 100 mm AT FULL SIZE. ALL SCALES REFERENCED TO FULL SIZE

SCALE 1:2,500

50 0 50 100 150

METRES

NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
4. THIS DRAWING MUST BE READ IN CONJUNCTION WITH BGC'S REPORT TITLED "ML / ARD PREDICTION BASELINE REPORT" AND DATED NOVEMBER 2013.
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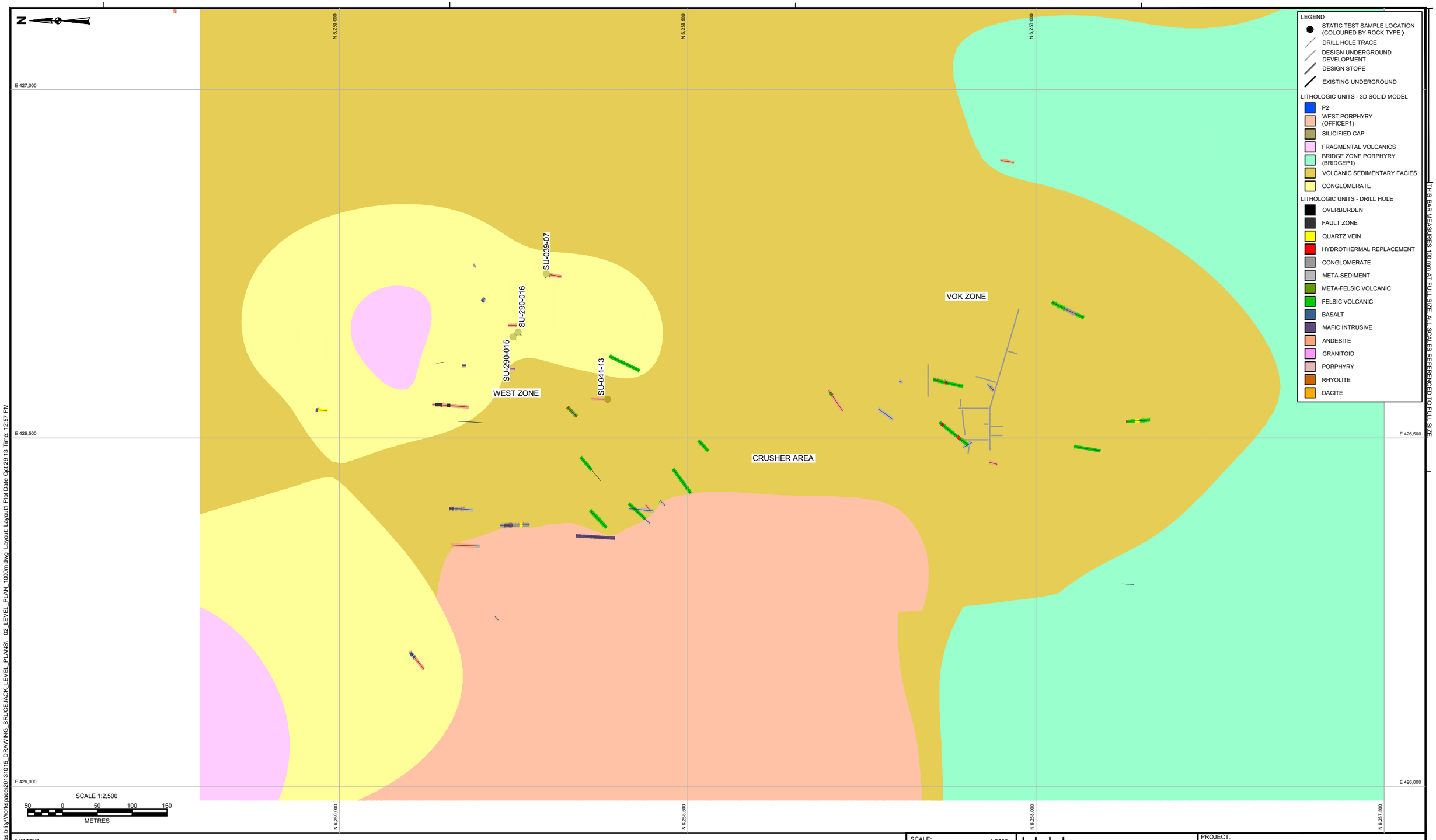
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PROJECT No.: 1008-010

DWG No.: 01

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5. PROJECTION IS NAD 1983 UTM ZONE 9N
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

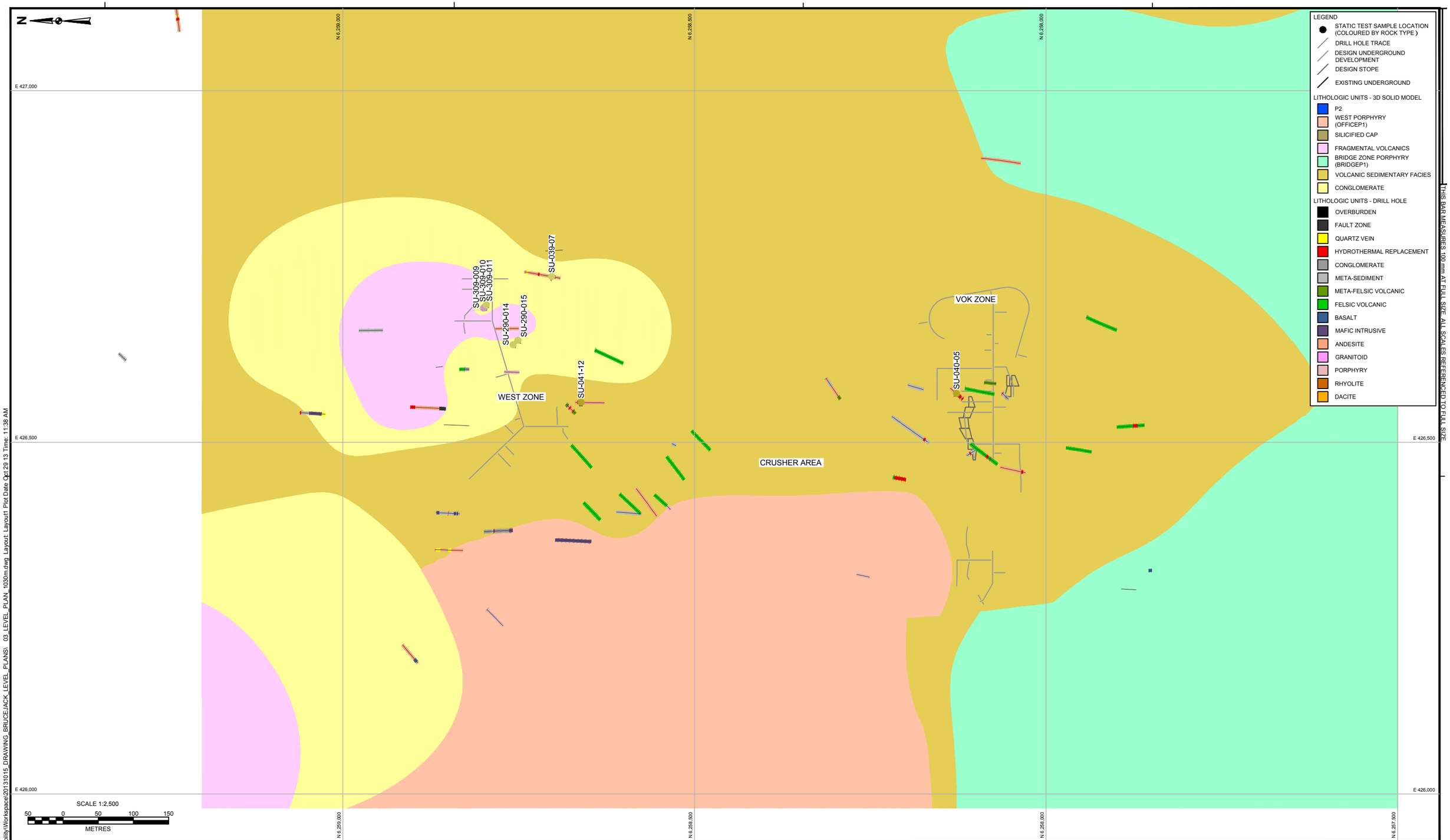
BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1000m

PROJECT No.:	DWG No.:
1008-010	02



X:\Projects\1008\007_BJ_Feasibility\Workspace\20131015_DRAWING_BRUCEJACK_LEVEL_PLANS\ 03_LEVEL_PLAN_1030m.dwg Layout: Layout1 Plot Date: Oct 29 13, Time: 11:38 AM

NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

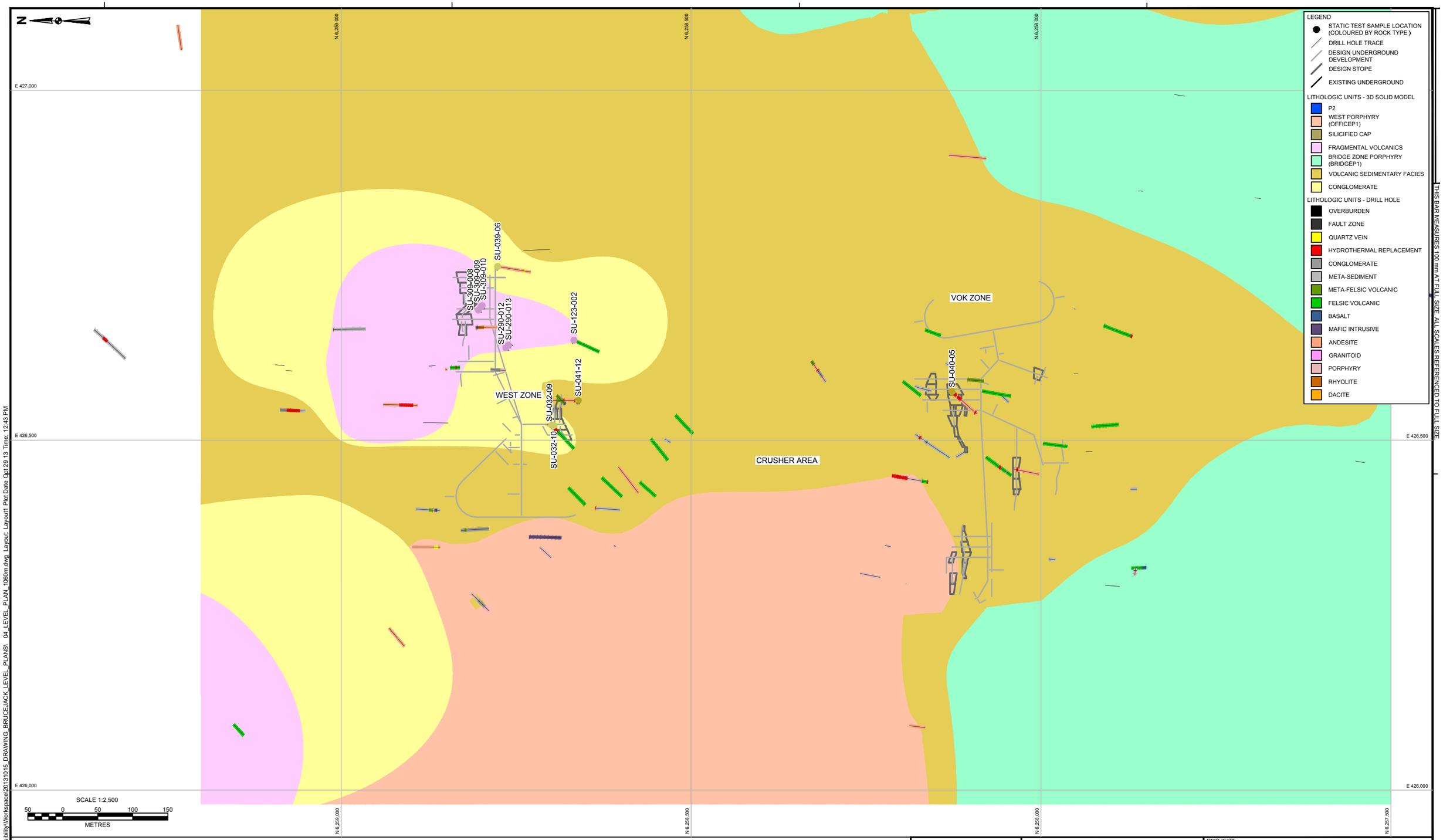
BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1030m

PROJECT No.:	DWG No.:
1008-010	03



X:\Projects\1008\007 BJ_Feasibility\Workspace\20131015_DRAWING_BRUCEJACK_LEVEL_PLANS\ 04_LEVEL_PLAN_1060m.dwg Layout: Layout Plot Date: Oct 29 13 Time: 12:43 PM

NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

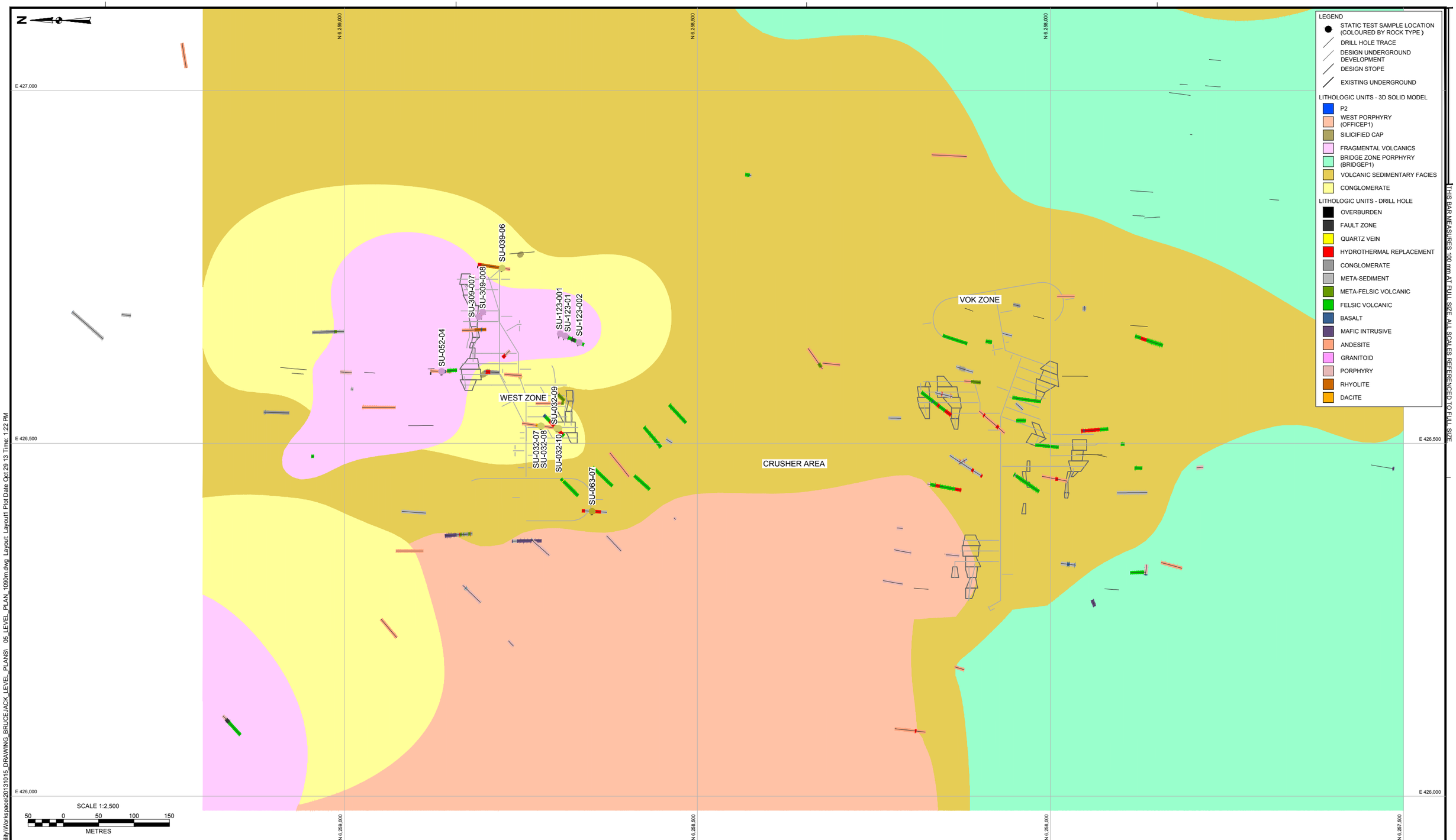
BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1060m

PROJECT No.:	DWG No.:
1008-010	04



NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1090m

PROJECT No.: 1008-010

DWG No.: 05

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SU-039-05

SU-309-006

SU-309-007

SU-123-001

SU-052-03

SU-047-05

SU-047-001

SU-047-06

WEST ZONE

VOK ZONE

CRUSHER AREA

SU-349-010

LEGEND

- STATIC TEST SAMPLE LOCATION (COLOURED BY ROCK TYPE)
- DRILL HOLE TRACE
- DESIGN UNDERGROUND DEVELOPMENT
- DESIGN STOPE
- EXISTING UNDERGROUND

LITHOLOGIC UNITS - 3D SOLID MODEL

- P2
- WEST PORPHYRY (OFFICEP1)
- SILICIFIED CAP
- FRAGMENTAL VOLCANICS
- BRIDGE ZONE PORPHYRY (BRIDGEP1)
- VOLCANIC SEDIMENTARY FACIES
- CONGLOMERATE

LITHOLOGIC UNITS - DRILL HOLE

- OVERBURDEN
- FAULT ZONE
- QUARTZ VEIN
- HYDROTHERMAL REPLACEMENT
- CONGLOMERATE
- META-SEDIMENT
- META-FELSIC VOLCANIC
- FELSIC VOLCANIC
- BASALT
- MAFIC INTRUSIVE
- ANDESITE
- GRANITOID
- PORPHYRY
- RHYOLITE
- DACITE

THIS BAR MEASURES 100 mm AT FULL SIZE ALL SCALES REFERENCED TO FULL SIZE

SCALE 1:2,500

50 0 50 100 150

METRES

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1120m

PROJECT No.: 1008-010

DWG No.: 06

X:\Projects\1008\007_BJ_Feasibility\Workspace\20131015_DRAWING_BRUCEJACK_LEVEL_PLANS\ 06_LEVEL_PLAN_1120m.dwg Layout: Layout1 Plot Date: Oct 29 13 Time: 1:53 PM

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N 6,258,000

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SU-039-04

SU-047-04

SU-047-05

SU-290-010

SU-290-011

SU-041-11

WEST ZONE

SU-032-05

SU-032-06

SU-121-03

SU-295-008

SU-063-003

CRUSHER AREA

VOK ZONE

SU-238-01

SU-238-02

SU-349-001

SU-349-010

SU-350-004

LEGEND

STATIC TEST SAMPLE LOCATION (COLOURED BY ROCK TYPE)

DRILL HOLE TRACE

DESIGN UNDERGROUND DEVELOPMENT

DESIGN STOPE

EXISTING UNDERGROUND

LITHOLOGIC UNITS - 3D SOLID MODEL

- P2
- WEST PORPHYRY (OFFICEP1)
- SILICIFIED CAP
- FRAGMENTAL VOLCANICS
- BRIDGE ZONE PORPHYRY (BRIDGEP1)
- VOLCANIC SEDIMENTARY FACIES
- CONGLOMERATE

LITHOLOGIC UNITS - DRILL HOLE

- OVERBURDEN
- FAULT ZONE
- QUARTZ VEIN
- HYDROTHERMAL REPLACEMENT
- CONGLOMERATE
- META-SEDIMENT
- META-FELSIC VOLCANIC
- FELSIC VOLCANIC
- BASALT
- MAFIC INTRUSIVE
- ANDESITE
- GRANITOID
- PORPHYRY
- RHYOLITE
- DACITE

THIS BAR MEASURES 100 mm AT FULL SIZE ALL SCALES REFERENCED TO FULL SIZE

SCALE 1:2,500

50 0 50 100 150

METRES

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
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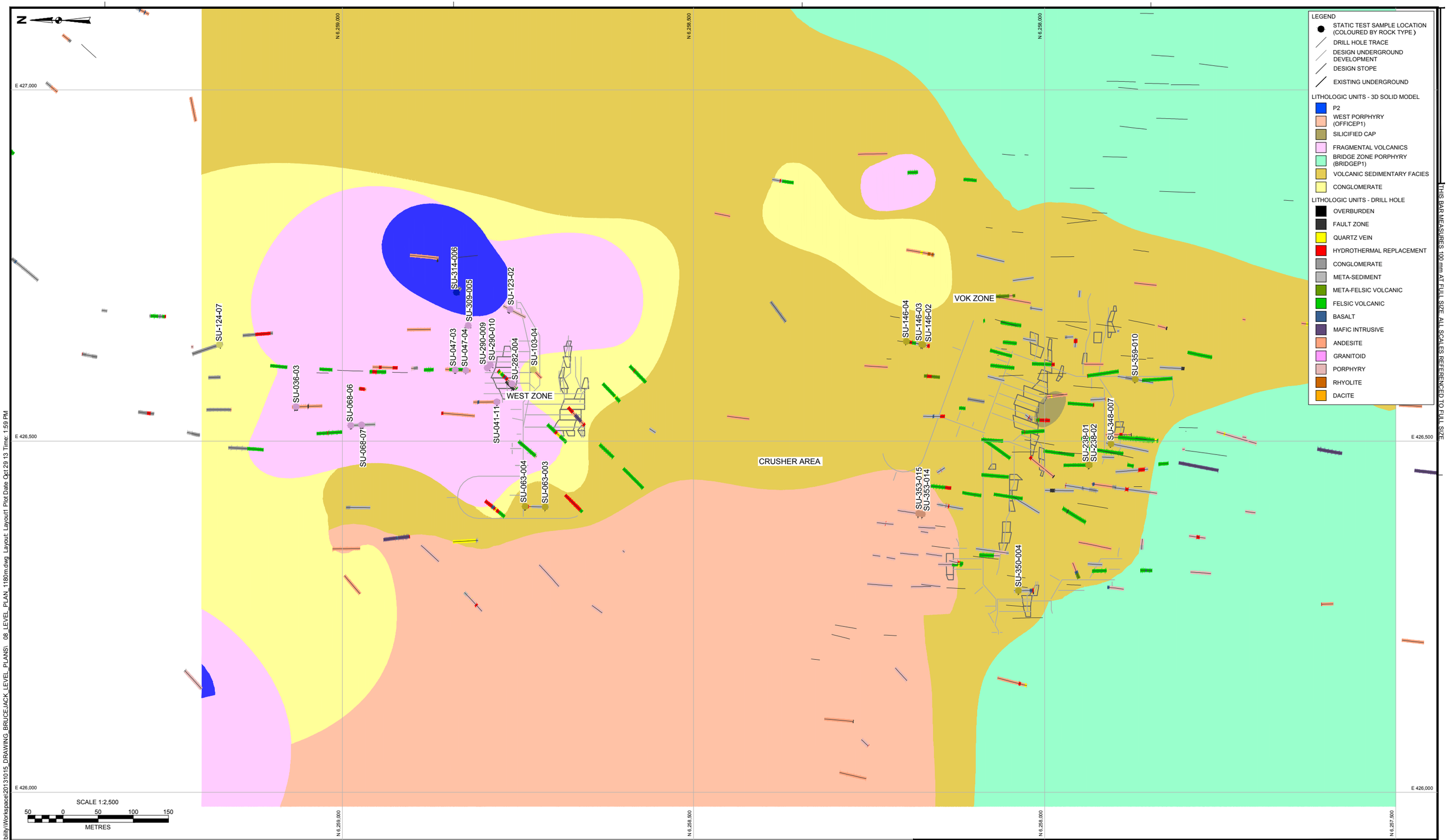
CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1150m

PROJECT No.:	DWG No.:
1008-010	07

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NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1180m

PROJECT No.:	DWG No.:
1008-010	08

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SU-039-03

SU-314-005

SU-314-006

SU-124-06

SU-282-003

SU-290-008

SU-309-004

SU-103-03

SU-103-04

SU-036-03

SU-066-04

SU-066-05

SU-066-06

SU-032-03

SU-032-04

WEST ZONE

VOK ZONE

SU-146-02

CRUSHER AREA

SU-063-005

SU-063-06

SU-063-004

SU-357-005

SU-353-015

SU-353-014

SU-353-013

SU-012-006

SU-348-007

SU-040-04

SU-017-05

SU-349-004

SU-346-003

SU-350-002

SU-350-003

LEGEND

- STATIC TEST SAMPLE LOCATION (COLOURED BY ROCK TYPE)
- DRILL HOLE TRACE
- DESIGN UNDERGROUND DEVELOPMENT
- DESIGN STOPE
- EXISTING UNDERGROUND

LITHOLOGIC UNITS - 3D SOLID MODEL

- P2
- WEST PORPHYRY (OFFICEP1)
- SILICIFIED CAP
- FRAGMENTAL VOLCANICS
- BRIDGE ZONE PORPHYRY (BRIDGEP1)
- VOLCANIC SEDIMENTARY FACIES
- CONGLOMERATE

LITHOLOGIC UNITS - DRILL HOLE

- OVERBURDEN
- FAULT ZONE
- QUARTZ VEIN
- HYDROTHERMAL REPLACEMENT
- CONGLOMERATE
- META-SEDIMENT
- META-FELSIC VOLCANIC
- FELSIC VOLCANIC
- BASALT
- MAFIC INTRUSIVE
- ANDESITE
- GRANITOID
- PORPHYRY
- RHYOLITE
- DACITE

SCALE 1:2,500

50 0 50 100 150

METRES

THIS BAR MEASURES 100 mm AT FULL SIZE ALL SCALES REFERENCED TO FULL SIZE

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1210m

PROJECT No.: 1008-010

DWG No.: 09

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E 426,500

E 426,000

N 6,259,000

N 6,258,500

N 6,258,000

N 6,257,500

WEST ZONE

VOK ZONE

CRUSHER AREA

SU-314-005
SU-124-06
SU-217-03
SU-217-02
SU-217-01
SU-041-10
SU-290-005
SU-290-006
SU-290-007
SU-290-008
SU-282-003
SU-103-02
SU-103-03
SU-098-03
SU-121-003
SU-131-001
SU-063-03
SU-063-05
SU-063-04
SU-063-005
SU-361-014
SU-056-002
SU-348-005
SU-348-006
SU-012-006
SU-119-002
SU-357-005
SU-357-004
SU-353-013
SU-353-012
SU-113-06
SU-346-003
SU-346-001
SU-350-003
SU-082-004
SU-040-003
SU-349-004
SU-345-005
SU-345-006
SU-345-007

LEGEND

- STATIC TEST SAMPLE LOCATION (COLOURED BY ROCK TYPE)
- DRILL HOLE TRACE
- DESIGN UNDERGROUND DEVELOPMENT
- DESIGN STOPE
- EXISTING UNDERGROUND

LITHOLOGIC UNITS - 3D SOLID MODEL

- P2
- WEST PORPHYRY (OFFICEP1)
- SILICIFIED CAP
- FRAGMENTAL VOLCANICS
- BRIDGE ZONE PORPHYRY (BRIDGEP1)
- VOLCANIC SEDIMENTARY FACIES
- CONGLOMERATE

LITHOLOGIC UNITS - DRILL HOLE

- OVERBURDEN
- FAULT ZONE
- QUARTZ VEIN
- HYDROTHERMAL REPLACEMENT
- CONGLOMERATE
- META-SEDIMENT
- META-FELSIC VOLCANIC
- FELSIC VOLCANIC
- BASALT
- MAFIC INTRUSIVE
- ANDESITE
- GRANITOID
- PORPHYRY
- RHYOLITE
- DACITE

THIS BAR MEASURES 100 mm AT FULL SIZE ALL SCALES REFERENCED TO FULL SIZE

SCALE 1:2,500

50 0 50 100 150

METRES

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

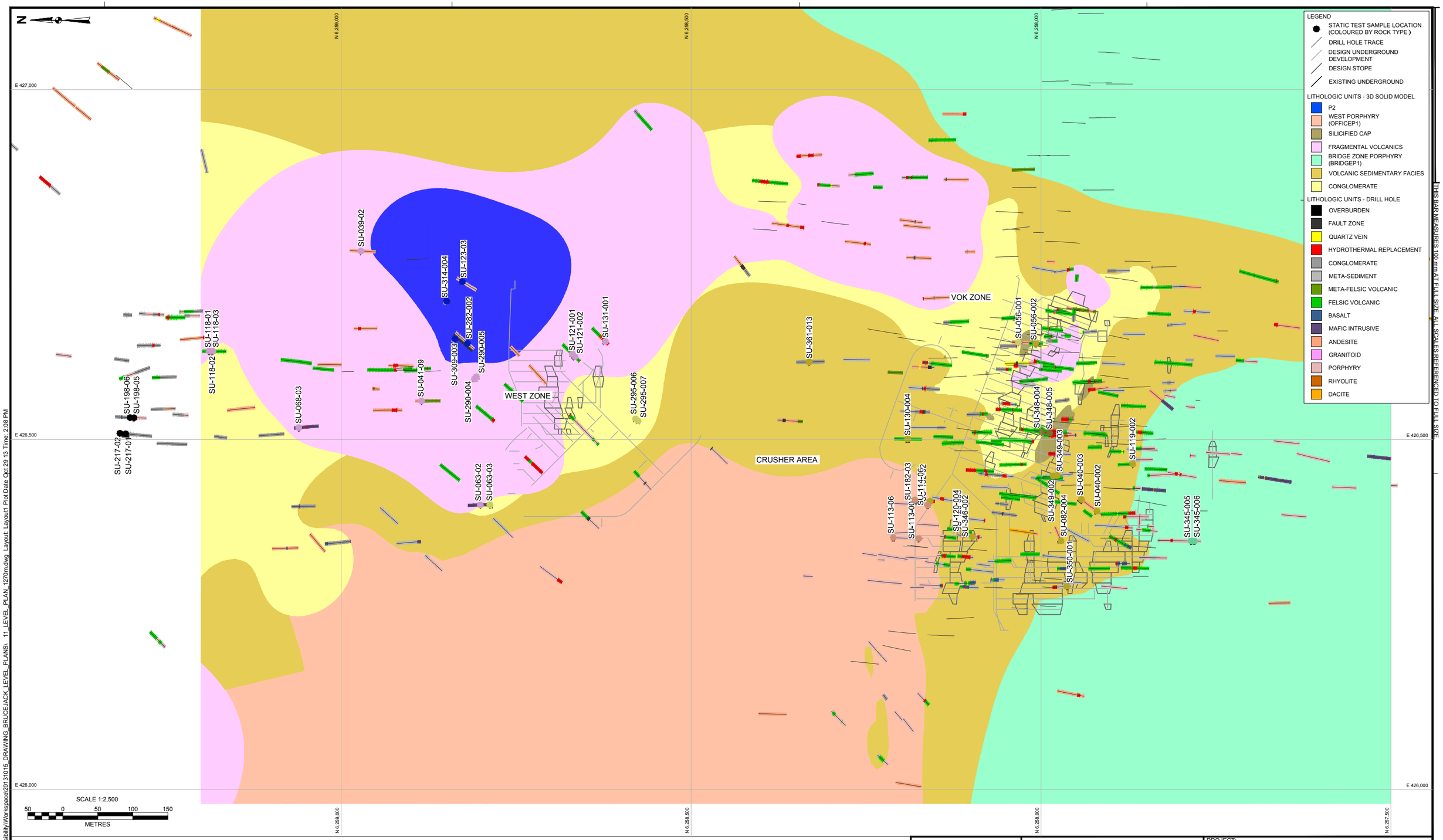
PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1240m

PROJECT No.: 1008-010

DWG No.: 10

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NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

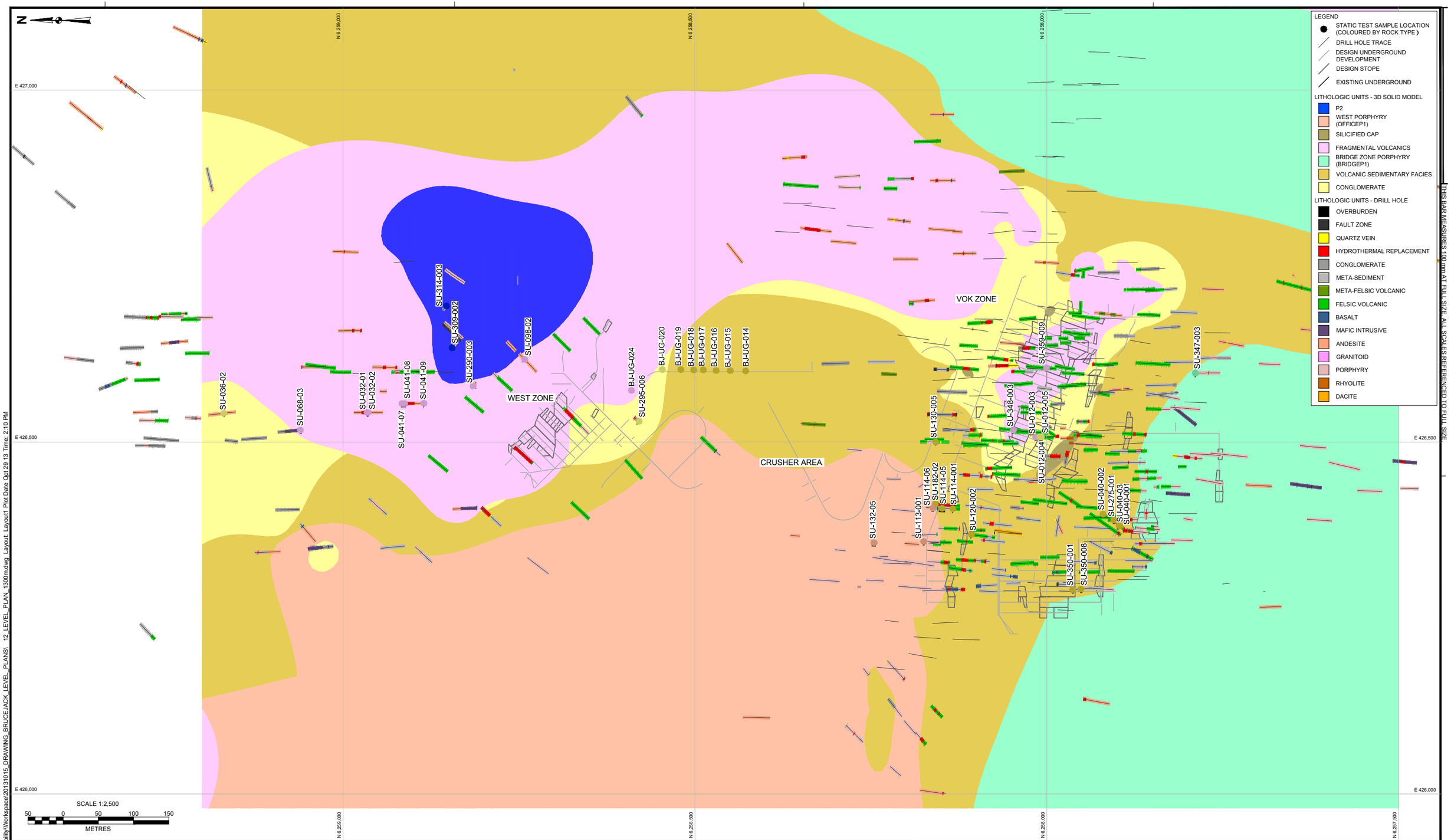
BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1270m

PROJECT No.:	DWG No.:
1008-010	11



THIS BAR MEASURES 100 mm AT FULL SIZE ALL SCALES REFERENCED TO FULL SIZE

X:\Projects\1008007_BJ_Feasibility\Workspace\20131015_DRAWING_BRUCEJACK_LEVEL_PLANS\ 12_LEVEL_PLAN_1300m.dwg Layout: Layout1 Plot Date: Oct 29 13 Time: 2:10 PM

NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1300m

PROJECT No.:	DWG No.:
1008-010	12

N

E 427,000

E 426,500

E 426,000

N 6,259,000

N 6,258,500

N 6,258,000

N 6,257,500

WEST ZONE

VOK ZONE

CRUSHER AREA

SU-039-01
SU-124-05
SU-036-01
SU-041-05
SU-041-07
SU-041-06
SU-041-08
SU-314-001
SU-314-002
SU-282-001
SU-309-002
SU-290-002
SU-290-001
SU-121-02
SU-063-002
BJ-UG-027
BJ-UG-026
BJ-UG-025
SU-295-005
BJ-UG-024
BJ-UG-020
BJ-UG-019
BJ-UG-018
BJ-UG-017
BJ-UG-016
BJ-UG-015
BJ-UG-014
BJ-UG-003
BJ-UG-002
BJ-BS-001
BJ-UG-001
BJ-UG-005
BJ-UG-006
BJ-UG-007
BJ-BS-002
SU-361-011
SU-361-012
BJ-UG-008
BJ-BS-003
BJ-UG-009
BJ-UG-010
BJ-BS-006
BJ-UG-011
BJ-UG-012
BJ-BS-007
SU-130-006
SU-130-007
BJ-UG-023
BJ-BS-004
BJ-UG-021
BJ-UG-022
SU-369-008
BJ-BS-005
SU-012-003
SU-035-053
SU-012-004
SU-114-001
SU-114-04
SU-114-03
SU-017-03
SU-017-04
SU-346-007
SU-082-001
SU-275-001
SU-040-03
SU-040-001
SU-132-05
SU-113-05
SU-223-01
SU-350-007
SU-350-006
SU-347-002
SU-347-003

LEGEND

- STATIC TEST SAMPLE LOCATION (COLOURED BY ROCK TYPE)
- DRILL HOLE TRACE
- DESIGN UNDERGROUND DEVELOPMENT
- DESIGN STOPE
- EXISTING UNDERGROUND

LITHOLOGIC UNITS - 3D SOLID MODEL

- P2
- WEST PORPHYRY (OFFICEP1)
- SILICIFIED CAP
- FRAGMENTAL VOLCANICS
- BRIDGE ZONE PORPHYRY (BRIDGEP1)
- VOLCANIC SEDIMENTARY FACIES
- CONGLOMERATE

LITHOLOGIC UNITS - DRILL HOLE

- OVERBURDEN
- FAULT ZONE
- QUARTZ VEIN
- HYDROTHERMAL REPLACEMENT
- CONGLOMERATE
- META-SEDIMENT
- META-FELSIC VOLCANIC
- FELSIC VOLCANIC
- BASALT
- MAFIC INTRUSIVE
- ANDESITE
- GRANITOID
- PORPHYRY
- RHYOLITE
- DACITE

THIS BAR MEASURES 100 mm AT FULL SIZE. ALL SCALES REFERENCED TO FULL SIZE.

SCALE 1:2,500

50 0 50 100 150

METRES

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
4. THIS DRAWING MUST BE READ IN CONJUNCTION WITH BGC'S REPORT TITLED "ML / ARD PREDICTION BASELINE REPORT" AND DATED NOVEMBER 2013.
5. PROJECTION IS NAD 1983 UTM ZONE 9N
6. UNLESS BGC AGREES OTHERWISE IN WRITING, THIS DRAWING SHALL NOT BE MODIFIED OR USED FOR ANY PURPOSE OTHER THAN THE PURPOSE FOR WHICH BGC GENERATED IT. BGC SHALL HAVE NO LIABILITY FOR ANY DAMAGES OR LOSS ARISING IN ANY WAY FROM ANY USE OR MODIFICATION OF THIS DOCUMENT NOT AUTHORIZED BY BGC. ANY USE OF OR RELIANCE UPON THIS DOCUMENT OR ITS CONTENT BY THIRD PARTIES SHALL BE AT SUCH THIRD PARTIES' SOLE RISK.

SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

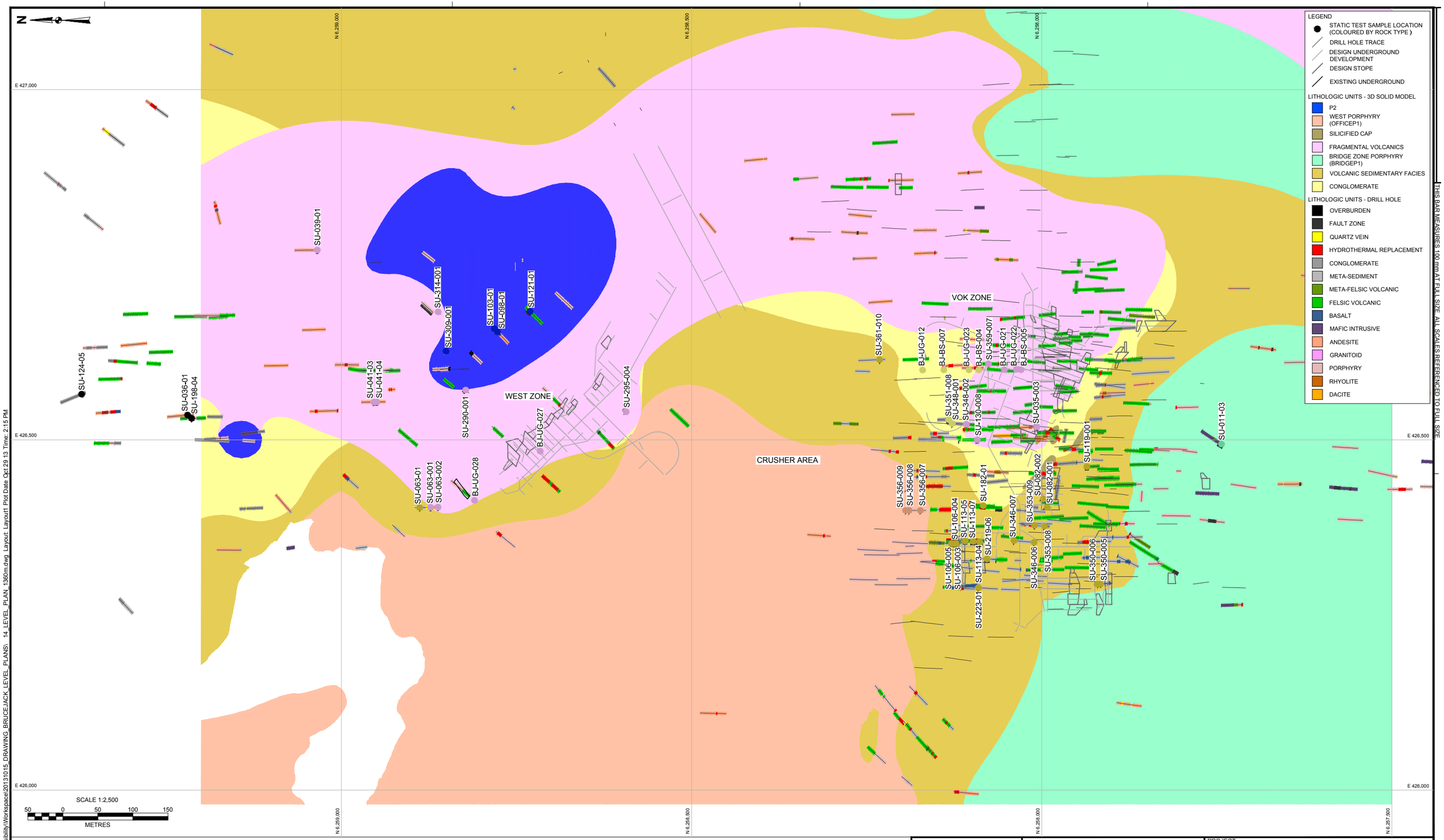
PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1330m

PROJECT No.: 1008-010

DWG No.: 13

X:\Projects\1008\007_BJ_Feasibility\Workspace\20131015_DRAWING_BRUCE\JACK_LEVEL_PLANS\ 13_LEVEL_PLAN_1330m.dwg Layout: Layout1 Plot Date: Oct 29 13 Time: 2:13 PM



THIS BAR MEASURES 100 mm AT FULL SIZE ALL SCALES REFERENCED TO FULL SIZE

X:\Projects\1008\007_BJ_Feasibility\Workspace\20131015_DRAWING_BRUCEJACK_LEVEL_PLANS\ 14_LEVEL_PLAN_1360m.dwg Layout: Layout Plot Date: Oct 29 13 Time: 2:15 PM

NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

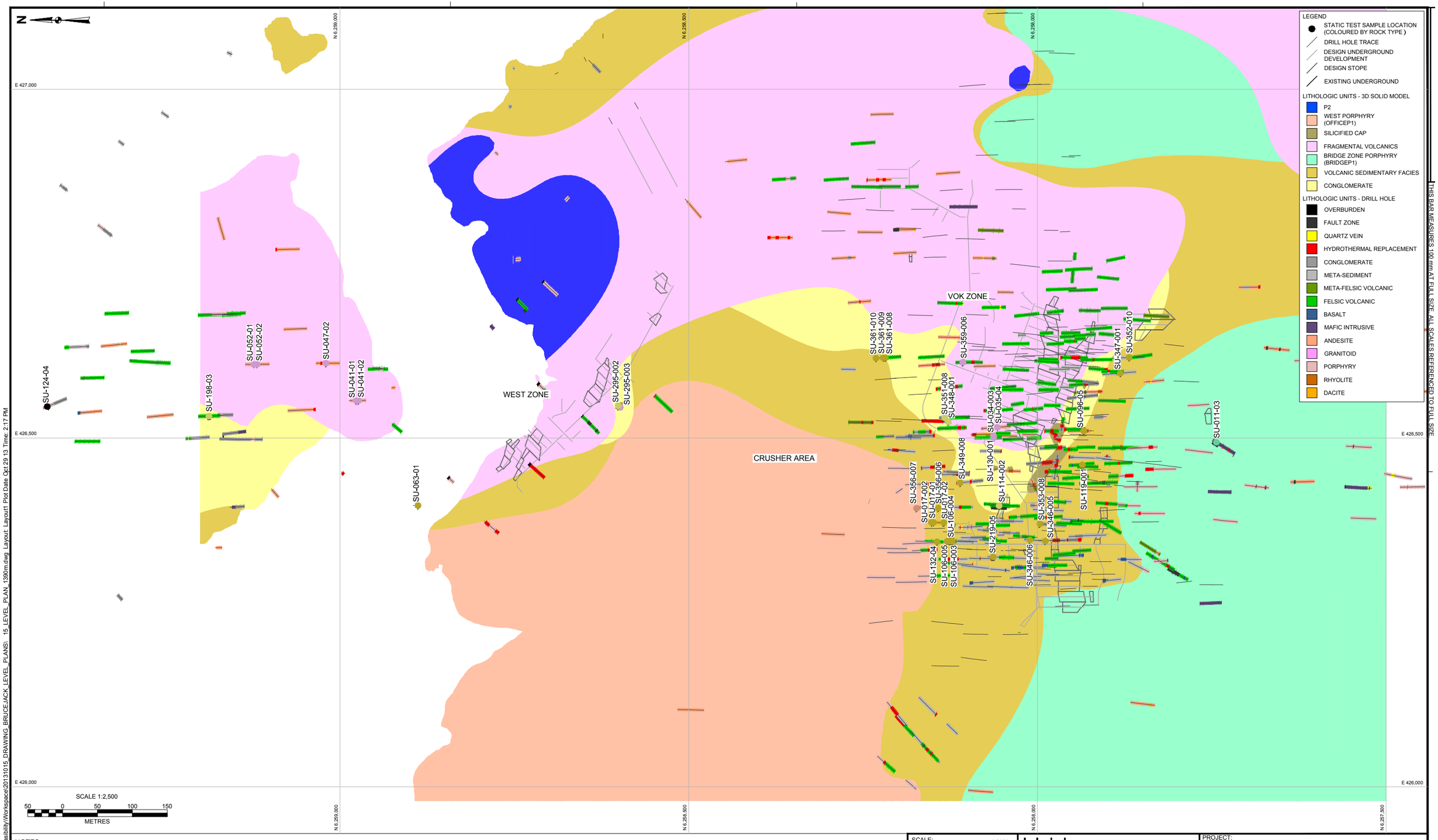
CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1360m

PROJECT No.: 1008-010

DWG No.: 14



[THIS BAR MEASURES 100 mm AT FULL SIZE. ALL SCALES REFERENCED TO FULL SIZE.]

X:\Projects\1008\007 BJ_Feasibility\Workspace\20131015_DRAWING_BRUCEJACK_LEVEL_PLANS\ 15_LEVEL_PLAN_1390m.dwg Layout: Layout1 Plot Date: Oct 29 13, Time: 2:17 PM

NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1390m

PROJECT No.:	DWG No.:
1008-010	15

N

E 427,000

E 426,500

E 426,000

N 6,259,000

N 6,258,500

N 6,258,000

N 6,257,500

WEST ZONE

CRUSHER AREA

VOK ZONE

SU-124-01
SU-124-02
SU-124-03
SU-124-04
SU-068-01
SU-068-02
SU-198-02
SU-198-01
SU-047-01
SU-295-001
SU-361-007
SU-361-006
SU-359-005
SU-352-008
SU-352-009
SU-348-015
SU-346-016
SU-012-002
SU-033-002
SU-351-002
SU-351-001
SU-034-003
SU-096-04
SU-082-003
SU-011-02
SU-011-01
SU-349-007
SU-349-009
SU-349-008
SU-034-002
SU-086-002
SU-346-004
SU-353-007
SU-353-006
SU-356-006
SU-356-005
SU-219-04
SU-113-03
SU-017-001
SU-017-002
SU-017-01
SU-346-005
SU-350-012
SU-040-02
SU-040-01

LEGEND

STATIC TEST SAMPLE LOCATION (COLOURED BY ROCK TYPE)
DRILL HOLE TRACE
DESIGN UNDERGROUND DEVELOPMENT
DESIGN STOPE
EXISTING UNDERGROUND

LITHOLOGIC UNITS - 3D SOLID MODEL

P2
WEST PORPHYRY (OFFICEP1)
SILICIFIED CAP
FRAGMENTAL VOLCANICS
BRIDGE ZONE PORPHYRY (BRIDGEP1)
VOLCANIC SEDIMENTARY FACIES
CONGLOMERATE

LITHOLOGIC UNITS - DRILL HOLE

OVERBURDEN
FAULT ZONE
QUARTZ VEIN
HYDROTHERMAL REPLACEMENT
CONGLOMERATE
META-SEDIMENT
META-FELSIC VOLCANIC
FELSIC VOLCANIC
BASALT
MAFIC INTRUSIVE
ANDESITE
GRANITOID
PORPHYRY
RHYOLITE
DACITE

SCALE 1:2,500

50 0 50 100 150

METRES

[THIS BAR MEASURES 100 mm AT FULL SIZE. ALL SCALES REFERENCED TO FULL SIZE.]

X:\Projects\1008\007 BJ_Feasibility\Workspace\20131015_DRAWING_BRUCEJACK_LEVEL_PLANS\ 16_LEVEL_PLAN_1420m.dwg Layout: Layout Plot Date: Oct 29 13 Time: 2:20 PM

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1420m

PROJECT No.: 1008-010

DWG No.: 16

N

N 6,259,000
N 6,258,500
N 6,258,000
N 6,257,500

E 427,000
E 426,500
E 426,000

WEST ZONE
CRUSHER AREA
VOK ZONE

SU-068-01
SU-361-006
SU-361-005
SU-352-007
SU-348-013
SU-348-014
SU-359-004
SU-012-001
SU-035-001
SU-012-002
SU-035-002
SU-082-003130-003
SU-355-002
SU-355-003
SU-355-004
SU-034-001
SU-034-002
SU-349-007
SU-106-002
SU-113-002
SU-120-001
SU-358-004
SU-356-004
SU-132-03
SU-132-02
SU-219-03
SU-353-006
SU-353-005
SU-350-011
SU-040-01

LEGEND

- STATIC TEST SAMPLE LOCATION (COLOURED BY ROCK TYPE)
- DRILL HOLE TRACE
- DESIGN UNDERGROUND DEVELOPMENT
- DESIGN STOPE
- EXISTING UNDERGROUND

LITHOLOGIC UNITS - 3D SOLID MODEL

- P2
- WEST PORPHYRY (OFFICEP1)
- SILICIFIED CAP
- FRAGMENTAL VOLCANICS
- BRIDGE ZONE PORPHYRY (BRIDGEP1)
- VOLCANIC SEDIMENTARY FACIES
- CONGLOMERATE

LITHOLOGIC UNITS - DRILL HOLE

- OVERBURDEN
- FAULT ZONE
- QUARTZ VEIN
- HYDROTHERMAL REPLACEMENT
- CONGLOMERATE
- META-SEDIMENT
- META-FELSIC VOLCANIC
- FELSIC VOLCANIC
- BASALT
- MAFIC INTRUSIVE
- ANDESITE
- GRANITOID
- PORPHYRY
- RHYOLITE
- DACITE

SCALE 1:2,500
50 0 50 100 150
METRES

[THIS BAR MEASURES 100 mm AT FULL SIZE ALL SCALES REFERENCED TO FULL SIZE]

X:\Projects\1008\007 BJ_Feasibility\Workspace\20131015_DRAWING_BRUCEJACK_LEVEL_PLANS\ 17_LEVEL_PLAN_1450m.dwg Layout: Layout1 Plot Date: Oct 29 13 Time: 2:24 PM

NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

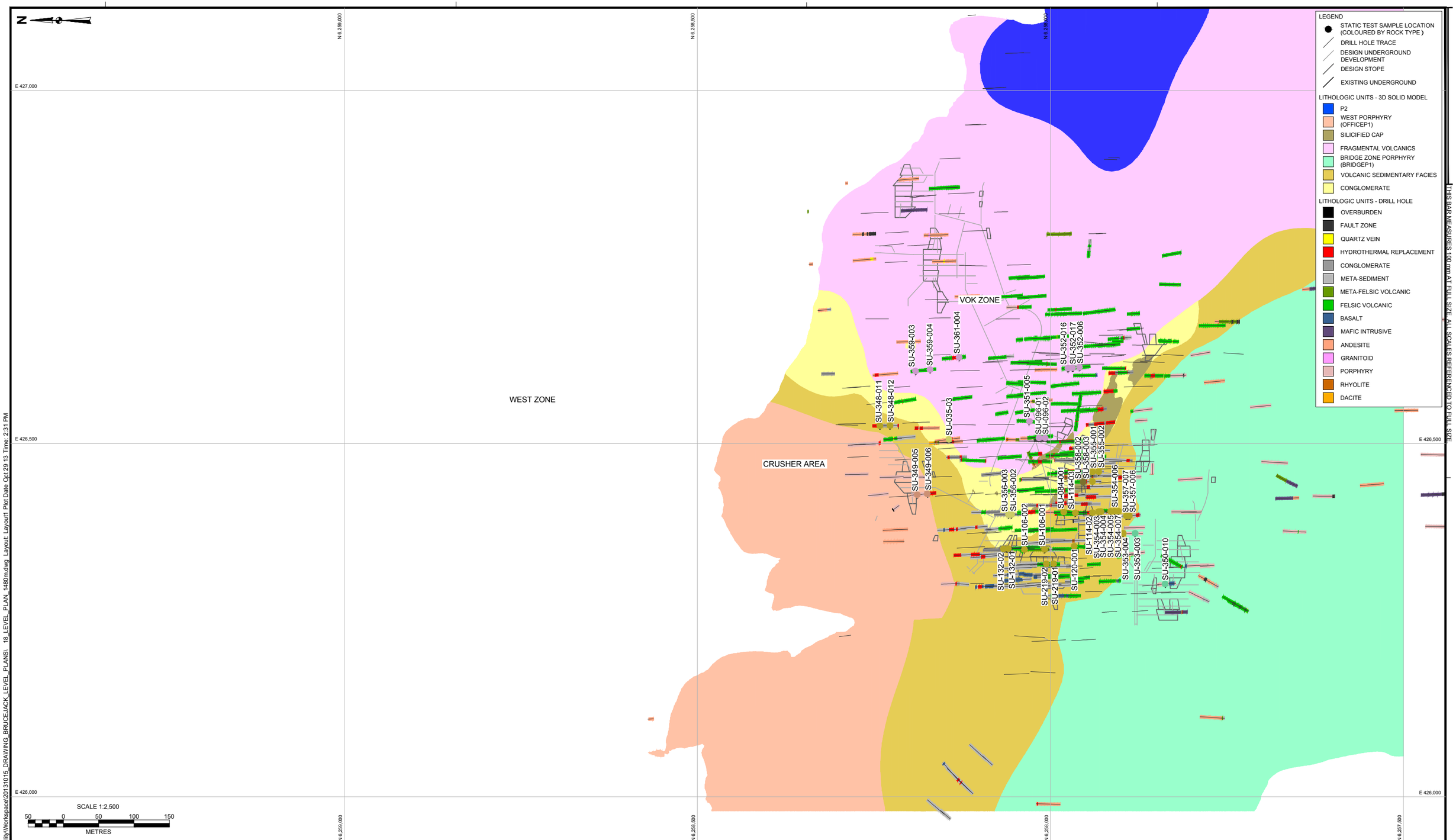
BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1450m

PROJECT No.:	DWG No.:
1008-010	17



X:\Projects\1008\007 BJ_Feasibility\Workspace\20131015 DRAWING_BRUCEJACK_LEVEL_PLANS\ 18_LEVEL_PLAN_1480m.dwg Layout: Layout1 Plot Date: Oct 29 13 Time: 2:31 PM

NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

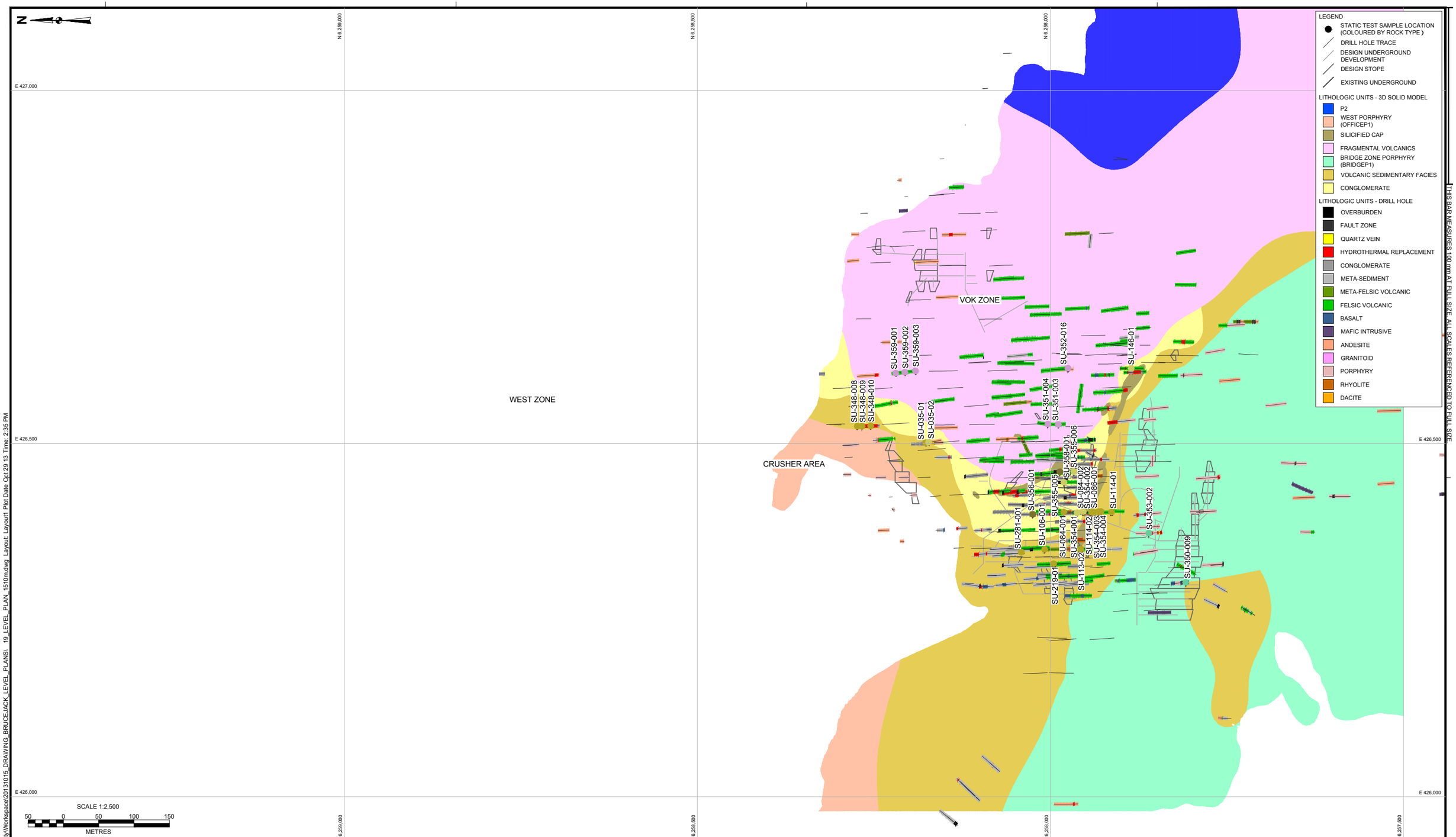
BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1480m

PROJECT No.:	DWG No.:
1008-010	18



[THIS BAR MEASURES 100 mm AT FULL SIZE. ALL SCALES REFERENCED TO FULL SIZE]

X:\Projects\1008007_BJ_Feasibility\Workspace\20131015_DRAWING_BRUCEJACK_LEVEL_PLANS\ 19_LEVEL_PLAN_1510m.dwg Layout: Layout1 Plot Date: Oct 29 13 Time: 2:35 PM

NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. LEVEL PLAN ENVELOPE: +/- 20m.
3. DATASETS RECEIVED FROM PRETIVM RESOURCES INC: 3D SOLID MODEL - NOVEMBER 30, 2012, UNDERGROUND DESIGN JULY 08, 2013, BULK SAMPLE AS BUILT - AUGUST 06 2013.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: PRETIVM RESOURCES INC.

PROJECT: ML / ARD PREDICTION BASELINE REPORT

TITLE: LEVEL PLAN 1510m

PROJECT No.: 1008-010

DWG No.: 19

N

N 6,259,000
N 6,258,500
N 6,258,000
N 6,257,500

E 427,000
E 426,500
E 426,000

WEST ZONE

CRUSHER AREA

VOK ZONE

SU-359-001
SU-348-008
SU-361-003
SU-361-002
SU-361-001
SU-352-001
SU-355-005
SU-354-001
SU-084-002
SU-086-001
SU-114-01
SU-113-01
SU-353-001
SU-350-009

LEGEND

STATIC TEST SAMPLE LOCATION (COLOURED BY ROCK TYPE)
DRILL HOLE TRACE
DESIGN UNDERGROUND DEVELOPMENT
DESIGN STOPE
EXISTING UNDERGROUND

LITHOLOGIC UNITS - 3D SOLID MODEL

P2
WEST PORPHYRY (OFFICEP1)
SILICIFIED CAP
FRAGMENTAL VOLCANICS
BRIDGE ZONE PORPHYRY (BRIDGEP1)
VOLCANIC SEDIMENTARY FACIES
CONGLOMERATE

LITHOLOGIC UNITS - DRILL HOLE

OVERBURDEN
FAULT ZONE
QUARTZ VEIN
HYDROTHERMAL REPLACEMENT
CONGLOMERATE
META-SEDIMENT
META-FELSIC VOLCANIC
FELSIC VOLCANIC
BASALT
MAFIC INTRUSIVE
ANDESITE
GRANITOID
PORPHYRY
RHYOLITE
DACITE

SCALE 1:2,500
50 0 50 100 150
METRES

[THIS BAR MEASURES 100 mm AT FULL SIZE ALL SCALES REFERENCED TO FULL SIZE]

X:\Projects\1008\007_BJ_Feasibility\Workspace\20131015_DRAWING_BRUCEJACK_LEVEL_PLANS\ 20_LEVEL_PLAN_1540m.dwg Layout: Layout1 Plot Date: Oct 29 13 Time: 2:37 PM

NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
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SCALE:	1:2500
DATE:	NOV 2013
DRAWN:	WKL
CHECKED:	JG
APPROVED:	JG

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT:
PRETIVM RESOURCES INC.

PROJECT:
ML / ARD PREDICTION BASELINE REPORT

TITLE:
LEVEL PLAN 1540m

PROJECT No.:	DWG No.:
1008-010	20

APPENDIX B
WASTE ROCK ABA

Sample ID	Zone	Logged Lithology	Geological Unit	Paste pH	TIC	Tot-S	Sulp-S	SO_4-S	Insoluble S	AP	CaCO3 NP	Sobek NP	Net NP	Fizz Test	Sobek NPR
					%	%	%	%	%	← kg $CaCO_3$/t →					Calc
SU-011-01	VOK	Meta-Felsic Volcanics	Bridge P1	8.70	0.8	3.64	3.59	0.005	0.05	112	66.7	69.9	-42.3	Slight	0.62
SU-011-02	VOK	Tonalite	Bridge P1	8.83	0.95	4.23	4.27	0.005	0.005	133	79.2	82.6	-50.8	Slight	0.62
SU-011-03	VOK	Tonalite	Bridge P1	8.80	0.58	3.33	3.34	0.005	0.005	104	48.3	50.6	-53.8	Slight	0.48
SU-040-01	VOK	Andesite	Bridge P1	9.00	0.62	0.73	0.73	0.005	0.005	22.8	51.7	62.3	39.5	Slight	2.73
SU-040-02	VOK	Meta-Int. Felsic Volcanics	Bridge P1	8.50	0.44	3.52	3.51	0.005	0.01	110	36.7	40.3	-69.4	Slight	0.37
SU-345-005	VOK	Plag-hbl Porphyry	Bridge P1	9.28	1.38	3.1	2.62	0.005	0.48	81.9	115	127	45.0	Moderate	1.55
SU-345-006	VOK	Plag-hbl Porphyry	Bridge P1	9.08	1.1	3.14	2.83	0.005	0.31	88.4	91.7	95.9	7.46	Moderate	1.08
SU-345-007	VOK	Plag-hbl Porphyry	Bridge P1	9.27	1.12	3.38	2.85	0.005	0.53	89.1	93.3	105	16.1	Moderate	1.18
SU-347-002	VOK	Plag-hbl Porphyry	Bridge P1	9.03	1.31	2.1	1.83	0.005	0.27	57.2	109	122	64.7	Slight	2.13
SU-347-003	VOK	Plag-hbl Porphyry	Bridge P1	9.19	1.08	2.13	1.86	0.005	0.27	58.1	90.0	90.6	32.5	Slight	1.56
SU-349-010	VOK	Plag-hbl Porphyry	Bridge P1	8.72	1.74	3.43	3.08	0.005	0.35	96.3	145	157	60.4	Moderate	1.63
SU-350-009	VOK	Plag-hbl Porphyry	Bridge P1	8.08	0.1	2.35	2.1	0.01	0.24	65.6	8.30	23.6	-42.0	Slight	0.36
SU-350-010	VOK	Plag-hbl Porphyry	Bridge P1	8.23	0.87	1.62	1.42	0.005	0.20	44.4	72.5	77.5	33.1	Slight	1.75
SU-350-011	VOK	Plag-hbl Porphyry	Bridge P1	8.13	0.81	1.41	1.2	0.02	0.19	37.5	67.5	72.3	34.8	Slight	1.93
SU-353-001	VOK	Plag-hbl Porphyry	Bridge P1	7.77	0.11	4.14	3.82	0.02	0.30	119	9.20	12.9	-106	Slight	0.11
SU-353-002	VOK	Plag-hbl Porphyry	Bridge P1	8.00	1	3.44	3.16	0.005	0.28	98.8	83.3	87.4	-11.4	Moderate	0.89
SU-353-003	VOK	Plag-hbl Porphyry	Bridge P1	8.49	0.7	1.91	1.72	0.005	0.19	53.8	58.3	81.3	27.6	Moderate	1.51
BJ-BS-006	VOK	Poly-Conglomerate	Conglomerate	8.34	0.4	4.36	4.12	0.02	0.22	129	33.3	38.7	-90.1	Slight	0.30
BJ-BS-006/007 Comp	VOK	Poly-Conglomerate	Conglomerate	8.25	0.4	4.22	4.04	0.02	0.16	126	33.3	38.6	-87.7	Slight	0.31
BJ-BS-007	VOK	Poly-Conglomerate	Conglomerate	8.59	0.28	3.67	3.47	0.02	0.18	108	23.3	28.7	-79.7	Slight	0.26
BJ-EA-FC8 (-2mm)	VOK	Poly-Conglomerate	Conglomerate	8.26	0.66	4.06	3.86	0.03	0.17	121	55.0	62.9	-57.7	Slight	0.52
BJ-UG-011	VOK	Poly-Conglomerate	Conglomerate	8.23	0.52	4.33	4.17	0.02	0.14	130	43.3	41.9	-88.4	Slight	0.32
BJ-UG-011/012/023 Comp	VOK	Poly-Conglomerate	Conglomerate	8.57	0.49	3.2	3.1	0.01	0.09	96.9	40.8	45.9	-51.0	Slight	0.47
BJ-UG-012	VOK	Poly-Conglomerate	Conglomerate	8.28	1.15	2.42	2.17	0.02	0.23	67.8	95.8	111	43.3	Moderate	1.64
BJ-UG-020	VOK	Poly-Conglomerate	Conglomerate	8.32	0.34	3.51	3.12	0.02	0.37	97.5	28.3	33.7	-63.8	Slight	0.35
BJ-UG-023	VOK	Poly-Conglomerate	Conglomerate	8.6	0.06	3.35	2.99	0.01	0.35	93.4	5.00	8.40	-85.0	Slight	0.09
SU-012-004	VOK	Meta-int to mafic volcanic	Conglomerate	7.24	0.005	2.45	2.07	0.01	0.37	64.7	0.40	6.20	-58.5	None	0.10
SU-012-005	VOK	Meta-int to mafic volcanic	Conglomerate	8.30	0.005	0.14	0.12	0.005	0.02	3.80	0.40	8.40	4.65	None	2.24
SU-032-07	Gossan Hill	Dacite	Conglomerate	8.78	1.02	4.56	4.42	0.005	0.14	138	85.0	86.2	-51.9	Slight	0.62
SU-032-08	Gossan Hill	Andesite	Conglomerate	8.90	0.62	3.91	3.94	0.005	0.005	123	51.7	53.1	-70.0	Slight	0.43
SU-032-09	Gossan Hill	Andesite	Conglomerate	8.20	0.12	4.41	4.6	0.02	0.005	144	10.0	52.1	-91.7	Slight	0.36
SU-032-10	Gossan Hill	Andesite	Conglomerate	8.91	0.45	3.99	3.94	0.005	0.05	123	37.5	39.9	-83.2	Slight	0.32
SU-035-02	VOK	Andesite	Conglomerate	7.01	0.13	1.88	1.84	0.02	0.02	57.5	10.8	10.7	-46.8	None	0.19
SU-035-03	VOK	poly-Conglomerate	Conglomerate	7.58	0.13	5.33	5.48	0.05	0.005	171	10.8	12.3	-159	Slight	0.07
SU-036-02	Gossan Hill	Andesite	Conglomerate	8.51	1.04	2.94	2.75	0.005	0.19	85.9	86.7	86.1	0.16	Slight	1.00
SU-039-06	Gossan Hill	Rhyolite	Conglomerate	9.50	1.17	0.72	0.66	0.005	0.06	20.6	97.5	109	88.4	Slight	5.28
SU-039-07	Gossan Hill	Basalt	Conglomerate	8.70	0.01	0.35	0.35	0.005	0.005	10.9	0.80	10.4	-0.54	Slight	0.95
SU-047-001	West Zone	Dense Vein stockwork	Conglomerate	7.76	0.03	3.6	3.56	0.02	0.02	111	2.50	6.50	-105	None	0.06
SU-047-05	Gossan Hill	Basalt	Conglomerate	9.30	0.98	0.33	0.31	0.005	0.02	9.70	81.7	133	123	Moderate	13.7
SU-047-06	Gossan Hill	Rhyolite	Conglomerate	9.11	0.52	2.61	2.33	0.005	0.28	72.8	43.3	41.9	-30.9	Slight	0.58
SU-056-001	VOK	Arenite	Conglomerate	8.61	0.1	3.39	2.87	0.01	0.51	89.7	8.30	15.2	-74.5	Slight	0.17
SU-063-005	West Zone	Quartz carbonate vein	Conglomerate	8.44	8.02	1.01	0.99	0.005	0.02	30.9	668	648	617	Strong	20.9
SU-063-03	West Zone	Tonalite	Conglomerate	8.71	4.58	1.8	1.65	0.005	0.15	51.6	382	371	320	Moderate	7.20
SU-063-04	West Zone	Basalt	Conglomerate	8.92	2.42	0.17	0.14	0.005	0.03	4.40	202	253	248	Moderate	57.7
SU-063-05	West Zone	Andesite	Conglomerate	8.70	2.48	2.66	2.48	0.005	0.18	77.5	207	200	123	Moderate	2.58
SU-063-06	West Zone	Andesite	Conglomerate	8.96	1.13	2.84	2.52	0.005	0.32	78.8	94.2	96.7	18.0	Slight	1.23
SU-068-01	Gossan Hill	Tonalite	Conglomerate	8.30	0.83	3.38	3.15	0.005	0.23	98.4	69.2	73.7	-24.7	Slight	0.75
SU-068-02	Gossan Hill	poly-Conglomerate	Conglomerate	8.34	0.62	2.19	1.96	0.005	0.23	61.3	51.7	56.6	-4.65	Slight	0.92
SU-082-003	VOK	Rhyolite	Conglomerate	8.40	0.37	1.68	1.51	0.01	0.16	47.2	30.8	32.3	-14.9	Slight	0.68
SU-103-04	West Zone	Andesite	Conglomerate	8.98	0.64	1.8	1.78	0.005	0.02	55.6	53.3	63.4	7.78	Slight	1.14
SU-114-002	VOK	Intermediate Volcanics	Conglomerate	7.96	0.08	3.32	2.84	0.02	0.46	88.8	6.70	12.5	-76.3	Slight	0.14
SU-121-003	West Zone	Dense Vein stockwork	Conglomerate	8.08	5.49	1.35	1.25	0.005	0.10	39.1	458	442	403	Strong	11.3
SU-123-04	West Zone	Intermediate Volcanics	Conglomerate	9.42	0.26	2.46	2.31	0.005	0.15	72.2	21.7	37.5	-34.7	Slight	0.52

Sample ID	Zone	Logged Lithology	Geological Unit	Paste pH	TIC	Tot-S	Sulp-S	SO_4-S	Insoluble S	AP	CaCO3 NP	Sobek NP	Net NP	Fizz Test	Sobek NPR
					%	%	%	%	%	← kg $CaCO_3$/t →					Calc
SU-124-07	Gossan Hill	poly-Conglomerate	Conglomerate	8.98	1.69	1.79	1.51	0.005	0.28	47.2	141	161	114	Moderate	3.42
SU-130-006	VOK	Mafic Dyke	conglomerate	7.54	0.15	5.04	4.76	0.03	0.25	149	12.5	15.6	-133	Slight	0.10
SU-130-007	VOK	Felsic Volcanics	conglomerate	8.85	0.61	3.65	3.21	0.01	0.43	100	50.8	53.7	-46.6	Slight	0.54
SU-146-01	VOK	Felsic Volcanics	Conglomerate	8.30	0.58	3.23	2.85	0.005	0.38	89.1	48.3	52.8	-36.3	Slight	0.59
SU-198-01	Gossan Hill	Kspar-Hbl-Porph	Conglomerate	8.39	2.11	3.25	2.76	0.005	0.49	86.3	176	174	87.4	Moderate	2.01
SU-198-02	Gossan Hill	Kspar-Hbl-Porph	Conglomerate	8.21	0.27	2.33	2.08	0.005	0.25	65.0	22.5	28.1	-36.9	Slight	0.43
SU-198-03	Gossan Hill	Intermediate Volcanics	Conglomerate	8.55	1.42	2.57	2.28	0.005	0.29	71.3	118	159	87.7	Moderate	2.23
SU-290-014	West Zone	Conglomerate	Conglomerate	8.48	0.6	2.49	2.31	0.005	0.18	72.2	50.0	46.9	-25.3	Slight	0.65
SU-290-015	West Zone	Arenite	Conglomerate	8.30	0.17	3.27	2.88	0.01	0.38	90.0	14.2	17.3	-72.7	Slight	0.19
SU-290-016	West Zone	Conglomerate	Conglomerate	7.47	0.06	4.93	4.71	0.02	0.20	147	5.00	9.10	-138	Slight	0.06
SU-295-001	West Zone	Conglomerate	Conglomerate	6.54	0.02	3.15	2.91	0.02	0.22	90.9	1.70	5.20	-85.7	None	0.06
SU-295-002	West Zone	Conglomerate	Conglomerate	7.84	0.03	1.33	1.15	0.005	0.18	35.9	2.50	5.30	-30.6	None	0.15
SU-295-006	West Zone	Conglomerate	Conglomerate	8.69	1.33	1.26	1.1	0.06	0.10	34.4	111	116	81.4	Moderate	3.37
SU-295-007	West Zone	Conglomerate	Conglomerate	8.63	0.74	1.31	1.14	0.005	0.17	35.6	61.7	80.7	45.1	Moderate	2.27
SU-309-011	West Zone	Conglomerate	Conglomerate	9.29	0.69	3.62	3.22	0.005	0.40	101	57.5	64.7	-35.9	Slight	0.64
SU-348-001	VOK	Conglomerate	Conglomerate	9.18	0.57	2.67	2.34	0.005	0.33	73.1	47.5	52.1	-21.0	Slight	0.71
SU-351-008	VOK	Conglomerate	Conglomerate	8.23	0.2	4.19	3.72	0.01	0.46	116	16.7	21.8	-94.5	Slight	0.19
SU-354-001	VOK	Conglomerate	Conglomerate	4.96	0.03	5.2	4.93	0.03	0.24	154	2.50	4.00	-150	None	0.03
SU-356-002	VOK	Conglomerate	Conglomerate	7.11	0.07	4.56	4.12	0.03	0.41	129	5.80	8.50	-120	None	0.07
SU-356-003	VOK	Conglomerate	Conglomerate	6.41	0.06	2.76	2.47	0.02	0.27	77.2	5.00	7.00	-70.2	None	0.09
SU-356-004	VOK	Conglomerate	Conglomerate	6.86	0.06	5.14	4.95	0.05	0.14	155	5.00	9.40	-145	None	0.06
SU-358-001	VOK	Intermediate Volcanics	Conglomerate	6.42	0.03	4.21	3.79	0.02	0.40	118	2.50	6.30	-112	None	0.05
SU-361-005	VOK	Intermediate Volcanics	Conglomerate	8.62	0.55	1.04	0.97	0.005	0.07	30.3	45.8	54.3	24.0	Slight	1.79
SU-361-006	VOK	Intermediate Volcanics	Conglomerate	8.50	1.69	1.39	1.11	0.005	0.28	34.7	141	164	130	Moderate	4.74
SU-361-007	VOK	Intermediate Volcanics	Conglomerate	8.63	1.76	0.65	0.46	0.04	0.15	14.4	147	178	164	Moderate	12.4
BJ-BS-004	VOK	Andesite	Fragmental	8.79	0.79	5.41	4.99	0.01	0.41	156	65.8	73.1	-82.8	Slight	0.47
BJ-BS-004/005 Comp	VOK	Andesite	Fragmental	8.96	0.91	4.63	4.44	<0.01	0.19	139	75.8	131	-7.62	Moderate	0.95
BJ-BS-005	VOK	Andesite	Fragmental	9	0.83	4.48	4.18	<0.01	0.3	131	69.2	76.1	-54.5	Slight	0.58
BJ-BS-013	VOK	Andesite	Fragmental	9.28	0.8	3.53	3.26	<0.01	0.27	102	66.7	79.0	-22.9	Slight	0.78
BJ-BS-014	VOK	Andesite	Fragmental	9.13	0.55	3.93	3.54	<0.01	0.39	111	45.8	59.2	-51.4	Slight	0.54
BJ-EA-FC7 (-2mm)	VOK	Andesite	Fragmental	8.48	0.93	5.54	5.15	0.02	0.37	161	77.5	83.8	-77.1	Slight	0.52
BJ-UG-021	VOK	Andesite	Fragmental	8.89	0.32	6.11	5.97	0.02	0.12	187	26.7	38.6	-148	Slight	0.21
BJ-UG-022	VOK	Andesite	Fragmental	8.71	0.43	6.12	5.85	0.02	0.25	183	35.8	46.9	-136	Slight	0.26
BJ-UG-024	VOK	Andesite	Fragmental	8.09	0.005	0.19	0.17	<0.01	0.02	5.30	0.40	6.90	1.59	None	1.30
BJ-UG-025	VOK	Andesite	Fragmental	8.04	0.06	0.68	0.63	0.01	0.04	19.7	5.00	9.00	-10.7	Slight	0.46
BJ-UG-026	VOK	Andesite	Fragmental	6.26	0.005	1.7	1.6	0.02	0.08	50.0	0.40	0.60	-49.4	Slight	0.01
BJ-UG-027	VOK	Andesite	Fragmental	6.41	0.02	4.09	3.77	0.03	0.29	118	1.70	3.80	-114	None	0.03
BJ-UG-028	VOK	Felsic Volcanics	Fragmental	8.01	0.26	6.73	5.79	0.03	0.91	181	21.7	28.9	-152	Slight	0.16
SU-012-001	VOK	Andesite	Fragmental	8.45	1.27	4.27	3.6	0.005	0.67	113	106	89.2	-23.3	Moderate	0.79
SU-012-002	VOK	Andesite	Fragmental	8.20	0.1	1.58	1.31	0.005	0.27	40.9	8.30	14.6	-26.3	None	0.36
SU-012-003	VOK	Dacite	Fragmental	8.00	0.01	1.11	0.89	0.005	0.22	27.8	0.80	3.50	-24.3	None	0.13
SU-032-01	Gossan Hill	Andesite	Fragmental	8.18	0.07	5.63	5.58	0.02	0.03	174	5.80	13.1	-161	None	0.08
SU-032-02	Gossan Hill	Andesite	Fragmental	7.85	0.06	2.66	2.55	0.03	0.08	79.7	5.00	7.60	-72.1	None	0.10
SU-032-03	Gossan Hill	Dense Vein Stockwork	Fragmental	8.24	0.09	3.77	3.74	0.02	0.01	117	7.50	13.8	-103	Slight	0.12
SU-032-04	Gossan Hill	Dense Vein Stockwork	Fragmental	8.81	0.46	3.87	3.85	0.01	0.01	120	38.3	40.5	-79.8	Slight	0.34
SU-032-05	Gossan Hill	Andesite	Fragmental	8.95	1.36	1.49	1.36	0.005	0.13	42.5	113	65.1	22.6	Slight	1.53
SU-032-06	Gossan Hill	Dense Vein Stockwork	Fragmental	8.70	0.75	2.21	2.13	0.005	0.08	66.6	62.5	63.9	-2.66	Slight	0.96
SU-034-001	VOK	Andesite	Fragmental	8.28	0.3	2.61	1.78	0.02	0.81	55.6	25.0	24.9	-30.7	Slight	0.45
SU-034-002	VOK	Andesite	Fragmental	7.64	0.05	5.06	4.6	0.03	0.43	144	4.20	14.8	-129	None	0.10
SU-034-003	VOK	Andesite	Fragmental	8.75	1.44	7.32	6.75	0.02	0.55	211	120	76.6	-134	Moderate	0.36
SU-035-001	VOK	Andesite	Fragmental	8.01	0.09	3.57	3.03	0.02	0.52	94.7	7.50	14.8	-79.9	Slight	0.16
SU-035-002	VOK	Andesite	Fragmental	8.46	0.19	3.78	3.22	0.01	0.55	101	15.8	22.3	-78.3	Slight	0.22
SU-035-003	VOK	Andesite	Fragmental	8.50	0.02	4.27	3.46	0.02	0.79	108	1.70	7.20	-101	None	0.07

Sample ID	Zone	Logged Lithology	Geological Unit	Paste pH	TIC	Tot-S	Sulp-S	SO_4-S	Insoluble S	AP	CaCO3 NP	Sobek NP	Net NP	Fizz Test	Sobek NPR
					%	%	%	%	%	← kg $CaCO_3$/t →					Calc
SU-035-04	VOK	Andesite	Fragmental	8.45	0.45	8.45	8.12	0.02	0.31	254	37.5	43.9	-210	Slight	0.17
SU-036-01	Gossan Hill	Andesite	Fragmental	8.56	0.44	2.92	2.87	0.01	0.04	89.7	36.7	40.2	-49.5	Slight	0.45
SU-036-03	Gossan Hill	Andesite	Fragmental	8.59	0.37	3.18	3.15	0.005	0.03	98.4	30.8	30.8	-67.6	Slight	0.31
SU-039-01	Gossan Hill	Andesite	Fragmental	7.10	0.16	6.03	6.07	0.03	0.005	190	13.3	8.40	-181	None	0.04
SU-039-02	Gossan Hill	Andesite	Fragmental	8.38	0.58	4.06	4.07	0.005	0.005	127	48.3	62.2	-65.0	Slight	0.49
SU-041-01	West Zone	Andesite	Fragmental	8.41	0.29	4.89	4.47	0.02	0.40	140	24.2	34.4	-105	Slight	0.25
SU-041-02	West Zone	Andesite	Fragmental	5.70	0.005	5.71	5.68	0.02	0.01	178	0.40	5.10	-172	None	0.03
SU-041-03	West Zone	Andesite	Fragmental	7.81	0.06	4.22	4.04	0.02	0.16	126	5.00	10.3	-116	None	0.08
SU-041-04	West Zone	Andesite	Fragmental	7.90	0.09	5.23	4.94	0.02	0.27	154	7.50	14.6	-140	Slight	0.09
SU-041-05	West Zone	Andesite	Fragmental	8.08	0.27	4.26	3.98	0.04	0.24	124	22.5	26.7	-97.7	Slight	0.21
SU-041-06	West Zone	Andesite	Fragmental	7.93	0.05	4.73	3.69	0.02	1.02	115	4.20	9.60	-106	None	0.08
SU-041-07	West Zone	Andesite	Fragmental	8.14	0.27	3.94	3.69	0.02	0.23	115	22.5	27.0	-88.3	Slight	0.23
SU-041-08	West Zone	Dense Vein Stockwork	Fragmental	8.61	1.12	1.24	1.1	0.005	0.14	34.4	93.3	86.8	52.4	Moderate	2.53
SU-041-09	West Zone	Meta Volcanics	Fragmental	7.46	0.09	6.23	6.53	0.04	0.005	204	7.50	14.9	-189	Slight	0.07
SU-041-10	West Zone	Meta Volcanics	Fragmental	7.80	0.1	4.06	3.82	0.02	0.22	119	8.30	13.6	-106	Slight	0.11
SU-041-11	West Zone	Andesite	Fragmental	8.32	0.24	5.97	5.97	0.02	0.005	187	20.0	27.2	-159	Slight	0.15
SU-047-01	Gossan Hill	Andesite	Fragmental	8.69	0.94	4.38	4.03	0.005	0.35	126	78.3	76.7	-49.2	Slight	0.61
SU-047-02	Gossan Hill	Andesite	Fragmental	8.25	0.15	5.66	5.59	0.01	0.06	175	12.5	21.8	-153	Slight	0.12
SU-047-03	Gossan Hill	Andesite	Fragmental	7.02	0.02	6.63	6.25	0.02	0.36	195	1.70	7.60	-188	None	0.04
SU-047-04	Gossan Hill	Basalt	Fragmental	8.96	1.54	0.35	0.29	0.005	0.06	9.10	128	226	217	Moderate	24.9
SU-052-01	Gossan Hill	Andesite	Fragmental	8.82	2.69	0.54	0.48	0.005	0.06	15.0	224	83.3	68.3	Slight	5.55
SU-052-02	Gossan Hill	Basalt	Fragmental	8.97	1.85	0.28	0.26	0.005	0.02	8.10	154	153	145	Moderate	18.8
SU-052-03	Gossan Hill	Andesite	Fragmental	6.93	0.04	5.58	5.3	0.04	0.24	166	3.30	7.60	-158	None	0.05
SU-052-04	Gossan Hill	Basalt	Fragmental	8.80	1.04	0.2	0.18	0.005	0.02	5.60	86.7	89.2	83.6	Slight	15.9
SU-063-001	West Zone	Andesite	Fragmental	8.70	0.31	0.39	0.34	0.005	0.05	10.6	25.8	28.2	17.6	Slight	2.65
SU-063-002	West Zone	Andesite	Fragmental	7.40	0.05	5.28	4.84	0.02	0.42	151	4.20	7.80	-143	None	0.05
SU-063-02	West Zone	Tonalite	Fragmental	8.35	0.41	4.96	4.1	0.02	0.84	128	34.2	39.0	-89.1	Slight	0.30
SU-068-03	Gossan Hill	Tonalite	Fragmental	8.91	0.47	3.94	3.73	0.005	0.21	117	39.2	43.7	-72.9	Slight	0.37
SU-068-04	Gossan Hill	Basalt	Fragmental	9.11	1.54	0.48	0.44	0.005	0.04	13.8	128	170	156	Moderate	12.4
SU-068-05	Gossan Hill	Arenite	Fragmental	9.16	0.57	1.13	1.05	0.005	0.08	32.8	47.5	59.1	26.3	Slight	1.80
SU-068-06	Gossan Hill	Tonalite	Fragmental	9.24	0.83	1.77	1.51	0.005	0.26	47.2	69.2	66.5	19.3	Slight	1.41
SU-068-07	Gossan Hill	Pelite	Fragmental	9.28	1.69	1.51	1.42	0.005	0.09	44.4	141	82.6	38.2	Slight	1.86
SU-096-01	VOK	Andesite	Fragmental	8.91	1.4	5.86	5.57	0.005	0.29	174	117	123	-50.9	Moderate	0.71
SU-096-02	VOK	Dense Vein Stockwork	Fragmental	8.74	0.16	2.18	1.94	0.005	0.24	60.6	13.3	16.1	-44.5	Slight	0.27
SU-096-03	VOK	Meta-Int Maf Volcanics	Fragmental	8.54	0.05	3.78	3.55	0.005	0.23	111	4.20	6.30	-105	None	0.06
SU-098-02	West Zone	Andesite	Fragmental	6.28	0.005	7.47	7.43	0.02	0.02	232	0.40	4.30	-228	None	0.02
SU-098-03	West Zone	Meta-Int Maf Volcanics	Fragmental	7.85	0.05	3.91	3.82	0.02	0.07	119	4.20	10.3	-109	None	0.09
SU-103-02	West Zone	Basalt	Fragmental	8.63	0.43	0.78	0.75	0.005	0.03	23.4	35.8	60.8	37.4	Slight	2.59
SU-103-03	West Zone	Andesite Ore Zone	Fragmental	8.04	0.42	5.76	6.03	0.02	0.005	188	35.0	42.4	-146	Slight	0.23
SU-118-01	Gossan Hill	Intermediate Volcanics	Fragmental	8.05	0.21	3.75	3.45	0.005	0.30	108	17.5	22.7	-85.1	Slight	0.21
SU-118-02	Gossan Hill	Silicified Breccia	Fragmental	8.36	2.22	0.63	0.53	0.005	0.10	16.6	185	176	160	Moderate	10.6
SU-118-03	Gossan Hill	Pelite	Fragmental	8.02	1.45	1.89	1.62	0.005	0.27	50.6	121	115	64.5	Moderate	2.27
SU-121-001	West Zone	Intermediate Volcanics	Fragmental	7.55	0.04	4.32	4.15	0.02	0.15	130	3.30	9.30	-120	None	0.07
SU-121-002	West Zone	Intermediate Volcanics	Fragmental	5.62	0.02	6.47	6.25	0.03	0.19	195	1.70	8.30	-187	None	0.04
SU-123-001	West Zone	Felsic Volcanics	Fragmental	8.17	0.21	4.55	4.5	0.02	0.03	141	17.5	22.2	-118	Slight	0.16
SU-123-002	West Zone	Felsic Volcanics	Fragmental	8.58	0.63	3.96	3.99	0.01	0.005	125	52.5	55.9	-68.8	Slight	0.45
SU-123-01	West Zone	Felsic Volcanics	Fragmental	8.67	1.06	4.01	3.86	0.005	0.15	121	88.3	89.7	-30.9	Slight	0.74
SU-123-02	West Zone	Plag-Hbl Porphyry	Fragmental	8.86	0.95	4.57	4.22	0.005	0.35	132	79.2	82.4	-49.5	Slight	0.62
SU-130-001	VOK	Felsic Volcanics	Fragmental	8.84	1.46	4.04	3.95	0.005	0.09	123	122	135	11.9	Moderate	1.10
SU-130-002	VOK	Felsic Volcanics	Fragmental	7.73	0.04	3.36	3.11	0.01	0.24	97.2	3.30	5.80	-91.4	None	0.06
SU-130-003	VOK	Felsic Volcanics	Fragmental	7.91	0.07	2.41	2.13	0.01	0.27	66.6	5.80	6.90	-59.7	None	0.10
SU-130-008	VOK	Felsic Volcanics	Fragmental	8.56	0.1	4.74	4.61	0.02	0.11	144	8.30	14.3	-130	Slight	0.10
SU-131-001	West Zone	Dense Vein stockwork	Fragmental	8.55	1.91	4.48	4.17	0.02	0.29	130	159	156	26.1	Moderate	1.20

Sample ID	Zone	Logged Lithology	Geological Unit	Paste pH	TIC	Tot-S	Sulp-S	SO_4-S	Insoluble S	AP	CaCO3 NP	Sobek NP	Net NP	Fizz Test	Sobek NPR
					%	%	%	%	%	← kg $CaCO_3$/t →					Calc
SU-282-004	West Zone	Plag-hbl Porphyry	Fragmental	9.30	0.99	1.88	1.55	0.005	0.33	48.4	82.5	82.5	34.1	Moderate	1.70
SU-290-003	West Zone	Plag-hbl Porphyry	Fragmental	8.57	0.05	4.29	4.24	0.02	0.03	133	4.20	15.7	-117	None	0.12
SU-290-004	West Zone	Plag-hbl Porphyry	Fragmental	6.80	0.03	6.61	6.47	0.03	0.11	202	2.50	7.00	-195	None	0.03
SU-290-005	West Zone	Arenite	Fragmental	5.87	0.01	7.51	6.98	0.03	0.50	218	0.80	6.90	-211	None	0.03
SU-290-006	West Zone	Intermediate Volcanics	Fragmental	9.16	1.15	0.31	0.29	0.005	0.02	9.10	95.8	132	123	Moderate	14.6
SU-290-007	West Zone	BX Conglomerate	Fragmental	7.64	0.02	3.3	2.85	0.02	0.43	89.1	1.70	6.00	-83.1	None	0.07
SU-290-008	West Zone	Arenite	Fragmental	8.58	0.01	8.13	7.7	0.04	0.39	241	0.80	3.20	-237	None	0.01
SU-290-009	West Zone	Arenite	Fragmental	8.39	0.6	4.22	3.95	0.02	0.25	123	50.0	52.2	-71.2	Slight	0.42
SU-290-010	West Zone	Arenite	Fragmental	8.36	0.48	4.26	3.84	0.02	0.40	120	40.0	41.7	-78.3	Slight	0.35
SU-290-011	West Zone	Intermediate Volcanics	Fragmental	9.62	1.33	0.19	0.18	0.005	0.01	5.60	111	147	142	Moderate	26.2
SU-290-012	West Zone	Plag-hbl Porphyry	Fragmental	8.45	0.35	4.09	3.98	0.01	0.10	124	29.2	33.7	-90.7	Slight	0.27
SU-290-013	West Zone	Hydrothermal Breccia	Fragmental	8.08	0.11	2.69	2.45	0.02	0.22	76.6	9.20	11.6	-65.0	Slight	0.15
SU-295-003	West Zone	Arenite	Fragmental	8.28	0.08	0.16	0.15	0.005	0.01	4.70	6.70	12.2	7.51	None	2.60
SU-295-004	West Zone	Conglomerate	Fragmental	7.71	0.14	4.32	3.82	0.02	0.48	119	11.7	11.6	-108	Slight	0.10
SU-295-005	West Zone	Conglomerate	Fragmental	8.32	0.43	2.64	2.4	0.005	0.24	75.0	35.8	34.3	-40.7	Slight	0.46
SU-309-004	West Zone	Conglomerate	Fragmental	8.57	1.24	4.11	3.89	0.01	0.21	122	103	122	0.34	Moderate	1.00
SU-309-005	West Zone	Conglomerate	Fragmental	8.48	0.4	4.49	4.05	0.02	0.42	127	33.3	39.5	-87.1	Slight	0.31
SU-309-006	West Zone	Conglomerate	Fragmental	7.94	0.22	4.68	3.81	0.02	0.85	119	18.3	21.2	-97.9	Slight	0.18
SU-309-007	West Zone	Conglomerate	Fragmental	9.10	1.51	0.55	0.52	0.005	0.03	16.3	126	144	128	Slight	8.85
SU-309-008	West Zone	Arenite	Fragmental	9.03	0.71	3	2.77	0.005	0.23	86.6	59.2	57.7	-28.9	Slight	0.67
SU-309-009	West Zone	Arenite	Fragmental	8.72	0.21	3.67	3.43	0.01	0.23	107	17.5	21.2	-86.0	Slight	0.20
SU-309-010	West Zone	Dense Vein stockwork	Fragmental	9.11	0.31	3.53	3.03	0.005	0.50	94.7	25.8	43.7	-51.0	Slight	0.46
SU-314-001	West Zone	Plag-hbl Porphyry	Fragmental	8.37	1.09	4.05	3.78	0.005	0.27	118	90.8	113	-5.63	Slight	0.95
SU-314-002	West Zone	Conglomerate	Fragmental	8.09	0.35	5.42	5.2	0.03	0.19	163	29.2	36.6	-126	Slight	0.23
SU-348-002	VOK	Intermediate Volcanics	Fragmental	8.81	0.04	2.91	2.58	0.01	0.32	80.6	3.30	13.6	-67.0	None	0.17
SU-348-003	VOK	Intermediate Volcanics	Fragmental	8.43	0.05	4.02	3.56	0.01	0.45	111	4.20	13.0	-98.3	None	0.12
SU-351-001	VOK	Intermediate Volcanics	Fragmental	7.47	0.05	7.67	7.27	0.03	0.37	227	4.20	11.8	-215	None	0.05
SU-351-002	VOK	Intermediate Volcanics	Fragmental	6.23	0.005	7.26	6.92	0.03	0.31	216	0.40	6.70	-210	None	0.03
SU-351-003	VOK	Intermediate Volcanics	Fragmental	7.10	0.05	6.46	6.21	0.03	0.22	194	4.20	12.4	-182	None	0.06
SU-351-004	VOK	Intermediate Volcanics	Fragmental	8.29	1.07	2.44	2.12	0.005	0.32	66.3	89.2	91.5	25.3	Slight	1.38
SU-351-005	VOK	Intermediate Volcanics	Fragmental	8.57	0.6	3.45	3	0.01	0.44	93.8	50.0	53.0	-40.8	Slight	0.57
SU-352-001	VOK	Intermediate Volcanics	Fragmental	8.13	1.94	3.64	3.29	0.005	0.35	103	162	171	68.4	Moderate	1.67
SU-352-006	VOK	Intermediate Volcanics	Fragmental	8.63	1	4.29	3.82	0.01	0.46	119	83.3	120	0.13	Moderate	1.00
SU-352-007	VOK	Siliceous Rocks	Fragmental	7.29	0.03	3.62	3.14	0.02	0.46	98.1	2.50	9.70	-88.4	None	0.10
SU-359-001	VOK	Intermediate Volcanics	Fragmental	8.25	1.56	1.52	1.29	0.005	0.23	40.3	130	108	67.8	Moderate	2.68
SU-359-002	VOK	Intermediate Volcanics	Fragmental	8.46	1.31	1.82	1.48	0.005	0.34	46.3	109	155	109	Moderate	3.35
SU-359-003	VOK	Intermediate Volcanics	Fragmental	8.23	1.53	3.07	2.22	0.005	0.85	69.4	128	154	84.4	Moderate	2.22
SU-359-004	VOK	Intermediate Volcanics	Fragmental	8.48	1.28	0.72	0.66	0.005	0.06	20.6	107	143	122	Moderate	6.94
SU-359-005	VOK	Intermediate Volcanics	Fragmental	8.24	0.03	2.39	2.11	0.005	0.28	65.9	2.50	6.20	-59.7	None	0.09
SU-359-006	VOK	Intermediate Volcanics	Fragmental	8.34	0.1	3.16	2.97	0.005	0.19	92.8	8.30	16.8	-76.0	Slight	0.18
SU-359-007	VOK	Intermediate Volcanics	Fragmental	8.06	0.14	6.9	6.34	0.02	0.54	198	11.7	17.7	-180	Slight	0.09
SU-359-008	VOK	Intermediate Volcanics	Fragmental	8.49	1.34	5.92	5.51	0.01	0.40	172	112	125	-47.2	Moderate	0.73
SU-359-009	VOK	Intermediate Volcanics	Fragmental	8.96	0.7	2.22	1.88	0.005	0.34	58.8	58.3	65.7	6.95	Slight	1.12
SU-361-001	VOK	Intermediate Volcanics	Fragmental	8.19	0.78	1.68	1.47	0.005	0.21	45.9	65.0	106	60.4	Moderate	2.31
SU-361-002	VOK	Intermediate Volcanics	Fragmental	8.11	0.67	2.85	2.53	0.005	0.32	79.1	55.8	103	24.0	Moderate	1.30
SU-361-003	VOK	Intermediate Volcanics	Fragmental	7.78	0.17	3.67	3.4	0.02	0.25	106	14.2	22.2	-84.1	Slight	0.21
SU-361-004	VOK	Intermediate Volcanics	Fragmental	7.88	0.05	1.71	1.45	0.02	0.24	45.3	4.20	8.00	-37.3	None	0.18
SU-017-001	VOK	Andesite	Office P1	8.59	1	1.91	1.45	0.005	0.46	45.3	83.3	117	71.5	Moderate	2.58
SU-113-001	VOK	Plag-hbl Porphyry	Office P1	8.80	1.27	0.9	0.82	0.005	0.08	25.6	106	113	87.4	Moderate	4.41
SU-113-06	VOK	Plag-Hbl Porphyry	Office P1	9.29	1.7	1.16	1.09	0.005	0.07	34.1	142	154	120	Moderate	4.52
SU-114-06	VOK	Plag-Hbl Porphyry	Office P1	8.82	0.99	2.29	2.07	0.005	0.22	64.7	82.5	87.2	22.5	Slight	1.35
SU-121-04	West Zone	Plag-Hbl Porphyry	Office P1	8.80	1.11	1.85	1.66	0.03	0.16	51.9	92.5	118	66.3	Slight	2.28
SU-132-05	VOK	Plag-Hbl Porphyry	Office P1	8.92	1.29	1.23	1.06	0.005	0.17	33.1	108	128	94.4	Slight	3.85

Sample ID	Zone	Logged Lithology	Geological Unit	Paste pH	TIC	Tot-S	Sulp-S	SO_4-S	Insoluble S	AP	CaCO3 NP	Sobek NP	Net NP	Fizz Test	Sobek NPR
					%	%	%	%	%	← kg $CaCO_3$/t →					Calc
SU-182-03	VOK	Plag-Hbl Porphyry	Office P1	9.33	0.79	1.04	0.93	0.005	0.11	29.1	65.8	74.1	45.0	Slight	2.55
SU-353-013	VOK	Plag-hbl Porphyry	Office P1	8.91	1.24	0.76	0.69	0.005	0.07	21.6	103	148	126	Moderate	6.85
SU-353-014	VOK	Plag-hbl Porphyry	Office P1	9.05	0.96	0.18	0.13	0.005	0.05	4.10	80.0	117	113	Moderate	28.8
SU-353-015	VOK	Plag-hbl Porphyry	Office P1	8.98	1.96	0.37	0.34	0.005	0.03	10.6	163	154	143	Moderate	14.5
SU-356-007	VOK	Plag-hbl Porphyry	Office P1	8.70	1.51	1.11	0.99	0.005	0.12	30.9	126	154	123	Moderate	4.99
SU-356-008	VOK	Plag-hbl Porphyry	Office P1	8.97	1.5	0.2	0.16	0.005	0.04	5.00	125	130	125	Moderate	26.0
SU-356-009	VOK	Plag-hbl Porphyry	Office P1	8.74	1.86	0.73	0.59	0.005	0.14	18.4	155	139	120	Moderate	7.53
SU-357-005	VOK	Plag-hbl Porphyry	Office P1	8.92	1.31	0.32	0.21	0.005	0.11	6.60	109	136	129	Moderate	20.7
SU-349-005	VOK	Plag-hbl Porphyry	Office P1	8.51	1.06	1.32	1.18	0.005	0.14	36.9	88.3	125	88.1	Moderate	3.39
SU-349-006	VOK	Plag-hbl Porphyry	Office P1	8.34	1.59	2.13	1.98	0.005	0.15	61.9	133	87.1	25.2	Slight	1.41
SU-039-03	Gossan Hill	Andesite	P2	8.43	0.65	4.86	4.7	0.005	0.16	147	54.2	58.3	-88.6	Slight	0.40
SU-039-04	Gossan Hill	Andesite	P2	9.02	0.12	3.94	3.96	0.02	0.005	124	10.0	92.6	-31.2	Slight	0.75
SU-039-05	Gossan Hill	Andesite	P2	8.70	1.47	5	4.94	0.03	0.03	154	123	126	-28.8	Slight	0.81
SU-098-01	West Zone	Tonalite	P2	8.22	1.62	2.92	2.68	0.08	0.16	83.8	135	110	26.5	Moderate	1.32
SU-103-01	West Zone	Tonalite	P2	8.10	0.81	3.42	3.4	0.02	0.00	106	67.5	74.2	-32.1	Slight	0.70
SU-121-01	West Zone	Intermediate Volcanics	P2	8.12	0.74	4.56	4.11	0.01	0.44	128	61.7	68.6	-59.8	Slight	0.53
SU-121-02	West Zone	Intermediate Volcanics	P2	8.45	0.66	3.43	3.14	0.005	0.29	98.1	55.0	64.8	-33.3	Slight	0.66
SU-123-03	West Zone	Plag-Hbl Porphyry	P2	8.39	1.25	3.95	3.59	0.005	0.36	112	104	122	9.71	Slight	1.09
SU-282-001	West Zone	Plag-hbl Porphyry	P2/Fragmental	8.83	0.61	3.99	3.59	0.02	0.38	112	50.8	57.8	-54.4	Slight	0.52
SU-282-003	West Zone	Plag-hbl Porphyry	P2/Fragmental	8.64	0.76	3.65	3.34	0.02	0.29	104	63.3	69.9	-34.5	Slight	0.67
SU-290-001	West Zone	Arenite	P2/Fragmental	4.68	0.01	6.19	5.88	0.05	0.26	184	0.80	1.70	-182	None	0.01
SU-290-002	West Zone	BX Conglomerate	P2/Fragmental	4.36	0.01	9.82	9.22	0.07	0.53	288	0.80	3.20	-285	None	0.01
SU-282-002	West Zone	Plag-hbl Porphyry	P2	8.90	1.03	2.83	2.4	0.005	0.43	75.0	85.8	110	34.6	Moderate	1.46
SU-309-001	West Zone	Plag-hbl Porphyry	P2	8.00	1.15	3.38	2.84	0.02	0.52	88.8	95.8	112	23.4	Moderate	1.26
SU-309-002	West Zone	Plag-hbl Porphyry	P2	8.26	1.35	3.22	2.94	0.005	0.28	91.9	113	124	31.9	Moderate	1.35
SU-309-003	West Zone	Plag-hbl Porphyry	P2	8.29	0.91	3.8	3.47	0.01	0.32	108	75.8	94.8	-13.6	Moderate	0.87
SU-314-003	West Zone	Conglomerate	P2	8.80	0.99	4.15	3.76	0.005	0.39	118	82.5	85.0	-32.5	Slight	0.72
SU-314-004	West Zone	Conglomerate	P2	8.15	0.41	5.01	4.62	0.07	0.32	144	34.2	39.5	-105	Slight	0.27
SU-314-005	West Zone	Conglomerate	P2	8.58	1.34	4.14	3.74	0.005	0.40	117	112	125	8.13	Moderate	1.07
SU-314-006	West Zone	Conglomerate	P2	8.54	0.86	4.32	4.07	0.03	0.22	127	71.7	77.2	-50.0	Slight	0.61
SU-096-04	VOK	Rhyolite	Silicified Cap	9.40	0.4	0.55	0.51	0.005	0.04	15.9	33.3	34.5	18.6	Slight	2.16
SU-348-004	VOK	Siliceous Rocks	Silicified Cap	6.76	0.05	7.55	6.99	0.03	0.53	218	4.20	5.40	-213	None	0.02
SU-348-005	VOK	Intermediate Volcanics	Silicified Cap	8.67	0.52	3.4	2.83	0.005	0.57	88.4	43.3	49.6	-38.8	Slight	0.56
SU-352-008	VOK	Intermediate Volcanics	Silicified Cap	5.73	0.01	6.9	6.72	0.02	0.16	210	0.80	6.80	-203	None	0.03
SU-356-001	VOK	Siliceous Rocks	Silicified Cap	7.82	0.28	4.82	4.08	0.02	0.72	128	23.3	19.9	-108	Slight	0.16
SU-358-002	VOK	Siliceous Rocks	Silicified Cap	8.13	0.4	2.59	2.22	0.01	0.36	69.4	33.3	32.0	-37.4	Slight	0.46
BJ-BS-001	VOK	Felsic Volcanics	VSF	8.77	0.65	2.84	2.65	<0.01	0.19	82.8	54.2	57.8	-25.0	Slight	0.70
BJ-BS-001/002 Comp	VOK	Felsic Volcanics	VSF	8.67	0.64	2.7	2.66	<0.01	0.04	83.1	53.3	55.8	-27.3	Slight	0.67
BJ-BS-002	VOK	Felsic Volcanics	VSF	8.51	0.36	3.26	2.95	<0.01	0.31	92.2	30.0	34.8	-57.4	Slight	0.38
BJ-BS-003	VOK	Felsic Volcanics	VSF	8.44	1.24	4.05	3.77	<0.01	0.28	118	103	131	13.1	Slight	1.11
BJ-BS-008	VOK	Felsic Volcanics	VSF	8.17	0.56	3.49	3.24	0.03	0.22	101	46.7	56.7	-44.6	Slight	0.56
BJ-BS-008/011Comp	VOK	Felsic Volcanics	VSF	8.17	0.66	3.04	2.95	0.04	0.05	92.2	55.0	76.0	-16.2	Moderate	0.82
BJ-BS-009	VOK	Felsic Volcanics	VSF	8.22	0.7	4.48	4.25	0.04	0.19	133	58.3	66.0	-66.8	Slight	0.50
BJ-BS-009/012Comp	VOK	Felsic Volcanics	VSF	8.05	0.52	3.46	3.4	0.04	0.02	106	43.3	56.4	-49.9	Moderate	0.53
BJ-BS-010	VOK	Felsic Volcanics	VSF	8.57	1.01	3.23	3.08	<0.01	0.15	96.3	84.2	89.3	-6.95	Slight	0.93
BJ-BS-011	VOK	Felsic Volcanics	VSF	8.34	0.48	2.78	2.56	0.01	0.21	80.0	40.0	54.7	-25.3	Slight	0.68
BJ-BS-012	VOK	Felsic Volcanics	VSF	8.21	0.5	2.97	2.63	0.02	0.32	82.2	41.7	50.6	-31.6	Slight	0.62
BJ-UG-001	VOK	Felsic Volcanics	VSF	8.77	1.38	3.59	3.4	<0.01	0.19	106	115	116	9.75	Slight	1.09
BJ-UG-002	VOK	Felsic Volcanics	VSF	8.52	0.53	3.32	2.97	0.01	0.34	92.8	44.2	47.1	-45.7	Slight	0.51
BJ-UG-003	VOK	Felsic Volcanics	VSF	8.82	0.61	3.13	2.95	0.01	0.17	92.2	50.8	60.7	-31.5	Slight	0.66
BJ-UG-004	VOK	Felsic Volcanics	VSF	8.6	0.98	3.38	3.06	0.02	0.3	95.6	81.7	83.9	-11.7	Moderate	0.88
BJ-UG-005	VOK	Felsic Volcanics	VSF	8.5	1.41	2.31	2.08	<0.01	0.23	65.0	118	132	66.5	Moderate	2.02
BJ-UG-006	VOK	Felsic Volcanics	VSF	8.13	0.18	3.03	2.59	0.02	0.42	80.9	15.0	19.0	-61.9	Slight	0.23

Sample ID	Zone	Logged Lithology	Geological Unit	Paste pH	TIC	Tot-S	Sulp-S	SO_4-S	Insoluble S	AP	CaCO3 NP	Sobek NP	Net NP	Fizz Test	Sobek NPR
					%	%	%	%	%	← kg $CaCO_3$/t →					Calc
BJ-UG-007	VOK	Felsic Volcanics	VSF	8.32	0.85	3.08	2.84	0.01	0.23	88.8	70.8	71.6	-17.2	Moderate	0.81
BJ-UG-008	VOK	Felsic Volcanics	VSF	8.03	0.15	4.15	4.04	0.02	0.09	126	12.5	20.4	-106	Slight	0.16
BJ-UG-009	VOK	Felsic Volcanics	VSF	8.27	0.95	3.84	3.6	<0.01	0.24	113	79.2	93.8	-18.7	Moderate	0.83
BJ-UG-010	VOK	Felsic Volcanics	VSF	8.47	1.62	2.37	1.96	<0.01	0.41	61.3	135	133	71.5	Moderate	2.17
BJ-UG-013	VOK	Felsic Volcanics	VSF	9.13	0.72	1.53	1.34	<0.01	0.19	41.9	60.0	73.5	31.6	Moderate	1.76
BJ-UG-014	VOK	Felsic Volcanics	VSF	8.91	1.18	3.61	3.37	<0.01	0.24	105	98.3	111	5.19	Moderate	1.05
BJ-UG-015	VOK	Felsic Volcanics	VSF	9.06	0.64	3.94	3.91	<0.01	0.03	122	53.3	65.5	-56.7	Slight	0.54
BJ-UG-016	VOK	Felsic Volcanics	VSF	9.12	0.8	2.64	2.51	<0.01	0.13	78.4	66.7	94.4	16.0	Moderate	1.20
BJ-UG-017	VOK	Felsic Volcanics	VSF	9.23	0.63	1.6	1.42	<0.01	0.18	44.4	52.5	79.6	35.2	Moderate	1.79
BJ-UG-018	VOK	Felsic Volcanics	VSF	8.76	0.96	2.53	2.38	<0.01	0.15	74.4	80.0	97.5	23.1	Moderate	1.31
BJ-UG-019	VOK	Felsic Volcanics	VSF	8.69	0.22	1.59	1.45	<0.01	0.14	45.3	18.3	34.0	-11.3	Slight	0.75
SU-012-006	VOK	Andesite	VSF	8.42	1.3	4	3.52	0.005	0.48	110	108	141	31.3	Moderate	1.28
SU-017-002	VOK	Andesite	VSF	8.36	0.84	3.54	3.19	0.005	0.35	99.7	70.0	64.1	-35.6	Moderate	0.64
SU-017-01	VOK	Dacite	VSF	8.72	1.08	3.02	2.92	0.005	0.10	91.3	90.0	90.9	-0.35	Slight	1.00
SU-017-02	VOK	Pelite	VSF	8.84	2.16	2.68	2.73	0.005	0.005	85.3	180	182	97.0	Moderate	2.14
SU-017-03	VOK	fault zone	VSF	8.64	1	4.12	3.81	0.005	0.31	119	83.3	86.1	-33.0	Slight	0.72
SU-017-04	VOK	Dacite	VSF	9.03	0.58	2.88	2.87	0.005	0.01	89.7	48.3	58.0	-31.7	Slight	0.65
SU-017-05	VOK	Andesite	VSF	9.58	1.01	1.27	1.23	0.005	0.04	38.4	84.2	88.6	50.2	Slight	2.31
SU-035-01	VOK	Andesite	VSF	8.86	1.03	0.86	0.84	0.005	0.02	26.3	85.8	53.4	27.2	Slight	2.03
SU-036-04	Gossan Hill	Andesite	VSF	8.38	0.62	3.36	3.25	0.02	0.09	102	51.7	55.6	-46.0	Slight	0.55
SU-040-001	VOK	Meta-int to mafic volcanic	VSF	9.24	0.78	2.11	1.52	0.005	0.59	47.5	65.0	31.4	-16.1	Moderate	0.66
SU-040-002	VOK	Andesite	VSF	9.40	1.03	1.06	0.86	0.005	0.20	26.9	85.8	76.6	49.7	Moderate	2.85
SU-040-003	VOK	Andesite	VSF	8.96	1.19	2.72	2.37	0.005	0.35	74.1	99.2	29.5	-44.6	Moderate	0.40
SU-040-03	VOK	Andesite	VSF	9.38	2.48	1.14	1.15	0.005	0.005	35.9	207	256	220	Moderate	7.11
SU-040-04	VOK	Andesite	VSF	9.40	1.58	2.7	2.6	0.005	0.10	81.3	132	153	71.5	Moderate	1.88
SU-040-05	VOK	Andesite	VSF	9.34	0.81	1.64	1.54	0.005	0.10	48.1	67.5	71.7	23.6	Slight	1.49
SU-041-12	West Zone	Andesite	VSF	9.36	0.76	2.37	2.15	0.03	0.19	67.2	63.3	65.4	-1.79	Slight	0.97
SU-041-13	West Zone	Andesite	VSF	9.43	0.29	1.48	1.39	0.005	0.09	43.4	24.2	45.8	2.36	Slight	1.05
SU-056-002	VOK	Dense Vein stockwork	VSF	9.42	0.31	0.35	0.26	0.005	0.09	8.10	25.8	32.8	24.7	Slight	4.04
SU-063-003	West Zone	Arenite	VSF	8.43	0.71	6	5.77	0.02	0.21	180	59.2	63.9	-116	Slight	0.35
SU-063-004	West Zone	Pelite	VSF	8.26	0.46	3.29	3.24	0.05	0.00	101	38.3	40.8	-60.5	Slight	0.40
SU-063-01	West Zone	Pelite	VSF	8.09	2.07	2.35	2.04	0.01	0.30	63.8	173	170	106	Moderate	2.67
SU-063-07	West Zone	Arenite	VSF	9.00	0.64	2.7	2.43	0.005	0.27	75.9	53.3	60.5	-15.4	Slight	0.80
SU-082-001	VOK	Andesite	VSF	8.61	2.35	2.13	1.77	0.005	0.36	55.3	196	197	142	Moderate	3.56
SU-082-002	VOK	Andesite	VSF	8.72	0.75	1.43	1.33	0.005	0.10	41.6	62.5	66.0	24.4	Slight	1.59
SU-082-004	VOK	Andesite	VSF	8.39	1.59	5.3	5.17	0.005	0.13	162	133	152	-10.1	Moderate	0.94
SU-084-001	VOK	Meta-int to mafic volcanic	VSF	8.00	0.06	0.2	0.18	0.005	0.02	5.60	5.00	13.6	7.98	Slight	2.42
SU-084-002	VOK	Andesite	VSF	6.85	0.05	5.42	4.56	0.04	0.82	143	4.20	7.90	-135	None	0.06
SU-086-001	VOK	Andesite	VSF	7.81	0.13	1.37	1.21	0.01	0.15	37.8	10.8	11.9	-25.9	Slight	0.31
SU-086-002	VOK	Andesite	VSF	8.18	1.26	2.87	2.56	0.005	0.31	80.0	105	87.1	7.10	Slight	1.09
SU-096-05	VOK	Andesite	VSF	7.90	0.27	9.64	8.91	0.03	0.70	278	22.5	23.3	-255	Slight	0.08
SU-106-001	VOK	Meta-int to mafic volcanic	VSF	7.89	0.2	2.97	2.64	0.02	0.31	82.5	16.7	34.3	-48.2	Slight	0.42
SU-106-002	VOK	Meta-int to mafic volcanic	VSF	8.20	0.21	1.39	1.28	0.005	0.11	40.0	17.5	20.0	-20.0	Slight	0.50
SU-106-003	VOK	Pelite	VSF	8.02	0.76	2.64	2.31	0.005	0.33	72.2	63.3	65.7	-6.49	Moderate	0.91
SU-106-004	VOK	Meta-int to mafic volcanic	VSF	7.92	0.21	3.51	3.17	0.01	0.33	99.1	17.5	20.5	-78.6	Slight	0.21
SU-106-005	VOK	Pelite	VSF	8.12	1.82	3.1	2.83	0.005	0.27	88.4	152	123	34.7	Moderate	1.39
SU-113-002	VOK	Felsic Volcanics	VSF	8.08	0.75	3.74	3.34	0.01	0.39	104	62.5	63.1	-41.3	Slight	0.60
SU-113-01	VOK	Felsic Volcanics	VSF	8.55	0.79	2.77	2.83	0.005	0.005	88.4	65.8	71.8	-16.6	Slight	0.81
SU-113-02	VOK	Felsic Volcanics	VSF	7.84	0.17	7.29	7.2	0.01	0.08	225	14.2	18.4	-207	Slight	0.08
SU-113-03	VOK	Felsic Volcanics	VSF	8.80	0.64	2.89	2.88	0.005	0.01	90.0	53.3	59.3	-30.7	Slight	0.66
SU-113-04	VOK	Arenite	VSF	9.06	0.42	2.74	2.69	0.005	0.05	84.1	35.0	39.7	-44.4	Slight	0.47
SU-113-05	VOK	Pelite	VSF	8.78	1.37	3.66	3.53	0.005	0.13	110	114	126	15.9	Moderate	1.14
SU-113-07	VOK	Conglomerate	VSF	8.91	0.21	2.63	2.48	0.005	0.15	77.5	17.5	28.3	-49.2	Slight	0.37

Sample ID	Zone	Logged Lithology	Geological Unit	Paste pH	TIC	Tot-S	Sulp-S	SO_4-S	Insoluble S	AP	CaCO3 NP	Sobek NP	Net NP	Fizz Test	Sobek NPR
					%	%	%	%	%	← kg $CaCO_3$/t →					Calc
SU-114-001	VOK	Felsic Volcanics	VSF	8.28	0.57	2.96	2.62	0.01	0.33	81.9	47.5	50.6	-31.3	Slight	0.62
SU-114-01	VOK	Silicified Breccia	VSF	8.42	0.3	3.37	2.92	0.005	0.45	91.3	25.0	29.7	-61.6	Slight	0.33
SU-114-02	VOK	Felsic Volcanics	VSF	7.51	0.05	3.99	3.59	0.01	0.39	112	4.20	10.9	-101	None	0.10
SU-114-03	VOK	Mafic Dyke	VSF	8.77	2.48	1.28	1.18	0.005	0.10	36.9	207	234	197	Moderate	6.35
SU-114-04	VOK	Felsic Volcanics	VSF	9.37	0.91	3.46	3.02	0.005	0.44	94.4	75.8	80.5	-13.9	Slight	0.85
SU-114-05	VOK	Pelite	VSF	9.27	1.89	2.43	2.1	0.005	0.33	65.6	158	161	95.1	Moderate	2.45
SU-119-001	VOK	Felsic Volcanics	VSF	8.42	0.91	2.9	2.64	0.01	0.25	82.5	75.8	79.3	-3.20	Slight	0.96
SU-119-002	VOK	Quartz carbonate vein	VSF	8.30	1.44	3.59	3.44	0.005	0.15	108	120	120	12.2	Moderate	1.11
SU-120-001	VOK	Arenite	VSF	8.05	0.68	4.26	4.13	0.01	0.12	129	56.7	66.9	-62.2	Slight	0.52
SU-120-002	VOK	Felsic Volcanics	VSF	8.85	0.04	1.53	1.39	0.005	0.14	43.4	3.30	18.4	-25.0	None	0.42
SU-120-003	VOK	Felsic Volcanics	VSF	8.45	0.51	3.69	3.51	0.02	0.16	110	42.5	54.2	-55.5	Slight	0.49
SU-120-004	VOK	Dense Vein stockwork	VSF	8.40	2.49	1.94	1.78	0.005	0.16	55.6	208	210	154	Moderate	3.77
SU-121-03	West Zone	Intermediate Volcanics	VSF	8.73	0.3	2.44	2.17	0.005	0.27	67.8	25.0	31.0	-36.8	Slight	0.46
SU-123-05	West Zone	Intermediate Volcanics	VSF	9.46	0.81	1.47	1.35	0.005	0.12	42.2	67.5	71.7	29.5	Slight	1.70
SU-130-004	VOK	Felsic Volcanics	VSF	8.10	0.23	4.22	3.92	0.02	0.28	123	19.2	20.9	-102	Slight	0.17
SU-130-005	VOK	Plag-hbl Porphyry	VSF	8.37	1.21	3.97	3.67	0.02	0.28	115	101	109	-5.69	Moderate	0.95
SU-132-01	VOK	Felsic Volcanics	VSF	8.03	0.32	3.95	3.47	0.005	0.48	108	26.7	29.4	-79.0	Slight	0.27
SU-132-02	VOK	Intermediate Volcanics	VSF	8.23	0.17	2.63	2.26	0.005	0.37	70.6	14.2	16.4	-54.2	Slight	0.23
SU-132-03	VOK	Pelite	VSF	8.43	3.27	3.79	3.32	0.005	0.47	104	273	262	159	Moderate	2.53
SU-132-04	VOK	Pelite	VSF	8.46	2.05	2.67	2.31	0.005	0.36	72.2	171	158	85.4	Slight	2.18
SU-146-02	VOK	poly-Conglomerate	VSF	7.83	0.41	6.36	5.51	0.02	0.83	172	34.2	35.3	-137	Slight	0.21
SU-146-03	VOK	Pelite	VSF	8.08	0.24	2.75	2.29	0.005	0.46	71.6	20.0	22.3	-49.3	Slight	0.31
SU-146-04	VOK	Felsic Volcanics	VSF	8.81	0.54	3.08	2.85	0.005	0.23	89.1	45.0	49.6	-39.5	Slight	0.56
SU-182-01	VOK	Pelite	VSF	8.58	0.03	3.01	2.69	0.01	0.31	84.1	2.50	5.40	-78.7	None	0.06
SU-182-02	VOK	Intermediate Volcanics	VSF	9.28	0.9	1.24	1.12	0.005	0.12	35.0	75.0	82.2	47.2	Slight	2.35
SU-219-01	VOK	Felsic Volcanics	VSF	8.58	2.38	4.89	4.36	0.005	0.53	136	198	197	60.8	Moderate	1.45
SU-219-02	VOK	fault zone	VSF	8.70	1.86	2.63	2.36	0.005	0.27	73.8	155	161	87.6	Moderate	2.19
SU-219-03	VOK	Arenite	VSF	8.93	1.38	2.39	2.19	0.005	0.20	68.4	115	136	67.1	Moderate	1.98
SU-219-04	VOK	Felsic Volcanics	VSF	8.64	0.83	3.71	3.34	0.005	0.37	104	69.2	67.2	-37.2	Slight	0.64
SU-219-05	VOK	Arenite	VSF	8.88	0.3	2.92	2.72	0.005	0.20	85.0	25.0	32.8	-52.2	Slight	0.39
SU-219-06	VOK	Pelite	VSF	8.56	0.5	4.2	3.77	0.005	0.43	118	41.7	50.5	-67.3	Slight	0.43
SU-223-01	VOK	Pelite	VSF	9.18	0.92	2.26	2.04	0.005	0.22	63.8	76.7	81.3	17.6	Moderate	1.28
SU-238-01	VOK	Mafic Dyke	VSF	9.41	1.61	0.63	0.56	0.005	0.07	17.5	134	198	180	Moderate	11.3
SU-238-02	VOK	Felsic Volcanics	VSF	9.62	0.25	0.39	0.38	0.005	0.01	11.9	20.8	26.3	14.4	Slight	2.21
SU-275-001	VOK	Felsic Volcanics	VSF	9.26	0.76	3.58	3.2	0.005	0.38	100	63.3	104	4.10	Moderate	1.04
SU-281-001	VOK	Felsic Volcanics	VSF	9.28	1.24	0.7	0.58	0.005	0.12	18.1	103	82.3	64.2	Slight	4.54
SU-295-008	West Zone	Arenite	VSF	8.30	0.79	1.63	1.29	0.06	0.28	40.3	65.8	77.0	36.7	Moderate	1.91
SU-346-001	VOK	Arenite	VSF	8.66	1.73	8.42	7.17	0.005	1.25	224	144	143	-81.2	Moderate	0.64
SU-346-002	VOK	Pelite	VSF	8.92	0.77	1.81	1.5	0.005	0.31	46.9	64.2	68.1	21.2	Slight	1.45
SU-346-003	VOK	Plag-hbl Porphyry	VSF	9.04	1.47	3.17	2.71	0.005	0.46	84.7	123	128	43.4	Moderate	1.51
SU-346-004	VOK	Pelite	VSF	8.63	0.43	3.15	2.83	0.005	0.32	88.4	35.8	50.2	-38.2	Slight	0.57
SU-346-005	VOK	Arenite	VSF	8.82	1.19	1.85	1.72	0.005	0.13	53.8	99.2	124	70.1	Moderate	2.30
SU-346-006	VOK	Conglomerate	VSF	9.03	1.85	2.1	1.83	0.005	0.27	57.2	154	181	123	Slight	3.16
SU-346-007	VOK	Pelite	VSF	9.10	0.7	3.28	2.56	0.005	0.72	80.0	58.3	58.7	-21.3	Slight	0.73
SU-347-001	VOK	Pelite	VSF	8.58	0.86	5.21	4.95	0.01	0.25	155	71.7	66.3	-88.4	Slight	0.43
SU-348-006	VOK	Arenite	VSF	8.91	0.34	1.33	1.12	0.005	0.21	35.0	28.3	36.0	1.00	Slight	1.03
SU-348-007	VOK	Arenite	VSF	8.58	0.94	2.97	2.51	0.005	0.46	78.4	78.3	103	24.9	Moderate	1.32
SU-348-008	VOK	Arenite	VSF	5.67	0.005	2.84	2.47	0.04	0.33	77.2	0.40	3.10	-74.1	None	0.04
SU-348-009	VOK	Conglomerate	VSF	4.95	0.005	3.75	2.85	0.02	0.88	89.1	0.40	3.20	-85.9	None	0.04
SU-348-010	VOK	Conglomerate	VSF	3.64	0.005	6.84	5.74	0.05	1.05	179	0.40	0.20	-179	None	0.00
SU-348-011	VOK	Conglomerate	VSF	6.51	0.005	6.66	5.86	0.12	0.68	183	0.40	-0.20	-183	None	0.00
SU-348-012	VOK	Pelite	VSF	3.38	0.005	3.44	2.91	0.04	0.49	90.9	0.40	-1.70	-92.6	None	-0.02
SU-348-013	VOK	Dense Vein stockwork	VSF	6.34	0.01	0.63	0.45	0.02	0.16	14.1	0.80	1.50	-12.6	Slight	0.11

Sample ID	Zone	Logged Lithology	Geological Unit	Paste pH	TIC	Tot-S	Sulp-S	SO_4-S	Insoluble S	AP	CaCO3 NP	Sobek NP	Net NP	Fizz Test	Sobek NPR
					%	%	%	%	%	← kg $CaCO_3$/t →					Calc
SU-348-014	VOK	Pelite	VSF	6.97	0.005	0.77	0.59	0.005	0.18	18.4	0.40	9.20	-9.24	None	0.50
SU-348-015	VOK	Conglomerate	VSF	7.62	0.58	3.86	3.22	0.03	0.61	101	48.3	51.7	-48.9	Slight	0.51
SU-348-016	VOK	Dense Vein stockwork	VSF	6.60	0.06	3.02	2.64	0.05	0.33	82.5	5.00	9.00	-73.5	Slight	0.11
SU-349-001	VOK	Pelite	VSF	8.18	1.11	4.89	4.41	0.005	0.48	138	92.5	126	-11.6	Moderate	0.92
SU-349-002	VOK	Pelite	VSF	8.89	1.49	2.44	2.26	0.005	0.18	70.6	124	142	71.1	Moderate	2.01
SU-349-003	VOK	Pelite	VSF	8.69	1.38	4.54	4.26	0.005	0.28	133	115	126	-7.53	Moderate	0.94
SU-349-004	VOK	Pelite	VSF	8.73	1.04	2.12	1.89	0.005	0.23	59.1	86.7	115	55.4	Moderate	1.94
SU-349-007	VOK	Pelite	VSF	8.15	0.39	2.96	2.77	0.01	0.18	86.6	32.5	36.6	-50.0	Slight	0.42
SU-349-008	VOK	Pelite	VSF	7.94	0.12	5.57	5.42	0.02	0.13	169	10.0	13.9	-155	Slight	0.08
SU-349-009	VOK	Dense Vein stockwork	VSF	7.98	0.03	1.19	0.86	0.005	0.33	26.9	2.50	2.50	-24.4	None	0.09
SU-350-001	VOK	Dense Vein stockwork	VSF	8.32	0.97	2.52	2.01	0.03	0.48	62.8	80.8	83.9	21.1	Slight	1.34
SU-350-002	VOK	Dense Vein stockwork	VSF	8.26	2.2	2.75	2.45	0.005	0.30	76.6	183	178	102	Moderate	2.33
SU-350-003	VOK	Arenite	VSF	8.95	0.78	2.09	1.91	0.005	0.18	59.7	65.0	94.7	35.0	Moderate	1.59
SU-350-004	VOK	Arenite	VSF	8.76	1.37	2.88	2.6	0.005	0.28	81.3	114	147	66.1	Moderate	1.81
SU-350-005	VOK	Pelite	VSF	8.42	1.22	2.15	1.85	0.02	0.28	57.8	102	84.8	27.0	Slight	1.47
SU-350-006	VOK	Arenite	VSF	8.06	1.52	2.3	1.91	0.14	0.25	59.7	127	89.7	30.0	Slight	1.50
SU-350-007	VOK	Arenite	VSF	8.80	1.88	1.45	1.28	0.005	0.17	40.0	157	145	105	Slight	3.63
SU-350-008	VOK	Dense Vein stockwork	VSF	8.36	1.38	1.81	1.56	0.005	0.25	48.8	115	113	64.5	Moderate	2.32
SU-350-012	VOK	Pelite	VSF	8.50	3.04	1.42	1.18	0.005	0.24	36.9	253	235	198	Moderate	6.36
SU-352-009	VOK	Siliceous Rocks	VSF	7.39	0.06	2.32	2.12	0.005	0.20	66.3	5.00	15.0	-51.3	None	0.23
SU-352-010	VOK	Pelite	VSF	8.90	0.19	0.55	0.37	0.005	0.18	11.6	15.8	18.3	6.74	Slight	1.58
SU-352-016	VOK	Intermediate Volcanics	VSF	8.51	0.7	5.32	4.88	0.01	0.43	153	58.3	72.0	-80.5	Moderate	0.47
SU-352-017	VOK	Intermediate Volcanics	VSF	7.90	0.04	3.9	3.6	0.02	0.28	113	3.30	12.4	-100	None	0.11
SU-353-004	VOK	Conglomerate	VSF	8.21	0.98	3.13	2.86	0.005	0.27	89.4	81.7	85.0	-4.38	Moderate	0.95
SU-353-005	VOK	Conglomerate	VSF	8.27	0.99	4.31	4.19	0.005	0.12	131	82.5	92.4	-38.5	Moderate	0.71
SU-353-006	VOK	Arenite	VSF	8.37	1.43	2.53	2.4	0.005	0.13	75.0	119	144	69.1	Moderate	1.92
SU-353-007	VOK	Conglomerate	VSF	8.62	1.8	1.45	1.33	0.005	0.12	41.6	150	167	125	Moderate	4.02
SU-353-008	VOK	Arenite	VSF	8.55	1.62	4.15	3.87	0.005	0.28	121	135	148	26.9	Moderate	1.22
SU-353-009	VOK	Arenite	VSF	8.70	0.8	4.6	4.35	0.01	0.24	136	66.7	78.2	-57.7	Moderate	0.58
SU-353-012	VOK	Arenite	VSF	8.49	0.56	1.15	1	0.005	0.15	31.3	46.7	47.1	15.9	Slight	1.51
SU-354-002	VOK	Pelite	VSF	6.64	0.14	8.55	8.21	0.03	0.31	257	11.7	11.9	-245	None	0.05
SU-354-003	VOK	Pelite	VSF	7.67	0.24	13.8	6.15	0.03	7.62	192	20.0	21.4	-171	Slight	0.11
SU-354-004	VOK	Arenite	VSF	7.71	0.08	3.71	3.23	0.02	0.46	101	6.70	9.50	-91.4	Slight	0.09
SU-354-005	VOK	Dense Vein stockwork	VSF	7.63	0.13	1.5	1.29	0.03	0.18	40.3	10.8	11.9	-28.4	Slight	0.30
SU-354-006	VOK	Conglomerate	VSF	7.99	0.22	2.97	2.82	0.01	0.14	88.1	18.3	20.0	-68.1	Slight	0.23
SU-354-007	VOK	Pelite	VSF	8.15	0.99	4.2	3.23	0.005	0.97	101	82.5	82.7	-18.2	Slight	0.82
SU-355-001	VOK	Arenite	VSF	7.43	0.005	0.54	0.33	0.005	0.21	10.3	0.40	4.90	-5.41	None	0.48
SU-355-002	VOK	Arenite	VSF	8.02	0.31	4.68	4.31	0.02	0.35	135	25.8	27.5	-107	Slight	0.20
SU-355-003	VOK	Arenite	VSF	8.16	0.37	2.67	2.23	0.01	0.43	69.7	30.8	31.3	-38.4	Slight	0.45
SU-355-004	VOK	Arenite	VSF	8.43	1.22	1.32	1.15	0.005	0.17	35.9	102	111	74.9	Moderate	3.08
SU-355-005	VOK	Siliceous Rocks	VSF	8.03	0.02	0.76	0.64	0.005	0.12	20.0	1.70	3.70	-16.3	None	0.19
SU-355-006	VOK	Conglomerate	VSF	7.10	0.01	0.76	0.67	0.005	0.09	20.9	0.80	6.40	-14.5	None	0.31
SU-356-005	VOK	Arenite	VSF	8.13	0.6	4.02	3.6	0.005	0.42	113	50.0	54.9	-57.6	Slight	0.49
SU-356-006	VOK	Pelite	VSF	8.42	0.75	2.61	2.35	0.005	0.26	73.4	62.5	81.3	7.86	Moderate	1.11
SU-357-004	VOK	Felsic Volcanics	VSF	8.93	1.74	1.24	0.95	0.005	0.29	29.7	145	116	86.6	Moderate	3.92
SU-357-006	VOK	Pelite	VSF	8.20	1.11	5.6	4.99	0.005	0.61	156	92.5	96.9	-59.0	Moderate	0.62
SU-357-007	VOK	Pelite	VSF	8.28	0.85	3.31	3.12	0.005	0.19	97.5	70.8	75.0	-22.5	Moderate	0.77
SU-358-003	VOK	Arenite	VSF	8.37	1.67	1.05	0.94	0.005	0.11	29.4	139	154	125	Moderate	5.26
SU-358-004	VOK	Arenite	VSF	7.63	0.06	4.53	4.11	0.02	0.40	128	5.00	9.60	-119	None	0.07
SU-359-010	VOK	Pelite	VSF	8.75	0.67	2.29	2.05	0.005	0.24	64.1	55.8	83.8	19.7	Moderate	1.31
SU-361-008	VOK	Pelite	VSF	7.43	0.19	1.42	1.22	0.03	0.17	38.1	15.8	10.1	-28.0	Slight	0.26
SU-361-009	VOK	Pelite	VSF	8.15	0.07	1.2	1.02	0.005	0.18	31.9	5.80	5.90	-26.0	Slight	0.19
SU-361-010	VOK	Arenite	VSF	8.24	0.33	2.12	1.92	0.005	0.20	60.0	27.5	53.3	-6.70	Slight	0.89

Sample ID	Zone	Logged Lithology	Geological Unit	Paste pH	TIC	Tot-S	Sulp-S	SO_4-S	Insoluble S	AP	CaCO3 NP	Sobek NP	Net NP	Fizz Test	Sobek NPR
					%	%	%	%	%	← kg $CaCO_3$/t →					Calc
SU-361-011	VOK	Conglomerate	VSF	8.20	0.87	2.9	2.69	0.005	0.21	84.1	72.5	78.8	-5.26	Moderate	0.94
SU-361-012	VOK	Pelite	VSF	8.21	2.08	3.58	3.37	0.005	0.21	105	173	177	71.6	Moderate	1.68
SU-361-013	VOK	Conglomerate	VSF	8.42	1.06	4.26	3.97	0.005	0.29	124	88.3	95.0	-29.1	Moderate	0.77
SU-361-014	VOK	Arenite	VSF	8.30	0.28	2.7	2.37	0.01	0.32	74.1	23.3	26.4	-47.7	Slight	0.36

Notes

TIC=Total Inorganic Carbon, Tot-S=Total Sulphur, SO_4-S=Sulphate Sulfur, Sulp-S=Sulphide Sulphur, NP=Neutralization Potential, AP=Acid Potential (calculated from Sulp-S), Net NP=NP-AP, NPR=NP/AP

All samples (N=428) are from the 2011, 2012, and 2013 sampling programs

APPENDIX C
WASTE ROCK METALS

Sample ID	Logged Lithology	Zone	Geol Unit	Al %	B ppm	Ba ppm	Ca %	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Na %	Ni ppm	P ppm	S %	Sr ppm	Ti %	V ppm	Zn ppm	Zr ppm	Ag ppm	As ppm	Be ppm	Bi ppm	Cd ppm	Ce ppm
			Method Code	ICM14B																									
			LOD	0.01	10	5	0.01	1	0.5	0.01	0.01	1	0.01	2	0.01	0.5	50	0.01	0.5	0.01	1	1	0.5	0.01	1	0.1	0.02	0.01	0.05
SU-040-01	Andesite	VOK	Bridge P1	2.33	40	301	3.10	54	26.8	6.3	0.09	47	1.81	936	0.05	14.0	2950	0.86	181	0.38	75	114	20.7	0.27	35	0.7	0.12	0.05	63.3
SU-011-01	Meta-Felsic Volcanics	VOK	Bridge P1	0.33	40	91	2.90	31	12.6	3.5	0.27	<1	0.06	988	0.02	2.5	650	4.64	135	<0.01	5	261	2.5	1.62	119	0.3	0.75	2.33	10.0
SU-040-02	Meta-Int. Felsic Volcanics	VOK	Bridge P1	0.36	40	103	1.77	60	11.1	3.4	0.27	<1	0.03	378	0.01	3.6	760	4.42	51.7	<0.01	5	21	2.4	3.01	263	0.4	1.02	0.12	8.30
Comp 13-16	Plag-hbl Porphyry	VOK	Bridge P1	0.63	30	119	4.12	85	28.5	2.3	0.27	9	0.22	1070	0.02	3.6	700	2.10	136	<0.01	8	63	1.5	2.11	180	0.2	0.07	0.50	10.2
Comp 13-9	Plag-hbl Porphyry	VOK	Bridge P1	0.62	30	117	3.08	75	37.0	2.8	0.24	9	0.56	1080	0.04	3.8	790	2.82	135	<0.01	17	91	2.2	0.52	21	0.2	0.51	0.50	9.66
SU-345-005	Plag-hbl Porphyry	VOK	Bridge P1	0.54	40	117	4.56	43	14.5	3.1	0.21	9	0.48	1440	0.04	2.3	760	3.21	168	<0.01	12	47	1.2	0.39	9	0.2	0.65	0.19	6.47
SU-345-006	Plag-hbl Porphyry	VOK	Bridge P1	0.52	40	105	3.21	65	15.2	3.3	0.22	6	0.56	1310	0.04	3.2	720	3.26	162	<0.01	12	130	1.4	0.57	16	0.2	0.69	0.75	8.50
SU-345-007	Plag-hbl Porphyry	VOK	Bridge P1	0.64	40	124	3.73	53	56.1	3.4	0.26	10	0.55	1100	0.04	3.2	760	3.38	126	<0.01	17	72	2.5	0.57	29	0.2	0.42	0.35	6.10
SU-347-002	Plag-hbl Porphyry	VOK	Bridge P1	0.66	40	110	4.56	75	15.7	2.6	0.26	10	0.30	1310	0.02	3.3	580	2.07	175	<0.01	7	84	0.9	1.30	120	0.3	0.05	0.64	7.71
SU-347-003	Plag-hbl Porphyry	VOK	Bridge P1	0.42	30	128	3.91	68	52.0	2.1	0.28	4	0.11	840	0.03	3.5	680	2.13	84.0	<0.01	3	46	1.0	3.19	219	0.3	0.09	0.27	7.44
SU-349-010	Plag-hbl Porphyry	VOK	Bridge P1	0.64	40	112	6.12	27	7.2	3.5	0.23	11	0.36	1550	0.03	3.0	650	3.45	120	<0.01	7	7	0.8	0.58	99	0.3	0.13	0.05	7.31
SU-350-009	Plag-hbl Porphyry	VOK	Bridge P1	0.86	40	121	0.58	57	16.5	3.4	0.25	13	0.51	579	0.02	3.1	840	2.33	23.4	0.04	28	66	4.4	1.20	86	0.4	0.09	0.38	13.3
SU-350-010	Plag-hbl Porphyry	VOK	Bridge P1	0.86	40	90	3.21	37	16.6	2.6	0.27	14	0.44	1260	0.02	2.3	770	1.63	138	<0.01	10	105	1.1	0.78	585	0.2	0.07	0.31	16.9
SU-350-011	Plag-hbl Porphyry	VOK	Bridge P1	1.07	40	66	2.95	39	15.2	2.8	0.25	20	0.63	1210	0.03	1.6	800	1.42	123	<0.01	24	62	1.1	0.45	287	0.3	0.09	0.15	14.5
SU-353-001	Plag-hbl Porphyry	VOK	Bridge P1	0.31	40	47	0.55	57	3.0	3.6	0.23	1	0.03	147	0.01	4.1	650	4.10	19.2	<0.01	<1	88	4.6	1.83	28	0.4	1.23	0.60	5.41
SU-353-002	Plag-hbl Porphyry	VOK	Bridge P1	0.30	40	95	3.51	46	16.1	3.0	0.24	<1	0.03	923	0.01	5.1	740	3.55	97.6	<0.01	<1	383	1.9	1.88	41	0.4	1.34	1.69	8.73
SU-353-003	Plag-hbl Porphyry	VOK	Bridge P1	1.02	40	125	2.60	23	17.4	2.7	0.27	23	0.54	1050	0.03	2.9	800	1.91	92.1	<0.01	12	60	1.1	0.61	97	0.2	0.52	0.45	10.4
SU-011-02	Tonalite	VOK	Bridge P1	0.54	60	75	3.35	49	14.3	4.3	0.30	8	0.28	1960	0.02	3.2	730	>5	235	<0.01	17	594	5.5	2.07	160	0.3	0.86	3.86	9.30
SU-011-03	Tonalite	VOK	Bridge P1	0.41	50	96	1.70	36	21.1	3.5	0.30	4	0.26	827	0.01	3.5	800	4.13	100	<0.01	8	191	2.6	2.25	280	0.2	0.36	1.40	11.0
SU-032-08	Andesite	Gossan Hill	Conglomerate	0.41	40	75	2.37	48	46.4	3.7	0.38	1	0.03	704	0.02	3.5	990	4.81	77.0	<0.01	9	84	2.9	4.67	288	0.3	0.26	0.56	13.8
SU-032-09	Andesite	Gossan Hill	Conglomerate	0.38	50	82	0.58	73	18.6	4.4	0.39	1	0.02	167	0.02	8.7	940	>5	36.4	<0.01	10	8	3.1	3.95	233	0.3	0.55	0.06	11.5
SU-032-10	Andesite	Gossan Hill	Conglomerate	0.52	40	114	1.61	36	30.4	4.2	0.59	3	0.04	631	0.02	3.1	1010	4.94	85.4	<0.01	10	19	3.3	3.77	326	0.4	0.49	0.08	15.9
SU-035-02	Andesite	VOK	Conglomerate	0.65	40	149	0.41	19	18.0	2.4	0.42	3	0.09	178	0.02	13.1	1540	2.29	57.7	<0.01	14	26	1.2	2.13	189	1.0	0.14	0.16	28.0
SU-036-02	Andesite	Gossan Hill	Conglomerate	0.40	50	128	3.62	39	45.5	3.0	0.33	2	0.07	2180	0.02	3.1	1040	3.72	108	<0.01	6	38	5.3	2.64	486	0.5	0.17	0.13	13.2
SU-063-05	Andesite	West Zone	Conglomerate	0.24	40	37	7.58	52	19.8	2.3	0.20	1	0.04	1860	0.01	4.2	620	3.17	242	<0.01	6	43	2.3	>10	160	0.3	0.16	0.38	7.17
SU-063-06	Andesite	West Zone	Conglomerate	0.25	90	57	3.98	72	41.1	2.7	0.20	2	0.03	1560	0.02	12.2	720	3.61	64.8	<0.01	6	21	2.1	8.17	197	0.3	0.74	0.17	7.48
SU-103-04	Andesite	West Zone	Conglomerate	0.61	70	61	2.51	65	72.9	2.3	0.27	9	0.33	1300	0.02	7.4	920	2.26	150	<0.01	22	198	2.4	3.25	161	0.2	0.05	0.59	14.8
SU-056-001	Arenite	VOK	Conglomerate	0.43	40	159	0.56	47	54.2	3.5	0.27	<1	0.05	186	0.04	2.8	1030	3.28	62.0	<0.01	6	888	2.5	3.85	597	0.5	0.97	16.3	10.3
SU-290-015	Arenite	West Zone	Conglomerate	0.32	70	143	0.70	75	43.3	3.0	0.29	<1	0.04	164	0.02	11.3	890	3.15	71.9	<0.01	6	5	2.2	2.64	54	0.3	0.29	0.11	9.12
SU-039-07	Basalt	Gossan Hill	Conglomerate	0.46	50	97	0.53	23	24.9	0.39	0.31	1	0.02	23	0.06	11.4	2150	0.43	38.7	<0.01	11	2	1.3	8.40	54	0.6	0.10	0.07	9.21
SU-047-05	Basalt	Gossan Hill	Conglomerate	0.19	20	258	0.16	7	2.0	0.32	0.19	10	0.52	588	<0.01	<0.5	2590	0.41	14.7	<0.01	8	173	1.8	0.61	8	0.5	0.03	0.13	51.6
SU-063-04	Basalt	West Zone	Conglomerate	2.86	50	284	9.01	82	76.7	7.2	0.49	58	2.41	1910	0.02	52.4	4170	0.20	718	0.06	177	136	4.5	0.61	18	0.7	0.03	0.13	47.1
Comp 13-2	Conglomerate	VOK	Conglomerate	0.39	30	147	0.90	73	316	3.4	0.26	1	0.02	289	0.02	8.6	1160	3.94	99.3	<0.01	6	290	2.8	6.82	374	0.4	0.97	2.32	18.9
Comp 13-4	Conglomerate	West Zone	Conglomerate	0.82	30	109	2.30	37	30.4	4.3	0.15	11	0.34	545	0.04	2.5	1200	>5	93.2	<0.01	10	137	2.5	0.95	24	0.2	1.32	4.79	20.7
Comp 13-6	Conglomerate	West Zone	Conglomerate	0.34	40	112	0.56	93	27.8	3.4	0.25	2	0.03	155	0.02	11.6	930	4.06	46.8	<0.01	7	8	2.2	5.47	97	0.2	0.33	0.10	9.13
Comp. 10	Conglomerate	Gossan Hill	Conglomerate	0.29	60	65	3.86	55	59.2	2.6	0.26	1	0.03	1840	0.01	4.5	780	3.68	141	<0.01	5	316	4.6	>10	206	0.6	0.12	2.18	10.7
SU-290-014	Conglomerate	West Zone	Conglomerate	0.20	60	75	2.14	109	19.6	2.2	0.20	<1	0.02	477	0.02	6.5	550	2.31	40.1	<0.01	5	5	1.6	1.50	42	0.2	0.17	0.07	9.39
SU-290-016	Conglomerate	West Zone	Conglomerate	0.32	60	53	0.41	64	21.8	4.5	0.25	2	0.03	115	0.03	12.0	1040	4.91	23.8	<0.01	4	17	1.8	9.44	147	0.3	0.37	0.18	8.53
SU-295-001	Conglomerate	West Zone	Conglomerate	0.45	50	55	0.30	26	8.0	3.0	0.31	<1	0.01	69	0.01	<0.5	1420	3.01	20.5	<0.01	3	143	1.9	3.39	352	0.6	1.13	2.13	18.8
SU-295-002	Conglomerate	West Zone	Conglomerate	0.37	50	56	0.23	45	32.0	1.3	0.30	<1	0.03	83	0.01	4.1	720	1.17	24.6	<0.01	4	210	2.7	6.16	104	0.7	0.31	1.66	13.2
SU-295-006	Conglomerate	West Zone	Conglomerate	0.89	60	397	4.82	38	54.4	2.2	0.34	11	0.45	1720	0.02	14.0	750	1.11	194	0.02	11	354	1.8	>10	111	0.2	0.15	4.12	21.7
SU-295-007	Conglomerate	West Zone	Conglomerate	1.02	60	161	2.59	47	49.5	2.6	0.32	13	0.53	1740	0.02	14.1	770	1.23	159	<0.01	15	96	1.9	2.48	88	0.3	0.10	0.40	18.6
SU-309-011	Conglomerate	West Zone	Conglomerate	0.50	40	100	2.64	31	64.4	3.6	0.31	6	0.24	1040	0.04	14.5	880	3.75	130	<0.01	8	12	2.1	1.35	48	0.4	0.39	0.06	6.89
SU-348-001	Conglomerate	VOK	Conglomerate	0.34	40	164	2.19	47	73.6	2.3	0.26	<1	0.02	496	0.03	3.0	920	2.69	178	0.02	4	31	3.6	1.95	83	0.4	0.10	0.21	11.3
SU-351-008	Conglomerate	VOK	Conglomerate	0.32	40	127	0.93	36	364	3.7	0.24	<1	0.02	306	0.03	8.9	1090	4.10	96.4	<0.01	2	359	2.7	6.84	402	0.4	1.15	2.44	14.4
SU-354-001	Conglomerate	VOK	Conglomerate	0.30	40	80	0.16	72	252	4.7	0.21	<1	0.04	115	0.02	26.7	490	>5	32.4	<0.01	<1	235	4.0	>10	531	0.4	2.50	5.51	6.31
SU-356-002	Conglomerate	VOK	Conglomerate	0.33	40	105	0.43	59	36.9	4.3	0.24	<1	0.04	101	0.02	3.1	980	4.86	53.5	<0.01	5	276	4.5	2.74	259	0.4	0.65	1.88	14.3
SU-356-003	Conglomerate	VOK	Conglomerate	0.33	40	97	0.36	81	40.2	2.7	0.25	<1	0.05	97	0.01	3.8	1050	3.16	49.9	<0.01	4	303	3.5	9.98	171	0.4	0.75	2.64	17.5
SU-356-004	Conglomerate	VOK	Conglomerate	0.33	40	77	0.44	62	31.8	4.9	0.24	<1	0.04	140	0.02	4.0	1000	>5	58.3	<0.01	4	759	3.2	7.69	312	0.4	0.71	6.03	16.0
Comp 13-17	Conglomerate	VOK	Conglomerate	0.40	60	115	0.39	46	57.8	3.7	0.27	<1	0.05	89	0.02	5.3	1150	4.12	45.5	<0.01	6	281	4.4	6.20	236	0.4	0.72	2.04	17.5
SU-032-07	Dacite	Gossan Hill	Conglomerate	0.34	40	74	3.81	55	57.9	4.5	0.31	1	0.03	1090	0.02	4.1	930	>5	110	<0.01	9	56	3.3	5.42	330	0.3	0.25	0.37	12.6
SU-047-001	Dense Vein stockwork	West Zone	Conglomerate	0.21	50	62	0.26	119	93.6	3.5	0.19	<1	0.01	38	0.01	2.6	620	3.45	24.1	<0.01	4	73	2.6	>10	204	0.2	0.07	0.54	9.06
SU-121-003	Dense Vein stockwork	West Zone	Conglomerate	0.05	50	40	>15	51	11.6	1.3	0.05	<1	0.04	5770	0.01	2.1	330	1.49	914	<0.01	2	51	0.6	8.33	30	0.1	0.04	0.48	9.54
SU-130-007	Felsic Volcanics	VOK	Conglomerate	0.30	40	91	2.21	68	31.1	3.5	0.21	2	0.06	943	0.03	28.4	520	3.51	111	<0.01	3	47	1.8	2.11	79	0.5	0.86	0.30	5.40
SU-146-01	Felsic Volcanics	VOK	Conglomerate	0.52	50	79	1.91	49	51.0	3.4	0.19	7	0.25	1030	0.01	5.4	730	3.89	62.8	<0.01	14	84	1.3	5.56	94	0.4	0.38	1.25	7.72
SU-114-002	Intermediate Volcanics	VOK	Conglomerate	0.32	40	134	0.49	74	34.4	3.1	0.25	<1	0.02	115	0.03	4.7	900	3.15	56.4	<0.01	4	391	3.8	1.85	352	0.4	0.86	3.18	9.34
SU-123-04	Intermediate Volcanics	West Zone	Conglomerate	1.23	40	81	1.15	33	16.5	4.1	0.36	17	0.75	1680	0.02	21.6	1200	3.13	47.8	0.08	30	144	2.0	1.52	118	0.3	0.31	0.73	15.5
SU-198-03	Intermediate Volcanics	Gossan Hill	Conglomerate	2.00	70	99	5.46	25	83.6	6.0	0.33	29	1.20	2280	0.02	7.3	2160	3.39	239	<0.01	61	87	4.7	4.74	307	0.3	<0.02	0.17	32.3
SU-358-001	Intermediate Volcanics	VOK	Conglomerate	0.39	40	86	0.28	61	38.0	3.9	0.24	<1	0.03	81	0.02	<0.5	840	4.40	131	<0.01	6	178	1.8	5.60	487	0.5	2.56	1.54	14.6
SU-361-005	Intermediate Volcanics	VOK	Conglomerate	1.22	50	155	2.24	26	39.0	2.7	0.43	16	0.49	812	0.02	1.2	1580	1.25	138	<0.01	23	46	1.9	0.75	120	0.3	0.06	0.03	15.9
SU-361-006	Intermediate Volcanics	VOK	Conglomerate	1.43	40	163	5.78	23	29.8	3.7	0.32	24	0.75	2190	0.02	1.7	1030	1.65	423	<0.01	19	61	1.3	0.75	190	0.3	0.08	0.04	18.2
SU-361-007	Intermediate Volcanics	VOK	Conglomerate	1.83	40	684	6.20	24	5.6	3.9	0.25	35	0.82	2350	0.02	2.3	1280	0.68	405	<0.01	37	85	1.4	0.65	81	0.3	0.09	0.04	14.8
SU-198-01	Kspar-Hbl-Porph	Gossan Hill	Conglomerate	0.26	60	60	6.77	45	61.1	2.9	0.24	1	0.04	3290	0.01	3.8	780	4.02	216	<0.01	7	393	4.1	9.90	264	0.4	0.16	2.70	9.50
SU-198-02	Kspar-Hbl-Porph	Gossan Hill	Conglomerate	0.32	50	80	1.06	46	30.5	2.3	0.26	<1	0.04	515	0.01	3.1	770	2.74	76.4	<0.01	7	156	3.5	6.82	166	0.5	0.06	0.78	14.4

Sample ID	Logged Lithology	Zone	Geol Unit	Co ppm	Cs ppm	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	La ppm	Lu ppm	Mo ppm	Nb ppm	Pb ppm	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sn ppm	Ta ppm	Tb ppm	Te ppm	Th ppm	Tl ppm	U ppm	W ppm	Y ppm	Yb ppm
			Method Code													ICM14B													
			LOD	0.1	0.05	0.1	0.1	0.05	0.01	0.02	0.1	0.01	0.05	0.05	0.2	0.2	0.05	0.1	1	0.3	0.05	0.02	0.05	0.1	0.02	0.05	0.1	0.05	0.1
SU-040-01	Andesite	VOK	Bridge P1	22.2	1.55	14.4	0.2	0.65	0.01	0.04	32.3	0.06	2.78	0.85	4.6	3.7	2.02	4.5	<1	0.9	<0.05	0.57	0.09	1.7	0.07	0.56	0.2	8.46	0.4
SU-011-01	Meta-Felsic Volcanics	VOK	Bridge P1	7.7	2.57	0.7	<0.1	0.06	0.09	<0.02	5.2	0.08	1.02	<0.05	124	11.3	2.89	1.2	1	<0.3	<0.05	0.19	0.18	1.7	0.54	0.59	0.1	4.80	0.5
SU-040-02	Meta-Int. Felsic Volcanics	VOK	Bridge P1	8.5	4.20	0.8	<0.1	0.06	0.04	<0.02	4.1	0.07	1.27	0.06	19.0	10.1	4.34	1.1	<1	<0.3	<0.05	0.19	0.59	1.2	0.79	0.51	0.2	4.80	0.4
Comp 13-16	Plag-hbl Porphyry	VOK	Bridge P1	7.3	3.20	1.4	0.2	<0.05	0.01	<0.02	5.4	0.11	5.10	<0.05	96.5	11.4	2.82	1.1	2	0.9	<0.05	0.27	<0.05	1.5	0.46	0.51	0.1	9.36	0.8
Comp 13-9	Plag-hbl Porphyry	VOK	Bridge P1	7.5	2.26	2.0	0.2	0.06	0.02	<0.02	5.2	0.09	3.32	<0.05	23.3	10.7	0.70	2.1	<1	2.6	<0.05	0.16	<0.05	1.7	0.16	0.56	0.2	4.61	0.5
SU-345-005	Plag-hbl Porphyry	VOK	Bridge P1	7.7	1.58	1.4	<0.1	<0.05	0.02	<0.02	3.3	0.08	1.39	<0.05	16.2	8.1	0.31	1.8	<1	<0.3	<0.05	0.15	0.06	1.3	0.15	0.40	0.1	4.39	0.5
SU-345-006	Plag-hbl Porphyry	VOK	Bridge P1	8.5	1.47	1.4	<0.1	<0.05	0.03	0.02	4.4	0.08	2.29	<0.05	28.5	9.0	0.60	2.1	<1	<0.3	<0.05	0.15	0.06	1.4	0.14	0.46	0.1	4.28	0.5
SU-345-007	Plag-hbl Porphyry	VOK	Bridge P1	7.4	2.19	1.6	<0.1	0.06	0.01	<0.02	3.1	0.08	1.60	<0.05	24.5	9.1	0.62	1.9	<1	<0.3	<0.05	0.13	0.09	1.6	0.13	0.54	0.2	3.88	0.4
SU-347-002	Plag-hbl Porphyry	VOK	Bridge P1	7.0	2.01	1.3	<0.1	<0.05	0.02	<0.02	4.1	0.11	3.64	<0.05	140	9.3	1.14	1.3	2	<0.3	<0.05	0.22	<0.05	1.2	0.38	0.44	<0.1	7.16	0.7
SU-347-003	Plag-hbl Porphyry	VOK	Bridge P1	6.4	3.47	0.8	<0.1	<0.05	0.02	<0.02	3.6	0.09	3.21	<0.05	67.6	10.2	3.55	0.9	2	<0.3	<0.05	0.23	<0.05	1.3	0.52	0.45	0.1	8.47	0.6
SU-349-010	Plag-hbl Porphyry	VOK	Bridge P1	7.9	1.94	1.3	<0.1	<0.05	0.02	<0.02	3.7	0.13	1.24	<0.05	11.3	7.7	0.99	1.4	13	<0.3	<0.05	0.20	<0.05	1.8	0.20	0.59	<0.1	6.40	0.8
SU-350-009	Plag-hbl Porphyry	VOK	Bridge P1	8.0	2.14	2.9	<0.1	0.14	0.01	<0.02	7.0	0.08	2.10	0.21	19.5	10.9	1.35	2.2	<1	<0.3	<0.05	0.24	0.13	1.4	0.21	0.47	0.5	6.26	0.6
SU-350-010	Plag-hbl Porphyry	VOK	Bridge P1	5.7	1.78	1.9	<0.1	<0.05	0.01	<0.02	8.8	0.06	1.29	<0.05	21.6	10.4	4.35	1	<1	<0.3	<0.05	0.22	0.05	1	0.21	0.20	<0.1	5.40	0.5
SU-350-011	Plag-hbl Porphyry	VOK	Bridge P1	6.2	2.00	3.4	<0.1	<0.05	0.02	<0.02	7.4	0.09	1.57	<0.05	12.0	10.7	2.25	1.4	<1	<0.3	<0.05	0.26	<0.05	1.1	0.25	0.40	<0.1	7.06	0.6
SU-353-001	Plag-hbl Porphyry	VOK	Bridge P1	7.3	2.33	0.6	<0.1	0.10	0.04	<0.02	2.5	0.03	1.54	<0.05	39.7	8.4	1.06	0.9	2	<0.3	<0.05	0.13	0.15	1.2	0.40	0.44	0.2	2.44	0.2
SU-353-002	Plag-hbl Porphyry	VOK	Bridge P1	7.4	2.86	0.5	<0.1	0.05	0.08	0.05	4.4	0.10	1.10	0.06	17.3	8.6	1.30	1.1	<1	<0.3	<0.05	0.20	0.24	0.8	0.28	0.66	0.1	6.06	0.7
SU-353-003	Plag-hbl Porphyry	VOK	Bridge P1	6.4	2.59	2.5	<0.1	<0.05	<0.01	<0.02	5.3	0.08	0.90	0.07	17.7	10.9	1.48	1.3	<1	<0.3	<0.05	0.24	<0.05	0.8	0.30	0.23	0.2	6.75	0.6
SU-011-02	Tonalite	VOK	Bridge P1	10.2	2.37	1.5	<0.1	0.14	0.12	0.05	4.8	0.08	1.17	<0.05	174	12.8	2.65	1.3	5	<0.3	<0.05	0.19	0.42	1.6	0.48	0.69	0.2	5.06	0.5
SU-011-03	Tonalite	VOK	Bridge P1	9.6	2.15	1.0	<0.1	0.07	0.04	<0.02	5.6	0.06	2.86	<0.05	65.4	12.8	5.63	1.5	4	<0.3	<0.05	0.17	0.09	1.9	0.39	0.55	0.1	3.83	0.4
SU-032-08	Andesite	Gossan Hill	Conglomerate	8.5	4.31	1.2	<0.1	0.06	0.04	<0.02	6.6	0.09	0.70	0.08	23.2	18.8	3.76	1.5	2	<0.3	<0.05	0.25	0.06	3.4	0.40	0.85	0.7	6.26	0.5
SU-032-09	Andesite	Gossan Hill	Conglomerate	20.1	2.20	1.1	<0.1	0.06	0.02	<0.02	5.8	0.06	1.16	0.07	16.7	20.2	2.66	1.1	2	<0.3	<0.05	0.18	0.05	2.8	0.36	0.89	0.4	3.89	0.4
SU-032-10	Andesite	Gossan Hill	Conglomerate	11.4	3.65	1.4	<0.1	0.06	0.02	<0.02	8.3	0.08	0.45	0.07	11.2	33.5	2.44	1.2	<1	<0.3	<0.05	0.20	<0.05	3.2	0.50	0.61	2	4.50	0.5
SU-035-02	Andesite	VOK	Conglomerate	12.9	8.89	1.3	<0.1	<0.05	0.85	<0.02	13.7	0.04	1.37	<0.05	23.6	17.2	4.30	2.4	<1	<0.3	<0.05	0.36	0.10	3.8	0.61	1.13	1.3	4.87	0.3
SU-036-02	Andesite	Gossan Hill	Conglomerate	8.6	4.73	0.9	<0.1	0.16	0.07	<0.02	7.2	0.13	0.33	0.06	24.4	14.5	11.0	1.5	1	<0.3	<0.05	0.28	0.26	3	1.09	1.66	0.2	7.13	0.8
SU-063-05	Andesite	West Zone	Conglomerate	6.1	1.48	0.7	<0.1	0.05	0.13	<0.02	3.6	0.06	1.06	<0.05	28.2	9.6	6.78	1.1	1	<0.3	<0.05	0.16	0.52	1	0.28	0.38	0.1	4.69	0.4
SU-063-06	Andesite	West Zone	Conglomerate	7.5	1.38	0.7	<0.1	<0.05	0.08	<0.02	3.4	0.04	1.64	<0.05	23.9	9.4	10.2	1	2	<0.3	<0.05	0.18	0.28	0.7	0.26	0.16	0.1	3.95	0.3
SU-103-04	Andesite	West Zone	Conglomerate	9.3	2.05	1.6	<0.1	0.09	0.03	0.03	7.5	0.12	6.78	0.07	59.2	14.5	2.11	2.1	<1	<0.3	<0.05	0.27	<0.05	2.1	0.31	1.89	0.3	7.31	0.7
SU-056-001	Arenite	VOK	Conglomerate	10.0	4.30	0.6	<0.1	<0.05	0.18	0.08	5.0	0.02	2.98	<0.05	146	8.8	2.83	1.4	8	<0.3	<0.05	0.19	0.13	2.5	0.80	1.17	0.4	2.16	0.1
SU-290-015	Arenite	West Zone	Conglomerate	8.5	1.25	0.8	<0.1	0.06	0.01	<0.02	4.4	0.03	6.25	<0.05	8.9	12.3	3.47	1.4	3	<0.3	<0.05	0.14	0.13	1.4	0.19	0.44	0.2	2.97	0.3
SU-039-07	Basalt	Gossan Hill	Conglomerate	10.4	7.36	1.6	<0.1	0.06	0.15	<0.02	4.4	0.01	1.56	<0.05	9.5	10.2	6.77	1.4	<1	<0.3	<0.05	0.11	1.43	2.8	0.44	0.57	0.3	1.29	<0.1
SU-047-05	Basalt	Gossan Hill	Conglomerate	3.2	4.32	3.8	<0.1	<0.05	0.01	<0.02	24.9	0.19	1.72	0.16	4.6	19.8	1.22	1.6	<1	<0.3	<0.05	0.74	<0.05	0.8	0.35	0.15	0.3	18.0	1.3
SU-063-04	Basalt	West Zone	Conglomerate	27.7	4.30	9.4	0.2	0.12	0.01	0.04	20.0	0.09	0.11	0.11	3.0	35.0	1.76	11.9	<1	0.4	<0.05	0.56	<0.05	0.3	0.73	0.09	<0.1	11.6	0.7
Comp 13-2	Conglomerate	VOK	Conglomerate	21.2	3.40	0.8	0.1	0.07	0.14	0.03	10.4	0.09	2.62	0.20	172	11.5	6.82	1.2	3	0.4	<0.05	0.31	0.72	3.6	0.65	2.16	0.6	7.65	0.6
Comp 13-4	Conglomerate	West Zone	Conglomerate	8.9	5.34	1.8	0.2	<0.05	0.26	0.05	11.1	0.10	3.35	<0.05	111	6.5	3.13	1.7	8	0.4	<0.05	0.29	0.44	1.4	0.21	0.25	<0.1	6.56	0.6
Comp 13-6	Conglomerate	West Zone	Conglomerate	9.4	1.44	1.0	0.1	0.06	0.02	<0.02	4.4	0.04	7.09	<0.05	15.4	12.6	3.58	1.3	3	<0.3	<0.05	0.18	0.21	1.4	0.29	0.55	0.2	3.62	0.3
Comp. 10	Conglomerate	Gossan Hill	Conglomerate	9.8	3.33	0.9	<0.1	0.11	0.83	0.03	5.7	0.09	6.11	0.10	102	11.8	34.1	1.7	<1	<0.3	<0.05	0.25	0.45	3.2	2.62	1.69	1.3	6.63	0.6
SU-290-014	Conglomerate	West Zone	Conglomerate	5.6	0.84	0.5	<0.1	<0.05	0.01	<0.02	4.8	0.07	9.58	0.05	16.7	7.6	2.29	0.9	2	<0.3	<0.05	0.22	<0.05	1.6	0.15	0.61	0.3	7.17	0.5
SU-290-016	Conglomerate	West Zone	Conglomerate	9.3	1.45	0.8	<0.1	<0.05	0.02	<0.02	3.8	0.04	4.03	<0.05	22.5	11.0	4.22	1.2	3	<0.3	<0.05	0.19	0.41	1.4	0.38	0.62	0.2	3.92	0.3
SU-295-001	Conglomerate	West Zone	Conglomerate	0.60	2.85	0.8	<0.1	0.05	0.03	<0.02	9.6	0.02	3.67	<0.05	87.3	12.4	2.70	1.4	2	<0.3	<0.05	0.31	<0.05	3.8	0.31	0.35	0.1	2.25	0.1
SU-295-002	Conglomerate	West Zone	Conglomerate	2.9	1.52	0.6	<0.1	0.07	0.08	<0.02	7.1	0.02	8.47	<0.05	133	11.9	8.16	1.7	<1	<0.3	<0.05	0.13	<0.05	1.8	0.33	0.76	0.1	2.08	0.2
SU-295-006	Conglomerate	West Zone	Conglomerate	9.8	3.66	1.9	<0.1	0.07	0.09	<0.02	11.4	0.13	5.55	0.09	101	15.3	1.70	1.7	1	<0.3	<0.05	0.40	<0.05	1.3	0.32	0.38	0.1	12.2	1
SU-295-007	Conglomerate	West Zone	Conglomerate	10.1	3.29	2.4	<0.1	0.05	<0.01	<0.02	9.6	0.10	2.11	<0.05	33.1	15.3	1.27	1.7	<1	<0.3	<0.05	0.26	<0.05	1.4	0.34	0.45	0.1	6.94	0.7
SU-309-011	Conglomerate	West Zone	Conglomerate	10.5	1.56	1.2	<0.1	0.06	0.08	<0.02	3.5	0.08	1.83	<0.05	12.0	14.3	1.31	1.7	<1	<0.3	<0.05	0.15	0.12	1.2	0.25	0.35	0.8	4.43	0.5
SU-348-001	Conglomerate	VOK	Conglomerate	5.1	3.69	0.7	<0.1	0.10	0.13	<0.02	6.3	0.11	1.28	0.31	7.0	10.4	2.80	1.3	1	<0.3	<0.05	0.24	0.34	3.2	0.97	5.03	0.4	8.37	0.8
SU-351-008	Conglomerate	VOK	Conglomerate	25.2	2.69	0.7	<0.1	0.06	0.19	0.03	8.0	0.08	0.57	0.08	197	9.4	6.39	1.2	3	<0.3	<0.05	0.26	0.67	3.2	0.64	2.42	0.6	6.07	0.5
SU-354-001	Conglomerate	VOK	Conglomerate	95.9	2.94	0.5	<0.1	0.08	0.19	0.04	3.2	0.04	2.56	<0.05	108	7.3	10.2	0.9	21	<0.3	<0.05	0.11	0.47	3.1	0.94	2.68	0.3	2.20	0.2
SU-356-002	Conglomerate	VOK	Conglomerate	9.6	3.20	0.6	<0.1	0.07	0.08	<0.02	7.7	0.04	1.81	<0.05	66.7	8.1	3.97	1.3	16	<0.3	<0.05	0.15	0.10	2.3	0.79	1.03	0.1	3.21	0.3
SU-356-003	Conglomerate	VOK	Conglomerate	8.4	3.10	0.7	<0.1	0.07	0.11	<0.02	9.2	0.04	2.37	<0.05	1300	8.8	12.3	1.3	7	<0.3	<0.05	0.18	0.07	2.1	0.65	1.14	0.2	3.35	0.3
SU-356-004	Conglomerate	VOK	Conglomerate	9.6	1.93	0.7	<0.1	0.07	0.65	<0.02	8.1	0.04	4.63	<0.05	78.3	8.6	8.43	1.2	<1	<0.3	<0.05	0.20	0.98	2.2	1.07	0.55	0.7	3.95	0.3
Comp 13-17	Conglomerate	VOK	Conglomerate	9.3	3.81	0.7	<0.1	0.07	0.11	<0.02	9.3	0.04	1.87	<0.05	436	9.7	13.5	1.3	7	<0.3	<0.05	0.18	0.10	2.2	0.75	1.17	0.1	3.37	0.3
SU-032-07	Dacite	Gossan Hill	Conglomerate	8.7	3.05	1.0	<0.1	0.06	0.02	<0.02	6.3	0.11	1.08	0.07	22.9	14.5	6.40	1.3	3	<0.3	<0.05	0.30	0.06	2.7	0.33	0.57	1	8.24	0.7
SU-047-001	Dense Vein stockwork	West Zone	Conglomerate	8.0	0.82	0.4	<0.1	<0.05	0.05	<0.02	4.2	0.04	6.16	<0.05	34.0	7.1	13.4	0.7	2	<0.3	<0.05	0.15	<0.05	0.8	0.28	0.29	0.2	3.71	0.3
SU-121-003	Dense Vein stockwork	West Zone	Conglomerate	4.3	0.09	0.3	<0.1	<0.05	0.04	<0.02	5.4	0.14	0.99	<0.05	33.7	1.5	4.94	2.5	1	<0.3	<0.05	0.34	0.07	0.3	0.07	0.10	0.3	12.8	0.9
SU-130-007	Felsic Volcanics	VOK	Conglomerate	7.7	2.06	0.6	<0.1	<0.05	0.35	<0.02	2.6	0.05	4.05	<0.05	18.2	7.0	1.97	0.9	2	<0.3	<0.05	0.12	0.28	1.3	0.48	0.60	0.1	2.89	0.3
SU-146-01	Felsic Volcanics	VOK	Conglomerate	7.9	3.29	1.1	<0.1	<0.05	0.05	0.05	3.9	0.05	1.40	<0.05	60.4	9.7	6.78	2.1	5	<0.3	<0.05	0.16	0.05	1.4	0.30	0.37	<0.1	3.77	0.3
SU-114-002	Intermediate Volcanics	VOK	Conglomerate	8.5	3.22	0.6	<0.1	0.08	0.13	0.02	4.8	0.05	2.11	<0.05	82.3	9.1	4.41	1.1	9	<0.3	<0.05	0.16	0.08	2.6	0.71	1.21	0.3	3.84	0.3
SU-123-04	Intermediate Volcanics	West Zone	Conglomerate	13.4	2.93	3.8	<0.1	<0.05	0.02	<0.02	6.9	0.08	0.61	0.23	23.8	20.5	3.35	2.2	2	<0.3	<0.05	0.32	<0.05	1.5	0.52	0.26	0.3	8.68	0.6
SU-198-03	Intermediate Volcanics	Gossan Hill	Conglomerate	20.8	4.28	5.5	<0.1	0.07	0.07	<0.02	18.0	0.17	0.50	<0.05	21.2	17.6	4.80	4.6	<1	<0.3	<0.05	0.49	0.18	1.5	0.87	0.36	0.3	13.4	1.1
SU-358-001	Intermediate Volcanics	VOK	Conglomerate	1.4	4.91	0.7	<0.1	<0.05	0.09	<0.02	7.6	0.01	5.57	<0.05	75.5	8.6	6.75	1	14	<0.3	<0.05	0.16	0.12	3.2	0.36	0.39	0.4	1.51	<0.1
SU-361-005	Intermediate Volcanics	VOK	Conglomerate	11.1	5.94	2.8	<0.1	<0.05	0.05	<0.02	8.5	0.08	0.32	<0.05	6.4	16.2	1.00	2.4	<1	<0.3	<0.05	0.24	0.09	1.5	0.42	0.27	<0.1	6.27	0.5
SU-361-006	Intermediate Volcanics	VOK	Conglomerate	8.1	4.13	3.1	<0.1	<0.05	0.02	0.02	9.5	0.11	0.31	<0.05	8.0	12.0	0.88	2.9	<1	<0.3	<0.05	0.41	<0.05	1.1	0.28	0.20	<0.1	12.4	0.9
SU-361-007	Intermediate Volcanics	VOK	Conglomerate	16.7	3.71	4.1	<0.1	<0.05	0.04	<0.02	7.8	0.10	0.08	<0.05	4.5	10.4	0.69	5.7	<1	<0.3	<0.05	0.28	<0.05	1.1	0.31	0.56	0.1	7.61	0.7
SU-198-01	Kspar-Hbl-Porph	Gossan Hill	Conglomerate	11.2	2.90	1.0	<0.1	0.11	0.94	0.05	5.3	0.09	8.10	0.07	88.0	11.5	50.0	1.6	<1	<0.3	<0.05	0.24	0.31	2.7	3.66	1.27	0.5	7.66	0.6
SU-198-02	Kspar-Hbl-Porph	Gossan Hill	Conglomerate	7.2	3.20	0.7	<0.1	0.10	0.56	<0.02	7.4	0.11	5.62	0.13	41.9	11.4	18.6	1.2	<1	<0.3	<0.05	0.29	0.50	3.3	1.04	2.13	2.1	6.93	0.7

Sample ID	Logged Lithology	Zone	Geol Unit	Al %	B ppm	Ba ppm	Ca %	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Na %	Ni ppm	P ppm	S %	Sr ppm	Ti %	V ppm	Zn ppm	Zr ppm	Ag ppm	As ppm	Be ppm	Bi ppm	Cd ppm	Ce ppm
			Method Code	ICM14B																									
			LOD	0.01	10	5	0.01	1	0.5	0.01	0.01	1	0.01	2	0.01	0.5	50	0.01	0.5	0.01	1	1	0.5	0.01	1	0.1	0.02	0.01	0.05
SU-130-006	Mafic Dyke	VOK	Conglomerate	0.29	40	89	0.62	52	26.0	4.8	0.20	<1	0.02	232	0.03	6.7	590	4.90	55.0	<0.01	2	13	2.9	3.10	99	0.4	3.02	0.09	7.58
SU-012-004	Meta-int to mafic volcanic	VOK	Conglomerate	0.38	30	75	0.25	65	7.3	2.3	0.21	2	0.02	44	0.05	0.60	1010	2.40	94.9	<0.01	5	73	0.6	1.43	138	0.3	0.22	0.90	22.9
SU-012-005	Meta-int to mafic volcanic	VOK	Conglomerate	0.47	40	107	0.40	24	5.7	0.18	0.25	2	0.02	59	0.06	<0.5	1820	0.15	105	<0.01	8	35	0.8	0.70	33	0.4	0.11	0.52	31.5
BJ-BS-006/007	Poly-Conglomerate	VOK	Conglomerate	0.30	30	94	1.31	37	55.9	3.4	0.17	2	0.07	356	0.02	5.7	970	4.31	107	<0.01	6	291	3.7	6.79	402	0.7	0.23	9.20	8.88
BJ-EA-FC8 (-2mm)	Poly-Conglomerate	VOK	Conglomerate	0.53	10	93	2.47	63	70.7	4.1	0.19	9	0.24	786	0.03	10.3	1140	4.22	188	<0.01	12	377	2.8	4.31	378	0.4	0.84	1.40	13.9
BJ-UG-011/012/023	Poly-Conglomerate	VOK	Conglomerate	0.46	40	140	1.77	46	53.7	3.2	0.20	5	0.09	525	0.02	8.1	1120	3.67	132	<0.01	9	98	3.0	3.09	318	0.6	0.22	1.22	8.81
SU-035-03	Poly-Conglomerate	VOK	Conglomerate	0.41	50	67	0.64	43	36.7	5.2	0.28	<1	0.04	118	0.02	4.6	870	>5	66.6	<0.01	8	94	4.5	7.39	556	0.4	0.26	0.69	19.0
SU-068-02	Poly-Conglomerate	Gossan Hill	Conglomerate	0.41	50	94	2.39	31	36.3	2.4	0.33	2	0.07	939	0.01	4.0	1120	2.81	111	<0.01	7	80	3.4	4.15	138	0.5	0.24	0.39	7.11
SU-124-07	Poly-Conglomerate	Gossan Hill	Conglomerate	1.23	40	152	6.42	31	42.4	3.7	0.32	20	0.65	3430	0.02	6.6	1040	2.33	224	0.03	21	116	4.1	1.70	846	0.3	0.14	0.35	12.1
SU-063-005	Quartz carbonate vein	West Zone	Conglomerate	0.11	50	40	>15	24	36.4	1.0	0.09	<1	0.04	8740	0.02	1.2	180	1.20	753	<0.01	1	7	1.0	6.39	77	0.2	0.12	0.11	7.01
SU-039-06	Rhyolite	Gossan Hill	Conglomerate	0.50	70	219	4.39	19	44.3	0.79	0.45	<1	0.08	1520	0.02	<0.5	2810	0.91	426	<0.01	<1	1940	0.7	>10	191	0.4	0.07	18.8	52.5
SU-047-06	Rhyolite	Gossan Hill	Conglomerate	0.21	50	63	1.03	106	71.5	2.7	0.17	2	0.38	740	0.01	15.2	600	3.19	75.4	<0.01	13	354	1.8	7.98	158	<0.1	0.05	2.58	8.65
SU-082-003	Rhyolite	VOK	Conglomerate	0.22	40	70	1.23	130	11.6	1.7	0.13	<1	0.04	476	0.02	1.7	480	1.69	1970	<0.01	3	129	1.1	2.36	119	0.2	0.22	1.25	8.43
SU-063-03	Tonalite	West Zone	Conglomerate	0.08	60	69	8.60	58	6.3	0.74	0.05	<1	0.03	3270	<0.01	4.3	550	2.45	251	<0.01	2	9	1.2	3.68	98	0.1	0.14	0.09	6.48
SU-068-01	Tonalite	Gossan Hill	Conglomerate	0.34	70	92	3.08	30	24.6	3.3	0.28	<1	0.03	2860	0.01	2.9	1460	4.40	86.5	<0.01	8	313	4.6	3.38	269	0.6	0.06	0.61	16.8
BJ-BS-004/005	Andesite	VOK	Fragmental	0.79	30	132	3.28	38	68.7	4.7	0.22	17	0.36	955	0.04	6.4	1870	>5	209	<0.01	26	104	3.3	2.57	222	0.6	1.02	0.94	17.5
BJ-EA-FC7 (-2mm)	Andesite	VOK	Fragmental	0.91	<10	79	3.56	76	86.3	5.9	0.19	23	0.49	1150	0.04	10.0	1730	>5	227	<0.01	27	176	3.1	4.68	401	0.3	0.97	1.52	16.3
Comp 13-12	Andesite	West Zone	Fragmental	0.37	30	100	0.80	70	15.5	2.6	0.24	<1	0.04	229	<0.01	2.6	780	3.09	43.2	<0.01	3	60	4.3	5.12	98	0.5	0.12	0.53	9.38
Comp 13-19	Andesite	VOK	Fragmental	0.58	70	90	2.31	61	68.9	5.1	0.30	8	0.19	527	0.03	7.0	1650	>5	172	<0.01	13	168	3.0	2.53	1250	0.3	0.46	0.92	13.4
Comp. 2	Andesite	Gossan Hill	Fragmental	0.87	30	72	0.48	16	66.7	6.6	0.34	8	0.14	298	0.01	9.6	1650	>5	29.8	<0.01	15	74	4.9	3.14	915	1.0	0.39	0.44	19.1
Comp. 4	Andesite	West Zone	Fragmental	0.31	30	57	0.33	46	34.2	5.5	0.21	1	0.02	73	0.02	10.4	960	>5	23.8	<0.01	7	282	4.9	5.47	126	0.5	0.82	2.18	12.1
Comp. 6	Andesite	GH/VOK/WZ	Fragmental	0.40	30	48	0.94	41	52.4	6.2	0.22	4	0.11	240	0.03	6.7	1400	>5	49.0	<0.01	10	71	3.8	>10	163	0.5	0.91	0.97	11.1
SU-012-001	Andesite	VOK	Fragmental	0.67	30	119	3.54	41	6.4	5.2	0.31	12	0.40	1960	0.03	5.2	1070	4.19	221	<0.01	23	25	1.3	1.45	269	0.3	0.12	0.04	10.0
SU-012-002	Andesite	VOK	Fragmental	1.08	40	132	0.32	39	22.8	3.5	0.37	22	0.45	502	0.03	3.4	1070	1.59	57.6	<0.01	25	73	1.0	1.82	104	0.4	0.07	0.20	11.9
SU-032-01	Andesite	Gossan Hill	Fragmental	0.44	40	70	0.60	46	73.7	5.3	0.36	1	0.05	93	0.01	7.2	1730	>5	53.0	<0.01	19	281	4.5	7.04	208	0.3	0.59	3.14	23.9
SU-032-02	Andesite	Gossan Hill	Fragmental	0.29	40	48	0.35	89	30.5	2.6	0.22	<1	0.03	81	0.01	5.9	540	3.01	31.0	<0.01	7	508	2.3	7.35	83	0.3	0.40	6.04	8.67
SU-032-05	Andesite	Gossan Hill	Fragmental	0.48	40	173	2.60	34	20.2	4.6	0.44	2	0.43	2060	0.01	1.1	2250	1.87	140	<0.01	4	164	2.3	8.91	153	0.5	0.14	1.34	44.0
SU-034-001	Andesite	VOK	Fragmental	0.36	40	200	0.86	59	37.9	2.9	0.37	2	0.11	267	0.02	5.7	1040	2.54	163	<0.01	7	425	1.1	2.77	3060	0.3	0.08	2.68	13.5
SU-034-002	Andesite	VOK	Fragmental	0.90	30	95	0.60	52	50.6	6.2	0.32	14	0.26	366	0.03	5.4	1670	>5	53.6	<0.01	19	38	4.5	6.37	186	0.4	0.08	0.10	22.8
SU-034-003	Andesite	VOK	Fragmental	0.47	30	72	5.22	43	54.5	6.8	0.26	6	0.16	908	0.05	0.60	1400	>5	253	<0.01	10	20	3.2	0.91	88	0.4	1.20	0.15	8.07
SU-035-001	Andesite	VOK	Fragmental	0.44	40	160	0.54	66	22.6	3.6	0.41	2	0.06	139	0.02	5.2	1320	3.31	67.4	<0.01	8	156	1.4	5.50	787	0.2	0.07	1.15	15.7
SU-035-002	Andesite	VOK	Fragmental	0.49	40	150	0.78	55	263	4.1	0.42	2	0.12	269	0.03	7.9	1940	3.69	104	<0.01	9	17	2.2	5.87	481	0.5	0.04	0.12	30.4
SU-035-003	Andesite	VOK	Fragmental	0.39	40	124	0.24	44	65.1	4.1	0.29	2	0.04	54	0.04	2.7	670	4.04	50.2	<0.01	5	310	1.8	9.66	730	0.4	0.44	3.36	24.0
SU-035-04	Andesite	VOK	Fragmental	0.55	40	38	1.87	62	76.3	8.0	0.27	7	0.18	354	0.04	10.9	1590	>5	105	<0.01	15	66	4.0	1.70	418	0.4	1.25	0.35	17.5
SU-036-01	Andesite	Gossan Hill	Fragmental	0.40	50	96	1.62	45	46.3	3.1	0.37	1	0.08	425	0.01	8.3	1390	3.64	136	<0.01	8	58	4.6	1.65	521	0.5	0.34	0.35	14.4
SU-036-03	Andesite	Gossan Hill	Fragmental	0.45	70	114	1.14	46	20.5	3.3	0.38	1	0.13	440	0.02	3.7	1220	3.92	99.7	<0.01	9	72	3.9	2.22	248	0.5	0.22	0.31	22.0
SU-039-01	Andesite	Gossan Hill	Fragmental	1.09	60	52	0.34	5	84.1	8.2	0.35	10	0.19	401	0.02	9.4	1250	>5	14.5	<0.01	19	54	4.2	2.60	1280	1.0	0.30	0.08	28.1
SU-039-02	Andesite	Gossan Hill	Fragmental	0.60	70	87	2.46	34	33.8	4.0	0.25	7	0.28	669	0.02	3.0	1090	4.93	54.3	<0.01	12	33	2.9	2.91	20	0.5	0.05	0.21	11.9
SU-041-01	Andesite	West Zone	Fragmental	0.66	50	75	1.19	39	43.2	5.3	0.31	8	0.29	579	0.01	7.7	1810	>5	82.6	<0.01	23	391	4.0	6.68	347	0.3	0.65	4.18	17.5
SU-041-02	Andesite	West Zone	Fragmental	0.31	60	57	0.22	63	21.1	5.4	0.23	<1	0.03	59	0.01	<0.5	980	>5	10.0	<0.01	10	148	5.5	5.65	218	0.4	1.08	2.31	12.3
SU-041-03	Andesite	West Zone	Fragmental	0.31	50	70	0.47	49	36.1	3.8	0.22	1	0.03	109	0.01	<0.5	1030	4.99	30.1	0.03	9	155	4.9	>10	52	0.3	1.31	1.93	17.9
SU-041-04	Andesite	West Zone	Fragmental	0.36	60	58	0.60	33	15.2	4.7	0.26	2	0.04	168	0.01	<0.5	1190	>5	39.4	0.05	12	119	7.3	4.19	41	0.5	0.22	1.54	18.2
SU-041-05	Andesite	West Zone	Fragmental	0.26	60	60	1.02	62	14.4	3.7	0.20	1	0.02	360	0.01	<0.5	830	4.92	59.5	0.03	8	138	3.8	5.82	64	0.4	2.15	1.69	11.8
SU-041-06	Andesite	West Zone	Fragmental	0.31	50	71	0.43	46	23.7	4.3	0.25	1	0.03	76	0.01	<0.5	1010	>5	41.2	0.05	10	51	4.8	4.95	50	0.3	0.30	0.79	13.0
SU-041-07	Andesite	West Zone	Fragmental	0.28	70	63	1.06	59	14.6	3.5	0.20	2	0.04	383	0.01	<0.5	840	4.66	66.7	0.03	8	130	4.4	4.66	47	0.4	1.04	1.91	11.2
SU-041-11	Andesite	West Zone	Fragmental	0.33	70	71	1.11	62	52.1	5.5	0.25	1	0.04	282	0.02	5.7	1690	>5	127	<0.01	15	32	3.5	>10	73	0.2	0.52	0.33	12.8
SU-047-01	Andesite	Gossan Hill	Fragmental	0.43	50	75	2.79	27	66.1	4.3	0.35	2	0.34	1270	0.02	6.5	2140	>5	131	<0.01	17	34	3.5	3.78	153	0.3	0.21	0.10	13.1
SU-047-02	Andesite	Gossan Hill	Fragmental	0.49	50	54	0.87	46	50.0	5.6	0.35	<1	0.08	221	0.01	8.7	2090	>5	79.2	<0.01	16	125	5.5	5.24	104	0.3	0.57	1.38	16.2
SU-047-03	Andesite	Gossan Hill	Fragmental	0.34	50	55	0.28	52	39.5	6.3	0.17	2	0.10	159	0.02	3.5	1100	>5	16.0	<0.01	13	95	3.6	4.73	23	0.3	0.82	1.77	10.6
SU-052-01	Andesite	Gossan Hill	Fragmental	0.58	70	121	4.82	14	9.6	4.0	0.55	3	0.67	2980	0.02	8.1	3240	0.67	274	<0.01	9	102	1.8	0.22	67	0.6	0.02	0.18	43.6
SU-052-03	Andesite	Gossan Hill	Fragmental	0.34	60	45	0.35	35	23.9	5.2	0.21	<1	0.07	208	0.02	1.7	1210	>5	23.6	<0.01	9	97	4.3	0.81	16	0.3	1.84	1.77	9.88
SU-063-001	Andesite	West Zone	Fragmental	0.30	50	96	1.17	58	5.0	0.42	0.24	<1	0.02	266	0.01	1.7	520	0.42	58.0	<0.01	2	70	3.8	2.06	29	0.4	0.07	0.74	7.63
SU-063-002	Andesite	West Zone	Fragmental	0.36	40	67	0.33	48	24.7	5.0	0.27	<1	0.07	104	0.01	<0.5	830	4.94	18.5	<0.01	5	62	4.9	7.57	140	0.6	0.14	0.50	9.92
SU-096-01	Andesite	VOK	Fragmental	1.07	60	69	5.00	43	102	6.6	0.24	22	0.50	1710	0.04	3.1	1570	>5	209	<0.01	30	42	3.8	3.03	226	0.3	0.94	0.55	17.1
SU-098-02	Andesite	West Zone	Fragmental	0.29	60	47	0.21	33	48.6	6.6	0.15	2	0.03	56	0.03	22.0	890	>5	26.5	<0.01	8	1060	3.7	0.19	70	0.3	0.09	3.41	4.03
SU-103-03	Andesite Ore Zone	West Zone	Fragmental	0.43	80	75	1.95	44	53.0	5.8	0.25	2	0.10	496	0.02	7.2	1640	>5	48.1	<0.01	14	145	3.5	>10	135	0.4	0.74	1.15	13.6
SU-068-05	Arenite	Gossan Hill	Fragmental	0.90	70	92	2.10	41	44.0	2.0	0.39	13	0.52	890	0.02	16.6	1150	1.50	91.4	<0.01	23	83	1.7	1.60	59	0.4	0.51	0.60	10.6
SU-290-005	Arenite	West Zone	Fragmental	0.41	30	62	0.36	52	34.2	6.9	0.22	2	0.04	73	0.04	0.50	1300	>5	37.0	<0.01	9	40	4.6	1.98	96	0.9	0.68	0.54	11.8
SU-290-008	Arenite	West Zone	Fragmental	0.40	<10	53	0.30	42	28.8	7.6	0.20	3	0.10	87	0.03	<0.5	1050	>5	25.1	<0.01	4	119	5.0	6.90	35	0.4	0.78	1.36	17.4
SU-290-009	Arenite	West Zone	Fragmental	0.36	40	85	2.10	74	14.9	4.1	0.20	2	0.10	2330	0.03	0.80	670	4.28	38.9	<0.01	7	111	2.7	>10	44	0.6	0.99	3.36	7.26
SU-290-010	Arenite	West Zone	Fragmental	0.27	40	58	1.71	91	50.8	4.2	0.19	<1	0.04	1420	0.02	1.5	620	4.29	29.0	<0.01	4	48	3.6	>10	45	0.5	0.83	1.16	6.31
SU-295-003	Arenite	West Zone	Fragmental	0.40	50	43	0.57	52	3.7	0.19	0.26	<1	0.02	133	0.02	1.5	1750	0.15	41.5	<0.01	7	11	2.5	0.98	9	0.9	0.13	0.23	22.5
SU-309-008	Arenite	West Zone	Fragmental	0.33	40	69	1.85	37	28.2	3.0	0.31	2	0.35	1000	0.03	6.6	850	3.13	159	<0.01	7	34	1.5	5.01	47	0.4	0.25	0.20	9.27
SU-309-009	Arenite	West Zone	Fragmental	0.36	40	88	0.72	37	35.8	3.5	0.32	3	0.16	335	0.02	21.6	820	3.99	66.8	<0.01	4	17	1.3	6.02	62	0.4	0.44	0.09	8.63

Sample ID	Logged Lithology	Zone	Geol Unit	Co ppm	Cs ppm	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	La ppm	Lu ppm	Mo ppm	Nb ppm	Pb ppm	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sn ppm	Ta ppm	Tb ppm	Te ppm	Th ppm	Tl ppm	U ppm	W ppm	Y ppm	Yb ppm
			Method Code													ICM14B													
			LOD	0.1	0.05	0.1	0.1	0.05	0.01	0.02	0.1	0.01	0.05	0.05	0.2	0.2	0.05	0.1	1	0.3	0.05	0.02	0.05	0.1	0.02	0.05	0.1	0.05	0.1
SU-130-006	Mafic Dyke	VOK	Conglomerate	7.2	2.48	0.4	<0.1	0.07	0.25	<0.02	3.8	0.02	1.98	<0.05	29.2	6.5	1.96	1.2	1	<0.3	<0.05	0.11	0.30	1.5	0.55	0.80	0.1	1.68	0.1
SU-012-004	Meta-int to mafic volcanic	VOK	Conglomerate	0.40	5.26	0.8	<0.1	<0.05	0.02	<0.02	12.3	0.01	4.56	<0.05	52.1	7.7	2.09	0.8	2	<0.3	<0.05	0.11	<0.05	4	0.41	0.24	0.1	1.01	<0.1
SU-012-005	Meta-int to mafic volcanic	VOK	Conglomerate	0.50	8.10	0.9	<0.1	<0.05	0.01	<0.02	15.2	0.03	1.19	<0.05	9.2	9.9	0.63	2.2	<1	<0.3	<0.05	0.40	<0.05	3.9	0.40	0.55	<0.1	2.66	0.3
BJ-BS-006/007	Poly-Conglomerate	VOK	Conglomerate	10.2	6.09	0.8	<0.1	0.12	0.62	0.02	4.6	0.08	1.24	0.20	69.9	9.5	26.6	1.3	1	<0.3	<0.05	0.24	0.20	3.2	4.18	3.31	1.7	6.26	0.5
BJ-EA-FC8 (-2mm)	Poly-Conglomerate	VOK	Conglomerate	17.9	4.29	2.0	<0.1	0.06	0.09	<0.02	7.3	0.10	2.87	0.11	50.2	7.2	5.99	2.5	12	<0.3	<0.05	0.28	0.25	1.9	0.34	0.52	1.2	7.33	0.6
BJ-UG-011/012/023	Poly-Conglomerate	VOK	Conglomerate	16.5	5.12	1.3	<0.1	0.10	0.57	0.02	4.4	0.18	0.94	0.08	30.3	10.6	15.7	1.9	<1	<0.3	<0.05	0.41	0.25	2.7	2.21	5.94	4.6	13.1	1.1
SU-035-03	Poly-Conglomerate	VOK	Conglomerate	9.2	4.32	1.1	<0.1	0.09	1.52	<0.02	10.2	0.06	0.94	0.05	121	11.3	11.7	1.2	1	<0.3	<0.05	0.27	0.37	3.1	1.30	1.61	1	6.48	0.5
SU-068-02	Poly-Conglomerate	Gossan Hill	Conglomerate	8.4	6.11	0.8	<0.1	0.09	0.50	<0.02	3.7	0.08	1.09	<0.05	69.3	14.2	7.20	1.2	<1	<0.3	<0.05	0.25	0.09	2.9	0.65	1.63	0.1	5.43	0.5
SU-124-07	Poly-Conglomerate	Gossan Hill	Conglomerate	9.0	4.45	2.6	<0.1	0.10	0.08	<0.02	6.2	0.14	1.30	0.21	40.1	13.1	5.55	1.7	<1	<0.3	<0.05	0.34	0.06	2.1	0.34	0.59	0.2	11.8	1
SU-063-005	Quartz carbonate vein	West Zone	Conglomerate	2.1	0.69	0.6	<0.1	<0.05	0.05	<0.02	4.0	0.07	0.68	<0.05	10.8	3.7	10.7	0.6	<1	<0.3	<0.05	0.23	0.16	0.3	0.09	0.12	0.1	8.40	0.5
SU-039-06	Rhyolite	Gossan Hill	Conglomerate	2.8	1.58	1.4	<0.1	0.09	0.44	0.08	25.2	0.37	1.44	0.09	134	21.9	17.1	2.1	2	<0.3	<0.05	1.65	<0.05	1.1	0.47	0.21	0.3	38.4	2.6
SU-047-06	Rhyolite	Gossan Hill	Conglomerate	8.8	0.73	0.9	<0.1	<0.05	0.09	0.03	4.3	0.06	19.5	<0.05	150	7.8	4.17	1	1	<0.3	<0.05	0.17	<0.05	1.5	0.22	0.49	<0.1	4.77	0.4
SU-082-003	Rhyolite	VOK	Conglomerate	2.3	2.49	0.5	<0.1	<0.05	0.11	<0.02	5.5	0.01	3.73	<0.05	47.4	6.1	3.14	0.6	5	<0.3	<0.05	0.09	<0.05	1.8	0.36	0.29	0.3	1.39	<0.1
SU-063-03	Tonalite	West Zone	Conglomerate	11.2	0.27	0.3	<0.1	<0.05	0.09	<0.02	3.4	0.10	2.51	0.05	10.1	3.6	3.99	1.5	1	<0.3	<0.05	0.20	0.16	0.8	0.20	0.12	0.7	6.88	0.6
SU-068-01	Tonalite	Gossan Hill	Conglomerate	9.7	4.12	0.8	<0.1	0.11	0.44	0.02	9.2	0.11	0.57	0.10	43.9	12.4	21.4	1.6	<1	<0.3	<0.05	0.26	0.06	3.5	1.25	1.13	0.4	6.67	0.7
BJ-BS-004/005	Andesite	VOK	Fragmental	14.9	4.91	2.1	<0.1	0.08	0.05	<0.02	9.2	0.10	1.07	0.16	34.4	9.2	3.77	2.8	4	<0.3	<0.05	0.29	0.20	2.7	0.28	0.75	0.3	7.32	0.7
BJ-EA-FC7 (-2mm)	Andesite	VOK	Fragmental	19.7	4.08	2.3	<0.1	<0.05	0.08	<0.02	8.6	0.11	3.16	<0.05	57.2	7.8	4.82	3	12	<0.3	<0.05	0.31	0.29	2.1	0.41	0.61	1.3	8.10	0.7
Comp 13-12	Andesite	West Zone	Fragmental	5.3	3.48	0.8	0.1	0.09	0.04	<0.02	5.1	0.03	4.41	<0.05	39.5	10.7	3.92	1.3	1	1.4	<0.05	0.13	0.78	2.8	0.27	0.93	0.3	2.39	0.2
Comp 13-19	Andesite	VOK	Fragmental	14.7	4.58	1.1	<0.1	<0.05	0.07	<0.02	7.2	0.07	1.74	<0.05	19.1	11.9	21.4	2	2	<0.3	<0.05	0.24	0.40	1.5	0.32	0.36	0.2	5.53	0.5
Comp. 2	Andesite	Gossan Hill	Fragmental	22.6	3.93	2.0	<0.1	0.07	0.04	0.02	10.6	0.06	2.12	<0.05	41.2	14.1	4.66	3.2	2	<0.3	<0.05	0.41	0.16	2.3	0.47	0.56	0.3	6.35	0.5
Comp. 4	Andesite	West Zone	Fragmental	22.2	2.85	0.7	<0.1	0.09	0.35	0.03	6.2	0.04	4.94	0.12	76.0	9.3	6.36	1.8	4	<0.3	<0.05	0.24	0.78	2.1	0.95	0.41	0.2	4.14	0.3
Comp. 6	Andesite	GH/VOK/WZ	Fragmental	19.0	4.00	0.9	<0.1	0.05	0.12	<0.02	5.4	0.05	2.63	0.06	50.2	9.4	5.13	2	5	<0.3	<0.05	0.21	0.62	1.7	0.33	0.41	0.2	4.34	0.4
SU-012-001	Andesite	VOK	Fragmental	16.1	5.12	1.5	<0.1	<0.05	0.05	0.02	5.6	0.08	1.94	0.06	7.2	12.0	1.36	4.6	<1	<0.3	<0.05	0.18	0.56	1.8	0.31	0.51	0.2	5.32	0.4
SU-012-002	Andesite	VOK	Fragmental	14.2	4.76	2.3	<0.1	<0.05	0.05	<0.02	6.2	0.03	0.86	<0.05	7.5	14.2	1.80	2.6	<1	<0.3	<0.05	0.17	<0.05	1.1	0.57	0.46	0.1	2.76	0.2
SU-032-01	Andesite	Gossan Hill	Fragmental	16.5	2.21	1.4	<0.1	0.09	0.07	0.04	12.0	0.05	4.63	0.06	80.8	16.5	3.88	2.4	5	<0.3	<0.05	0.26	0.05	1.9	0.37	0.38	0.3	4.65	0.4
SU-032-02	Andesite	Gossan Hill	Fragmental	9.0	1.34	0.7	<0.1	0.05	0.11	0.02	4.1	0.02	11.6	<0.05	193	10.1	3.07	1.2	3	<0.3	<0.05	0.11	0.15	1.4	0.33	0.32	0.1	1.90	0.1
SU-032-05	Andesite	Gossan Hill	Fragmental	7.5	5.82	1.2	<0.1	<0.05	0.04	0.04	21.7	0.14	1.37	0.11	44.8	22.4	5.73	2	2	<0.3	<0.05	0.72	<0.05	1.2	0.41	0.13	2.4	13.9	1
SU-034-001	Andesite	VOK	Fragmental	10.2	3.56	0.7	<0.1	<0.05	0.13	0.02	7.0	0.04	1.24	<0.05	12.9	14.7	37.1	1.5	<1	<0.3	<0.05	0.21	<0.05	1.7	0.48	0.30	0.1	4.13	0.3
SU-034-002	Andesite	VOK	Fragmental	23.4	3.32	2.2	<0.1	0.07	0.04	<0.02	11.7	0.05	1.47	<0.05	17.1	12.7	2.43	2.3	<1	<0.3	<0.05	0.26	1.08	1.7	0.33	0.48	0.2	5.56	0.4
SU-034-003	Andesite	VOK	Fragmental	15.1	4.43	0.8	<0.1	<0.05	0.05	<0.02	4.7	0.11	1.29	0.06	30.5	9.5	0.91	2.5	4	<0.3	<0.05	0.23	0.23	1.7	0.20	0.37	0.4	6.22	0.7
SU-035-001	Andesite	VOK	Fragmental	10.5	3.95	0.8	<0.1	<0.05	0.06	<0.02	8.5	0.03	2.05	<0.05	31.2	15.7	5.70	1.7	<1	<0.3	<0.05	0.19	<0.05	1.6	0.55	1.21	0.2	3.75	0.2
SU-035-002	Andesite	VOK	Fragmental	17.7	5.15	0.9	<0.1	<0.05	0.06	<0.02	15.4	0.07	1.28	<0.05	13.3	15.9	7.04	2.3	<1	<0.3	<0.05	0.31	1.00	2.3	0.31	0.45	0.2	6.46	0.5
SU-035-003	Andesite	VOK	Fragmental	7.7	4.60	0.8	<0.1	<0.05	0.10	<0.02	12.7	0.04	2.04	<0.05	166	11.2	6.38	1.2	14	<0.3	<0.05	0.22	0.09	3.9	0.46	0.82	<0.1	4.15	0.3
SU-035-04	Andesite	VOK	Fragmental	26.5	4.99	1.3	<0.1	<0.05	0.13	<0.02	8.0	0.07	0.94	0.11	14.5	11.0	3.35	2.3	3	<0.3	<0.05	0.25	0.92	1.8	0.56	0.48	0.3	5.61	0.5
SU-036-01	Andesite	Gossan Hill	Fragmental	15.0	5.30	0.9	<0.1	0.12	0.67	<0.02	7.4	0.09	0.35	0.05	25.4	16.4	5.36	2.1	<1	<0.3	<0.05	0.33	0.15	3.7	0.39	1.90	0.1	7.09	0.6
SU-036-03	Andesite	Gossan Hill	Fragmental	11.4	2.51	1.3	<0.1	0.11	0.18	<0.02	11.9	0.06	0.48	<0.05	20.5	19.2	3.04	2.1	1	<0.3	<0.05	0.27	0.06	3.9	0.44	1.35	0.2	5.06	0.4
SU-039-01	Andesite	Gossan Hill	Fragmental	23.6	4.38	2.5	<0.1	<0.05	0.02	0.02	16.6	0.07	2.42	<0.05	24.9	14.7	4.96	3.2	1	<0.3	<0.05	0.49	0.20	2.6	0.52	0.61	0.3	6.60	0.5
SU-039-02	Andesite	Gossan Hill	Fragmental	11.0	3.74	1.3	<0.1	0.06	0.09	<0.02	5.9	0.07	2.86	<0.05	82.4	10.7	1.99	1.7	1	<0.3	<0.05	0.25	0.58	1.5	0.25	0.27	<0.1	5.30	0.5
SU-041-01	Andesite	West Zone	Fragmental	18.1	3.21	1.6	<0.1	0.09	0.08	0.04	8.7	0.08	2.55	0.06	104	16.2	4.35	2.4	5	<0.3	<0.05	0.27	<0.05	1.8	0.34	0.33	0.2	6.70	0.6
SU-041-02	Andesite	West Zone	Fragmental	9.2	1.98	0.8	<0.1	0.10	0.19	0.02	6.5	0.03	12.4	0.06	99.6	10.1	7.58	1.4	4	<0.3	<0.05	0.15	0.28	2.4	1.64	0.46	0.2	2.98	0.3
SU-041-03	Andesite	West Zone	Fragmental	15.4	3.57	0.8	<0.1	0.13	0.12	0.03	9.2	0.06	2.01	0.38	114	11.1	8.70	1.5	4	<0.3	<0.05	0.31	0.22	2.8	0.36	0.56	0.3	6.31	0.4
SU-041-04	Andesite	West Zone	Fragmental	10.1	3.22	1.0	<0.1	0.21	0.07	0.03	9.0	0.10	4.33	0.64	74.1	12.5	4.03	1.8	5	<0.3	<0.05	0.37	0.44	3.6	0.35	0.82	0.3	9.73	0.7
SU-041-05	Andesite	West Zone	Fragmental	8.5	2.22	0.7	<0.1	0.10	0.10	<0.02	6.0	0.06	2.40	0.54	72.9	9.3	3.80	1.4	3	<0.3	<0.05	0.21	0.46	2.4	0.35	0.65	0.4	5.24	0.4
SU-041-06	Andesite	West Zone	Fragmental	9.8	3.25	0.8	<0.1	0.12	0.06	<0.02	6.6	0.05	3.15	0.69	46.0	12.0	4.47	1.4	4	<0.3	<0.05	0.21	0.24	2.7	0.31	0.63	0.4	4.70	0.4
SU-041-07	Andesite	West Zone	Fragmental	8.7	2.12	0.7	<0.1	0.13	0.13	<0.02	5.4	0.07	1.52	0.50	69.8	9.7	3.10	1.3	4	<0.3	<0.05	0.21	0.26	2.6	0.28	0.69	0.2	4.63	0.5
SU-041-11	Andesite	West Zone	Fragmental	16.9	1.79	0.9	<0.1	0.07	0.04	<0.02	6.2	0.05	3.09	0.06	40.3	11.7	6.56	2.1	7	<0.3	<0.05	0.25	0.35	1.4	0.28	0.36	0.3	5.32	0.3
SU-047-01	Andesite	Gossan Hill	Fragmental	14.8	3.78	1.1	<0.1	0.06	0.02	0.03	6.2	0.08	0.82	<0.05	8.1	21.1	2.85	3.6	2	<0.3	<0.05	0.27	0.13	1.1	0.41	0.31	0.2	6.01	0.5
SU-047-02	Andesite	Gossan Hill	Fragmental	22.9	2.94	1.0	<0.1	0.08	0.13	0.02	7.8	0.04	1.28	<0.05	65.1	16.0	8.36	2.3	2	<0.3	<0.05	0.28	0.18	1.2	0.52	0.28	0.3	5.13	0.3
SU-047-03	Andesite	Gossan Hill	Fragmental	14.2	2.58	0.7	<0.1	<0.05	0.23	<0.02	5.4	0.04	3.48	<0.05	49.2	7.4	8.37	1.2	7	<0.3	<0.05	0.18	0.60	1.8	0.23	0.36	<0.1	3.14	0.3
SU-052-01	Andesite	Gossan Hill	Fragmental	6.6	6.70	1.4	<0.1	<0.05	0.06	0.03	20.2	0.24	0.86	<0.05	3.2	32.2	2.57	4.3	<1	<0.3	<0.05	0.93	<0.05	0.8	0.54	0.17	0.8	22.2	1.6
SU-052-03	Andesite	Gossan Hill	Fragmental	10.6	4.32	0.7	<0.1	0.07	0.20	<0.02	4.8	0.05	6.50	<0.05	97.8	8.1	4.11	1	4	<0.3	<0.05	0.19	0.84	1.3	0.26	0.32	<0.1	3.49	0.3
SU-063-001	Andesite	West Zone	Fragmental	1.3	2.85	0.7	<0.1	0.08	0.03	<0.02	4.3	0.02	4.72	<0.05	21.2	9.5	2.36	1.2	<1	<0.3	<0.05	0.09	0.10	2.4	0.34	0.88	0.4	2.05	0.2
SU-063-002	Andesite	West Zone	Fragmental	9.0	3.63	0.6	<0.1	0.09	0.03	<0.02	5.2	0.03	2.60	<0.05	43.3	10.7	3.29	1.5	2	<0.3	<0.05	0.16	1.35	2.8	0.19	0.70	0.1	2.49	0.2
SU-096-01	Andesite	VOK	Fragmental	19.1	6.09	2.2	<0.1	0.05	0.02	0.05	9.4	0.13	0.48	<0.05	28.0	10.3	3.62	3.9	30	<0.3	<0.05	0.29	0.12	1.6	0.43	0.45	0.1	7.55	0.8
SU-098-02	Andesite	West Zone	Fragmental	38.7	2.68	0.6	<0.1	0.07	0.97	0.05	1.6	0.04	0.73	0.05	10.9	6.9	4.98	1.7	2	<0.3	<0.05	0.21	1.49	1.7	0.27	0.26	<0.1	3.13	0.3
SU-103-03	Andesite Ore Zone	West Zone	Fragmental	17.1	4.64	0.9	<0.1	0.13	0.07	0.02	6.7	0.07	3.81	0.09	105	12.0	7.24	2.1	5	<0.3	<0.05	0.24	0.28	1.6	0.37	0.34	0.3	5.22	0.5
SU-068-05	Arenite	Gossan Hill	Fragmental	8.8	4.15	2.7	<0.1	<0.05	0.01	<0.02	5.4	0.06	1.83	<0.05	23.2	20.5	1.66	2.1	<1	<0.3	<0.05	0.23	<0.05	1	0.36	0.16	0.2	5.29	0.4
SU-290-005	Arenite	West Zone	Fragmental	15.0	5.55	0.8	<0.1	0.07	0.19	<0.02	6.1	0.04	3.96	<0.05	36.0	9.4	4.84	2.5	5	<0.3	<0.05	0.23	0.49	3.9	0.34	0.75	<0.1	3.44	0.3
SU-290-008	Arenite	West Zone	Fragmental	13.8	4.23	0.9	<0.1	0.09	0.12	<0.02	9.5	0.04	3.18	<0.05	27.5	9.9	4.66	1.6	7	<0.3	<0.05	0.23	0.36	2.9	0.31	0.42	<0.1	4.03	0.3
SU-290-009	Arenite	West Zone	Fragmental	7.1	3.38	0.8	<0.1	<0.05	0.21	0.03	3.8	0.05	4.10	<0.05	83.3	9.0	5.37	1.4	6	<0.3	<0.05	0.14	0.50	2.9	0.51	0.79	<0.1	3.42	0.3
SU-290-010	Arenite	West Zone	Fragmental	10.8	2.01	0.5	<0.1	0.07	0.17	<0.02	3.2	0.04	10.1	<0.05	48.5	7.8	16.1	1.1	3	<0.3	<0.05	0.13	0.47	2.3	0.29	0.81	0.1	3.59	0.3
SU-295-003	Arenite	West Zone	Fragmental	2.5	2.10	1.7	<0.1	0.07	<0.01	<0.02	11.8	0.03	3.84	<0.05	123	11.0	1.46	1.4	<1	<0.3	<0.05	0.15	<0.05	5.8	0.23	1.16	0.3	1.76	<0.1
SU-309-008	Arenite	West Zone	Fragmental	9.0	1.99	0.8	<0.1	<0.05	0.02	<0.02	4.6	0.07	1.86	<0.05	28.0	15.0	1.13	1.7	2	<0.3	<0.05	0.19	0.13	1.9	0.27	0.37	0.1	4.91	0.5
SU-309-009	Arenite	West Zone	Fragmental	13.2	1.79	0.8	<0.1	<0.05	<0.01	<0.02	3.9	0.03	1.20	<0.05	22.9	14.4	1.33	1.6	3	<0.3	<0.05	0.17	0.32	0.6	0.28	0.12	0.1	3.41	0.2

Sample ID	Logged Lithology	Zone	Geol Unit	Al %	B ppm	Ba ppm	Ca %	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Na %	Ni ppm	P ppm	S %	Sr ppm	Ti %	V ppm	Zn ppm	Zr ppm	Ag ppm	As ppm	Be ppm	Bi ppm	Cd ppm	Ce ppm
			Method Code	ICM14B																									
			LOD	0.01	10	5	0.01	1	0.5	0.01	0.01	1	0.01	2	0.01	0.5	50	0.01	0.5	0.01	1	1	0.5	0.01	1	0.1	0.02	0.01	0.05
SU-047-04	Basalt	Gossan Hill	Fragmental	6.50	60	41	4.98	4	2.2	7.6	0.11	141	5.06	8500	0.01	25.0	1450	0.39	64.5	<0.01	194	376	2.2	0.23	16	0.4	<0.02	0.09	17.1
SU-052-02	Basalt	Gossan Hill	Fragmental	1.63	50	120	5.24	21	10.5	4.8	0.47	24	0.85	4000	0.01	9.0	2990	0.38	413	<0.01	18	129	2.2	0.26	19	0.6	0.04	0.25	40.2
SU-052-04	Basalt	Gossan Hill	Fragmental	2.63	40	206	3.58	16	0.90	3.3	0.19	39	2.16	2460	0.01	<0.5	2390	0.22	61.8	<0.01	4	202	1.7	0.04	2	0.3	0.04	0.10	61.2
SU-068-04	Basalt	Gossan Hill	Fragmental	2.25	70	98	5.16	65	161	4.2	0.36	35	1.46	1680	0.02	64.0	1040	0.58	180	<0.01	58	83	2.2	2.41	78	0.5	0.11	0.19	11.4
SU-103-02	Basalt	West Zone	Fragmental	9.05	50	39	2.52	187	14.1	8.4	0.03	214	9.27	>10000	0.02	80.1	5200	0.87	153	<0.01	394	713	3.4	0.67	29	0.5	0.08	0.13	34.4
SU-290-007	BX Conglomerate	West Zone	Fragmental	0.41	10	83	0.30	49	34.2	3.2	0.21	2	0.08	89	0.03	3.9	1120	3.31	25.8	<0.01	5	16	2.1	>10	24	0.7	0.81	0.19	15.9
Comp 13-5	Conglomerate	West Zone	Fragmental	1.01	30	115	3.19	31	16.4	3.8	0.16	19	0.67	822	0.04	1.5	1420	4.84	59.7	<0.01	14	44	2.5	0.36	18	0.3	0.14	0.43	13.1
SU-295-004	Conglomerate	West Zone	Fragmental	0.34	60	49	0.54	65	16.7	3.9	0.29	<1	0.02	163	0.01	17.8	560	4.21	37.2	<0.01	2	106	1.7	6.99	745	0.6	1.26	1.14	11.5
SU-295-005	Conglomerate	West Zone	Fragmental	0.65	40	141	1.10	44	87.2	3.5	0.37	7	0.31	763	0.02	9.3	1080	2.51	83.6	<0.01	11	121	3.7	3.87	204	0.3	0.24	1.10	14.1
SU-309-004	Conglomerate	West Zone	Fragmental	1.17	50	91	4.48	23	13.6	3.8	0.15	25	0.86	1170	0.06	1.1	1220	4.00	70.6	<0.01	15	47	1.9	0.64	18	0.3	0.06	0.43	14.2
SU-309-005	Conglomerate	West Zone	Fragmental	0.61	50	109	1.66	24	18.2	4.0	0.20	6	0.21	352	0.05	0.70	1560	4.33	52.8	<0.01	6	16	2.5	0.26	14	0.3	0.25	0.37	11.1
SU-309-006	Conglomerate	West Zone	Fragmental	0.35	60	94	0.73	41	19.0	4.3	0.21	1	0.15	257	0.04	1.0	1210	4.56	37.3	<0.01	2	159	3.4	0.67	10	0.4	0.57	3.76	10.1
SU-309-007	Conglomerate	West Zone	Fragmental	1.15	60	123	4.22	14	<0.5	2.1	0.31	17	1.34	1650	0.04	<0.5	2900	0.56	118	<0.01	<1	152	<0.5	0.47	17	0.5	0.03	0.21	35.5
SU-314-002	Conglomerate	West Zone	Fragmental	0.44	40	74	1.53	70	27.5	5.0	0.16	5	0.18	502	0.03	1.8	1100	>5	78.2	<0.01	1	15	1.9	0.43	56	0.3	0.64	0.47	26.4
SU-012-003	Dacite	VOK	Fragmental	0.13	50	165	0.08	226	5.4	1.2	0.07	1	<0.01	45	0.02	3.5	170	1.07	18.1	<0.01	2	153	1.1	0.87	150	<0.1	0.14	2.83	5.10
Comp 13-13	Dense Vein Stockwork	West Zone	Fragmental	0.29	40	82	4.31	114	73.8	3.2	0.24	1	0.06	2210	0.02	11.2	820	4.13	434	<0.01	5	76	1.9	>10	110	0.2	0.25	1.08	11.3
SU-032-03	Dense Vein Stockwork	Gossan Hill	Fragmental	0.29	40	66	0.52	109	23.6	3.8	0.25	<1	0.03	152	0.01	6.9	1020	4.58	47.2	<0.01	12	116	2.6	8.17	169	0.2	0.09	1.47	15.5
SU-032-04	Dense Vein Stockwork	Gossan Hill	Fragmental	0.30	60	88	1.13	75	57.5	4.4	0.21	3	0.45	887	0.01	7.5	1440	4.80	149	<0.01	15	34	3.6	8.55	193	0.1	0.28	0.45	18.2
SU-032-06	Dense Vein Stockwork	Gossan Hill	Fragmental	0.27	40	145	2.73	100	31.4	2.2	0.19	1	0.07	850	0.01	3.1	540	2.77	142	<0.01	7	698	1.7	>10	81	0.3	0.47	6.88	9.94
SU-041-08	Dense Vein Stockwork	West Zone	Fragmental	0.10	60	37	3.69	122	17.9	1.2	0.08	1	<0.01	1520	0.02	<0.5	310	1.40	273	<0.01	3	162	1.3	>10	85	<0.1	4.16	2.86	7.52
SU-096-02	Dense Vein Stockwork	VOK	Fragmental	0.21	50	94	0.54	95	47.1	2.1	0.14	<1	0.07	165	0.02	3.4	450	2.37	47.5	<0.01	6	72	1.2	6.44	259	0.1	0.40	0.89	7.59
SU-131-001	Dense Vein stockwork	West Zone	Fragmental	0.12	40	60	6.46	81	108	4.2	0.13	<1	0.03	3040	0.01	4.5	960	4.58	631	<0.01	5	110	1.8	>10	127	<0.1	0.15	1.77	10.9
SU-309-010	Dense Vein stockwork	West Zone	Fragmental	0.33	40	89	1.05	43	33.4	3.2	0.31	2	0.09	522	0.03	18.1	570	3.74	58.2	<0.01	2	5	1.6	2.23	68	0.4	0.40	0.03	8.77
SU-123-001	Felsic Volcanics	West Zone	Fragmental	0.35	40	80	0.96	29	18.6	4.5	0.28	<1	0.03	183	0.02	1.5	920	4.60	66.4	<0.01	7	141	4.3	3.90	37	0.4	0.30	1.50	7.55
SU-123-002	Felsic Volcanics	West Zone	Fragmental	0.29	40	88	2.04	27	14.9	3.9	0.25	1	0.20	489	0.03	<0.5	990	4.06	111	<0.01	4	31	4.3	3.44	40	0.2	0.27	0.30	7.52
SU-123-01	Felsic Volcanics	West Zone	Fragmental	0.36	50	84	4.04	38	57.0	4.0	0.32	2	0.07	1130	0.02	9.9	1400	>5	245	<0.01	11	104	3.0	2.96	118	0.3	0.32	0.86	11.2
SU-130-001	Felsic Volcanics	VOK	Fragmental	0.63	40	136	5.57	39	39.4	4.2	0.26	14	0.35	897	0.05	<0.5	1670	4.17	292	<0.01	24	18	4.2	1.37	56	0.5	0.94	0.15	7.52
SU-130-002	Felsic Volcanics	VOK	Fragmental	0.28	40	103	0.16	108	83.0	3.4	0.20	<1	0.04	90	0.02	3.9	90.0	3.25	54.0	<0.01	<1	48	0.8	>10	234	0.4	0.92	0.88	6.33
SU-130-003	Felsic Volcanics	VOK	Fragmental	0.25	40	151	0.24	112	210	2.3	0.17	2	0.03	125	0.02	2.9	50.0	2.39	44.4	<0.01	1	195	0.7	>10	181	0.4	0.45	3.31	4.32
SU-130-008	Felsic Volcanics	VOK	Fragmental	0.34	40	109	0.56	75	48.8	4.7	0.29	2	0.04	80	0.02	5.7	1040	4.64	147	<0.01	9	299	1.4	2.06	1010	0.2	0.26	2.63	8.96
SU-290-013	Hydrothermal Breccia	West Zone	Fragmental	0.15	60	112	0.46	126	42.9	2.6	0.16	<1	0.01	108	0.02	6.3	540	2.54	27.0	<0.01	4	32	1.1	5.03	35	<0.1	0.24	0.33	9.88
Comp 13-7	Intermediate Volcanics	VOK	Fragmental	0.44	40	64	0.42	90	31.0	7.1	0.27	2	0.03	39	0.03	10.0	1630	>5	42.2	<0.01	9	131	4.9	2.24	368	0.3	1.03	1.47	12.3
SU-118-01	Intermediate Volcanics	Gossan Hill	Fragmental	0.27	40	58	0.90	68	36.5	3.7	0.21	<1	0.04	298	<0.01	4.0	940	4.71	57.2	<0.01	8	30	4.1	7.05	193	0.4	0.65	0.16	8.06
SU-121-001	Intermediate Volcanics	West Zone	Fragmental	0.44	30	97	0.34	52	19.1	4.3	0.24	3	0.15	266	0.04	2.5	1010	4.28	20.5	<0.01	7	50	3.8	>10	59	0.8	0.16	0.56	8.56
SU-121-002	Intermediate Volcanics	West Zone	Fragmental	0.37	30	64	0.39	52	26.2	5.9	0.25	2	0.05	110	0.04	0.60	1340	>5	27.7	<0.01	9	160	7.1	>10	97	1.1	0.33	1.50	8.83
SU-290-006	Intermediate Volcanics	West Zone	Fragmental	2.53	40	89	4.39	12	<0.5	3.1	0.17	60	1.64	3480	0.02	<0.5	2100	0.30	73.8	<0.01	2	160	1.8	0.28	34	0.4	0.04	0.06	74.3
SU-290-011	Intermediate Volcanics	West Zone	Fragmental	1.78	20	227	4.73	8	<0.5	2.9	0.32	24	0.90	2750	0.02	<0.5	2050	0.19	102	<0.01	1	188	1.8	0.21	3	0.7	0.03	0.17	49.2
SU-348-002	Intermediate Volcanics	VOK	Fragmental	1.01	50	137	0.34	64	77.5	3.9	0.28	25	0.50	527	0.03	12.8	890	2.87	68.7	<0.01	14	37	1.0	1.74	163	0.3	0.10	0.15	12.6
SU-348-003	Intermediate Volcanics	VOK	Fragmental	0.73	40	131	0.33	48	141	4.1	0.23	17	0.33	381	0.05	3.3	630	4.00	60.7	<0.01	21	135	1.8	1.71	158	0.3	0.52	1.51	19.2
SU-351-001	Intermediate Volcanics	VOK	Fragmental	0.40	40	48	0.56	70	61.6	6.8	0.27	2	0.04	54	0.04	11.8	1820	>5	48.6	<0.01	4	967	7.8	3.18	186	0.5	1.25	11.3	7.84
SU-351-002	Intermediate Volcanics	VOK	Fragmental	0.34	50	56	0.41	65	29.3	6.3	0.25	<1	0.02	28	0.03	7.5	1520	>5	41.1	<0.01	3	29	2.0	1.44	536	0.3	0.65	0.30	8.33
SU-351-003	Intermediate Volcanics	VOK	Fragmental	0.57	40	66	0.60	44	52.8	5.9	0.21	7	0.28	180	0.02	2.5	1870	>5	68.2	<0.01	9	59	4.0	3.79	170	0.5	0.72	0.86	7.66
SU-351-004	Intermediate Volcanics	VOK	Fragmental	0.98	30	133	4.02	42	9.4	3.0	0.21	20	0.48	1330	0.02	2.0	1690	2.40	155	<0.01	24	52	3.5	1.19	275	0.4	0.55	0.99	9.44
SU-351-005	Intermediate Volcanics	VOK	Fragmental	0.32	30	120	2.09	45	61.6	3.0	0.23	<1	0.09	549	0.03	2.2	1040	3.38	117	<0.01	3	365	2.7	1.06	63	0.4	0.81	4.50	11.4
SU-352-001	Intermediate Volcanics	VOK	Fragmental	1.21	40	121	5.89	50	35.5	4.9	0.17	29	1.05	1990	0.01	6.8	1730	3.69	168	<0.01	38	62	1.9	1.77	88	0.5	0.69	0.35	16.2
SU-352-006	Intermediate Volcanics	VOK	Fragmental	1.73	50	137	3.64	57	11.6	5.6	0.17	38	1.06	2380	0.04	8.9	2110	4.49	138	<0.01	59	71	1.8	1.35	143	0.5	0.38	0.80	12.3
SU-359-001	Intermediate Volcanics	VOK	Fragmental	0.51	40	176	3.61	21	30.7	3.6	0.35	4	0.52	1230	0.02	<0.5	1810	1.74	207	<0.01	17	68	3.2	1.94	276	0.4	<0.02	0.09	16.2
SU-359-002	Intermediate Volcanics	VOK	Fragmental	2.31	40	177	4.95	17	195	6.1	0.29	42	1.11	1680	0.02	<0.5	1730	2.04	239	<0.01	65	119	2.8	1.44	153	0.3	<0.02	0.09	15.9
SU-359-003	Intermediate Volcanics	VOK	Fragmental	1.26	40	148	5.28	36	51.5	4.4	0.30	21	0.65	1770	0.02	1.3	1350	3.37	211	<0.01	32	69	1.8	1.95	168	0.2	0.08	0.06	14.3
SU-359-004	Intermediate Volcanics	VOK	Fragmental	1.76	40	174	4.52	18	26.4	3.5	0.29	28	1.09	1530	0.02	0.60	1170	0.85	278	<0.01	39	74	1.6	0.40	116	0.3	0.05	0.03	15.4
SU-359-005	Intermediate Volcanics	VOK	Fragmental	0.72	40	179	0.39	56	59.1	2.9	0.48	8	0.15	150	0.02	1.4	1250	2.60	48.9	<0.01	16	15	1.1	1.74	213	0.3	0.03	0.04	8.13
SU-359-006	Intermediate Volcanics	VOK	Fragmental	0.54	50	166	0.69	50	64.3	3.4	0.44	4	0.07	179	0.02	1.3	1530	3.43	124	<0.01	14	107	2.8	2.41	210	0.2	0.02	0.51	9.48
SU-359-007	Intermediate Volcanics	VOK	Fragmental	0.45	40	75	0.85	49	42.3	6.0	0.34	1	0.04	144	0.03	6.1	1640	>5	82.5	<0.01	13	211	4.1	3.10	296	0.4	0.12	2.02	23.8
SU-359-008	Intermediate Volcanics	VOK	Fragmental	0.60	40	95	4.78	54	35.0	5.6	0.27	9	0.23	1570	0.04	5.1	1410	>5	234	<0.01	18	31	5.8	1.90	165	0.4	1.01	0.41	19.6
SU-359-009	Intermediate Volcanics	VOK	Fragmental	2.10	40	220	2.69	27	15.7	4.8	0.26	53	1.21	3260	0.03	3.2	1330	2.48	133	<0.01	51	108	2.0	1.02	190	0.3	0.64	0.60	19.8
SU-361-001	Intermediate Volcanics	VOK	Fragmental	2.52	30	102	3.13	31	139	6.8	0.21	54	0.71	2530	0.02	6.8	1720	1.87	77.1	<0.01	103	198	3.2	1.94	55	0.4	0.12	0.36	13.5
SU-361-002	Intermediate Volcanics	VOK	Fragmental	3.19	30	85	2.74	22	277	9.1	0.19	73	1.09	2540	0.02	7.8	1690	2.98	80.0	<0.01	115	241	3.4	2.89	196	0.4	0.15	0.52	10.8
SU-361-003	Intermediate Volcanics	VOK	Fragmental	1.84	30	118	0.80	28	56.6	7.1	0.27	39	0.74	647	0.02	3.0	2010	4.05	41.0	<0.01	69	25	2.8	1.21	112	0.5	0.40	0.01	15.4
SU-361-004	Intermediate Volcanics	VOK	Fragmental	0.32	50	84	0.33	64	16.3	1.8	0.22	1	0.05	82	0.02	4.0	690	1.95	25.0	<0.01	3	55	2.5	2.32	174	0.3	0.21	0.39	13.2
SU-041-09	Meta Volcanics	West Zone	Fragmental	0.38	50	63	0.69	34	45.0	5.8	0.28	1	0.03	186	0.02	3.2	1650	>5	50.4	0.07	16	57	3.6	6.03	168	0.4	0.45	0.88	18.7
SU-041-10	Meta Volcanics	West Zone	Fragmental	0.35	40	69	0.51	55	16.3	3.7	0.21	2	0.06	162	0.02	0.60	810	4.81	17.4	0.010	9	55	4.3	>10	72	0.4	1.02	0.60	10.7
SU-096-03	Meta-Int Maf Volcanics	VOK	Fragmental	0.25	50	94	0.18	74	140	3.4	0.17	1	0.05	79	0.02	2.2	300	4.13	45.8	<0.01	4	139	1.3	>10	506	0.4	1.24	1.67	10.0
SU-098-03	Meta-Int Maf Volcanics	West Zone	Fragmental	0.29	60	67	0.48	56	119	3.7	0.24	1	0.04	163	0.01	2.3	1710	4.68	57.0	<0.01	17	93	2.9	>10	72	0.3	0.14	1.14	16.7
SU-068-07	Pelite	Gossan Hill	Fragmental	0.64	40	148	3.03	14	130	3.7	0.38	7	1.20	1790	0.02	23.1	1180	1.75	176	<0.01	17	134	3.1	1.86	135	0.4	0.71	0.99	19.7

Sample ID	Logged Lithology	Zone	Geol Unit	Co ppm	Cs ppm	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	La ppm	Lu ppm	Mo ppm	Nb ppm	Pb ppm	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sn ppm	Ta ppm	Tb ppm	Te ppm	Th ppm	Tl ppm	U ppm	W ppm	Y ppm	Yb ppm
			Method Code													ICM14B													
			LOD	0.1	0.05	0.1	0.1	0.05	0.01	0.02	0.1	0.01	0.05	0.05	0.2	0.2	0.05	0.1	1	0.3	0.05	0.02	0.05	0.1	0.02	0.05	0.1	0.05	0.1
SU-047-04	Basalt	Gossan Hill	Fragmental	40.2	2.58	12.2	0.1	<0.05	0.02	0.04	7.1	0.13	0.30	<0.05	2.9	6.8	0.81	9.4	<1	<0.3	<0.05	0.42	<0.05	0.3	0.18	0.17	0.1	9.31	0.8
SU-052-02	Basalt	Gossan Hill	Fragmental	8.3	5.10	3.6	0.1	<0.05	0.03	0.03	18.6	0.21	0.67	<0.05	6.3	28.1	2.50	3.5	<1	<0.3	<0.05	0.86	<0.05	0.6	0.51	0.13	0.4	21.0	1.4
SU-052-04	Basalt	Gossan Hill	Fragmental	3.4	1.62	4.7	0.1	<0.05	<0.01	0.02	30.8	0.15	1.18	<0.05	1.5	8.4	0.49	1.2	<1	<0.3	<0.05	0.72	<0.05	0.9	0.18	0.07	<0.1	13.6	1
SU-068-04	Basalt	Gossan Hill	Fragmental	27.1	4.79	4.3	<0.1	<0.05	0.01	<0.02	4.8	0.11	0.42	<0.05	7.1	18.7	1.77	5.9	<1	<0.3	<0.05	0.35	<0.05	0.6	0.46	0.08	0.2	8.27	0.7
SU-103-02	Basalt	West Zone	Fragmental	29.1	2.22	21.2	0.3	0.10	0.03	0.06	13.3	0.07	0.31	0.17	2.9	2.1	1.82	24.9	<1	0.6	<0.05	0.60	<0.05	0.6	0.08	0.06	0.1	10.7	0.5
SU-290-007	BX Conglomerate	West Zone	Fragmental	10.4	4.31	0.8	<0.1	0.05	0.05	<0.02	7.5	0.03	3.19	<0.05	25.8	9.4	2.54	1.5	3	<0.3	<0.05	0.22	0.41	1.4	0.26	0.21	<0.1	2.87	0.2
Comp 13-5	Conglomerate	West Zone	Fragmental	9.3	5.61	2.5	0.1	<0.05	0.05	<0.02	6.7	0.12	3.29	<0.05	24.8	7.5	1.90	1.9	3	2.2	<0.05	0.30	0.24	1.2	0.17	0.23	<0.1	8.47	0.8
SU-295-004	Conglomerate	West Zone	Fragmental	10.0	1.95	0.7	<0.1	<0.05	0.03	<0.02	5.6	0.03	2.68	<0.05	34.7	13.4	5.66	0.9	1	<0.3	<0.05	0.11	<0.05	1.4	0.41	0.63	0.3	1.92	0.1
SU-295-005	Conglomerate	West Zone	Fragmental	11.0	3.11	1.6	<0.1	0.06	0.02	0.03	7.6	0.07	2.89	<0.05	57.8	19.1	5.13	1.9	4	<0.3	<0.05	0.18	<0.05	2	0.50	0.67	0.1	3.36	0.3
SU-309-004	Conglomerate	West Zone	Fragmental	9.3	5.12	2.7	<0.1	<0.05	0.03	<0.02	7.1	0.13	2.28	<0.05	23.3	6.6	1.40	2.2	2	<0.3	<0.05	0.29	0.19	1	0.13	0.19	<0.1	9.14	0.9
SU-309-005	Conglomerate	West Zone	Fragmental	8.8	5.41	1.2	<0.1	<0.05	0.07	<0.02	5.6	0.07	3.95	<0.05	27.4	8.1	2.38	1.4	5	<0.3	<0.05	0.24	0.44	1.1	0.20	0.20	<0.1	5.69	0.5
SU-309-006	Conglomerate	West Zone	Fragmental	8.8	3.86	0.7	<0.1	0.06	0.23	0.04	4.5	0.08	3.94	<0.05	39.1	8.8	2.77	1.5	5	<0.3	<0.05	0.22	0.31	0.9	0.21	0.25	0.1	4.09	0.5
SU-309-007	Conglomerate	West Zone	Fragmental	2.6	5.67	2.0	<0.1	<0.05	0.02	0.03	15.0	0.18	2.83	<0.05	5.3	12.9	0.63	2.1	<1	<0.3	<0.05	0.73	<0.05	0.7	0.24	0.07	0.5	18.6	1.3
SU-314-002	Conglomerate	West Zone	Fragmental	8.4	5.07	0.9	<0.1	<0.05	0.17	<0.02	13.7	0.07	3.59	<0.05	19.3	6.7	2.20	1.2	6	<0.3	<0.05	0.32	0.44	1.1	0.22	0.17	<0.1	5.85	0.5
SU-012-003	Dacite	VOK	Fragmental	0.80	1.08	0.3	<0.1	<0.05	0.07	0.02	3.4	<0.01	4.74	<0.05	27.4	3.2	2.28	0.2	4	<0.3	<0.05	0.03	<0.05	1.6	0.15	0.34	0.3	0.40	<0.1
Comp 13-13	Dense Vein Stockwork	West Zone	Fragmental	11.9	0.79	0.6	0.2	<0.05	0.05	0.02	5.9	0.07	4.54	<0.05	55.2	11.6	26.2	2.7	4	1.9	<0.05	0.21	0.19	1.5	0.26	0.33	0.1	5.57	0.4
SU-032-03	Dense Vein Stockwork	Gossan Hill	Fragmental	12.4	0.82	0.8	<0.1	<0.05	0.05	<0.02	7.8	0.05	2.89	0.06	36.2	11.4	4.27	1.5	3	<0.3	<0.05	0.20	0.12	1.1	0.22	0.19	0.1	4.17	0.3
SU-032-04	Dense Vein Stockwork	Gossan Hill	Fragmental	15.1	0.43	0.9	<0.1	0.07	0.07	0.03	9.0	0.07	6.37	0.06	21.7	9.4	3.47	2.6	6	<0.3	<0.05	0.25	0.06	1.8	0.39	0.48	0.1	5.45	0.5
SU-032-06	Dense Vein Stockwork	Gossan Hill	Fragmental	1.6	0.53	0.7	<0.1	<0.05	0.17	<0.02	5.0	0.06	4.67	<0.05	242	7.5	5.60	1.3	2	<0.3	<0.05	0.17	0.06	2	0.19	0.24	0.2	3.87	0.4
SU-041-08	Dense Vein Stockwork	West Zone	Fragmental	3.5	0.33	0.3	<0.1	<0.05	0.20	0.05	4.0	0.05	2.81	0.08	351	3.5	5.46	1	2	<0.3	<0.05	0.13	0.07	1.1	0.28	0.25	<0.1	3.98	0.3
SU-096-02	Dense Vein Stockwork	VOK	Fragmental	5.9	1.83	0.5	<0.1	0.10	0.10	<0.02	4.2	0.04	1.65	0.10	37.9	6.4	9.48	0.9	6	<0.3	<0.05	0.13	0.17	1	0.46	0.27	0.1	3.33	0.3
SU-131-001	Dense Vein stockwork	West Zone	Fragmental	12.5	0.27	0.3	<0.1	<0.05	0.09	0.02	5.7	0.09	1.72	<0.05	83.7	4.4	50.6	3.8	5	<0.3	<0.05	0.21	0.17	1	0.21	0.26	<0.1	6.63	0.6
SU-309-010	Dense Vein stockwork	West Zone	Fragmental	11.8	1.03	0.6	<0.1	<0.05	<0.01	<0.02	3.9	0.03	1.86	<0.05	14.8	13.7	1.51	1.1	2	<0.3	<0.05	0.16	0.26	0.9	0.27	0.38	0.1	2.86	0.2
SU-123-001	Felsic Volcanics	West Zone	Fragmental	7.8	1.98	0.8	<0.1	0.09	0.12	<0.02	3.6	0.04	1.69	<0.05	33.1	11.0	2.38	1.2	2	<0.3	<0.05	0.15	0.20	1.6	0.25	0.46	<0.1	3.31	0.2
SU-123-002	Felsic Volcanics	West Zone	Fragmental	7.3	1.58	0.7	<0.1	0.08	0.01	<0.02	3.8	0.07	5.24	<0.05	28.2	10.7	1.83	1.6	5	<0.3	<0.05	0.17	0.33	2	0.21	0.47	<0.1	4.31	0.4
SU-123-01	Felsic Volcanics	West Zone	Fragmental	13.2	2.83	0.8	<0.1	0.07	0.04	<0.02	5.7	0.11	6.40	<0.05	37.5	14.9	4.14	2.3	3	<0.3	<0.05	0.25	0.19	1.1	0.46	0.31	0.1	6.96	0.6
SU-130-001	Felsic Volcanics	VOK	Fragmental	10.0	3.90	1.4	<0.1	0.08	0.03	<0.02	3.5	0.12	0.90	<0.05	6.5	9.6	2.50	4.5	2	<0.3	<0.05	0.21	0.18	1.8	0.20	0.54	0.3	6.19	0.7
SU-130-002	Felsic Volcanics	VOK	Fragmental	7.2	3.42	0.6	<0.1	<0.05	0.03	<0.02	2.9	0.01	2.96	<0.05	68.5	9.4	11.2	0.7	15	<0.3	<0.05	0.07	0.29	2.3	0.35	0.42	0.1	1.24	<0.1
SU-130-003	Felsic Volcanics	VOK	Fragmental	3.6	2.61	0.5	<0.1	<0.05	0.10	0.04	2.2	<0.01	2.46	<0.05	150	8.3	13.4	0.8	10	<0.3	<0.05	0.04	0.31	2	0.42	0.36	0.1	0.73	<0.1
SU-130-008	Felsic Volcanics	VOK	Fragmental	13.6	1.89	0.6	<0.1	<0.05	0.10	0.02	4.4	0.04	2.56	<0.05	29.4	12.0	10.2	1.9	1	<0.3	<0.05	0.16	0.19	1.1	0.28	0.22	0.2	3.63	0.2
SU-290-013	Hydrothermal Breccia	West Zone	Fragmental	6.7	0.41	0.4	<0.1	<0.05	0.03	<0.02	5.7	0.03	12.8	<0.05	42.3	5.2	9.48	0.7	2	<0.3	<0.05	0.12	0.09	1.5	0.12	0.44	0.1	2.73	0.2
Comp 13-7	Intermediate Volcanics	VOK	Fragmental	28.4	4.50	1.0	0.2	0.07	0.05	<0.02	6.5	0.03	3.99	<0.05	87.5	11.3	3.69	1.7	<1	0.3	<0.05	0.17	0.52	1.7	0.22	0.41	0.2	3.31	0.2
SU-118-01	Intermediate Volcanics	Gossan Hill	Fragmental	6.0	2.92	0.7	<0.1	0.10	1.14	<0.02	3.8	0.05	1.10	0.07	25.6	9.0	12.4	1.1	1	<0.3	<0.05	0.17	0.30	2.4	0.86	0.79	0.2	3.89	0.3
SU-121-001	Intermediate Volcanics	West Zone	Fragmental	14.1	3.80	0.9	<0.1	0.07	0.04	<0.02	4.1	0.03	3.88	<0.05	46.9	11.1	3.56	2	3	<0.3	<0.05	0.15	0.24	2.2	0.33	0.49	<0.1	2.55	0.2
SU-121-002	Intermediate Volcanics	West Zone	Fragmental	14.2	5.76	0.8	<0.1	0.12	0.07	0.03	4.4	0.04	3.86	<0.05	103	11.7	5.37	2.2	3	<0.3	<0.05	0.17	0.55	3.7	0.64	0.79	<0.1	2.98	0.3
SU-290-006	Intermediate Volcanics	West Zone	Fragmental	2.6	1.90	5.4	0.1	<0.05	0.02	0.02	35.3	0.15	2.08	<0.05	2.0	7.8	0.45	1.4	<1	<0.3	<0.05	0.80	<0.05	1	0.20	0.06	<0.1	14.7	1.1
SU-290-011	Intermediate Volcanics	West Zone	Fragmental	1.9	1.48	3.5	<0.1	<0.05	<0.01	<0.02	22.1	0.20	1.33	<0.05	2.4	14.8	0.33	1.3	<1	<0.3	<0.05	0.63	<0.05	0.9	0.25	0.10	0.2	16.0	1.2
SU-348-002	Intermediate Volcanics	VOK	Fragmental	13.6	2.62	2.0	<0.1	<0.05	0.02	<0.02	6.5	0.03	1.20	<0.05	7.4	11.7	1.40	2	<1	<0.3	<0.05	0.15	0.26	1.3	0.42	0.37	0.2	2.67	0.2
SU-348-003	Intermediate Volcanics	VOK	Fragmental	7.1	4.91	2.0	<0.1	<0.05	0.04	0.02	10.7	0.04	1.43	<0.05	28.6	9.9	2.65	1.6	5	<0.3	<0.05	0.21	0.06	3.6	0.34	0.97	<0.1	4.54	0.3
SU-351-001	Intermediate Volcanics	VOK	Fragmental	23.1	4.17	0.8	<0.1	0.09	0.25	<0.02	4.0	0.03	2.47	<0.05	246	9.7	2.54	1.8	<1	<0.3	<0.05	0.16	0.55	1.7	0.18	0.40	0.2	3.29	0.2
SU-351-002	Intermediate Volcanics	VOK	Fragmental	22.3	3.12	0.7	<0.1	<0.05	0.03	<0.02	4.2	0.02	2.03	<0.05	22.3	8.6	4.38	1.2	<1	<0.3	<0.05	0.13	0.28	1.2	0.17	0.36	0.1	2.52	0.1
SU-351-003	Intermediate Volcanics	VOK	Fragmental	12.7	5.82	1.1	<0.1	0.07	0.02	0.02	4.1	0.04	0.87	<0.05	38.2	8.5	5.71	2.1	28	<0.3	<0.05	0.17	0.09	1.4	0.32	0.35	<0.1	4.06	0.3
SU-351-004	Intermediate Volcanics	VOK	Fragmental	11.7	4.99	1.9	<0.1	0.06	0.02	0.02	5.8	0.09	0.69	<0.05	30.1	8.5	1.33	3.2	10	<0.3	<0.05	0.17	<0.05	1.7	0.25	0.84	<0.1	4.71	0.5
SU-351-005	Intermediate Volcanics	VOK	Fragmental	7.4	5.02	0.7	<0.1	0.06	0.06	0.03	6.8	0.03	3.11	<0.05	18.0	8.3	1.56	1.9	16	<0.3	<0.05	0.15	0.05	4.3	0.25	2.05	0.1	3.12	0.2
SU-352-001	Intermediate Volcanics	VOK	Fragmental	16.7	3.97	2.6	<0.1	<0.05	0.01	0.02	8.6	0.14	0.59	<0.05	24.6	6.7	1.61	5.4	13	<0.3	<0.05	0.42	<0.05	1.5	0.21	0.44	0.1	12.6	1.1
SU-352-006	Intermediate Volcanics	VOK	Fragmental	18.0	4.51	3.6	<0.1	<0.05	0.02	<0.02	6.6	0.07	2.01	<0.05	15.7	7.1	1.11	4.7	20	0.3	<0.05	0.21	0.09	2	0.20	0.42	<0.1	5.24	0.5
SU-359-001	Intermediate Volcanics	VOK	Fragmental	10.2	6.52	1.0	<0.1	0.05	0.07	<0.02	8.2	0.11	0.70	<0.05	7.9	12.6	2.42	5.3	2	<0.3	<0.05	0.31	1.27	1.6	0.41	0.39	0.2	8.60	0.7
SU-359-002	Intermediate Volcanics	VOK	Fragmental	16.7	5.06	5.4	<0.1	0.05	0.04	<0.02	8.4	0.10	0.44	<0.05	8.0	10.8	0.80	4.6	<1	<0.3	<0.05	0.30	<0.05	1.4	0.22	0.33	0.1	8.16	0.7
SU-359-003	Intermediate Volcanics	VOK	Fragmental	13.3	5.01	2.9	<0.1	<0.05	0.03	<0.02	7.8	0.12	1.25	<0.05	42.6	11.4	1.18	3.2	1	<0.3	<0.05	0.28	0.08	0.9	0.28	0.16	0.2	8.83	0.8
SU-359-004	Intermediate Volcanics	VOK	Fragmental	10.8	4.00	4.0	<0.1	<0.05	0.01	<0.02	8.9	0.10	0.37	<0.05	4.8	10.9	0.70	3.6	<1	<0.3	<0.05	0.25	<0.05	1.2	0.23	0.29	<0.1	7.14	0.6
SU-359-005	Intermediate Volcanics	VOK	Fragmental	7.5	5.07	1.6	<0.1	<0.05	0.02	<0.02	4.4	0.02	1.35	<0.05	30.7	18.8	1.54	2	<1	<0.3	<0.05	0.08	0.12	1.3	0.46	0.20	0.1	1.35	0.1
SU-359-006	Intermediate Volcanics	VOK	Fragmental	11.3	5.18	1.1	<0.1	<0.05	0.04	<0.02	5.0	0.04	1.44	<0.05	20.9	17.5	2.55	2	<1	<0.3	<0.05	0.12	0.09	1.4	0.48	0.30	0.1	2.79	0.2
SU-359-007	Intermediate Volcanics	VOK	Fragmental	16.9	4.38	0.9	<0.1	0.06	0.07	<0.02	12.5	0.07	2.33	0.08	48.1	11.2	2.54	1.9	<1	<0.3	<0.05	0.29	0.28	1.8	0.29	0.30	0.2	6.72	0.5
SU-359-008	Intermediate Volcanics	VOK	Fragmental	19.6	3.82	1.4	<0.1	0.07	0.03	<0.02	9.6	0.11	1.52	<0.05	24.6	9.3	3.29	2.5	19	<0.3	<0.05	0.29	0.20	1.5	0.33	0.36	0.2	8.13	0.7
SU-359-009	Intermediate Volcanics	VOK	Fragmental	9.9	4.59	5.1	<0.1	<0.05	0.02	<0.02	9.9	0.07	0.54	<0.05	44.5	10.7	1.25	3.2	20	<0.3	<0.05	0.34	0.06	2.1	0.30	0.24	<0.1	7.65	0.6
SU-361-001	Intermediate Volcanics	VOK	Fragmental	20.7	2.70	6.7	<0.1	<0.05	0.06	0.03	6.7	0.07	0.72	<0.05	31.2	7.8	1.00	7.7	<1	<0.3	<0.05	0.26	<0.05	1.7	0.29	0.22	0.1	7.50	0.6
SU-361-002	Intermediate Volcanics	VOK	Fragmental	26.8	3.26	8.8	<0.1	<0.05	0.05	0.06	5.5	0.07	1.24	<0.05	25.2	6.8	1.52	8.8	<1	<0.3	<0.05	0.23	0.12	1.7	0.13	0.17	0.2	5.88	0.5
SU-361-003	Intermediate Volcanics	VOK	Fragmental	17.1	3.85	4.8	<0.1	<0.05	0.11	<0.02	7.8	0.04	0.74	<0.05	7.4	9.1	2.03	5.7	<1	<0.3	<0.05	0.27	0.23	1.9	0.72	0.24	0.1	4.87	0.3
SU-361-004	Intermediate Volcanics	VOK	Fragmental	11.1	2.48	0.5	<0.1	0.05	0.05	<0.02	7.2	0.02	13.9	<0.05	33.5	7.8	1.99	0.9	<1	<0.3	<0.05	0.12	<0.05	1.9	0.44	0.52	<0.1	1.90	0.1
SU-041-09	Meta Volcanics	West Zone	Fragmental	13.2	3.35	1.1	<0.1	0.09	0.06	<0.02	8.8	0.11	3.97	0.66	63.5	13.1	4.68	2	4	<0.3	<0.05	0.43	0.62	1.3	0.36	0.26	0.4	10.6	0.8
SU-041-10	Meta Volcanics	West Zone	Fragmental	9.0	3.82	0.8	<0.1	0.10	0.10	<0.02	5.7	0.05	6.56	0.20	50.5	9.9	4.33	1.4	3	<0.3	<0.05	0.19	0.51	2.6	0.42	0.66	0.2	4.57	0.4
SU-096-03	Meta-Int Maf Volcanics	VOK	Fragmental	6.2	4.11	0.5	<0.1	0.06	0.07	0.04	5.3	0.02	0.94	0.08	37.7	8.1	13.2	1.1	15	<0.3	<0.05	0.12	0.12	2.2	0.28	0.30	<0.1	2.41	0.2
SU-098-03	Meta-Int Maf Volcanics	West Zone	Fragmental	11.2	1.17	1.1	<0.1	0.08	0.09	0.02	7.9	0.06	0.83	0.06	30.2	12.6	23.2	1.6	3	<0.3	<0.05	0.31	0.76	0.9	0.40	0.24	0.2	6.47	0.4
SU-068-07	Pelite	Gossan Hill	Fragmental	15.9	2.05	1.8	<0.1	0.07	0.02	0.03	9.2	0.10	6.77	<0.05	37.0	17.9	2.83	4.5	2	<0.3	<0.05	0.37	0.07	1.5	0.35	0.43	0.1	8.88	0.7

Sample ID	Logged Lithology	Zone	Geol Unit	Al %	B ppm	Ba ppm	Ca %	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Na %	Ni ppm	P ppm	S %	Sr ppm	Ti %	V ppm	Zn ppm	Zr ppm	Ag ppm	As ppm	Be ppm	Bi ppm	Cd ppm	Ce ppm
			Method Code	ICM14B																									
			LOD	0.01	10	5	0.01	1	0.5	0.01	0.01	1	0.01	2	0.01	0.5	50	0.01	0.5	0.01	1	1	0.5	0.01	1	0.1	0.02	0.01	0.05
SU-118-03	Pelite	Gossan Hill	Fragmental	0.08	40	50	4.82	102	34.6	1.8	0.06	<1	0.03	2530	<0.01	4.6	110	2.20	443	<0.01	2	139	2.1	9.92	165	0.1	0.13	0.94	5.15
SU-123-02	Plag-Hbl Porphyry	West Zone	Fragmental	0.39	50	64	3.66	37	17.2	4.4	0.17	4	0.19	1340	0.03	0.80	1410	>5	61.7	<0.01	7	116	3.7	1.97	45	0.4	0.35	1.68	9.42
SU-282-004	Plag-hbl Porphyry	West Zone	Fragmental	0.73	30	63	2.81	49	33.9	3.2	0.31	11	0.48	1090	0.02	<0.5	900	1.99	125	<0.01	20	648	4.8	>10	159	0.2	<0.02	5.97	14.4
SU-290-003	Plag-hbl Porphyry	West Zone	Fragmental	1.98	30	65	0.45	42	16.5	4.3	0.13	39	1.21	859	0.06	<0.5	1170	4.20	29.7	<0.01	25	75	3.1	0.09	32	0.6	0.08	0.22	18.3
SU-290-004	Plag-hbl Porphyry	West Zone	Fragmental	0.40	30	63	0.36	76	17.9	6.2	0.19	2	0.07	110	0.04	1.7	1130	>5	27.7	<0.01	6	132	3.1	0.36	27	0.5	0.35	0.96	8.20
SU-290-012	Plag-hbl Porphyry	West Zone	Fragmental	0.46	60	91	1.30	52	11.8	4.2	0.34	4	0.10	552	0.03	1.8	990	3.92	82.3	<0.01	4	511	3.1	1.71	103	0.2	0.34	5.35	12.8
SU-314-001	Plag-hbl Porphyry	West Zone	Fragmental	1.05	30	84	3.98	38	16.2	3.7	0.13	18	0.62	1480	0.02	0.50	1140	4.37	71.3	<0.01	11	26	1.7	0.13	26	0.3	0.50	0.18	14.4
SU-352-007	Siliceous Rocks	VOK	Fragmental	0.30	40	73	0.44	113	23.9	3.4	0.13	3	0.08	169	0.02	2.5	1730	3.65	32.0	<0.01	5	387	2.5	3.58	201	0.1	0.37	3.78	10.5
SU-118-02	Silicified Breccia	Gossan Hill	Fragmental	0.09	50	48	7.50	93	10.9	0.74	0.05	<1	0.03	4560	<0.01	2.0	70.0	0.74	465	<0.01	1	131	1.4	3.91	44	0.1	0.07	0.90	6.44
SU-063-02	Tonalite	West Zone	Fragmental	0.31	50	64	1.62	108	135	4.5	0.22	1	0.04	394	0.01	8.2	1510	>5	299	<0.01	12	7520	3.0	>10	95	0.3	0.56	75.1	14.2
SU-068-03	Tonalite	Gossan Hill	Fragmental	0.32	50	69	1.69	40	51.0	3.8	0.27	<1	0.07	702	0.02	7.6	1040	>5	135	<0.01	8	63	5.4	5.41	56	0.4	0.41	0.41	9.62
SU-068-06	Tonalite	Gossan Hill	Fragmental	0.61	40	59	2.90	85	19.6	2.3	0.27	9	0.38	1750	0.03	10.8	470	2.26	93.7	<0.01	18	62	1.7	0.99	24	0.2	0.09	0.40	7.37
Comp. 5	Tonalite	West Zone	Frag./Congl.	0.17	40	114	10.3	76	96.3	2.6	0.14	1	0.03	3050	0.01	5.6	970	4.12	454	<0.01	5	4530	2.0	>10	96	0.3	0.36	54.9	7.22
Comp. 1	Andesite/Dacite	Gossan Hill	Frag./VSF	0.33	40	88	2.27	47	60.1	4.2	0.31	1	0.03	628	0.02	5.2	1340	>5	85.9	<0.01	10	138	3.7	6.46	246	0.3	0.39	1.52	15.4
SU-017-001	Andesite	VOK	Office P1	1.38	40	130	3.64	30	20.6	3.9	0.28	27	0.81	1150	0.02	2.1	890	2.01	138	<0.01	46	48	2.4	0.84	508	0.2	0.15	0.13	11.0
Comp 13-8	Plag-hbl Porphyry	VOK	Office P1	1.05	40	142	3.46	60	29.0	3.4	0.26	22	0.87	1360	0.02	6.2	960	1.76	126	<0.01	33	24	2.3	2.79	211	0.2	0.07	0.07	15.4
SU-113-001	Plag-hbl Porphyry	VOK	Office P1	0.94	20	270	3.96	44	4.8	2.8	0.31	13	0.54	1270	0.02	2.7	940	0.95	220	<0.01	16	41	1.3	0.32	58	0.2	0.03	0.04	12.8
SU-113-06	Plag-Hbl Porphyry	VOK	Office P1	1.12	60	131	5.35	46	24.1	3.0	0.34	14	0.78	1550	0.03	2.9	820	1.38	248	<0.01	17	50	1.6	0.70	148	0.2	0.03	0.05	15.1
SU-114-06	Plag-Hbl Porphyry	VOK	Office P1	1.24	40	142	3.70	36	29.1	4.1	0.20	25	0.85	1120	0.03	4.3	1090	2.99	136	0.03	53	21	2.6	2.16	2290	0.2	0.62	0.05	8.73
SU-121-04	Plag-Hbl Porphyry	West Zone	Office P1	1.09	40	155	4.07	25	25.7	3.3	0.29	14	0.65	1470	0.02	4.0	1080	2.26	93.3	0.05	26	56	2.4	0.98	39	0.2	0.15	0.15	12.2
SU-132-05	Plag-Hbl Porphyry	VOK	Office P1	1.27	40	229	3.81	25	11.1	3.6	0.30	15	1.05	1430	0.02	3.3	1050	1.50	198	0.02	26	98	2.5	0.64	123	0.3	0.03	0.48	15.4
SU-182-03	Plag-Hbl Porphyry	VOK	Office P1	1.83	50	154	3.15	39	41.1	4.2	0.23	32	1.22	1420	0.04	4.1	1100	1.32	112	0.03	72	77	3.1	1.16	659	0.2	0.23	0.29	9.82
SU-349-005	Plag-hbl Porphyry	VOK	Office P1	1.62	40	104	3.67	37	28.5	3.7	0.20	36	1.07	1420	0.03	6.2	890	1.39	136	<0.01	53	28	2.1	0.45	144	0.2	0.07	0.06	12.8
SU-349-006	Plag-hbl Porphyry	VOK	Office P1	0.29	40	138	3.69	31	29.0	3.1	0.27	<1	0.74	1520	0.01	4.0	890	2.11	131	<0.01	3	18	1.3	2.05	238	0.3	0.07	0.10	7.85
SU-353-013	Plag-hbl Porphyry	VOK	Office P1	1.95	40	76	4.29	39	28.3	4.0	0.20	28	1.20	1430	0.03	3.1	840	0.78	174	<0.01	60	179	1.8	0.65	268	0.3	0.15	0.68	6.47
SU-353-014	Plag-hbl Porphyry	VOK	Office P1	1.68	40	395	3.27	37	7.3	3.0	0.29	24	1.08	1190	0.03	3.3	900	0.17	151	<0.01	32	30	1.9	0.09	9	0.2	0.03	0.01	9.98
SU-353-015	Plag-hbl Porphyry	VOK	Office P1	0.80	40	124	4.61	28	14.0	3.1	0.33	7	1.03	1790	0.03	2.2	880	0.38	228	<0.01	11	39	2.0	0.27	17	0.2	0.04	0.08	7.90
SU-356-007	Plag-hbl Porphyry	VOK	Office P1	1.38	50	90	5.38	62	22.7	3.5	0.22	20	0.73	1450	0.03	2.7	820	1.26	213	<0.01	42	38	1.8	0.38	109	0.2	0.07	0.06	9.36
SU-356-008	Plag-hbl Porphyry	VOK	Office P1	1.12	40	530	3.85	33	32.6	3.2	0.33	14	0.92	1680	0.03	1.7	860	0.20	318	<0.01	24	129	2.0	0.19	9	0.2	0.10	1.00	15.7
SU-356-009	Plag-hbl Porphyry	VOK	Office P1	0.78	40	110	4.30	30	19.8	3.5	0.32	8	0.85	1510	0.03	2.4	840	0.80	200	<0.01	18	78	1.6	0.40	69	0.2	0.07	0.33	11.0
SU-357-005	Plag-hbl Porphyry	VOK	Office P1	1.51	40	187	4.04	33	27.8	3.4	0.30	19	0.92	1610	0.03	1.8	850	0.34	163	<0.01	36	40	2.3	0.29	25	0.2	<0.02	0.07	12.4
SU-039-03	Andesite	Gossan Hill	P2	0.50	50	77	2.54	44	27.5	4.9	0.23	4	0.15	562	0.02	2.4	1180	>5	78.6	<0.01	9	78	5.6	1.45	81	0.4	0.05	0.45	20.2
SU-039-04	Andesite	Gossan Hill	P2	0.37	50	57	3.58	52	21.8	4.1	0.19	2	0.41	441	0.04	1.5	1000	4.84	156	<0.01	7	25	2.7	0.63	35	0.3	0.08	0.12	12.6
SU-039-05	Andesite	Gossan Hill	P2	0.29	50	57	5.64	76	38.7	5.1	0.19	1	0.06	1670	0.03	3.3	1200	>5	191	<0.01	6	36	2.6	8.20	323	0.3	0.18	0.16	11.6
SU-314-003	Conglomerate	West Zone	P2	0.75	30	90	3.63	31	18.0	3.9	0.14	15	0.43	736	0.04	1.2	1050	4.48	65.3	<0.01	7	17	2.1	0.44	26	0.3	0.19	0.36	12.3
SU-314-004	Conglomerate	West Zone	P2	0.55	40	84	1.72	32	27.7	4.3	0.16	6	0.21	355	0.04	1.5	1130	>5	95.7	<0.01	4	59	2.2	0.95	17	0.3	0.77	2.71	24.1
SU-314-005	Conglomerate	West Zone	P2	0.74	30	79	4.86	25	20.2	3.8	0.12	16	0.47	896	0.04	0.50	980	4.43	81.5	<0.01	7	41	1.8	0.27	13	0.2	0.32	1.71	11.6
SU-314-006	Conglomerate	West Zone	P2	0.78	30	88	3.25	28	28.4	3.9	0.14	12	0.41	831	0.06	1.9	1100	4.34	55.0	<0.01	8	214	1.9	0.55	23	0.2	1.57	7.26	8.07
SU-121-01	Intermediate Volcanics	West Zone	P2	0.82	40	77	2.81	26	20.1	4.4	0.14	18	0.58	1620	0.02	1.8	1330	>5	81.2	<0.01	14	70	3.3	0.32	49	0.3	0.99	1.47	17.2
SU-121-02	Intermediate Volcanics	West Zone	P2	1.28	40	84	2.47	32	19.3	4.2	0.15	32	0.97	2720	0.03	0.90	1300	4.15	67.0	<0.01	17	83	3.1	0.61	108	0.4	0.41	0.35	17.5
Comp 13-15	Plag-hbl Porphyry	West Zone	P2	1.00	30	163	3.29	63	17.8	3.4	0.16	24	0.67	993	0.04	2.0	1240	3.86	90.1	<0.01	12	48	2.2	0.23	23	0.3	0.49	1.09	12.2
SU-123-03	Plag-Hbl Porphyry	West Zone	P2	0.96	30	75	4.86	19	18.9	4.1	0.11	23	0.69	1470	0.03	1.0	1350	>5	112	0.010	14	70	2.4	0.39	20	0.2	0.64	1.25	11.8
SU-282-002	Plag-hbl Porphyry	West Zone	P2	1.63	30	84	3.93	21	14.5	3.6	0.13	47	1.20	1610	0.04	<0.5	1000	2.81	107	<0.01	17	85	3.1	0.18	14	0.3	0.27	1.18	13.5
SU-309-001	Plag-hbl Porphyry	West Zone	P2	1.18	50	130	4.17	38	14.7	3.4	0.13	27	0.78	1550	0.03	0.50	1220	3.25	105	<0.01	15	42	1.5	0.12	20	0.3	1.14	0.68	20.2
SU-309-002	Plag-hbl Porphyry	West Zone	P2	0.95	50	128	4.79	54	15.1	3.1	0.15	22	0.63	1340	0.04	1.3	1150	3.18	102	<0.01	9	49	1.6	0.16	27	0.3	0.49	1.16	11.7
SU-309-003	Plag-hbl Porphyry	West Zone	P2	0.99	50	105	3.26	23	16.8	3.7	0.17	22	0.65	1030	0.04	1.3	1220	3.60	87.2	<0.01	9	36	1.6	0.33	13	0.3	0.38	0.99	12.6
SU-098-01	Tonalite	West Zone	P2	1.22	40	89	5.87	26	14.1	3.3	0.11	37	0.85	2300	0.02	<0.5	1180	3.35	166	0.02	15	77	2.6	0.12	24	0.2	0.57	0.46	14.7
SU-103-01	Tonalite	West Zone	P2	1.21	50	87	3.33	32	20.7	4.1	0.15	31	0.75	1220	0.03	1.2	1380	4.29	103	0.010	14	63	2.8	0.13	17	0.3	0.68	0.21	15.2
SU-290-001	Arenite	West Zone	P2/Frag.	0.37	30	66	0.11	27	29.9	5.7	0.20	1	0.04	56	0.03	<0.5	150	>5	31.8	<0.01	6	17	4.9	0.13	29	1.1	0.41	0.56	8.84
SU-290-002	BX Conglomerate	West Zone	P2/Frag.	0.63	20	44	0.31	25	53.8	8.9	0.15	4	0.19	97	0.02	5.0	1020	>5	41.4	<0.01	12	50	2.9	0.18	65	0.9	0.67	2.52	5.77
Comp 13-11	Plag-Hbl Porphyry	West Zone	P2/Frag.	1.03	30	138	2.42	41	20.8	3.9	0.15	25	0.79	1060	0.03	1.8	1220	4.26	68.7	<0.01	12	52	3.1	1.73	22	0.3	0.58	0.85	12.3
SU-282-001	Plag-hbl Porphyry	West Zone	P2/Frag.	1.03	30	104	2.38	32	15.8	4.3	0.15	24	0.63	774	0.04	<0.5	1150	4.04	75.7	<0.01	11	52	2.2	0.20	18	0.5	0.42	0.76	10.8
SU-282-003	Plag-hbl Porphyry	West Zone	P2/Frag.	1.10	40	113	2.73	23	20.7	3.8	0.18	28	0.81	1490	0.04	<0.5	1110	3.65	62.7	<0.01	15	57	4.6	3.35	17	0.6	0.68	0.89	10.7
Comp 13-3	Intermediate Volcanics	VOK	Silicified Cap	0.24	40	83	0.25	236	99.6	6.1	0.13	1	0.02	78	0.01	7.9	440	>5	23.4	<0.01	4	1630	3.1	4.48	215	0.3	1.55	44.9	13.6
SU-348-005	Intermediate Volcanics	VOK	Silicified Cap	0.38	40	128	2.04	51	115	2.8	0.27	2	0.04	460	0.04	4.9	1080	3.49	157	<0.01	6	6290	<0.5	3.59	170	0.9	0.45	465	14.0
SU-352-008	Intermediate Volcanics	VOK	Silicified Cap	0.53	50	70	0.30	31	37.1	6.4	0.29	3	0.11	91	0.02	4.3	1170	>5	38.8	<0.01	<1	583	2.2	7.52	933	0.5	1.17	5.12	10.2
SU-096-04	Rhyolite	VOK	Silicified Cap	0.22	40	65	1.41	125	12.5	0.66	0.13	<1	0.02	531	0.02	<0.5	530	0.61	62.2	<0.01	3	70	0.8	1.73	93	0.2	0.14	1.37	15.4
SU-348-004	Siliceous Rocks	VOK	Silicified Cap	0.20	50	59	0.28	186	93.8	6.7	0.12	1	0.02	70	0.02	5.3	400	>5	25.7	<0.01	<1	1700	2.8	3.91	217	0.3	1.57	48.0	8.91
SU-356-001	Siliceous Rocks	VOK	Silicified Cap	0.06	50	19	0.81	144	10.4	4.7	0.04	<1	0.07	378	0.01	3.7	<50	4.93	108	<0.01	<1	39	1.5	2.44	89	<0.1	1.24	0.47	6.21
SU-358-002	Siliceous Rocks	VOK	Silicified Cap	0.17	40	64	1.37	121	38.8	2.5	0.12	<1	0.04	472	0.01	4.1	110	2.98	45.1	<0.01	2	1070	2.4	6.30	76	0.2	0.47	16.4	21.2
Comp. 3	Andesite	VOK	VSF	1.23	40	108	5.93	81	35.5	3.0	0.24	29	1.03	1780	0.03	75.3	850	2.65	186	<0.01	30	33	1.5	1.15	76	0.4	0.25	0.49	13.5
SU-012-006	Andesite	VOK	VSF	1.37	30	85	4.64	66	87.2	5.4	0.27	29	0.87	1440	0.02	64.0	930	3.98	201	<0.01	26	108	1.7	2.95	172	0.3	0.08	1.81	11.3
SU-017-002	Andesite	VOK	VSF	0.39	40	97	2.49	58	136	4.0	0.34	3	0.23	655	0.02	16.7	710	3.58	101	<0.01	5	36	1.3	>10	421	0.3	0.30	0.19	8.43
SU-017-05	Andesite	VOK	VSF	1.54	40	59	3.56	47	122	2.4	0.20	36	1.24	1560	0.04	19.9	800	1.51	94.3	0.010	33	55	1.0	0.79	18	0.5	0.33	0.35	17.4

Sample ID	Logged Lithology	Zone	Geol Unit	Co ppm	Cs ppm	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	La ppm	Lu ppm	Mo ppm	Nb ppm	Pb ppm	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sn ppm	Ta ppm	Tb ppm	Te ppm	Th ppm	Tl ppm	U ppm	W ppm	Y ppm	Yb ppm
			Method Code													ICM14B													
			LOD	0.1	0.05	0.1	0.1	0.05	0.01	0.02	0.1	0.01	0.05	0.05	0.2	0.2	0.05	0.1	1	0.3	0.05	0.02	0.05	0.1	0.02	0.05	0.1	0.05	0.1
SU-118-03	Pelite	Gossan Hill	Fragmental	0.90	0.30	0.2	<0.1	0.06	0.70	<0.02	3.9	0.02	3.16	0.07	42.6	2.3	20.1	0.6	<1	<0.3	<0.05	0.07	0.20	1.1	0.28	0.29	0.5	2.74	0.2
SU-123-02	Plag-Hbl Porphyry	West Zone	Fragmental	9.1	3.70	0.8	<0.1	0.08	0.16	<0.02	4.9	0.11	3.85	<0.05	43.2	7.9	3.16	1.2	5	<0.3	<0.05	0.25	0.37	1.2	0.18	0.37	<0.1	6.46	0.7
SU-282-004	Plag-hbl Porphyry	West Zone	Fragmental	9.5	2.44	2.7	<0.1	0.10	0.10	0.02	6.8	0.12	2.15	<0.05	16.9	16.4	6.35	2.1	<1	<0.3	<0.05	0.30	<0.05	1.2	0.26	0.38	0.1	8.79	0.7
SU-290-003	Plag-hbl Porphyry	West Zone	Fragmental	9.0	9.52	4.1	<0.1	0.06	0.07	<0.02	8.9	0.05	4.35	<0.05	7.3	6.1	1.71	3.1	3	<0.3	<0.05	0.26	0.17	1.5	0.14	0.37	<0.1	3.91	0.3
SU-290-004	Plag-hbl Porphyry	West Zone	Fragmental	13.3	3.51	0.7	<0.1	<0.05	0.28	<0.02	4.0	0.05	2.77	<0.05	9.9	8.1	2.29	1.9	2	<0.3	<0.05	0.20	0.16	2.5	0.24	0.40	<0.1	3.65	0.3
SU-290-012	Plag-hbl Porphyry	West Zone	Fragmental	8.1	2.75	1.0	<0.1	0.08	0.07	0.03	6.6	0.06	11.5	<0.05	111	17.3	0.80	1.1	4	<0.3	<0.05	0.17	0.10	2	0.31	0.58	0.2	4.02	0.4
SU-314-001	Plag-hbl Porphyry	West Zone	Fragmental	8.0	7.28	2.0	<0.1	<0.05	0.05	<0.02	7.3	0.12	1.92	<0.05	11.0	5.8	1.03	2.3	3	<0.3	<0.05	0.29	<0.05	0.9	0.13	0.18	<0.1	8.10	0.8
SU-352-007	Siliceous Rocks	VOK	Fragmental	1.2	1.21	1.5	<0.1	0.07	0.11	0.03	4.9	0.02	7.24	<0.05	299	5.7	4.56	1.2	7	<0.3	<0.05	0.12	0.07	4.3	0.26	2.21	0.6	1.86	0.2
SU-118-02	Silicified Breccia	Gossan Hill	Fragmental	0.50	0.29	0.3	<0.1	<0.05	0.33	<0.02	5.0	0.02	1.56	0.08	40.0	2.3	8.07	0.4	<1	<0.3	<0.05	0.06	0.21	0.7	0.21	0.45	0.7	2.36	0.1
SU-063-02	Tonalite	West Zone	Fragmental	14.6	1.46	0.8	<0.1	<0.05	1.99	0.14	6.4	0.05	9.90	<0.05	1200	9.0	46.7	1.8	6	<0.3	<0.05	0.26	0.09	1.4	0.27	0.22	<0.1	5.58	0.4
SU-068-03	Tonalite	Gossan Hill	Fragmental	9.6	1.56	0.8	<0.1	0.13	0.03	<0.02	4.6	0.06	1.75	<0.05	56.6	11.3	6.52	1.6	2	<0.3	<0.05	0.17	0.11	1.9	0.24	1.00	0.1	3.88	0.3
SU-068-06	Tonalite	Gossan Hill	Fragmental	7.9	1.82	2.1	<0.1	<0.05	0.01	<0.02	3.4	0.06	0.83	<0.05	14.3	12.9	0.73	1.1	1	<0.3	<0.05	0.18	<0.05	1.2	0.23	0.33	<0.1	4.85	0.4
Comp. 5	Tonalite	West Zone	Frag./Congl.	11.9	0.80	0.5	<0.1	<0.05	1.58	0.13	3.5	0.06	6.68	0.06	769	5.4	36.1	1.7	4	<0.3	<0.05	0.22	0.12	0.8	0.20	0.14	0.3	6.04	0.4
Comp. 1	Andesite/Dacite	Gossan Hill	Frag./VSF	11.5	2.45	1.0	<0.1	0.10	0.04	0.02	7.8	0.08	2.73	0.06	50.8	13.7	4.44	1.8	3	<0.3	<0.05	0.28	0.06	2.2	0.32	0.45	0.6	6.88	0.5
SU-017-001	Andesite	VOK	Office P1	11.2	2.66	3.4	<0.1	0.06	0.01	<0.02	5.3	0.08	0.80	<0.05	12.7	11.2	1.63	2.9	1	<0.3	<0.05	0.21	0.06	0.7	0.30	0.20	0.1	5.74	0.5
Comp 13-8	Plag-hbl Porphyry	VOK	Office P1	11.8	2.79	3.7	0.2	0.06	0.09	<0.02	7.8	0.09	2.80	<0.05	8.7	12.2	2.70	3.3	<1	<0.3	<0.05	0.26	<0.05	0.9	0.37	0.25	0.2	6.89	0.6
SU-113-001	Plag-hbl Porphyry	VOK	Office P1	11.7	1.74	2.3	<0.1	<0.05	<0.01	<0.02	5.9	0.09	1.23	<0.05	5.7	13.1	0.63	1.9	<1	<0.3	<0.05	0.34	<0.05	0.9	0.25	0.22	<0.1	10.8	0.7
SU-113-06	Plag-Hbl Porphyry	VOK	Office P1	9.4	2.61	2.5	<0.1	<0.05	<0.01	<0.02	7.7	0.12	0.56	<0.05	8.0	13.9	2.13	2.7	<1	<0.3	<0.05	0.32	<0.05	0.8	0.31	0.28	<0.1	9.74	0.9
SU-114-06	Plag-Hbl Porphyry	VOK	Office P1	11.1	3.41	3.6	<0.1	0.07	0.01	0.02	4.3	0.07	0.61	0.16	12.9	7.9	22.5	3	<1	<0.3	<0.05	0.20	0.29	0.6	0.66	0.15	0.2	6.00	0.5
SU-121-04	Plag-Hbl Porphyry	West Zone	Office P1	9.3	2.79	2.6	<0.1	<0.05	0.03	<0.02	6.2	0.11	0.72	0.21	17.5	12.1	0.73	1.6	1	<0.3	<0.05	0.27	<0.05	0.9	0.23	0.29	0.8	8.63	0.8
SU-132-05	Plag-Hbl Porphyry	VOK	Office P1	10.7	2.69	3.2	<0.1	0.08	0.01	<0.02	7.3	0.11	0.42	0.11	20.5	11.7	1.31	3.1	<1	<0.3	<0.05	0.28	<0.05	0.9	0.25	0.36	0.1	8.37	0.8
SU-182-03	Plag-Hbl Porphyry	VOK	Office P1	10.4	2.33	5.2	<0.1	0.07	<0.01	<0.02	4.8	0.08	0.51	0.09	25.4	9.6	6.51	3.9	<1	<0.3	<0.05	0.22	0.09	0.8	0.20	0.20	0.1	5.95	0.5
SU-349-005	Plag-hbl Porphyry	VOK	Office P1	13.7	2.09	4.7	<0.1	0.06	0.08	<0.02	6.3	0.09	1.82	<0.05	6.9	9.0	1.15	3.2	<1	<0.3	<0.05	0.22	<0.05	0.8	0.23	0.24	0.3	5.84	0.6
SU-349-006	Plag-hbl Porphyry	VOK	Office P1	9.1	2.21	0.5	<0.1	<0.05	<0.01	<0.02	3.8	0.08	0.82	<0.05	9.9	9.4	2.81	3.1	1	<0.3	<0.05	0.21	<0.05	0.4	0.37	0.13	0.1	5.83	0.5
SU-353-013	Plag-hbl Porphyry	VOK	Office P1	9.2	1.53	5.7	<0.1	<0.05	0.01	0.03	3.2	0.06	0.92	<0.05	7.5	8.9	1.42	3.4	<1	<0.3	<0.05	0.15	<0.05	0.6	0.15	0.19	<0.1	4.28	0.4
SU-353-014	Plag-hbl Porphyry	VOK	Office P1	8.5	3.03	4.3	<0.1	0.06	<0.01	<0.02	5.0	0.09	0.70	<0.05	2.7	12.7	0.42	2.6	<1	<0.3	<0.05	0.23	<0.05	1.1	0.18	0.40	<0.1	6.44	0.6
SU-353-015	Plag-hbl Porphyry	VOK	Office P1	8.4	3.38	1.7	<0.1	0.05	<0.01	<0.02	4.0	0.07	0.66	<0.05	10.1	12.7	0.76	3.2	<1	<0.3	<0.05	0.19	<0.05	0.8	0.19	0.18	0.3	5.46	0.5
SU-356-007	Plag-hbl Porphyry	VOK	Office P1	9.7	1.36	3.9	<0.1	<0.05	0.02	<0.02	4.7	0.09	1.36	<0.05	7.5	8.8	1.24	2.3	<1	<0.3	<0.05	0.22	<0.05	0.7	0.28	0.24	<0.1	7.49	0.7
SU-356-008	Plag-hbl Porphyry	VOK	Office P1	9.2	1.89	3.0	<0.1	<0.05	0.02	<0.02	8.0	0.09	0.77	<0.05	69.7	12.1	0.46	3.8	<1	<0.3	<0.05	0.25	<0.05	0.9	0.21	0.29	0.1	6.79	0.6
SU-356-009	Plag-hbl Porphyry	VOK	Office P1	10.6	2.45	1.8	<0.1	<0.05	0.02	<0.02	5.4	0.08	0.90	<0.05	16.1	12.0	0.94	4.1	<1	<0.3	<0.05	0.24	<0.05	0.9	0.25	0.20	<0.1	6.86	0.6
SU-357-005	Plag-hbl Porphyry	VOK	Office P1	9.7	3.21	4.6	<0.1	<0.05	0.02	<0.02	6.2	0.06	0.72	<0.05	4.1	13.8	0.59	3.5	<1	<0.3	<0.05	0.18	<0.05	0.8	0.19	0.28	0.1	4.47	0.4
SU-039-03	Andesite	Gossan Hill	P2	11.1	5.95	1.0	<0.1	0.21	0.05	<0.02	11.0	0.11	2.52	0.11	26.6	9.8	1.79	1.6	<1	<0.3	<0.05	0.33	<0.05	2.8	0.37	0.64	0.1	8.51	0.7
SU-039-04	Andesite	Gossan Hill	P2	8.9	5.07	0.8	<0.1	0.09	0.06	<0.02	6.0	0.07	7.92	0.05	8.7	6.8	1.15	1.7	<1	<0.3	<0.05	0.23	0.84	1.1	0.14	0.23	<0.1	5.10	0.4
SU-039-05	Andesite	Gossan Hill	P2	11.6	3.10	0.7	<0.1	0.06	0.04	0.02	6.1	0.08	5.47	0.06	15.0	7.6	6.09	1.5	1	<0.3	<0.05	0.25	0.81	0.6	0.19	0.13	0.6	7.86	0.5
SU-314-003	Conglomerate	West Zone	P2	8.3	4.39	1.5	<0.1	<0.05	0.04	<0.02	6.6	0.10	3.95	<0.05	21.2	5.6	0.99	1.5	3	<0.3	<0.05	0.27	0.20	0.9	0.13	0.17	<0.1	7.86	0.7
SU-314-004	Conglomerate	West Zone	P2	8.8	5.04	1.1	<0.1	<0.05	0.19	0.05	12.7	0.07	2.65	<0.05	91.4	6.0	2.36	1.4	6	<0.3	<0.05	0.28	0.32	1.3	0.16	0.19	<0.1	4.85	0.5
SU-314-005	Conglomerate	West Zone	P2	7.8	3.28	1.4	<0.1	<0.05	0.05	<0.02	6.2	0.12	2.74	<0.05	29.6	4.0	0.84	1.5	5	<0.3	<0.05	0.25	0.14	1	0.13	0.16	<0.1	8.40	0.8
SU-314-006	Conglomerate	West Zone	P2	8.6	4.21	1.4	<0.1	<0.05	0.31	0.03	4.3	0.11	2.87	<0.05	101	4.6	1.89	1.6	7	<0.3	<0.05	0.24	0.43	1.1	0.22	0.18	<0.1	7.28	0.7
SU-121-01	Intermediate Volcanics	West Zone	P2	8.2	5.53	1.7	<0.1	0.07	0.20	<0.02	8.9	0.13	1.87	<0.05	25.0	6.5	3.66	1.6	5	<0.3	<0.05	0.36	0.21	1.2	0.22	0.27	<0.1	9.01	0.9
SU-121-02	Intermediate Volcanics	West Zone	P2	8.7	5.99	2.7	<0.1	0.05	0.03	<0.02	9.1	0.10	5.75	<0.05	16.0	7.4	2.55	1.7	4	<0.3	<0.05	0.32	<0.05	1.3	0.18	0.30	<0.1	7.43	0.6
Comp 13-15	Plag-hbl Porphyry	West Zone	P2	8.3	6.55	2.4	0.1	<0.05	0.11	<0.02	6.6	0.13	3.71	<0.05	24.8	7.8	1.56	1.7	5	1	<0.05	0.26	0.74	1.3	0.22	0.21	<0.1	9.38	0.9
SU-123-03	Plag-Hbl Porphyry	West Zone	P2	8.8	5.14	2.0	<0.1	<0.05	0.09	<0.02	6.2	0.12	2.06	0.11	35.1	4.6	1.35	1.9	4	<0.3	<0.05	0.26	0.24	1.2	0.15	0.17	<0.1	9.27	0.8
SU-282-002	Plag-hbl Porphyry	West Zone	P2	7.9	5.89	3.5	<0.1	0.06	0.01	<0.02	7.0	0.13	2.14	<0.05	20.4	6.0	0.70	2.1	5	<0.3	<0.05	0.27	0.07	1.5	0.12	0.32	<0.1	9.24	0.9
SU-309-001	Plag-hbl Porphyry	West Zone	P2	8.3	5.59	2.5	<0.1	<0.05	0.07	<0.02	10.7	0.10	2.56	<0.05	14.0	5.4	1.33	2.3	4	<0.3	<0.05	0.33	0.15	1.2	0.19	0.19	<0.1	8.08	0.7
SU-309-002	Plag-hbl Porphyry	West Zone	P2	7.5	6.00	1.9	<0.1	<0.05	0.15	<0.02	6.1	0.11	2.43	<0.05	23.8	6.2	1.35	1.8	5	<0.3	<0.05	0.23	0.84	1	0.19	0.17	<0.1	8.23	0.7
SU-309-003	Plag-hbl Porphyry	West Zone	P2	9.1	5.52	2.2	<0.1	<0.05	0.03	<0.02	6.9	0.14	3.23	<0.05	24.2	7.7	1.10	1.7	5	<0.3	<0.05	0.26	0.33	1.3	0.18	0.19	<0.1	10.2	1
SU-098-01	Tonalite	West Zone	P2	7.5	5.84	2.8	<0.1	0.09	0.04	<0.02	7.6	0.13	1.62	0.19	6.9	5.3	1.41	1.8	1	<0.3	<0.05	0.33	0.10	1.4	0.12	0.21	<0.1	10.8	0.8
SU-103-01	Tonalite	West Zone	P2	8.4	7.62	2.3	<0.1	0.17	0.04	<0.02	8.2	0.11	1.53	0.17	12.5	6.2	1.58	1.7	1	<0.3	<0.05	0.30	0.16	2	0.15	0.25	<0.1	8.98	0.7
SU-290-001	Arenite	West Zone	P2/Frag.	12.3	10.8	0.6	<0.1	0.08	0.28	<0.02	3.3	0.10	2.08	<0.05	21.2	8.7	4.04	3	5	<0.3	<0.05	0.27	0.33	3.5	0.44	0.64	<0.1	4.81	0.7
SU-290-002	BX Conglomerate	West Zone	P2/Frag.	25.0	4.76	1.1	<0.1	<0.05	0.34	<0.02	2.5	0.06	19.9	<0.05	24.3	6.5	6.82	2.6	13	<0.3	<0.05	0.27	0.47	1.1	0.32	0.16	<0.1	4.40	0.4
Comp 13-11	Plag-Hbl Porphyry	West Zone	P2/Frag.	8.8	6.44	2.5	0.1	0.06	0.07	<0.02	6.7	0.12	3.11	<0.05	28.3	7.7	1.98	1.7	6	2.3	<0.05	0.27	0.20	1.5	0.19	0.31	<0.1	8.48	0.8
SU-282-001	Plag-hbl Porphyry	West Zone	P2/Frag.	8.6	5.85	2.2	<0.1	<0.05	0.05	<0.02	5.6	0.14	1.78	<0.05	21.6	6.2	0.95	1.9	5	<0.3	<0.05	0.28	0.22	1.2	0.15	0.19	<0.1	9.50	0.9
SU-282-003	Plag-hbl Porphyry	West Zone	P2/Frag.	8.2	6.20	2.3	<0.1	0.09	0.05	<0.02	5.5	0.10	1.71	<0.05	30.4	8.1	1.80	2.2	5	<0.3	<0.05	0.24	0.23	1.8	0.20	0.46	<0.1	6.71	0.6
Comp 13-3	Intermediate Volcanics	VOK	Silicified Cap	2.6	1.60	0.9	0.2	0.07	0.40	0.03	6.4	0.02	23.7	0.08	53.9	5.6	9.36	1.3	32	0.6	<0.05	0.14	0.15	3.3	0.32	3.61	0.4	1.91	0.2
SU-348-005	Intermediate Volcanics	VOK	Silicified Cap	6.8	7.39	0.7	<0.1	<0.05	1.58	0.30	7.8	0.02	8.10	<0.05	161	10.3	6.39	1.8	15	<0.3	<0.05	0.14	0.09	1.5	0.41	0.21	1.9	2.27	0.2
SU-352-008	Intermediate Volcanics	VOK	Silicified Cap	9.1	3.16	0.9	<0.1	<0.05	0.13	0.03	4.8	0.02	2.32	<0.05	364	10.8	12.8	1	18	<0.3	<0.05	0.22	0.11	3.1	0.52	1.13	0.4	2.26	0.1
SU-096-04	Rhyolite	VOK	Silicified Cap	0.90	3.03	0.6	<0.1	0.07	0.06	<0.02	9.9	0.05	2.99	0.07	43.6	6.1	2.83	0.5	<1	<0.3	<0.05	0.17	<0.05	3.4	0.25	0.40	0.3	3.77	0.3
SU-348-004	Siliceous Rocks	VOK	Silicified Cap	2.7	1.38	0.7	<0.1	0.06	0.34	0.03	4.0	0.02	18.9	<0.05	57.1	4.5	8.10	1.1	33	<0.3	<0.05	0.11	0.20	2.9	0.27	3.55	0.4	1.61	0.1
SU-356-001	Siliceous Rocks	VOK	Silicified Cap	1.6	0.17	0.2	<0.1	<0.05	0.04	<0.02	2.8	0.03	1.31	0.07	51.5	1.3	2.89	0.5	22	<0.3	<0.05	0.13	0.30	1.6	0.14	0.64	0.2	2.82	0.2
SU-358-002	Siliceous Rocks	VOK	Silicified Cap	2.6	0.75	0.4	<0.1	0.06	0.27	0.04	9.0	0.03	1.69	<0.05	39.0	4.0	11.7	1	10	<0.3	<0.05	0.24	0.15	1.8	0.24	0.47	0.1	4.35	0.3
Comp. 3	Andesite	VOK	VSF	12.9	3.22	3.2	<0.1	<0.05	<0.01	<0.02	7.0	0.10	81.4	0.06	27.0	8.9	2.72	2.7	9	<0.3	<0.05	0.39	0.08	0.8	0.28	0.13	0.2	12.2	0.8
SU-012-006	Andesite	VOK	VSF	15.1	2.10	2.8	<0.1	<0.05	0.03	0.02	6.2	0.09	2.10	<0.05	107	9.2	3.93	2	17	<0.3	<0.05	0.19	<0.05	1.6	0.39	0.28	0.1	5.66	0.6
SU-017-002	Andesite	VOK	VSF	14.0	2.38	0.8	<0.1	<0.05	0.04	<0.02	4.2	0.05	3.81	<0.05	12.1	13.2	3.17	1.6	2	<0.3	<0.05	0.15	0.22	1.1	0.43	0.23	0.2	3.93	0.3
SU-017-05	Andesite	VOK	VSF	11.6	3.16	4.9	<0.1	<0.05	0.02	<0.02	7.8	0.11	0.43	0.07	27.8	8.6	1.23	2.7	8	<0.3	<0.05	0.39	<0.05	2.4	0.28	0.25	0.2	9.31	0.8

Sample ID	Logged Lithology	Zone	Geol Unit	Al %	B ppm	Ba ppm	Ca %	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Na %	Ni ppm	P ppm	S %	Sr ppm	Ti %	V ppm	Zn ppm	Zr ppm	Ag ppm	As ppm	Be ppm	Bi ppm	Cd ppm	Ce ppm
			Method Code	ICM14B																									
			LOD	0.01	10	5	0.01	1	0.5	0.01	0.01	1	0.01	2	0.01	0.5	50	0.01	0.5	0.01	1	1	0.5	0.01	1	0.1	0.02	0.01	0.05
SU-035-01	Andesite	VOK	VSF	0.68	40	268	1.87	26	50.5	3.2	0.55	<1	0.51	879	0.01	34.0	2770	1.06	183	<0.01	35	107	1.4	1.16	99	0.7	<0.02	0.30	36.3
SU-036-04	Andesite	Gossan Hill	VSF	0.41	50	48	2.16	69	91.4	3.3	0.35	2	0.08	1730	0.02	22.5	710	3.99	77.7	<0.01	8	89	1.7	>10	183	0.3	0.86	0.56	9.81
SU-040-002	Andesite	VOK	VSF	0.35	40	62	3.37	82	15.4	1.2	0.23	3	0.08	764	0.03	5.4	310	1.08	82.9	<0.01	5	19	1.1	0.37	22	0.3	0.26	0.57	4.27
SU-040-003	Andesite	VOK	VSF	2.33	40	85	4.25	52	166	5.0	0.21	61	1.80	2390	0.02	55.5	1160	2.72	167	0.010	44	267	1.4	2.51	250	0.4	0.23	4.48	16.7
SU-040-03	Andesite	VOK	VSF	2.86	30	103	8.84	16	59.3	6.1	0.26	74	1.54	3190	0.03	23.7	1990	1.47	169	<0.01	84	70	2.4	1.57	180	0.6	0.10	0.31	29.7
SU-040-04	Andesite	VOK	VSF	1.31	50	116	5.52	98	38.9	3.7	0.25	30	0.99	1510	0.03	95.0	860	3.37	183	<0.01	34	27	1.7	1.14	73	0.3	0.36	0.50	12.7
SU-040-05	Andesite	VOK	VSF	1.40	50	112	2.84	41	79.9	3.2	0.34	28	0.81	1780	0.02	17.2	750	2.04	66.4	<0.01	27	61	1.4	1.56	209	0.3	0.16	0.47	15.2
SU-041-12	Andesite	West Zone	VSF	0.39	60	132	2.48	23	39.7	2.3	0.37	2	0.12	1060	0.02	2.9	890	2.67	205	<0.01	7	116	2.2	4.19	150	0.3	0.55	1.16	14.1
SU-041-13	Andesite	West Zone	VSF	1.84	50	64	1.38	40	151	4.1	0.35	26	1.48	1930	0.02	77.7	1290	1.76	59.3	0.06	35	178	2.5	3.34	101	0.4	0.06	1.02	20.2
SU-082-001	Andesite	VOK	VSF	0.56	40	83	7.69	43	31.8	2.3	0.19	10	0.25	2030	0.03	22.9	710	2.14	209	<0.01	9	50	1.2	1.07	94	0.5	0.61	0.67	12.1
SU-082-002	Andesite	VOK	VSF	1.56	40	97	2.41	42	68.5	3.4	0.22	41	1.21	1270	0.03	9.8	880	1.47	149	<0.01	22	150	1.6	1.21	44	0.6	0.47	3.04	9.35
SU-082-004	Andesite	VOK	VSF	0.75	30	47	5.38	49	63.0	5.2	0.18	17	0.59	1860	0.03	15.3	690	>5	145	<0.01	13	39	1.3	4.80	22	0.3	0.78	0.17	10.2
SU-084-002	Andesite	VOK	VSF	0.32	40	86	0.33	55	25.8	5.3	0.24	<1	0.05	150	0.01	3.5	820	>5	26.2	<0.01	3	370	3.8	4.08	447	0.4	0.94	6.78	8.30
SU-086-001	Andesite	VOK	VSF	0.17	50	26	0.38	176	96.2	1.4	0.12	<1	0.08	396	0.01	7.6	300	1.34	31.3	<0.01	2	20	0.6	>10	182	0.2	0.26	0.50	6.70
SU-086-002	Andesite	VOK	VSF	0.35	20	55	2.74	40	48.1	3.4	0.26	<1	0.72	1000	0.01	51.0	780	2.79	158	<0.01	7	15	0.9	1.39	55	0.6	0.39	0.21	7.87
SU-096-05	Andesite	VOK	VSF	0.27	60	37	0.81	74	32.6	8.8	0.18	1	0.09	253	0.03	4.3	870	>5	80.1	<0.01	11	1290	3.8	5.44	2350	0.3	0.77	13.5	9.86
Comp. 7	Arenite	VOK	VSF	0.65	50	64	3.08	66	40.8	2.9	0.23	13	0.42	1110	0.02	12.9	760	3.01	123	<0.01	11	58	1.9	4.73	219	0.3	0.19	0.26	8.86
SU-063-003	Arenite	West Zone	VSF	0.42	40	62	2.61	51	128	5.6	0.36	4	0.08	1030	0.03	23.5	840	>5	85.1	0.010	6	157	3.3	7.74	76	0.4	0.89	0.81	12.1
SU-063-07	Arenite	West Zone	VSF	0.58	50	42	2.34	35	102	3.0	0.36	7	0.23	1090	0.02	16.7	1290	3.45	67.8	<0.01	19	184	1.6	3.76	85	0.3	0.28	1.87	14.3
SU-113-04	Arenite	VOK	VSF	0.27	50	67	1.61	89	14.0	2.6	0.21	1	0.02	414	0.03	9.7	460	3.26	95.1	<0.01	5	37	2.2	3.14	51	0.2	0.17	0.29	7.74
SU-120-001	Arenite	VOK	VSF	1.30	30	49	2.51	35	67.0	5.0	0.23	31	0.95	689	0.01	46.5	1050	4.22	67.1	<0.01	23	32	1.4	3.81	517	0.5	0.78	0.39	9.10
SU-219-03	Arenite	VOK	VSF	1.03	40	62	4.79	44	65.0	3.5	0.23	23	0.80	1850	0.01	16.2	1080	2.96	156	<0.01	17	106	1.6	5.24	363	0.3	0.20	0.35	10.9
SU-219-05	Arenite	VOK	VSF	0.52	40	72	1.17	55	33.8	3.2	0.25	8	0.24	506	0.02	16.3	620	3.71	52.2	<0.01	10	66	1.3	5.24	326	0.4	0.09	0.31	7.71
SU-295-008	Arenite	West Zone	VSF	0.66	60	337	3.02	27	87.3	1.9	0.40	5	0.31	1850	0.01	12.7	720	1.45	357	0.13	7	67	1.2	1.32	42	0.4	0.04	1.05	12.7
SU-346-001	Arenite	VOK	VSF	1.25	50	64	5.89	64	109	8.0	0.20	36	1.04	1970	0.03	17.3	800	>5	145	0.02	17	796	2.5	4.71	584	0.3	0.83	5.83	8.23
SU-346-005	Arenite	VOK	VSF	1.16	40	50	3.99	39	44.9	2.7	0.21	29	0.98	1080	0.02	21.7	540	1.86	113	<0.01	19	25	1.0	1.72	157	0.4	0.27	0.41	7.32
SU-348-006	Arenite	VOK	VSF	0.39	30	198	1.43	66	208	1.2	0.26	2	0.04	340	0.05	27.2	1460	1.30	123	<0.01	9	660	1.1	3.69	202	0.7	0.18	33.1	11.4
SU-348-007	Arenite	VOK	VSF	1.13	50	76	3.36	59	84.4	3.7	0.25	25	0.83	1390	0.03	45.7	710	2.98	163	<0.01	21	56	1.3	2.86	439	0.3	0.04	1.31	9.52
SU-348-008	Arenite	VOK	VSF	0.28	40	121	0.14	80	80.0	2.7	0.24	<1	0.02	20	0.01	20.7	700	2.87	7.0	<0.01	1	63	1.1	5.17	713	0.4	0.72	1.51	6.76
SU-350-003	Arenite	VOK	VSF	1.33	40	58	2.78	47	89.9	3.1	0.20	32	1.01	1080	0.03	22.2	670	2.10	81.9	<0.01	18	25	0.5	1.88	415	0.4	0.56	0.07	11.4
SU-350-004	Arenite	VOK	VSF	1.51	40	71	5.07	47	96.9	4.1	0.19	33	1.12	2270	0.03	19.6	1090	2.90	111	<0.01	21	93	0.6	1.88	309	0.3	0.29	1.45	8.84
SU-350-006	Arenite	VOK	VSF	1.08	40	200	4.32	27	49.8	4.1	0.38	50	0.79	1290	0.11	16.3	1490	2.16	366	<0.01	17	61	1.6	2.18	334	0.9	0.38	0.23	29.0
SU-350-007	Arenite	VOK	VSF	0.48	40	177	4.26	38	16.3	3.0	0.27	9	1.07	1230	0.04	3.0	750	1.43	301	<0.01	7	35	1.6	0.69	375	0.3	0.22	0.17	12.4
SU-353-006	Arenite	VOK	VSF	0.74	40	55	5.08	38	34.7	2.7	0.21	15	0.49	1260	0.01	35.1	1190	2.72	114	<0.01	9	93	0.5	2.15	44	0.4	1.02	1.83	10.0
SU-353-008	Arenite	VOK	VSF	0.45	40	72	5.46	39	49.0	3.8	0.20	8	0.32	1290	0.03	38.6	670	4.35	296	<0.01	5	35	1.5	3.68	47	0.4	1.66	0.79	7.94
SU-353-009	Arenite	VOK	VSF	0.31	40	77	2.81	44	50.8	3.9	0.20	3	0.08	794	0.04	52.4	760	4.76	145	<0.01	3	179	1.1	6.28	54	0.5	1.40	3.71	5.25
SU-353-012	Arenite	VOK	VSF	0.19	40	37	1.93	123	26.1	1.1	0.14	<1	0.04	560	0.02	8.6	220	1.13	46.5	<0.01	2	26	<0.5	3.16	46	0.3	0.26	0.25	5.34
SU-354-004	Arenite	VOK	VSF	0.25	40	45	0.43	112	19.3	3.4	0.20	<1	0.03	67	0.02	26.0	650	3.78	45.4	<0.01	2	<1	1.1	2.43	305	0.2	0.76	0.04	5.82
SU-355-001	Arenite	VOK	VSF	0.35	20	115	0.27	32	32.2	0.49	0.22	<1	0.02	17	0.02	15.1	1100	0.52	85.9	<0.01	2	10	<0.5	4.83	104	0.3	0.45	0.16	8.60
SU-355-002	Arenite	VOK	VSF	0.37	40	51	1.14	52	98.0	4.2	0.21	3	0.13	514	0.01	39.4	670	4.76	69.4	<0.01	1	12	0.7	4.46	464	0.4	0.62	0.17	5.53
SU-355-003	Arenite	VOK	VSF	0.28	30	45	1.41	46	67.4	2.3	0.22	<1	0.04	298	0.01	25.3	580	2.60	35.6	<0.01	2	28	<0.5	2.89	154	0.3	0.59	0.35	6.85
SU-355-004	Arenite	VOK	VSF	0.16	30	32	3.99	98	17.9	1.2	0.16	<1	0.02	1170	0.01	11.1	230	1.31	103	<0.01	1	12	<0.5	1.29	68	0.1	0.30	0.18	5.97
SU-356-005	Arenite	VOK	VSF	0.50	40	63	2.31	62	297	4.0	0.26	7	0.20	692	0.01	17.4	810	4.33	98.2	<0.01	9	41	1.0	>10	298	0.4	0.35	0.25	10.8
SU-358-003	Arenite	VOK	VSF	0.58	50	235	6.32	47	46.2	1.0	0.34	<1	0.04	2060	0.02	1.8	4070	1.23	272	<0.01	14	141	0.8	9.58	72	0.6	0.30	1.91	16.7
SU-358-004	Arenite	VOK	VSF	0.42	40	49	0.35	63	59.9	4.4	0.21	6	0.16	143	0.01	29.8	680	4.87	24.7	<0.01	6	9	0.8	2.12	357	0.3	0.87	0.12	8.40
SU-361-010	Arenite	VOK	VSF	0.28	50	67	1.22	77	9.1	2.0	0.22	<1	0.03	510	0.01	7.0	380	2.38	98.4	<0.01	2	31	0.7	1.89	11	0.3	0.31	0.16	5.00
SU-361-014	Arenite	VOK	VSF	0.29	50	75	1.16	81	20.0	2.6	0.23	1	0.03	330	0.03	22.8	540	3.12	58.4	<0.01	3	167	1.1	8.53	193	0.3	0.36	1.69	6.09
SU-113-07	Conglomerate	VOK	VSF	0.62	50	85	0.87	81	59.1	3.1	0.30	11	0.26	364	0.02	34.2	720	3.13	50.0	<0.01	12	88	1.4	5.26	162	0.4	0.31	0.50	11.3
SU-346-006	Conglomerate	VOK	VSF	1.27	40	57	5.77	58	321	2.9	0.21	34	1.16	1940	0.02	64.2	790	2.09	120	<0.01	19	88	<0.5	>10	137	0.5	0.83	0.96	11.5
SU-348-009	Conglomerate	VOK	VSF	0.29	40	62	0.17	84	95.6	3.4	0.21	<1	0.03	22	0.01	22.7	740	3.82	19.5	<0.01	2	64	1.2	>10	840	0.5	0.65	1.39	6.82
SU-348-010	Conglomerate	VOK	VSF	0.21	60	45	0.10	157	69.6	6.0	0.16	<1	0.01	143	0.01	5.7	370	>5	11.4	<0.01	<1	3430	2.5	>10	516	0.4	0.14	23.1	9.96
SU-348-011	Conglomerate	VOK	VSF	0.27	50	42	0.19	95	47.7	5.8	0.20	<1	0.02	321	0.02	4.4	720	>5	14.0	<0.01	<1	553	3.1	>10	694	0.5	0.10	3.78	10.0
SU-348-015	Conglomerate	VOK	VSF	0.30	40	104	2.23	63	34.3	3.4	0.22	<1	0.02	537	0.02	3.8	920	3.93	264	<0.01	2	32	2.9	5.37	189	0.4	0.20	0.27	7.94
SU-353-004	Conglomerate	VOK	VSF	0.33	40	57	3.29	38	36.2	2.9	0.24	1	0.20	1130	0.01	25.0	860	3.18	124	<0.01	2	160	0.6	3.47	142	0.4	0.67	2.51	6.47
SU-353-005	Conglomerate	VOK	VSF	0.32	40	42	3.48	50	55.0	3.7	0.18	3	0.12	797	0.01	19.8	560	4.37	85.3	<0.01	<1	65	0.8	1.95	78	0.3	0.81	1.81	5.19
SU-353-007	Conglomerate	VOK	VSF	1.11	40	56	5.27	80	40.7	2.9	0.17	28	1.06	1560	0.02	20.2	500	1.44	196	<0.01	21	24	0.9	0.98	146	0.3	0.31	0.23	6.01
SU-354-006	Conglomerate	VOK	VSF	0.27	30	102	0.88	45	14.8	2.6	0.20	<1	0.06	269	0.01	38.8	800	3.00	44.8	<0.01	3	66	0.8	2.45	55	0.4	1.04	1.38	4.32
SU-355-006	Conglomerate	VOK	VSF	0.37	40	54	0.28	60	9.5	0.84	0.20	<1	0.05	72	0.02	1.8	1040	0.86	144	<0.01	4	11	1.7	1.12	335	0.3	0.56	0.24	15.6
SU-361-011	Conglomerate	VOK	VSF	0.30	50	120	3.11	67	24.0	2.7	0.23	<1	0.03	1270	0.02	7.5	670	3.21	166	<0.01	6	32	1.9	4.74	57	0.2	0.20	0.17	11.9
SU-361-013	Conglomerate	VOK	VSF	0.31	40	71	3.88	51	44.6	4.0	0.26	<1	0.04	1280	0.03	22.3	720	4.68	110	<0.01	4	30	1.7	6.98	212	0.4	0.46	0.15	7.39
SU-017-01	Dacite	VOK	VSF	0.66	40	97	3.75	56	112	3.6	0.34	8	0.27	935	0.02	22.1	990	3.87	133	<0.01	16	60	1.8	8.50	428	0.3	0.43	0.40	12.4
SU-017-04	Dacite	VOK	VSF	0.85	40	139	2.18	31	30.6	3.3	0.26	20	0.43	1030	0.02	9.5	770	3.51	53.4	<0.01	15	77	2.3	1.84	83	0.4	0.07	0.35	12.8
Comp 13-14	Dense Vein Stockwork	VOK	VSF	0.35	30	62	6.49	98	41.0	1.3	0.20	3	0.07	2220	0.03	11.4	670	1.45	152	<0.01	5	46	1.5	4.54	148	0.2	0.41	0.31	7.45
SU-056-002	Dense Vein stockwork	VOK	VSF	0.40	40	71	1.27	48	23.5	0.37	0.27	<1	0.01	364	0.06	7.7	1150	0.37	78.9	<0.01	5	9	1.6	4.94	36	0.3	0.41	0.05	6.89

Sample ID	Logged Lithology	Zone	Geol Unit	Co ppm	Cs ppm	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	La ppm	Lu ppm	Mo ppm	Nb ppm	Pb ppm	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sn ppm	Ta ppm	Tb ppm	Te ppm	Th ppm	Tl ppm	U ppm	W ppm	Y ppm	Yb ppm
			Method Code													ICM14B													
			LOD	0.1	0.05	0.1	0.1	0.05	0.01	0.02	0.1	0.01	0.05	0.05	0.2	0.2	0.05	0.1	1	0.3	0.05	0.02	0.05	0.1	0.02	0.05	0.1	0.05	0.1
SU-035-01	Andesite	VOK	VSF	30.0	3.04	1.4	<0.1	<0.05	0.15	0.03	16.4	0.19	0.47	<0.05	5.6	28.2	5.69	5.9	<1	<0.3	<0.05	0.83	<0.05	0.6	1.24	0.45	2.2	17.9	1.3
SU-036-04	Andesite	Gossan Hill	VSF	9.2	1.92	1.2	<0.1	<0.05	0.04	0.02	4.7	0.05	7.22	<0.05	71.1	19.2	4.91	1.4	2	<0.3	<0.05	0.18	0.46	1.3	0.36	0.47	0.1	3.66	0.3
SU-040-002	Andesite	VOK	VSF	3.7	2.40	0.6	<0.1	<0.05	0.01	<0.02	2.2	0.05	1.89	<0.05	11.5	8.2	0.83	0.7	4	<0.3	<0.05	0.10	<0.05	0.9	0.22	0.67	<0.1	3.37	0.3
SU-040-003	Andesite	VOK	VSF	23.0	2.38	6.6	<0.1	<0.05	0.04	0.05	8.2	0.11	1.36	<0.05	115	7.5	2.15	2.9	12	<0.3	<0.05	0.37	<0.05	2.1	0.22	0.28	0.2	11.4	0.8
SU-040-03	Andesite	VOK	VSF	24.0	4.43	6.5	<0.1	<0.05	0.05	0.03	13.9	0.18	0.94	<0.05	11.8	12.4	2.17	4.7	3	<0.3	<0.05	0.72	<0.05	0.6	0.48	0.09	1.5	19.5	1.2
SU-040-04	Andesite	VOK	VSF	14.5	3.43	3.3	<0.1	<0.05	0.01	<0.02	6.6	0.10	73.9	<0.05	29.6	9.5	2.95	2.6	13	<0.3	<0.05	0.35	0.14	0.7	0.29	0.13	0.2	9.76	0.7
SU-040-05	Andesite	VOK	VSF	13.4	2.67	3.9	<0.1	<0.05	0.01	<0.02	7.6	0.08	0.49	0.05	32.5	13.0	2.81	1.8	8	<0.3	<0.05	0.29	<0.05	1.6	0.40	0.19	0.2	7.23	0.5
SU-041-12	Andesite	West Zone	VSF	8.1	2.47	0.9	<0.1	0.06	0.03	<0.02	7.6	0.10	2.01	<0.05	57.0	17.9	5.71	1.7	1	<0.3	<0.05	0.23	0.08	2	0.31	0.55	<0.1	5.94	0.6
SU-041-13	Andesite	West Zone	VSF	21.0	2.87	5.5	<0.1	0.07	0.01	0.03	9.4	0.12	52.6	0.15	44.7	19.5	1.46	2.7	<1	0.4	<0.05	0.46	<0.05	2.5	0.34	0.50	0.3	12.2	0.9
SU-082-001	Andesite	VOK	VSF	9.7	3.20	1.2	<0.1	<0.05	0.03	<0.02	6.1	0.10	1.34	<0.05	34.0	6.7	1.64	2.3	12	<0.3	<0.05	0.28	0.05	0.8	0.26	0.41	0.2	7.66	0.7
SU-082-002	Andesite	VOK	VSF	10.1	3.03	3.6	<0.1	<0.05	0.04	<0.02	4.6	0.06	1.53	<0.05	54.7	8.1	2.01	2.9	11	<0.3	<0.05	0.19	0.06	1.7	0.35	0.44	<0.1	4.58	0.4
SU-082-004	Andesite	VOK	VSF	15.7	2.22	2.2	<0.1	<0.05	0.01	<0.02	4.9	0.09	1.26	<0.05	23.6	7.4	2.37	1.6	11	<0.3	<0.05	0.28	0.09	1.2	0.21	0.11	0.2	8.33	0.7
SU-084-002	Andesite	VOK	VSF	9.1	2.33	0.6	<0.1	0.08	0.11	<0.02	4.3	0.04	4.62	<0.05	151	8.5	5.63	1.1	22	<0.3	<0.05	0.13	0.24	2.1	0.74	0.76	0.2	2.98	0.2
SU-086-001	Andesite	VOK	VSF	4.5	1.04	0.5	<0.1	<0.05	0.06	<0.02	3.5	0.02	4.66	<0.05	10.7	4.9	38.0	0.5	3	<0.3	<0.05	0.10	0.13	0.3	0.37	0.06	0.2	1.82	0.1
SU-086-002	Andesite	VOK	VSF	14.0	2.57	0.7	<0.1	<0.05	0.02	<0.02	3.4	0.05	0.92	<0.05	14.8	8.9	12.6	5.4	13	<0.3	<0.05	0.16	0.08	0.9	0.24	0.06	0.1	3.61	0.4
SU-096-05	Andesite	VOK	VSF	8.5	3.65	0.6	<0.1	0.07	0.25	<0.02	4.4	0.03	10.7	0.11	172	7.9	66.7	1.2	40	<0.3	<0.05	0.19	0.13	1.6	0.35	0.37	0.9	3.75	0.2
Comp. 7	Arenite	VOK	VSF	9.2	2.04	1.7	<0.1	<0.05	0.08	<0.02	4.2	0.05	1.62	0.05	19.9	8.8	4.78	1.7	<1	<0.3	<0.05	0.19	0.65	0.8	0.30	0.25	0.2	4.95	0.4
SU-063-003	Arenite	West Zone	VSF	16.0	2.54	1.0	<0.1	0.08	0.02	<0.02	5.5	0.09	3.96	0.12	34.7	15.7	1.57	1.8	3	<0.3	<0.05	0.29	0.58	1.5	0.30	0.44	0.2	7.55	0.6
SU-063-07	Arenite	West Zone	VSF	12.6	3.68	1.9	<0.1	<0.05	0.03	<0.02	6.4	0.08	0.81	<0.05	47.0	21.2	1.81	1.8	3	<0.3	<0.05	0.33	0.08	1.7	0.37	0.21	0.1	8.34	0.6
SU-113-04	Arenite	VOK	VSF	6.7	1.80	0.7	<0.1	0.06	0.09	<0.02	3.8	0.04	1.11	0.12	15.8	7.5	3.45	0.9	<1	<0.3	<0.05	0.14	0.91	0.8	0.26	0.52	0.2	3.19	0.3
SU-120-001	Arenite	VOK	VSF	16.4	2.01	3.6	<0.1	<0.05	0.01	<0.02	4.4	0.06	0.66	<0.05	23.1	8.6	5.55	3	2	<0.3	<0.05	0.21	0.14	1.7	0.52	0.11	0.2	4.93	0.4
SU-219-03	Arenite	VOK	VSF	11.5	2.15	2.5	<0.1	<0.05	0.03	0.02	5.0	0.07	2.09	<0.05	27.5	9.1	6.31	2	<1	<0.3	<0.05	0.25	0.52	0.9	0.35	0.15	0.3	6.39	0.5
SU-219-05	Arenite	VOK	VSF	8.8	3.05	1.2	<0.1	<0.05	0.03	<0.02	3.7	0.03	0.50	<0.05	23.4	9.9	5.25	0.9	<1	<0.3	<0.05	0.10	0.16	0.9	0.52	0.22	0.2	1.95	0.2
SU-295-008	Arenite	West Zone	VSF	11.5	2.61	1.3	<0.1	0.07	0.02	<0.02	5.8	0.12	4.47	0.51	33.8	17.6	0.78	1.5	<1	0.8	<0.05	0.32	<0.05	1.7	0.31	0.55	1.5	9.68	0.9
SU-346-001	Arenite	VOK	VSF	32.2	1.73	3.0	<0.1	0.05	0.12	0.17	4.0	0.07	2.28	0.14	188	6.7	11.9	2.2	2	<0.3	<0.05	0.23	0.63	1.2	0.31	0.21	0.3	7.48	0.6
SU-346-005	Arenite	VOK	VSF	9.2	2.00	2.5	<0.1	<0.05	0.01	<0.02	3.6	0.07	7.68	<0.05	8.6	7.2	2.00	2.2	2	<0.3	<0.05	0.16	<0.05	0.6	0.47	0.23	0.2	4.37	0.4
SU-348-006	Arenite	VOK	VSF	33.9	6.63	1.1	<0.1	<0.05	0.14	0.08	5.7	0.05	5.59	<0.05	62.7	10.4	8.50	2	3	0.4	<0.05	0.21	0.12	3.6	0.54	3.11	1.3	3.10	0.4
SU-348-007	Arenite	VOK	VSF	17.1	2.07	2.8	<0.1	<0.05	0.02	0.02	4.7	0.07	2.87	<0.05	90.3	9.0	3.63	1.9	10	<0.3	<0.05	0.19	0.06	1.4	0.28	0.49	<0.1	5.07	0.5
SU-348-008	Arenite	VOK	VSF	9.4	1.89	0.6	<0.1	<0.05	0.05	<0.02	3.3	0.02	1.64	<0.05	17.3	9.3	11.3	0.8	1	<0.3	<0.05	0.09	0.56	0.8	0.70	0.18	0.1	1.42	<0.1
SU-350-003	Arenite	VOK	VSF	12.5	1.46	3.3	<0.1	<0.05	<0.01	<0.02	5.7	0.05	0.44	<0.05	22.6	6.7	2.14	1.9	<1	<0.3	<0.05	0.16	0.20	1	0.20	0.09	0.1	3.95	0.3
SU-350-004	Arenite	VOK	VSF	14.2	0.99	3.9	<0.1	<0.05	0.01	<0.02	4.4	0.06	0.68	<0.05	102	6.5	2.77	2.3	5	<0.3	<0.05	0.15	<0.05	1.3	0.25	0.16	0.1	4.32	0.4
SU-350-006	Arenite	VOK	VSF	14.5	18.6	2.4	<0.1	<0.05	0.08	0.03	13.4	0.06	1.24	<0.05	16.7	17.9	5.83	2.9	2	<0.3	<0.05	0.41	0.10	1.7	1.26	0.32	0.3	8.30	0.5
SU-350-007	Arenite	VOK	VSF	7.7	2.63	1.1	<0.1	<0.05	<0.01	<0.02	6.7	0.11	2.49	<0.05	9.8	10.1	3.20	2.2	<1	<0.3	<0.05	0.31	0.07	1.1	0.24	0.28	<0.1	10.2	0.8
SU-353-006	Arenite	VOK	VSF	9.1	2.45	1.6	<0.1	<0.05	0.01	<0.02	4.9	0.10	0.76	<0.05	8.9	8.1	1.31	2.5	4	<0.3	<0.05	0.28	0.19	0.7	0.22	<0.05	0.1	7.26	0.7
SU-353-008	Arenite	VOK	VSF	12.6	2.77	0.9	<0.1	<0.05	0.02	0.02	3.9	0.09	0.55	<0.05	72.1	7.3	1.80	2.3	20	<0.3	<0.05	0.20	0.30	0.5	0.26	0.13	<0.1	5.54	0.6
SU-353-009	Arenite	VOK	VSF	17.0	2.98	0.6	<0.1	<0.05	0.05	<0.02	2.6	0.05	1.47	<0.05	103	7.1	3.54	1.5	19	<0.3	<0.05	0.14	0.22	0.5	0.80	0.21	0.1	3.62	0.4
SU-353-012	Arenite	VOK	VSF	4.3	0.73	0.4	<0.1	<0.05	<0.01	<0.02	2.6	0.03	2.44	<0.05	31.1	5.2	2.95	0.6	1	<0.3	<0.05	0.08	0.24	0.8	0.20	0.09	<0.1	2.04	0.2
SU-354-004	Arenite	VOK	VSF	9.4	1.50	0.5	<0.1	<0.05	0.03	<0.02	2.8	0.02	3.69	<0.05	6.8	7.3	4.68	0.6	4	<0.3	<0.05	0.11	0.09	0.9	0.77	0.54	0.3	2.28	0.2
SU-355-001	Arenite	VOK	VSF	10.7	5.35	0.4	<0.1	<0.05	<0.01	<0.02	4.4	<0.01	0.45	<0.05	39.0	7.8	4.09	1	1	<0.3	<0.05	0.06	<0.05	1.1	0.24	0.13	<0.1	0.55	<0.1
SU-355-002	Arenite	VOK	VSF	15.4	2.18	0.7	<0.1	<0.05	0.04	<0.02	2.7	0.03	1.12	<0.05	46.5	8.9	9.16	0.9	31	<0.3	<0.05	0.16	0.15	0.9	0.84	0.14	<0.1	3.83	0.2
SU-355-003	Arenite	VOK	VSF	9.8	1.82	0.5	<0.1	<0.05	0.01	0.03	3.4	0.06	0.69	<0.05	20.4	8.6	3.63	1.2	9	<0.3	<0.05	0.16	0.07	0.6	0.32	0.14	<0.1	3.61	0.4
SU-355-004	Arenite	VOK	VSF	3.9	1.07	0.3	<0.1	<0.05	<0.01	<0.02	2.9	0.04	0.66	<0.05	12.7	6.3	2.57	0.6	4	<0.3	<0.05	0.13	<0.05	0.4	0.50	0.29	<0.1	4.47	0.3
SU-356-005	Arenite	VOK	VSF	11.7	2.93	1.2	<0.1	<0.05	0.06	0.04	5.3	0.04	1.36	<0.05	30.3	9.9	14.5	1.5	1	<0.3	<0.05	0.20	0.32	1	0.83	0.19	0.2	4.40	0.3
SU-358-003	Arenite	VOK	VSF	1.1	5.51	1.3	<0.1	<0.05	0.06	0.02	7.4	0.06	1.25	<0.05	177	12.2	6.71	3.1	3	<0.3	<0.05	0.25	<0.05	1.7	0.59	0.13	0.2	5.26	0.4
SU-358-004	Arenite	VOK	VSF	13.9	2.64	1.0	<0.1	<0.05	0.01	<0.02	4.2	0.02	1.32	<0.05	25.7	9.1	7.30	1.4	19	<0.3	<0.05	0.11	0.07	0.5	0.40	0.15	0.1	1.81	0.1
SU-361-010	Arenite	VOK	VSF	4.7	2.35	0.6	<0.1	<0.05	0.04	<0.02	2.6	0.03	0.90	<0.05	17.3	7.6	1.52	0.7	2	<0.3	<0.05	0.10	<0.05	0.7	0.23	0.16	<0.1	2.31	0.2
SU-361-014	Arenite	VOK	VSF	8.0	2.24	0.5	<0.1	<0.05	0.07	<0.02	3.1	0.02	2.10	<0.05	50.9	7.7	2.42	0.8	<1	<0.3	<0.05	0.09	1.54	0.8	0.45	0.13	0.1	1.88	0.2
SU-113-07	Conglomerate	VOK	VSF	11.2	2.87	1.6	<0.1	<0.05	0.04	<0.02	5.5	0.04	1.20	<0.05	16.4	13.0	7.60	1.3	<1	<0.3	<0.05	0.18	0.21	0.8	0.41	0.16	0.2	3.31	0.3
SU-346-006	Conglomerate	VOK	VSF	9.9	2.83	2.6	<0.1	<0.05	0.05	0.03	5.8	0.14	0.45	<0.05	70.9	7.2	9.51	2.9	5	<0.3	<0.05	0.39	0.09	0.5	0.42	0.07	0.1	12.9	1
SU-348-009	Conglomerate	VOK	VSF	12.9	2.67	0.5	<0.1	<0.05	0.04	<0.02	3.2	0.02	2.17	<0.05	14.6	8.8	16.2	0.9	2	<0.3	<0.05	0.11	0.80	0.7	0.69	0.17	0.1	2.16	0.1
SU-348-010	Conglomerate	VOK	VSF	5.2	1.61	0.4	<0.1	<0.05	3.63	0.08	4.8	0.02	5.56	<0.05	392	5.6	30.8	1	3	<0.3	<0.05	0.13	0.51	2.4	13.8	0.31	0.6	1.61	<0.1
SU-348-011	Conglomerate	VOK	VSF	7.9	2.70	0.5	<0.1	0.06	5.24	0.03	4.8	0.06	5.21	<0.05	167	6.7	39.9	0.8	<1	<0.3	<0.05	0.15	0.11	1.9	80.1	0.40	0.7	2.24	0.2
SU-348-015	Conglomerate	VOK	VSF	7.4	3.99	0.6	<0.1	0.07	0.55	<0.02	4.2	0.13	2.53	<0.05	46.4	7.6	9.33	1.1	<1	<0.3	<0.05	0.26	0.10	1.9	0.97	0.66	1	10.0	0.9
SU-353-004	Conglomerate	VOK	VSF	8.8	1.91	0.6	<0.1	<0.05	0.08	<0.02	3.1	0.06	1.63	<0.05	43.9	8.5	5.73	1.7	4	<0.3	<0.05	0.16	0.15	0.8	0.82	0.13	0.1	4.12	0.4
SU-353-005	Conglomerate	VOK	VSF	10.9	1.39	0.6	<0.1	<0.05	0.01	<0.02	2.8	0.06	1.03	<0.05	25.9	6.6	5.27	1	7	<0.3	<0.05	0.13	0.24	0.8	0.26	0.35	0.1	3.57	0.4
SU-353-007	Conglomerate	VOK	VSF	8.1	1.89	2.5	<0.1	<0.05	0.01	<0.02	3.1	0.08	1.76	<0.05	16.6	6.4	1.29	2.9	4	<0.3	<0.05	0.16	<0.05	0.6	0.23	0.32	<0.1	5.35	0.5
SU-354-006	Conglomerate	VOK	VSF	9.0	1.91	0.5	<0.1	<0.05	0.08	<0.02	2.0	0.02	1.33	<0.05	8.2	7.2	4.07	1.1	2	<0.3	<0.05	0.09	0.17	0.4	0.65	0.37	0.2	1.91	0.2
SU-355-006	Conglomerate	VOK	VSF	1.2	3.94	0.7	<0.1	<0.05	0.02	<0.02	8.0	0.02	1.86	<0.05	55.3	7.6	2.65	1	3	<0.3	<0.05	0.12	0.07	3.1	0.27	0.47	0.1	1.43	<0.1
SU-361-011	Conglomerate	VOK	VSF	7.7	1.70	0.6	<0.1	<0.05	0.11	<0.02	6.0	0.06	0.65	<0.05	22.3	7.5	3.90	1.2	<1	<0.3	<0.05	0.19	1.69	1.1	0.41	0.45	0.2	5.75	0.4
SU-361-013	Conglomerate	VOK	VSF	11.0	2.38	0.5	<0.1	<0.05	0.11	<0.02	3.7	0.07	2.70	<0.05	17.6	8.6	6.61	1.5	<1	<0.3	<0.05	0.19	2.48	0.8	1.33	0.18	0.2	5.59	0.5
SU-017-01	Dacite	VOK	VSF	17.9	2.96	1.7	<0.1	<0.05	0.03	0.02	5.8	0.08	3.47	<0.05	36.3	16.0	5.52	2.3	2	<0.3	<0.05	0.24	0.21	1.1	0.74	0.20	0.4	5.35	0.5
SU-017-04	Dacite	VOK	VSF	8.7	3.62	2.0	<0.1	0.06	0.04	<0.02	6.7	0.08	1.67	<0.05	17.9	9.7	2.14	1.7	2	<0.3	<0.05	0.21	0.19	2.3	0.38	0.72	0.2	5.08	0.5
Comp 13-14	Dense Vein Stockwork	VOK	VSF	6.1	3.64	0.8	0.2	<0.05	0.02	<0.02	3.8	0.07	9.61	0.09	28.5	8.4	3.62	1	2	0.9	<0.05	0.29	0.22	1.1	0.27	0.63	0.2	9.93	0.5
SU-056-002	Dense Vein stockwork	VOK	VSF	4.9	8.17	0.8	<0.1	<0.05	0.01	<0.02	3.1	0.01	1.13	<0.05	11.0	9.6	1.72	1.4	1	<0.3	<0.05	0.05	0.13	1.9	0.30	1.62	<0.1	0.97	<0.1

Sample ID	Logged Lithology	Zone	Geol Unit	Al %	B ppm	Ba ppm	Ca %	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Na %	Ni ppm	P ppm	S %	Sr ppm	Ti %	V ppm	Zn ppm	Zr ppm	Ag ppm	As ppm	Be ppm	Bi ppm	Cd ppm	Ce ppm
			Method Code	ICM14B																									
			LOD	0.01	10	5	0.01	1	0.5	0.01	0.01	1	0.01	2	0.01	0.5	50	0.01	0.5	0.01	1	1	0.5	0.01	1	0.1	0.02	0.01	0.05
SU-120-004	Dense Vein stockwork	VOK	VSF	0.26	40	47	8.18	81	31.1	1.8	0.17	3	0.09	2720	0.02	11.7	450	2.01	170	<0.01	4	75	1.2	5.50	189	0.2	0.46	0.55	6.46
SU-348-013	Dense Vein stockwork	VOK	VSF	0.07	30	36	0.07	252	39.3	0.70	0.04	<1	<0.01	41	0.01	8.2	<50	0.58	15.0	<0.01	<1	8	1.6	6.07	182	<0.1	0.18	0.19	2.00
SU-348-016	Dense Vein stockwork	VOK	VSF	0.27	30	126	0.39	49	211	2.7	0.21	<1	0.02	171	0.02	15.8	500	3.01	66.1	<0.01	1	198	3.8	>10	455	0.5	0.21	1.41	6.06
SU-349-009	Dense Vein stockwork	VOK	VSF	0.08	30	22	0.12	193	763	1.2	0.05	<1	0.01	56	0.01	6.5	90.0	1.15	14.2	<0.01	<1	70	<0.5	>10	135	<0.1	0.18	0.92	1.17
SU-350-001	Dense Vein stockwork	VOK	VSF	0.54	40	134	3.52	46	56.2	2.5	0.19	10	0.31	1230	0.04	9.3	710	2.46	120	<0.01	4	216	0.9	2.11	296	0.2	0.44	1.67	11.3
SU-350-002	Dense Vein stockwork	VOK	VSF	0.30	40	105	7.37	98	90.2	2.5	0.16	4	0.17	1860	0.02	46.3	480	2.71	160	<0.01	4	93	<0.5	6.90	232	0.2	2.63	0.71	7.37
SU-350-008	Dense Vein stockwork	VOK	VSF	0.22	30	35	4.89	94	37.0	1.7	0.14	2	0.06	1220	0.03	10.2	430	1.80	87.0	<0.01	1	37	<0.5	1.89	90	0.2	0.43	0.25	8.46
SU-354-005	Dense Vein stockwork	VOK	VSF	0.20	30	114	0.49	133	5.6	1.4	0.16	<1	0.05	143	0.01	13.0	400	1.47	52.7	<0.01	2	20	0.6	0.88	57	0.2	0.34	0.29	4.99
SU-017-03	fault zone	VOK	VSF	0.29	40	83	3.57	92	18.9	3.7	0.18	2	0.07	1140	0.02	8.9	510	4.93	109	<0.01	5	4580	1.6	3.96	153	0.2	0.69	41.6	9.46
SU-219-02	fault zone	VOK	VSF	0.92	40	54	6.03	18	123	3.8	0.28	17	0.66	1860	<0.01	21.0	1010	3.39	133	<0.01	15	61	1.6	2.92	160	0.5	0.15	0.15	14.6
BJ-BS-001/002	Felsic Volcanics	VOK	VSF	0.27	50	98	2.02	70	54.3	2.3	0.19	2	0.11	941	0.02	19.4	660	2.99	80.9	<0.01	5	357	1.0	5.73	146	0.5	1.57	2.46	7.04
BJ-BS-008/011	Felsic Volcanics	VOK	VSF	0.69	30	125	2.39	40	50.4	3.6	0.19	13	0.29	875	0.03	6.5	1360	3.48	142	<0.01	20	176	3.4	3.47	142	0.5	0.47	3.76	12.7
BJ-BS-009/012	Felsic Volcanics	VOK	VSF	0.71	20	117	1.83	39	53.1	4.0	0.16	12	0.29	754	0.04	6.0	1260	3.59	107	0.010	19	133	3.2	4.71	101	0.4	0.66	1.41	13.4
Comp. 11	Felsic Volcanics	VOK	VSF	0.44	40	75	1.27	56	52.4	4.6	0.27	3	0.29	513	0.02	30.9	880	>5	63.2	<0.01	6	38	2.3	3.90	503	0.6	1.04	0.68	9.12
Comp. 9	felsic volcanics	VOK	VSF	0.39	50	77	0.50	52	33.2	3.7	0.28	2	0.08	154	0.02	39.8	1310	4.98	43.7	<0.01	7	81	1.7	2.85	394	0.7	0.31	2.48	14.7
SU-113-002	Felsic Volcanics	VOK	VSF	0.59	40	57	2.13	60	37.9	4.1	0.25	10	0.58	638	0.01	21.3	980	3.66	107	<0.01	11	88	1.4	3.37	354	0.5	1.98	0.96	9.55
SU-113-01	Felsic Volcanics	VOK	VSF	0.77	70	75	3.09	47	30.8	3.2	0.29	12	0.44	666	0.02	64.4	930	3.46	105	<0.01	13	136	1.7	1.43	144	0.5	1.26	5.60	13.1
SU-113-02	Felsic Volcanics	VOK	VSF	0.37	50	54	0.67	64	43.4	7.0	0.23	<1	0.12	334	0.01	49.5	780	>5	35.6	<0.01	7	20	3.7	4.69	604	0.7	1.73	0.62	9.88
SU-113-03	Felsic Volcanics	VOK	VSF	0.60	70	89	2.38	62	31.2	3.1	0.28	8	0.34	754	0.02	26.6	760	3.59	92.6	<0.01	11	74	1.6	>10	535	0.5	1.25	0.36	7.32
SU-114-001	Felsic Volcanics	VOK	VSF	0.28	40	51	2.27	96	57.9	3.0	0.21	<1	0.04	543	0.03	14.0	710	2.95	65.6	<0.01	3	7	1.0	5.01	212	0.5	1.04	0.05	8.60
SU-114-02	Felsic Volcanics	VOK	VSF	0.35	40	67	0.43	38	32.9	3.9	0.25	2	0.07	109	0.01	38.6	1370	4.91	40.7	<0.01	8	96	1.5	2.67	348	0.6	0.35	3.02	11.7
SU-114-04	Felsic Volcanics	VOK	VSF	0.77	40	105	3.41	45	39.1	4.0	0.22	22	0.49	1300	0.04	5.1	1020	4.55	83.5	<0.01	19	144	2.2	4.98	525	0.3	0.59	0.55	10.1
SU-119-001	Felsic Volcanics	VOK	VSF	0.31	40	114	3.28	41	84.7	2.7	0.30	1	0.03	744	0.02	31.7	730	2.89	170	<0.01	13	123	1.9	3.08	556	0.3	0.26	4.30	9.34
SU-120-002	Felsic Volcanics	VOK	VSF	1.88	40	138	0.58	48	54.0	4.7	0.32	42	0.85	747	0.05	25.4	1830	1.54	42.5	<0.01	40	91	1.4	2.12	135	1.0	0.19	0.36	21.0
SU-120-003	Felsic Volcanics	VOK	VSF	0.92	40	81	1.94	71	119	4.6	0.26	25	0.58	876	0.03	16.9	610	3.69	48.1	<0.01	19	24	1.2	3.29	371	0.4	0.69	0.23	12.1
SU-130-004	Felsic Volcanics	VOK	VSF	0.31	40	60	0.60	73	203	4.3	0.27	<1	0.15	237	0.02	13.9	530	4.07	57.1	<0.01	4	35	1.2	>10	682	0.4	1.53	0.67	9.21
SU-132-01	Felsic Volcanics	VOK	VSF	0.33	50	63	1.07	44	65.7	4.1	0.25	<1	0.16	376	0.01	23.4	940	4.93	51.1	<0.01	7	153	1.7	7.99	543	0.5	0.22	0.43	11.0
SU-146-04	Felsic Volcanics	VOK	VSF	0.33	40	85	2.07	38	90.3	3.0	0.25	<1	0.04	1070	0.02	35.2	970	3.90	80.8	<0.01	6	211	2.2	>10	366	0.4	0.24	1.14	8.27
SU-219-01	Felsic Volcanics	VOK	VSF	0.44	40	44	8.11	49	23.3	4.5	0.18	6	0.38	2130	0.01	26.2	1570	>5	252	<0.01	11	19	2.4	4.37	126	0.3	2.16	0.36	9.23
SU-219-04	Felsic Volcanics	VOK	VSF	0.46	40	66	2.31	45	85.1	4.3	0.27	4	0.52	1040	0.01	35.3	1350	4.80	84.3	<0.01	10	65	1.7	6.75	552	0.6	0.23	0.19	11.2
SU-238-02	Felsic Volcanics	VOK	VSF	0.44	40	103	0.94	62	28.3	0.88	0.25	4	0.13	215	0.03	6.4	380	0.50	59.4	<0.01	4	32	0.7	0.78	19	0.3	0.24	1.04	4.80
SU-275-001	Felsic Volcanics	VOK	VSF	1.55	40	78	2.84	37	71.7	4.5	0.22	43	1.17	1160	0.03	25.0	1230	3.46	63.7	<0.01	29	172	1.3	2.04	477	0.6	0.49	3.88	10.7
SU-281-001	Felsic Volcanics	VOK	VSF	1.24	30	57	2.83	40	92.9	3.3	0.22	26	1.15	1530	0.02	14.8	600	0.70	151	<0.01	18	72	1.0	1.14	136	0.5	0.10	0.23	13.0
SU-357-004	Felsic Volcanics	VOK	VSF	0.45	40	138	3.36	32	22.4	3.4	0.35	3	0.79	1270	0.03	1.9	840	1.39	162	<0.01	10	70	2.0	0.72	139	0.2	0.33	0.39	10.6
Comp 13-10	Intermediate Volcanics	VOK	VSF	0.68	40	114	1.83	104	45.4	4.7	0.24	9	0.22	703	0.04	7.8	1620	>5	98.1	<0.01	16	129	3.3	4.95	572	0.5	0.33	1.81	14.7
SU-121-03	Intermediate Volcanics	West Zone	VSF	0.39	50	110	1.17	55	62.4	2.7	0.30	4	0.12	546	0.02	16.1	660	3.00	50.9	0.02	10	160	1.8	8.42	233	0.3	0.13	1.14	9.83
SU-123-05	Intermediate Volcanics	West Zone	VSF	0.81	40	68	2.78	68	23.9	2.5	0.31	10	0.48	2780	0.02	10.8	500	1.81	104	0.02	17	104	1.3	2.04	58	0.2	0.14	0.77	10.4
SU-132-02	Intermediate Volcanics	VOK	VSF	0.32	40	94	0.54	58	24.2	2.8	0.25	<1	0.12	224	0.01	10.3	960	3.23	61.0	<0.01	6	600	2.5	6.46	360	0.3	0.21	6.12	11.8
SU-182-02	Intermediate Volcanics	VOK	VSF	1.92	40	130	3.48	30	101	3.8	0.30	45	1.33	1220	0.03	21.8	1170	1.57	133	0.04	43	47	2.0	2.83	170	0.3	0.60	0.08	11.3
SU-352-016	Intermediate Volcanics	VOK	VSF	0.56	40	83	2.76	51	27.5	5.0	0.19	8	0.26	1010	0.05	6.4	1700	>5	129	<0.01	13	111	3.2	4.33	390	0.5	0.24	1.61	11.1
SU-352-017	Intermediate Volcanics	VOK	VSF	0.52	40	108	0.49	60	58.9	3.8	0.20	7	0.20	236	0.04	6.5	1510	3.84	45.8	<0.01	10	228	3.0	4.28	490	0.4	0.33	2.89	13.0
SU-114-03	Mafic Dyke	VOK	VSF	2.48	40	310	8.80	15	41.5	5.7	0.21	48	1.15	2870	0.01	24.4	2070	1.62	520	<0.01	67	84	2.5	3.61	185	0.5	0.13	0.47	25.8
SU-238-01	Mafic Dyke	VOK	VSF	3.74	40	81	6.01	4	32.0	7.4	0.18	57	2.14	1910	0.03	9.0	2580	0.71	311	0.08	135	93	3.0	0.36	42	0.4	<0.02	0.35	32.8
SU-040-001	Meta-int to mafic volcanic	VOK	VSF	1.66	40	93	2.86	43	82.7	3.3	0.24	45	1.25	1510	0.03	36.9	920	2.09	72.7	0.010	33	37	1.4	1.17	207	0.5	0.17	0.31	12.7
SU-084-001	Meta-int to mafic volcanic	VOK	VSF	0.45	30	119	0.60	11	80.3	0.20	0.31	<1	0.01	202	0.02	6.6	1850	0.21	88.4	<0.01	16	9	0.5	>10	23	0.6	0.19	0.40	6.85
SU-106-001	Meta-int to mafic volcanic	VOK	VSF	1.40	20	73	0.75	52	299	3.7	0.26	37	1.12	796	0.01	25.6	570	2.79	37.9	<0.01	18	552	1.4	6.08	372	0.7	2.14	5.25	6.60
SU-106-002	Meta-int to mafic volcanic	VOK	VSF	0.27	20	51	0.81	119	16.2	1.4	0.23	<1	0.03	186	0.01	6.5	310	1.45	47.1	<0.01	2	124	0.9	2.75	236	0.4	0.22	0.53	7.69
SU-106-004	Meta-int to mafic volcanic	VOK	VSF	0.26	40	60	0.87	108	30.5	3.2	0.21	<1	0.02	242	0.01	4.0	570	3.23	40.6	<0.01	4	37	1.2	>10	171	0.4	0.06	0.32	5.35
Comp 13-1	Pelite	VOK	VSF	0.33	30	115	3.23	67	19.2	3.3	0.24	<1	0.04	999	0.01	2.6	820	4.20	126	<0.01	2	76	1.6	1.47	57	0.4	0.94	1.29	7.61
Comp. 8	Pelite	VOK	VSF	0.48	40	78	2.50	94	70.1	2.9	0.25	8	0.20	928	0.02	13.1	810	3.41	83.1	<0.01	9	88	2.2	3.70	224	0.4	0.50	0.58	14.5
SU-017-02	Pelite	VOK	VSF	0.26	40	66	7.47	83	45.4	2.6	0.20	1	0.08	2610	0.02	16.6	510	3.38	277	<0.01	5	189	1.4	5.62	173	0.3	0.25	1.78	12.5
SU-063-004	Pelite	West Zone	VSF	0.32	50	116	1.73	55	42.7	3.3	0.28	2	0.03	466	0.02	17.0	530	3.41	49.1	0.010	7	11	2.4	4.28	68	0.5	0.76	0.20	7.55
SU-063-01	Pelite	West Zone	VSF	0.23	40	73	7.14	70	45.8	2.2	0.17	<1	0.04	2080	0.01	16.6	660	3.04	147	<0.01	5	257	1.7	7.85	172	0.3	0.09	2.19	9.21
SU-106-003	Pelite	VOK	VSF	0.19	20	30	2.68	147	11.6	2.5	0.14	<1	0.02	770	0.01	15.5	410	2.70	72.7	<0.01	3	86	1.0	1.00	89	0.2	0.22	0.61	8.43
SU-106-005	Pelite	VOK	VSF	0.25	20	37	6.30	103	7.3	2.8	0.17	<1	0.05	1880	0.01	14.7	560	3.06	167	<0.01	4	70	1.1	2.41	154	0.3	0.18	0.41	8.33
SU-113-05	Pelite	VOK	VSF	0.78	50	68	4.92	55	89.5	4.0	0.32	16	0.41	1810	0.02	19.4	1030	4.49	157	<0.01	17	100	1.8	4.13	199	0.3	0.49	0.56	16.4
SU-114-05	Pelite	VOK	VSF	0.45	40	58	6.67	63	57.1	2.6	0.18	9	0.24	1890	0.02	15.5	780	3.18	173	<0.01	8	83	1.3	4.20	202	0.2	0.73	0.44	9.11
SU-132-03	Pelite	VOK	VSF	0.27	40	67	11	24	67.8	3.8	0.20	1	0.41	4060	0.01	19.1	990	>5	375	<0.01	7	112	1.7	4.49	155	0.4	0.18	1.00	15.2
SU-132-04	Pelite	VOK	VSF	0.31	40	68	5.22	30	92.0	3.6	0.24	<1	0.95	1730	0.01	23.0	1080	3.36	314	<0.01	9	105	1.8	6.38	360	0.4	0.08	1.15	15.3
SU-146-03	Pelite	VOK	VSF	0.06	50	14	0.85	170	110	2.7	0.04	<1	<0.01	247	0.01	24.3	140	3.04	133	<0.01	3	11	1.9	>10	494	0.1	1.38	0.24	10.4
SU-182-01	Pelite	VOK	VSF	0.24	70	96	0.21	110	63.7	3.0	0.17	<1	0.02	66	0.03	6.3	630	3.66	28.0	<0.01	5	100	2.3	4.65	297	0.3	0.69	0.90	16.4
SU-219-06	Pelite	VOK	VSF	0.56	40	75	2.11	54	71.4	4.4	0.25	10	0.29	669	0.01	49.8	1460	>5	76.0	<0.01	11	24	1.8	9.73	366	0.5	1.03	0.10	9.64
SU-223-01	Pelite	VOK	VSF	0.30	50	107	3.48	36	207	2.1	0.27	1	0.05	925	0.02	10.1	1430	2.86	118	<0.01	6	53	1.3	>10	285	0.3	0.10	0.30	12.4
SU-346-002	Pelite	VOK	VSF	0.55	30	80	2.73	93	72.2	1.9	0.20	10	0.30	906	0.02	24.2	790	1.73	53.9	<0.01	10	68	<0.5	3.84	160	0.3	0.13	0.42	8.94

Sample ID	Logged Lithology	Zone	Geol Unit	Co ppm	Cs ppm	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	La ppm	Lu ppm	Mo ppm	Nb ppm	Pb ppm	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sn ppm	Ta ppm	Tb ppm	Te ppm	Th ppm	Tl ppm	U ppm	W ppm	Y ppm	Yb ppm
			Method Code													ICM14B													
			LOD	0.1	0.05	0.1	0.1	0.05	0.01	0.02	0.1	0.01	0.05	0.05	0.2	0.2	0.05	0.1	1	0.3	0.05	0.02	0.05	0.1	0.02	0.05	0.1	0.05	0.1
SU-120-004	Dense Vein stockwork	VOK	VSF	6.3	0.80	0.6	<0.1	<0.05	0.09	<0.02	3.2	0.09	10.7	0.11	41.2	6.1	2.79	0.9	1	<0.3	<0.05	0.30	0.39	0.6	0.25	0.19	0.3	10.3	0.6
SU-348-013	Dense Vein stockwork	VOK	VSF	8.0	0.22	0.2	<0.1	0.06	0.52	<0.02	1.2	0.02	5.09	<0.05	10.4	1.7	18.1	0.2	<1	<0.3	<0.05	0.03	0.39	1	0.48	0.69	0.5	0.39	<0.1
SU-348-016	Dense Vein stockwork	VOK	VSF	61.5	5.04	0.5	<0.1	0.09	2.93	0.04	3.3	0.05	1.62	<0.05	65.2	8.0	14.0	1	2	<0.3	<0.05	0.15	0.65	2.5	1.20	3.19	0.4	3.65	0.3
SU-349-009	Dense Vein stockwork	VOK	VSF	1.7	0.26	0.2	<0.1	<0.05	0.33	<0.02	0.60	<0.01	3.97	<0.05	97.8	2.1	118	0.2	<1	<0.3	<0.05	<0.02	0.11	0.2	0.13	0.35	0.2	0.46	<0.1
SU-350-001	Dense Vein stockwork	VOK	VSF	8.0	1.32	1.3	<0.1	<0.05	0.04	0.02	5.6	0.06	0.55	<0.05	24.9	6.6	3.26	1.1	3	<0.3	<0.05	0.20	0.13	2	0.36	0.28	<0.1	5.42	0.4
SU-350-002	Dense Vein stockwork	VOK	VSF	9.3	0.73	0.7	<0.1	<0.05	0.06	0.03	3.9	0.05	3.20	<0.05	60.6	5.4	3.55	1.3	2	<0.3	<0.05	0.21	1.36	0.4	0.45	0.35	<0.1	5.90	0.4
SU-350-008	Dense Vein stockwork	VOK	VSF	5.0	0.99	0.5	<0.1	<0.05	0.03	<0.02	4.3	0.06	1.42	<0.05	41.9	5.0	2.74	0.6	2	<0.3	<0.05	0.24	0.10	0.8	0.24	0.11	<0.1	7.05	0.5
SU-354-005	Dense Vein stockwork	VOK	VSF	4.5	1.66	0.4	<0.1	<0.05	0.02	<0.02	2.4	0.02	11.5	<0.05	53.8	5.7	2.11	0.7	2	<0.3	<0.05	0.09	<0.05	0.5	0.30	0.40	0.1	1.72	0.1
SU-017-03	fault zone	VOK	VSF	6.7	2.03	0.8	<0.1	<0.05	1.60	0.05	4.8	0.06	1.06	0.06	130	7.3	4.52	1	2	<0.3	<0.05	0.27	0.20	1	0.37	0.37	0.2	7.19	0.4
SU-219-02	fault zone	VOK	VSF	14.6	2.39	2.3	<0.1	0.05	0.03	0.03	7.5	0.13	0.45	<0.05	26.6	11.1	4.31	2.6	<1	<0.3	<0.05	0.39	0.13	1.4	0.41	0.25	0.2	10.7	0.9
BJ-BS-001/002	Felsic Volcanics	VOK	VSF	9.3	2.98	0.7	<0.1	0.10	0.16	0.03	3.4	0.04	3.69	0.26	56.7	9.1	7.45	1.4	<1	<0.3	<0.05	0.14	1.25	1	0.38	0.16	0.3	3.27	0.3
BJ-BS-008/011	Felsic Volcanics	VOK	VSF	12.0	4.01	1.8	<0.1	0.08	0.11	<0.02	6.5	0.09	0.90	0.14	39.8	8.4	7.02	2.1	2	<0.3	<0.05	0.26	0.11	2.4	0.64	0.79	0.8	6.50	0.6
BJ-BS-009/012	Felsic Volcanics	VOK	VSF	12.5	3.53	1.9	<0.1	0.08	0.08	<0.02	7.0	0.09	1.07	0.21	26.4	7.2	8.17	2.2	2	<0.3	<0.05	0.28	0.25	2.3	0.34	0.66	0.5	6.80	0.6
Comp. 11	Felsic Volcanics	VOK	VSF	12.5	2.87	1.1	<0.1	<0.05	0.02	<0.02	4.4	0.04	3.44	<0.05	66.6	10.2	6.20	1.9	5	<0.3	<0.05	0.17	0.16	1.1	0.50	0.40	0.4	3.42	0.3
Comp. 9	felsic volcanics	VOK	VSF	11.8	4.05	0.9	<0.1	<0.05	0.06	<0.02	7.4	0.02	0.49	<0.05	22.0	11.7	6.66	1.9	6	<0.3	<0.05	0.17	0.19	1.5	0.82	0.19	0.4	2.42	0.1
SU-113-002	Felsic Volcanics	VOK	VSF	13.5	1.78	1.4	<0.1	<0.05	0.11	<0.02	4.1	0.04	1.32	<0.05	29.9	8.2	5.36	2.6	2	<0.3	<0.05	0.15	0.34	1.1	1.09	0.11	0.2	3.36	0.3
SU-113-01	Felsic Volcanics	VOK	VSF	13.0	3.14	1.7	<0.1	0.06	0.05	<0.02	7.2	0.06	9.72	<0.05	6.9	11.5	4.83	2	3	<0.3	<0.05	0.24	0.07	0.5	0.60	0.13	0.5	4.71	0.4
SU-113-02	Felsic Volcanics	VOK	VSF	17.5	3.32	0.8	<0.1	0.07	0.03	<0.02	5.0	0.03	14.7	0.06	14.7	8.6	12.1	1.4	6	<0.3	<0.05	0.16	0.14	0.8	0.56	0.73	0.2	3.06	0.2
SU-113-03	Felsic Volcanics	VOK	VSF	12.3	3.38	1.3	<0.1	<0.05	0.03	<0.02	3.0	0.04	0.57	<0.05	13.8	9.8	5.91	1.6	2	<0.3	<0.05	0.13	9.16	0.9	0.70	0.12	0.2	2.57	0.2
SU-114-001	Felsic Volcanics	VOK	VSF	10.7	1.81	0.6	<0.1	<0.05	0.03	<0.02	4.1	0.03	2.47	<0.05	17.1	7.5	3.87	0.9	<1	<0.3	<0.05	0.13	1.21	0.9	0.55	0.19	0.1	2.80	0.2
SU-114-02	Felsic Volcanics	VOK	VSF	10.9	4.25	0.7	<0.1	<0.05	0.06	<0.02	5.6	0.02	0.43	<0.05	22.1	10.5	8.13	1.4	6	<0.3	<0.05	0.16	0.09	1.5	0.53	0.19	0.3	2.32	0.1
SU-114-04	Felsic Volcanics	VOK	VSF	11.5	4.86	1.7	<0.1	<0.05	0.03	0.03	5.0	0.09	0.53	0.09	29.6	9.1	4.12	1.8	2	<0.3	<0.05	0.32	0.17	0.3	0.31	0.11	0.2	8.95	0.7
SU-119-001	Felsic Volcanics	VOK	VSF	9.2	2.89	0.6	<0.1	<0.05	0.05	0.04	5.2	0.09	2.28	<0.05	49.0	10.7	3.03	1.5	8	<0.3	<0.05	0.17	0.05	2.2	1.08	0.34	0.3	5.00	0.5
SU-120-002	Felsic Volcanics	VOK	VSF	27.6	8.33	3.8	<0.1	<0.05	0.08	0.02	8.9	0.08	1.03	<0.05	7.8	14.4	2.73	4.5	<1	<0.3	<0.05	0.55	0.06	0.9	0.41	0.11	9.4	10.3	0.7
SU-120-003	Felsic Volcanics	VOK	VSF	19.6	2.19	2.6	<0.1	<0.05	<0.01	0.03	5.9	0.04	1.49	<0.05	12.1	9.1	4.06	1.8	<1	<0.3	<0.05	0.23	0.18	1.5	0.30	0.24	0.2	5.73	0.3
SU-130-004	Felsic Volcanics	VOK	VSF	13.3	1.55	0.6	<0.1	<0.05	0.04	0.03	4.3	0.02	1.49	<0.05	29.9	10.1	22.1	1.4	5	<0.3	<0.05	0.11	1.34	1.1	0.85	0.17	0.1	1.56	0.1
SU-132-01	Felsic Volcanics	VOK	VSF	12.9	2.55	0.7	<0.1	<0.05	0.05	0.03	5.1	0.03	0.74	<0.05	24.7	9.0	13.2	1.6	<1	<0.3	<0.05	0.15	0.24	1.3	0.65	0.22	0.2	2.91	0.2
SU-146-04	Felsic Volcanics	VOK	VSF	12.3	2.32	0.7	<0.1	0.05	0.14	0.03	4.0	0.05	0.44	<0.05	17.1	9.3	7.27	1.3	6	<0.3	<0.05	0.12	3.71	1.3	2.87	0.19	0.3	3.12	0.3
SU-219-01	Felsic Volcanics	VOK	VSF	12.4	1.49	1.1	<0.1	0.09	0.02	<0.02	3.8	0.10	0.90	0.08	24.3	7.3	6.02	2.4	2	<0.3	<0.05	0.27	0.14	1	0.33	0.13	0.2	7.43	0.6
SU-219-04	Felsic Volcanics	VOK	VSF	14.4	2.82	1.1	<0.1	<0.05	0.03	0.03	5.3	0.06	0.45	<0.05	16.3	10.4	9.02	2.6	1	<0.3	<0.05	0.22	0.24	1.2	0.49	0.17	0.3	5.14	0.4
SU-238-02	Felsic Volcanics	VOK	VSF	3.6	2.26	1.0	<0.1	<0.05	0.02	<0.02	2.2	0.02	2.37	<0.05	165	9.6	1.84	0.5	4	<0.3	<0.05	0.08	<0.05	0.9	0.34	0.45	<0.1	1.61	0.1
SU-275-001	Felsic Volcanics	VOK	VSF	16.5	3.38	4.2	<0.1	<0.05	0.04	0.02	5.0	0.10	0.86	<0.05	37.2	8.4	4.08	2.8	11	<0.3	<0.05	0.29	<0.05	2.9	0.29	0.38	0.2	8.78	0.7
SU-281-001	Felsic Volcanics	VOK	VSF	12.0	1.90	3.4	<0.1	<0.05	0.02	0.02	6.0	0.06	0.81	<0.05	7.4	7.9	1.96	3.1	<1	<0.3	<0.05	0.23	<0.05	0.9	0.21	0.10	0.1	4.99	0.4
SU-357-004	Felsic Volcanics	VOK	VSF	10.0	1.87	0.9	<0.1	<0.05	0.02	<0.02	5.3	0.07	0.53	<0.05	12.6	12.2	1.43	4.2	<1	<0.3	<0.05	0.22	<0.05	0.6	0.25	0.17	<0.1	5.86	0.5
Comp 13-10	Intermediate Volcanics	VOK	VSF	14.3	5.21	1.6	0.2	0.06	0.13	<0.02	7.9	0.07	3.96	<0.05	52.3	11.0	7.26	2.1	18	1	<0.05	0.23	0.11	2	0.41	0.51	0.2	5.52	0.4
SU-121-03	Intermediate Volcanics	West Zone	VSF	10.3	2.92	1.0	<0.1	<0.05	0.03	<0.02	4.5	0.06	3.06	0.16	61.0	14.2	3.34	1.3	1	<0.3	<0.05	0.20	<0.05	1.7	0.38	0.29	0.2	5.11	0.4
SU-123-05	Intermediate Volcanics	West Zone	VSF	6.8	2.33	2.2	<0.1	<0.05	0.01	<0.02	5.1	0.06	1.21	0.08	34.7	17.6	1.11	1.1	2	<0.3	<0.05	0.22	<0.05	1.3	0.30	0.32	0.1	6.39	0.5
SU-132-02	Intermediate Volcanics	VOK	VSF	7.6	2.31	0.7	<0.1	<0.05	0.14	<0.02	6.0	0.02	1.53	<0.05	77.1	8.6	10.8	1.2	<1	<0.3	<0.05	0.12	0.09	1.8	0.24	0.51	0.2	2.11	0.2
SU-182-02	Intermediate Volcanics	VOK	VSF	12.3	3.22	5.2	<0.1	<0.05	0.01	<0.02	5.5	0.08	2.84	0.14	14.7	12.2	2.12	2.3	<1	<0.3	<0.05	0.28	0.23	1.8	0.27	0.25	0.3	8.05	0.6
SU-352-016	Intermediate Volcanics	VOK	VSF	11.5	4.82	1.1	<0.1	0.06	0.09	<0.02	5.8	0.07	1.06	<0.05	46.5	7.9	3.71	2.1	16	<0.3	<0.05	0.23	0.08	1.8	0.21	0.43	0.1	5.48	0.5
SU-352-017	Intermediate Volcanics	VOK	VSF	13.0	4.48	1.1	<0.1	0.05	0.16	<0.02	6.9	0.04	0.87	<0.05	39.1	7.6	5.58	1.6	11	<0.3	<0.05	0.18	0.12	1.6	0.31	0.36	<0.1	4.06	0.3
SU-114-03	Mafic Dyke	VOK	VSF	26.8	2.02	5.0	<0.1	<0.05	0.04	0.03	12.4	0.18	2.09	<0.05	12.8	9.6	3.79	4.7	2	<0.3	<0.05	0.59	0.14	1.1	0.58	0.43	0.7	17.0	1.2
SU-238-01	Mafic Dyke	VOK	VSF	30.3	1.17	9.4	0.1	0.05	<0.01	0.03	15.6	0.19	0.71	0.11	6.5	8.9	0.94	5.7	1	<0.3	<0.05	0.58	<0.05	0.6	0.24	0.15	0.1	16.6	1.3
SU-040-001	Meta-int to mafic volcanic	VOK	VSF	9.5	3.50	4.3	<0.1	<0.05	0.02	<0.02	6.0	0.11	0.71	0.06	25.0	9.8	2.21	2.9	7	<0.3	<0.05	0.35	0.06	1.6	0.26	0.12	0.4	10.4	0.9
SU-084-001	Meta-int to mafic volcanic	VOK	VSF	10.5	3.87	1.8	<0.1	<0.05	0.03	<0.02	3.4	0.02	0.45	<0.05	14.5	8.8	18.9	0.9	2	<0.3	<0.05	0.06	<0.05	1.2	0.42	0.66	0.1	1.30	0.1
SU-106-001	Meta-int to mafic volcanic	VOK	VSF	14.0	2.80	3.6	<0.1	<0.05	0.11	0.06	3.2	0.03	1.57	<0.05	28.7	9.1	4.92	2.1	1	<0.3	<0.05	0.13	0.10	2.3	0.59	0.30	0.1	3.03	0.2
SU-106-002	Meta-int to mafic volcanic	VOK	VSF	3.9	1.63	0.5	<0.1	<0.05	0.02	<0.02	4.1	0.02	2.62	<0.05	73.1	7.2	2.60	0.6	1	<0.3	<0.05	0.11	0.11	0.5	0.30	0.14	<0.1	2.22	0.1
SU-106-004	Meta-int to mafic volcanic	VOK	VSF	7.8	1.86	0.5	<0.1	<0.05	0.05	<0.02	2.6	0.02	3.76	<0.05	25.2	7.0	11.8	0.9	1	<0.3	<0.05	0.09	0.41	0.2	0.91	0.10	0.1	2.21	0.2
Comp 13-1	Pelite	VOK	VSF	7.4	3.20	0.7	0.2	<0.05	0.02	<0.02	3.8	0.08	4.12	0.15	60.2	10.5	0.83	1	1	0.5	<0.05	0.18	0.14	0.8	0.29	0.21	0.2	4.83	0.5
Comp. 8	Pelite	VOK	VSF	8.4	3.17	1.3	<0.1	<0.05	0.09	<0.02	7.0	0.06	4.31	<0.05	39.7	10.0	5.99	1.5	1	<0.3	<0.05	0.22	0.33	1.9	0.52	0.49	2.1	4.68	0.4
SU-017-02	Pelite	VOK	VSF	9.5	2.25	0.7	<0.1	<0.05	0.05	0.03	6.0	0.14	7.68	<0.05	67.4	8.2	14.9	1.6	1	<0.3	<0.05	0.60	0.29	0.9	0.35	0.21	0.1	18.0	1
SU-063-004	Pelite	West Zone	VSF	10.0	1.84	0.8	<0.1	0.06	0.03	<0.02	3.5	0.04	2.45	0.10	16.2	12.6	5.59	1.4	3	<0.3	<0.05	0.16	0.28	0.6	0.24	0.18	0.3	3.93	0.3
SU-063-01	Pelite	West Zone	VSF	7.1	1.46	0.6	<0.1	<0.05	0.12	0.02	4.7	0.09	14.0	0.07	39.3	7.5	12.6	1.2	1	<0.3	<0.05	0.24	0.16	0.6	0.42	0.23	0.4	7.47	0.6
SU-106-003	Pelite	VOK	VSF	7.3	0.93	0.4	<0.1	<0.05	0.03	<0.02	4.1	0.05	13.2	<0.05	46.1	4.9	5.10	0.8	1	<0.3	<0.05	0.20	0.11	0.5	0.18	0.22	0.2	5.46	0.3
SU-106-005	Pelite	VOK	VSF	7.7	1.63	0.6	<0.1	<0.05	0.03	<0.02	4.0	0.07	17.2	<0.05	24.9	6.2	3.69	1.3	1	<0.3	<0.05	0.24	0.59	0.6	0.23	0.19	0.2	7.08	0.5
SU-113-05	Pelite	VOK	VSF	12.8	2.91	2.2	<0.1	0.05	0.04	0.02	8.2	0.08	4.72	0.06	34.3	13.5	8.28	1.9	1	<0.3	<0.05	0.29	0.48	1.1	0.51	0.21	0.3	6.94	0.5
SU-114-05	Pelite	VOK	VSF	8.9	2.21	1.0	<0.1	<0.05	0.03	<0.02	4.3	0.06	2.85	<0.05	33.5	7.0	3.85	1.2	1	<0.3	<0.05	0.20	0.48	0.8	0.38	0.11	0.2	5.63	0.4
SU-132-03	Pelite	VOK	VSF	12.1	2.44	0.7	<0.1	<0.05	0.11	0.02	7.5	0.10	1.49	<0.05	33.4	7.9	15.9	2.4	<1	<0.3	<0.05	0.35	0.15	0.7	0.40	0.09	0.2	9.91	0.7
SU-132-04	Pelite	VOK	VSF	13.0	2.27	0.7	<0.1	0.08	0.02	0.03	6.9	0.08	5.46	<0.05	66.2	9.0	26.8	4.1	<1	<0.3	<0.05	0.34	0.09	1.8	0.28	0.26	0.1	8.35	0.6
SU-146-03	Pelite	VOK	VSF	15.7	0.36	1.2	<0.1	<0.05	0.48	0.02	4.0	0.07	6.21	0.16	16.8	1.4	11.0	0.7	1	0.3	<0.05	0.30	4.64	1	0.19	2.02	0.9	7.17	0.5
SU-182-01	Pelite	VOK	VSF	5.6	3.76	0.6	<0.1	<0.05	0.08	<0.02	7.6	0.03	2.98	0.06	47.9	6.5	7.59	0.7	2	<0.3	<0.05	0.16	0.28	2	0.52	0.62	2.3	2.11	0.2
SU-219-06	Pelite	VOK	VSF	16.5	3.51	1.3	<0.1	<0.05	0.23	0.03	4.7	0.05	0.61	<0.05	14.2	9.5	17.4	1.5	2	<0.3	<0.05	0.19	2.10	1.4	2.01	0.13	0.3	4.37	0.3
SU-223-01	Pelite	VOK	VSF	9.9	2.17	0.6	<0.1	<0.05	0.04	0.02	6.1	0.06	17.7	0.06	18.7	10.4	16.2	1.4	<1	<0.3	<0.05	0.23	0.11	0.7	0.48	0.13	<0.1	5.83	0.4
SU-346-002	Pelite	VOK	VSF	9.2	1.32	1.4	<0.1	<0.05	0.05	<0.02	4.3	0.03	2.26	<0.05	17.4	7.3	5.22	1.2	<1	<0.3	<0.05	0.18	0.10	1	0.36	0.11	0.1	4.32	0.2

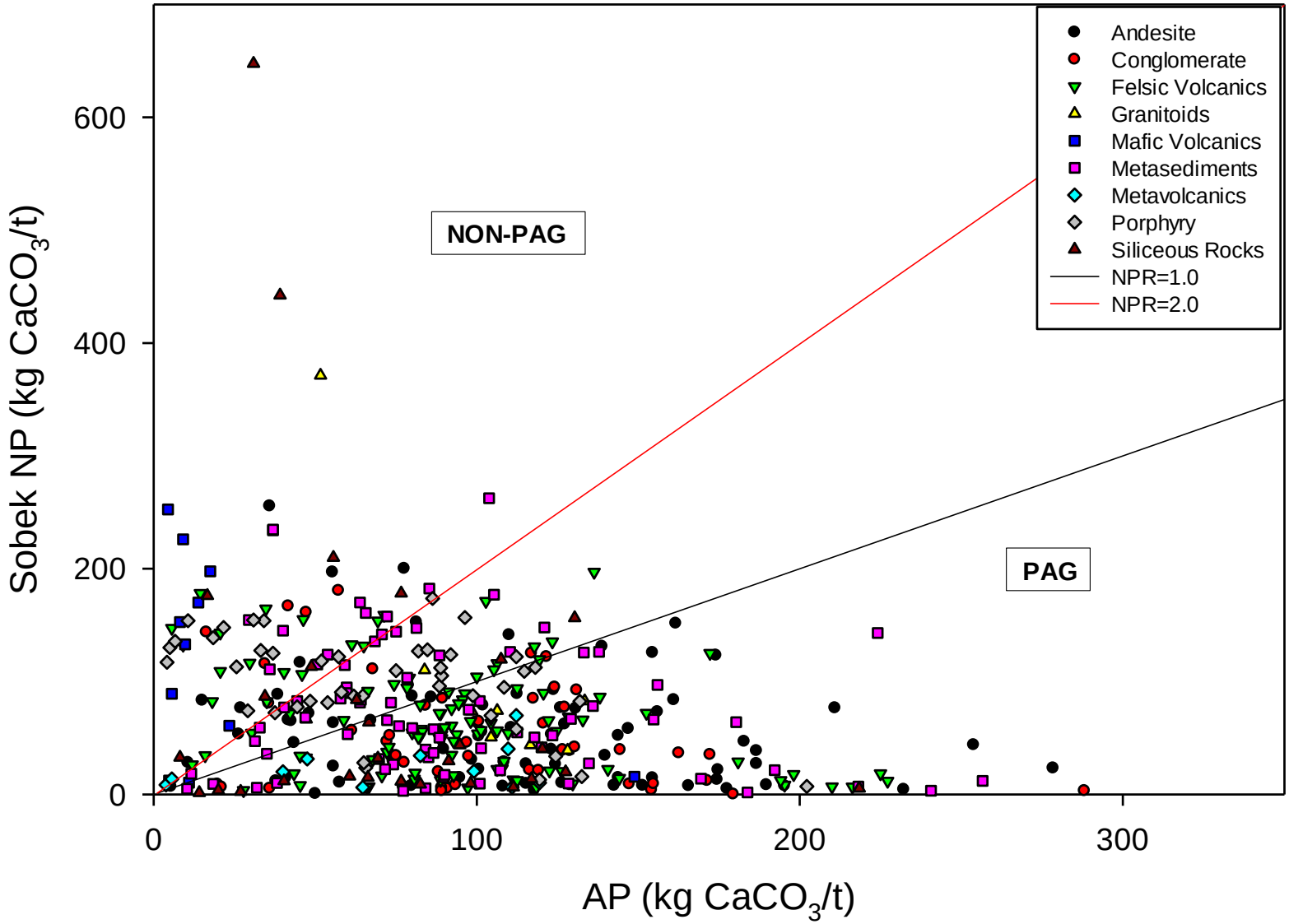
Sample ID	Logged Lithology	Zone	Geol Unit	Al %	B ppm	Ba ppm	Ca %	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Na %	Ni ppm	P ppm	S %	Sr ppm	Ti %	V ppm	Zn ppm	Zr ppm	Ag ppm	As ppm	Be ppm	Bi ppm	Cd ppm	Ce ppm
			Method Code	ICM14B																									
			LOD	0.01	10	5	0.01	1	0.5	0.01	0.01	1	0.01	2	0.01	0.5	50	0.01	0.5	0.01	1	1	0.5	0.01	1	0.1	0.02	0.01	0.05
SU-346-004	Pelite	VOK	VSF	1.68	50	55	1.69	27	71.7	4.6	0.23	47	1.33	602	0.02	26.1	930	3.31	55.2	<0.01	30	17	1.0	1.94	203	0.5	1.23	0.04	10.7
SU-346-007	Pelite	VOK	VSF	0.32	40	78	2.57	47	32.3	2.8	0.23	2	0.07	643	0.03	24.0	1020	3.34	94.2	<0.01	3	14	0.7	9.43	44	0.5	1.17	0.12	6.80
SU-347-001	Pelite	VOK	VSF	0.90	50	66	2.31	35	91.2	6.3	0.25	13	0.72	846	0.02	29.2	1200	>5	80.0	<0.01	13	122	1.2	4.67	317	0.5	0.47	1.80	10.1
SU-348-012	Pelite	VOK	VSF	0.08	40	26	0.02	247	45.7	3.2	0.05	<1	<0.01	21	0.02	10.8	50.0	3.54	4.1	<0.01	<1	565	2.2	>10	519	0.1	0.24	5.19	2.32
SU-348-014	Pelite	VOK	VSF	0.46	30	176	0.47	26	225	0.66	0.27	<1	0.03	48	0.01	14.7	1850	0.78	113	<0.01	8	48	1.3	>10	85	1.2	0.52	0.69	7.23
SU-349-001	Pelite	VOK	VSF	1.42	40	84	4.04	38	136	5.7	0.22	33	1.10	1070	0.03	50.4	1310	>5	97.8	<0.01	33	18	1.9	2.58	298	0.4	0.09	0.13	8.13
SU-349-002	Pelite	VOK	VSF	1.14	40	127	5.31	38	158	3.3	0.19	26	0.73	2100	0.04	36.5	1210	2.45	167	<0.01	17	145	<0.5	3.22	217	0.3	0.38	4.28	9.50
SU-349-003	Pelite	VOK	VSF	0.67	50	118	4.96	67	73.1	4.4	0.19	13	0.36	901	0.04	35.0	800	4.81	180	<0.01	6	88	1.3	1.61	112	0.3	0.58	2.78	7.44
SU-349-004	Pelite	VOK	VSF	1.39	40	97	3.69	76	69.5	3.3	0.20	35	1.10	1190	0.03	57.1	730	2.15	123	<0.01	23	211	0.9	>10	151	0.3	0.21	5.74	5.48
SU-349-007	Pelite	VOK	VSF	0.28	30	61	1.51	62	37.7	2.7	0.23	<1	0.04	441	0.01	12.4	610	3.00	66.2	<0.01	1	57	1.0	3.48	259	0.4	1.79	0.27	7.01
SU-349-008	Pelite	VOK	VSF	0.31	40	79	0.59	41	7.2	5.2	0.23	1	0.04	181	0.02	6.0	850	>5	54.9	<0.01	<1	4	1.3	3.91	323	0.4	1.30	0.03	6.25
SU-350-005	Pelite	VOK	VSF	0.34	30	155	3.00	40	73.8	2.5	0.26	4	0.58	1000	0.04	16.3	950	2.08	148	<0.01	4	53	0.5	1.79	94	0.3	0.81	0.30	9.31
SU-350-012	Pelite	VOK	VSF	0.99	40	42	7.69	43	84.8	3.0	0.18	20	2.02	2730	0.01	13.5	990	1.46	164	<0.01	21	247	1.6	1.64	719	0.5	0.15	1.19	9.35
SU-352-010	Pelite	VOK	VSF	0.39	20	92	0.72	41	34.2	0.58	0.30	2	0.08	215	0.02	3.5	560	0.53	57.6	<0.01	3	63	<0.5	2.01	56	0.4	0.15	1.41	4.74
SU-354-002	Pelite	VOK	VSF	0.29	60	48	0.48	67	63.2	7.5	0.21	<1	0.15	236	0.01	39.8	760	>5	51.1	<0.01	<1	5	1.3	5.34	597	0.4	0.48	0.11	6.58
SU-354-003	Pelite	VOK	VSF	0.28	50	51	0.78	65	65.2	6.4	0.23	<1	0.14	256	0.01	34.2	750	>5	63.8	<0.01	<1	3	1.4	5.88	734	0.3	0.85	0.05	6.48
SU-354-007	Pelite	VOK	VSF	0.29	40	56	3.24	34	166	3.4	0.22	<1	0.20	854	0.01	53.0	900	4.04	99.2	<0.01	1	1930	0.5	6.06	43	0.4	2.30	62.8	7.04
SU-356-006	Pelite	VOK	VSF	0.73	40	56	2.47	33	52.4	3.1	0.26	17	0.49	867	0.02	13.3	800	3.06	69.8	<0.01	16	13	1.7	1.15	212	0.3	0.30	0.02	7.70
SU-357-006	Pelite	VOK	VSF	0.33	40	77	3.78	43	33.7	5.0	0.26	<1	0.05	1190	0.02	<0.5	700	>5	134	<0.01	2	53	2.1	1.81	55	0.4	1.46	0.75	5.99
SU-357-007	Pelite	VOK	VSF	0.33	40	97	3.06	50	7.2	3.1	0.27	<1	0.04	897	0.02	1.5	690	3.62	123	<0.01	2	107	1.7	1.20	65	0.3	0.63	1.44	7.02
SU-359-010	Pelite	VOK	VSF	1.39	40	89	2.57	29	77.3	4.2	0.32	21	0.58	2190	0.03	19.3	1030	2.58	76.9	<0.01	30	51	1.1	1.44	103	0.4	0.08	0.31	12.4
SU-361-008	Pelite	VOK	VSF	0.26	50	69	0.54	161	35.1	1.5	0.17	<1	0.01	143	0.02	11.9	580	1.62	66.5	<0.01	8	48	2.4	8.57	123	0.3	0.18	0.38	9.48
SU-361-009	Pelite	VOK	VSF	0.15	50	106	0.30	188	54.9	1.3	0.10	<1	0.01	101	0.01	19.6	290	1.28	22.2	<0.01	2	330	0.6	>10	35	0.1	0.40	1.49	3.68
SU-361-012	Pelite	VOK	VSF	0.38	40	57	6.73	48	29.4	3.5	0.26	<1	0.36	3940	0.02	24.0	1520	4.05	135	<0.01	7	20	1.5	2.69	78	0.5	2.03	0.12	9.70
SU-130-005	Plag-hbl Porphyry	VOK	VSF	0.35	50	104	4.46	35	49.3	3.8	0.26	<1	0.04	1080	0.03	22.9	1190	4.03	176	<0.01	5	18	1.9	7.76	43	0.5	2.29	0.12	12.3
SU-346-003	Plag-hbl Porphyry	VOK	VSF	0.80	40	121	5.16	20	43.4	3.6	0.26	13	0.54	1130	0.02	7.8	800	3.21	149	<0.01	14	66	1.0	3.02	385	0.3	0.73	0.47	5.34
SU-146-02	Poly-Conglomerate	VOK	VSF	0.07	60	25	1.43	152	144	6.0	0.04	<1	0.01	558	0.01	20.7	100	>5	81.2	<0.01	4	15	4.5	>10	1150	0.1	2.14	0.23	6.52
SU-119-002	Quartz carbonate vein	VOK	VSF	0.30	40	102	5.13	55	41.7	3.6	0.21	2	0.06	1970	0.02	55.0	960	3.74	79.6	<0.01	5	57	0.9	>10	208	0.4	0.15	0.67	6.94
SU-352-009	Siliceous Rocks	VOK	VSF	0.39	30	97	0.78	65	27.6	2.2	0.24	<1	0.07	118	0.02	3.4	3100	2.37	79.0	<0.01	5	241	<0.5	2.06	178	0.4	0.17	3.07	12.0
SU-355-005	Siliceous Rocks	VOK	VSF	0.26	30	131	0.26	92	9.6	0.75	0.16	<1	0.02	71	0.01	3.4	1000	0.73	31.4	<0.01	3	93	1.6	1.83	57	0.4	0.48	0.92	10.4
SU-114-01	Silicified Breccia	VOK	VSF	0.24	40	53	1.23	72	27.7	3.2	0.18	<1	0.04	408	0.01	61.0	930	4.02	80.7	<0.01	5	5	1.6	1.76	104	0.3	1.06	0.05	5.90
# Values < DL				-	2	-	2	-	3	-	-	110	5	1	7	31	2	78.0	-	381	18	1	14.0	50	-	8.0	8.00	-	-

Sample ID	Logged Lithology	Zone	Geol Unit	Co ppm	Cs ppm	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	La ppm	Lu ppm	Mo ppm	Nb ppm	Pb ppm	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sn ppm	Ta ppm	Tb ppm	Te ppm	Th ppm	Tl ppm	U ppm	W ppm	Y ppm	Yb ppm
			Method Code	ICM14B																									
			LOD	0.1	0.05	0.1	0.1	0.05	0.01	0.02	0.1	0.01	0.05	0.05	0.2	0.2	0.05	0.1	1	0.3	0.05	0.02	0.05	0.1	0.02	0.05	0.1	0.05	0.1
SU-346-004	Pelite	VOK	VSF	16.2	2.04	4.5	<0.1	<0.05	<0.01	0.02	5.3	0.04	0.35	<0.05	11.3	8.3	2.62	3	<1	<0.3	<0.05	0.15	0.15	2.2	0.44	0.28	0.1	3.13	0.3
SU-346-007	Pelite	VOK	VSF	11.9	2.66	0.6	<0.1	<0.05	0.05	<0.02	2.9	0.05	1.19	<0.05	28.9	8.3	2.39	1.1	2	<0.3	<0.05	0.20	0.40	0.9	0.35	0.09	0.2	4.49	0.4
SU-347-001	Pelite	VOK	VSF	17.3	2.35	2.0	<0.1	<0.05	0.04	<0.02	4.6	0.11	5.09	<0.05	234	8.5	7.32	3.1	14	<0.3	<0.05	0.36	0.14	1	0.31	0.07	0.2	9.16	0.7
SU-348-012	Pelite	VOK	VSF	6.1	0.71	0.3	<0.1	0.05	4.61	<0.02	1.5	0.04	7.87	<0.05	110	2.0	32.6	0.3	<1	<0.3	<0.05	0.04	0.26	0.4	10.2	0.17	0.8	0.65	<0.1
SU-348-014	Pelite	VOK	VSF	22.2	5.34	0.9	<0.1	<0.05	0.26	<0.02	4.4	<0.01	1.79	<0.05	43.2	9.1	67.4	1.9	<1	<0.3	<0.05	0.07	0.09	2.7	0.83	0.52	0.5	0.90	<0.1
SU-349-001	Pelite	VOK	VSF	22.3	1.75	3.5	<0.1	<0.05	0.06	0.03	3.0	0.08	0.74	<0.05	22.5	8.2	3.61	2.7	24	<0.3	<0.05	0.21	0.10	2	0.50	0.48	0.1	5.67	0.5
SU-349-002	Pelite	VOK	VSF	10.6	4.13	2.4	<0.1	<0.05	0.04	0.03	4.7	0.08	8.90	<0.05	35.6	6.8	2.21	2	12	<0.3	<0.05	0.24	<0.05	0.9	0.38	<0.05	0.2	6.41	0.6
SU-349-003	Pelite	VOK	VSF	15.9	4.23	1.3	<0.1	<0.05	0.01	0.02	3.7	0.09	3.56	0.06	17.8	6.4	1.76	1.7	33	0.3	<0.05	0.24	0.59	0.9	0.17	0.34	0.2	7.00	0.7
SU-349-004	Pelite	VOK	VSF	12.3	2.64	2.8	<0.1	<0.05	0.44	0.05	2.9	0.07	1.33	<0.05	122	6.8	1.45	2.2	15	<0.3	<0.05	0.17	0.11	0.7	0.21	0.24	76.5	5.34	0.5
SU-349-007	Pelite	VOK	VSF	8.3	2.59	0.6	<0.1	<0.05	0.03	<0.02	3.4	0.04	2.05	<0.05	33.8	9.0	5.15	0.8	1	<0.3	<0.05	0.14	0.24	0.7	0.72	0.16	0.2	2.82	0.2
SU-349-008	Pelite	VOK	VSF	6.8	2.26	0.5	<0.1	<0.05	0.01	<0.02	3.2	0.02	1.36	<0.05	27.2	8.1	3.39	1	2	<0.3	<0.05	0.10	0.41	2.1	0.40	0.51	0.1	1.84	0.1
SU-350-005	Pelite	VOK	VSF	8.7	3.84	0.7	<0.1	<0.05	0.03	<0.02	4.5	0.06	2.83	<0.05	9.6	9.2	1.76	2.9	2	<0.3	<0.05	0.20	0.16	1.7	0.28	0.18	0.2	5.16	0.4
SU-350-012	Pelite	VOK	VSF	10.6	0.71	2.3	<0.1	<0.05	0.03	0.05	4.6	0.10	9.06	<0.05	74.9	5.6	5.16	4.6	<1	<0.3	<0.05	0.27	0.07	1.4	0.18	0.27	0.2	7.97	0.7
SU-352-010	Pelite	VOK	VSF	2.1	2.68	0.5	<0.1	<0.05	<0.01	<0.02	2.6	<0.01	1.15	<0.05	382	11.4	1.67	0.7	<1	<0.3	<0.05	0.05	<0.05	0.9	0.27	0.38	<0.1	0.85	<0.1
SU-354-002	Pelite	VOK	VSF	16.5	2.59	0.6	<0.1	<0.05	0.09	<0.02	3.0	0.02	0.45	<0.05	12.3	7.8	9.31	1.2	14	<0.3	<0.05	0.12	0.15	0.8	0.98	0.07	0.1	2.26	0.2
SU-354-003	Pelite	VOK	VSF	15.9	1.80	0.5	<0.1	<0.05	0.04	<0.02	3.2	0.03	0.61	<0.05	12.3	9.0	12.9	1.4	9	<0.3	<0.05	0.13	0.11	0.9	0.73	0.16	0.2	2.77	0.2
SU-354-007	Pelite	VOK	VSF	11.9	2.22	0.6	<0.1	<0.05	0.37	0.34	3.2	0.06	1.10	<0.05	11.1	8.1	6.13	2	2	<0.3	<0.05	0.19	0.26	0.5	0.45	0.06	0.5	4.83	0.5
SU-356-006	Pelite	VOK	VSF	9.1	2.54	2.1	<0.1	<0.05	0.02	<0.02	3.6	0.05	3.00	<0.05	6.5	9.8	1.85	2.3	1	<0.3	<0.05	0.15	0.29	1	0.32	0.18	0.2	3.71	0.3
SU-357-006	Pelite	VOK	VSF	10.3	2.47	0.7	<0.1	<0.05	0.02	<0.02	2.9	0.07	3.65	<0.05	64.9	9.6	0.75	1	2	<0.3	<0.05	0.16	0.22	0.6	0.30	0.17	0.8	4.54	0.5
SU-357-007	Pelite	VOK	VSF	5.7	2.65	0.6	<0.1	<0.05	0.04	<0.02	3.5	0.06	1.91	<0.05	70.5	9.5	0.45	1	2	<0.3	<0.05	0.16	0.17	0.7	0.24	0.14	0.1	4.12	0.4
SU-359-010	Pelite	VOK	VSF	10.5	2.66	3.7	<0.1	<0.05	0.01	<0.02	5.5	0.07	4.04	<0.05	93.6	12.5	1.22	2.3	6	<0.3	<0.05	0.33	<0.05	2	0.31	0.13	0.7	8.37	0.6
SU-361-008	Pelite	VOK	VSF	11.3	1.61	1.0	<0.1	<0.05	0.52	<0.02	4.4	0.02	3.01	<0.05	42.5	4.9	9.58	0.5	<1	<0.3	<0.05	0.10	0.13	1.8	0.89	0.74	0.5	1.61	0.2
SU-361-009	Pelite	VOK	VSF	3.3	0.55	0.3	<0.1	<0.05	0.38	<0.02	1.6	<0.01	0.70	<0.05	54.9	3.6	34.7	0.5	2	<0.3	<0.05	0.06	0.68	0.3	0.19	0.07	1.5	1.11	<0.1
SU-361-012	Pelite	VOK	VSF	16.7	2.16	0.9	<0.1	<0.05	0.03	0.03	4.5	0.09	1.38	<0.05	21.1	9.5	2.54	3.4	<1	<0.3	<0.05	0.31	0.60	1.4	0.37	0.15	0.2	8.30	0.7
SU-130-005	Plag-hbl Porphyry	VOK	VSF	14.1	2.04	0.8	<0.1	<0.05	0.03	<0.02	5.4	0.07	1.26	<0.05	29.0	9.0	7.44	1.6	2	<0.3	<0.05	0.22	0.27	1.2	0.41	0.15	0.2	5.72	0.5
SU-346-003	Plag-hbl Porphyry	VOK	VSF	8.9	1.85	1.7	<0.1	<0.05	0.02	<0.02	2.6	0.07	1.73	<0.05	44.2	8.7	3.57	2.1	2	<0.3	<0.05	0.15	0.29	0.6	0.43	0.09	0.1	4.30	0.4
SU-146-02	Poly-Conglomerate	VOK	VSF	25.7	0.30	1.0	<0.1	0.08	0.37	0.02	2.4	0.03	4.18	0.18	54.8	1.5	14.5	0.3	2	0.9	<0.05	0.21	2.71	1.5	0.30	5.07	1.6	3.12	0.2
SU-119-002	Quartz carbonate vein	VOK	VSF	14.9	1.51	0.6	<0.1	<0.05	0.13	<0.02	3.4	0.08	1.81	<0.05	59.2	7.7	15.1	1.4	9	<0.3	<0.05	0.23	0.22	1.2	2.60	0.15	0.2	7.84	0.6
SU-352-009	Siliceous Rocks	VOK	VSF	2.2	3.42	1.4	<0.1	<0.05	0.07	<0.02	5.6	0.02	7.82	<0.05	201	9.9	6.01	1.8	6	<0.3	<0.05	0.16	<0.05	3.8	0.34	0.30	0.8	2.85	0.2
SU-355-005	Siliceous Rocks	VOK	VSF	0.90	2.37	0.8	<0.1	<0.05	0.06	<0.02	6.2	<0.01	4.13	<0.05	49.6	6.3	2.41	0.4	2	<0.3	<0.05	0.09	0.13	2.3	0.45	0.43	0.4	0.85	<0.1
SU-114-01	Silicified Breccia	VOK	VSF	11.0	2.16	0.5	<0.1	<0.05	0.04	<0.02	2.9	0.04	1.48	<0.05	10.1	7.4	7.01	0.8	3	<0.3	<0.05	0.14	0.13	0.7	0.48	0.14	0.3	3.26	0.2
# Values < DL				-	-	-	391	247	23	278	-	8.00	-	305	-	-	-	-	124	391	415	1.00	99	-	-	2.00	95	-	20

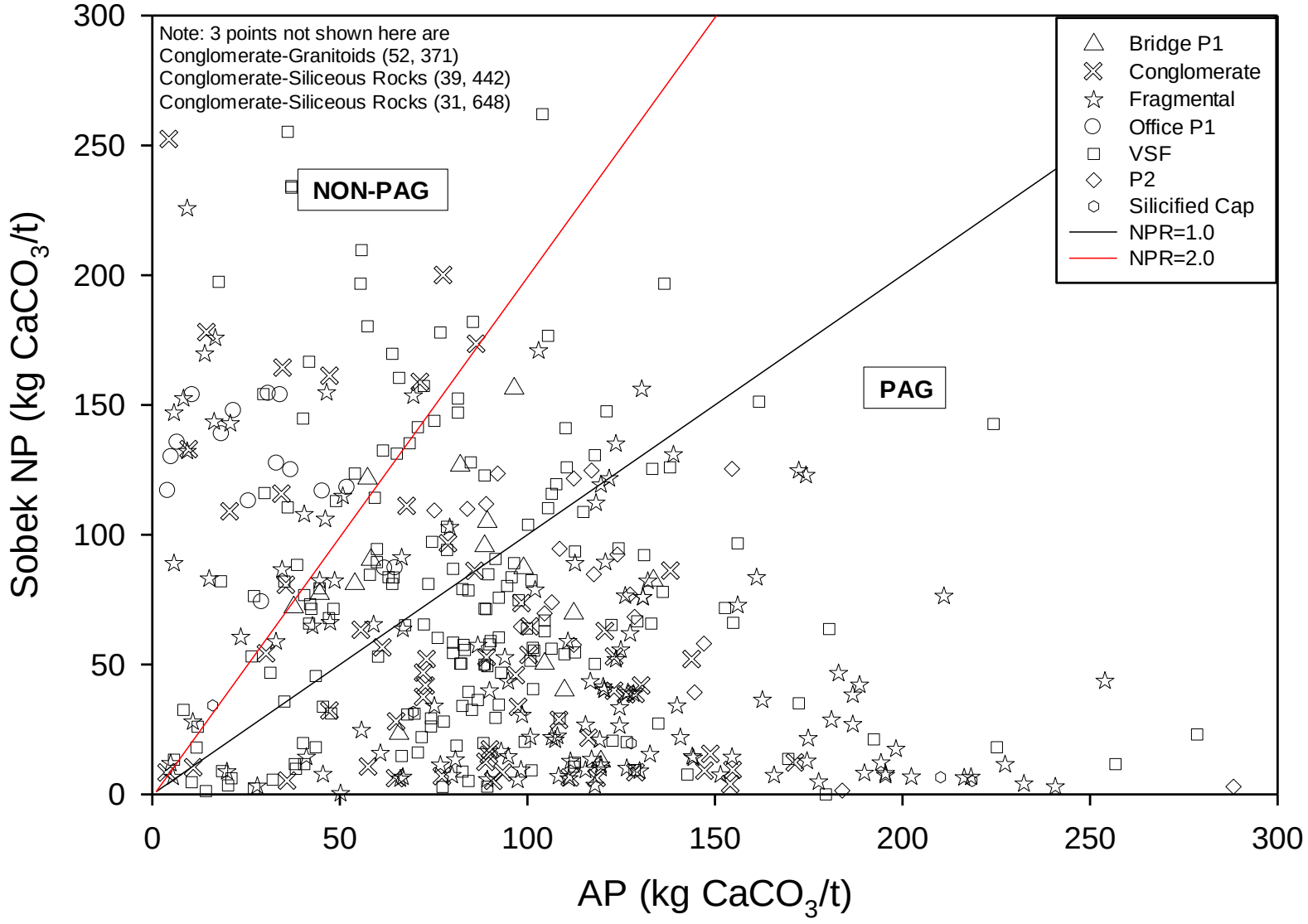
APPENDIX D
WASTE ROCK ABA PLOTS

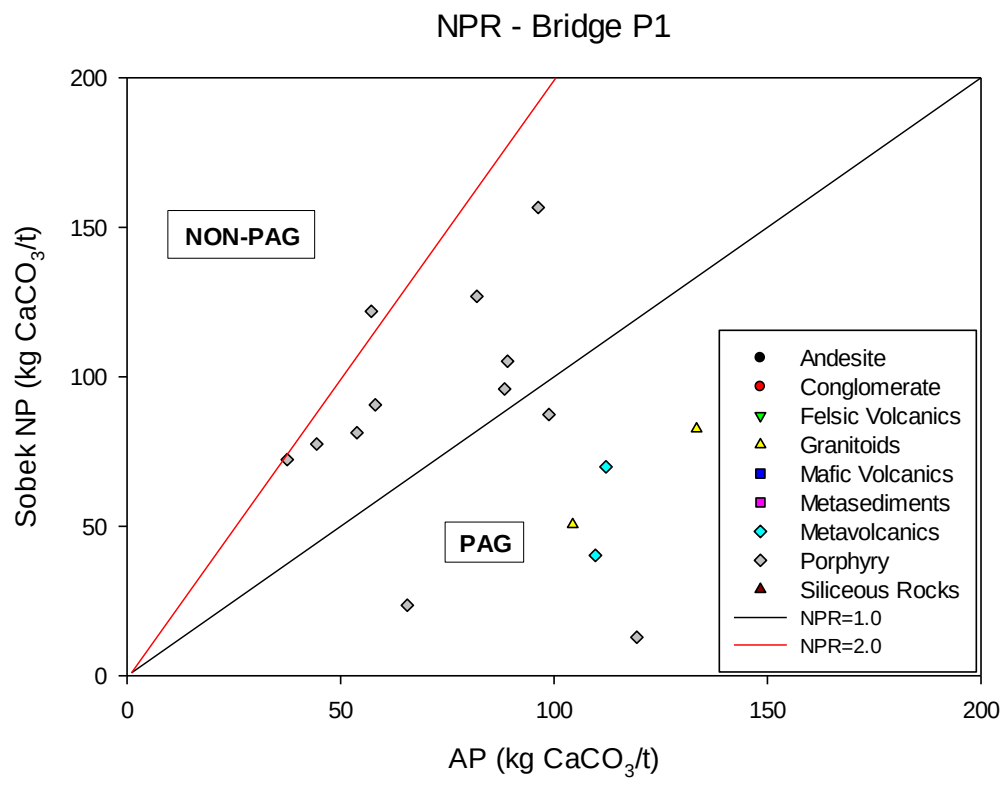
APPENDIX D1
WASTE ROCK – ABA PLOTS BY GEOLOGICAL MODEL UNIT

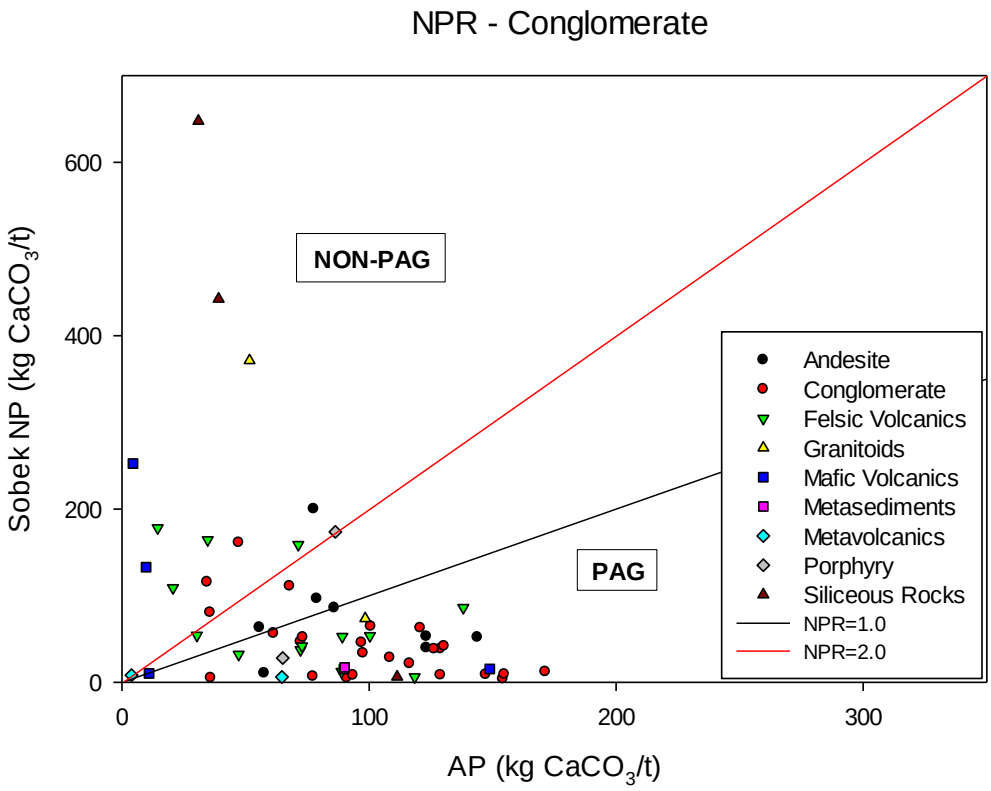
NPR - All Geological Model Units

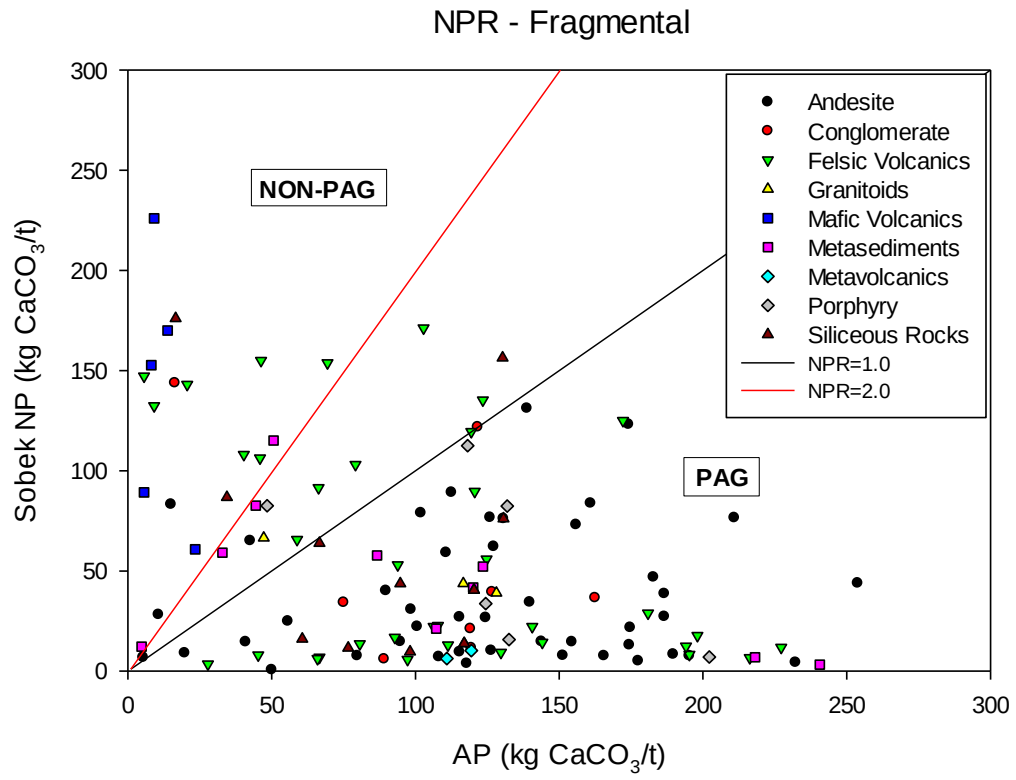


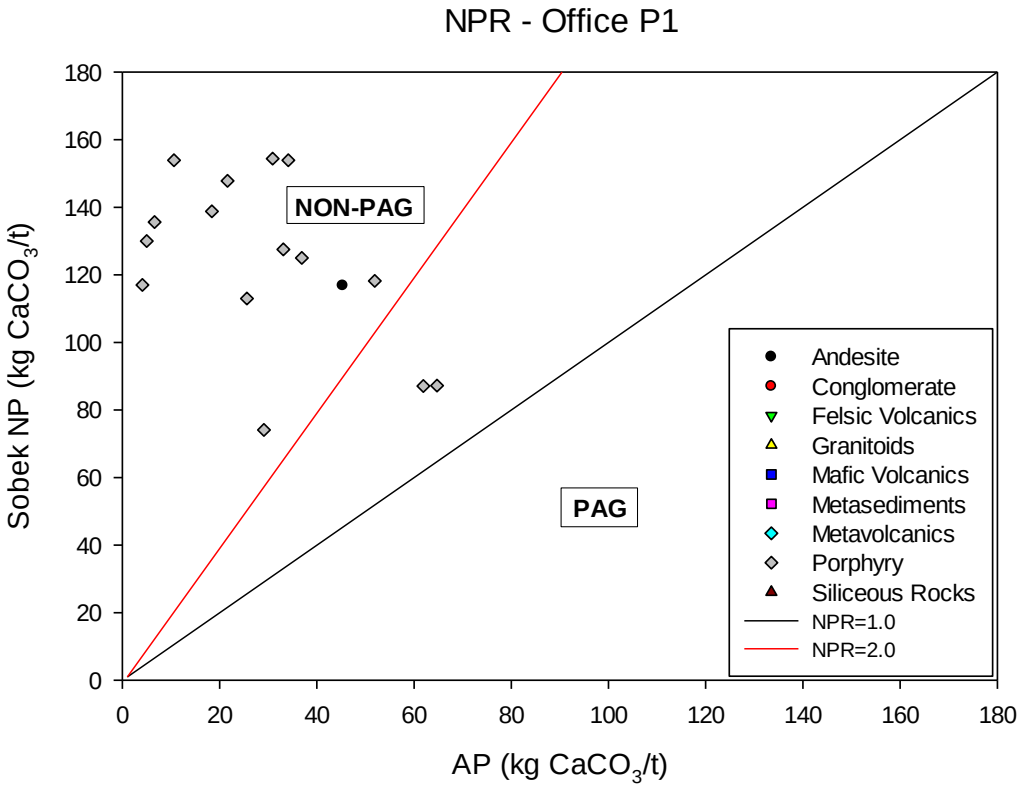
NPR - By Geological Model Unit

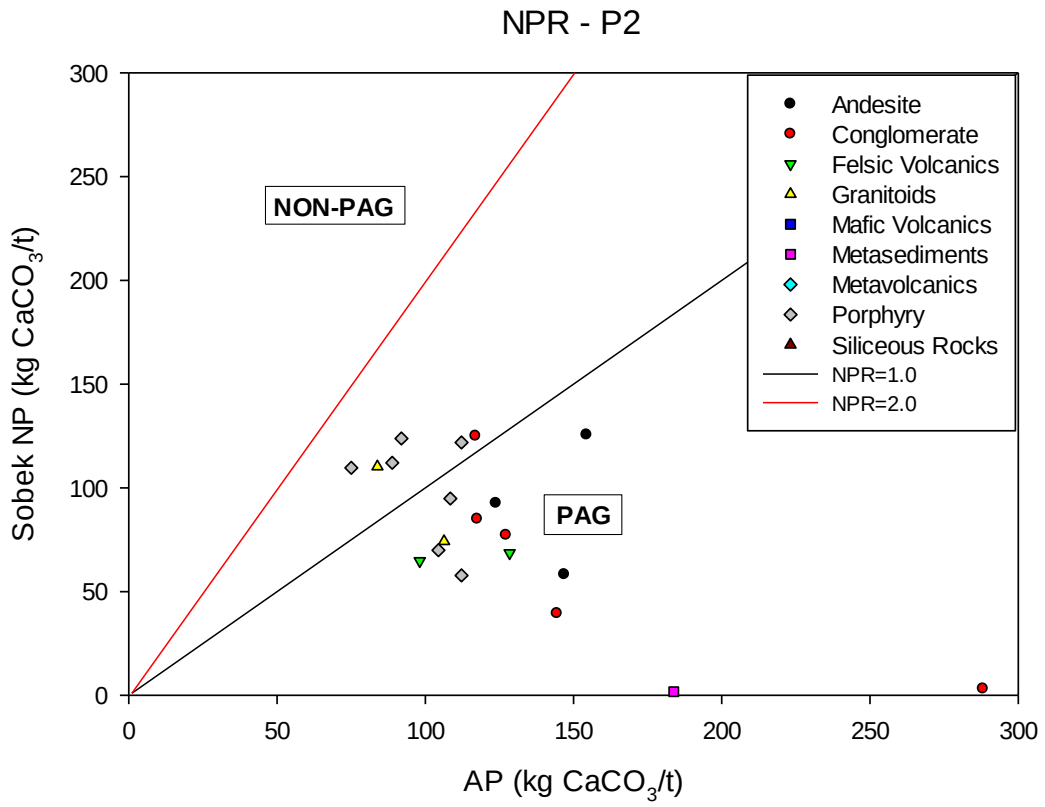


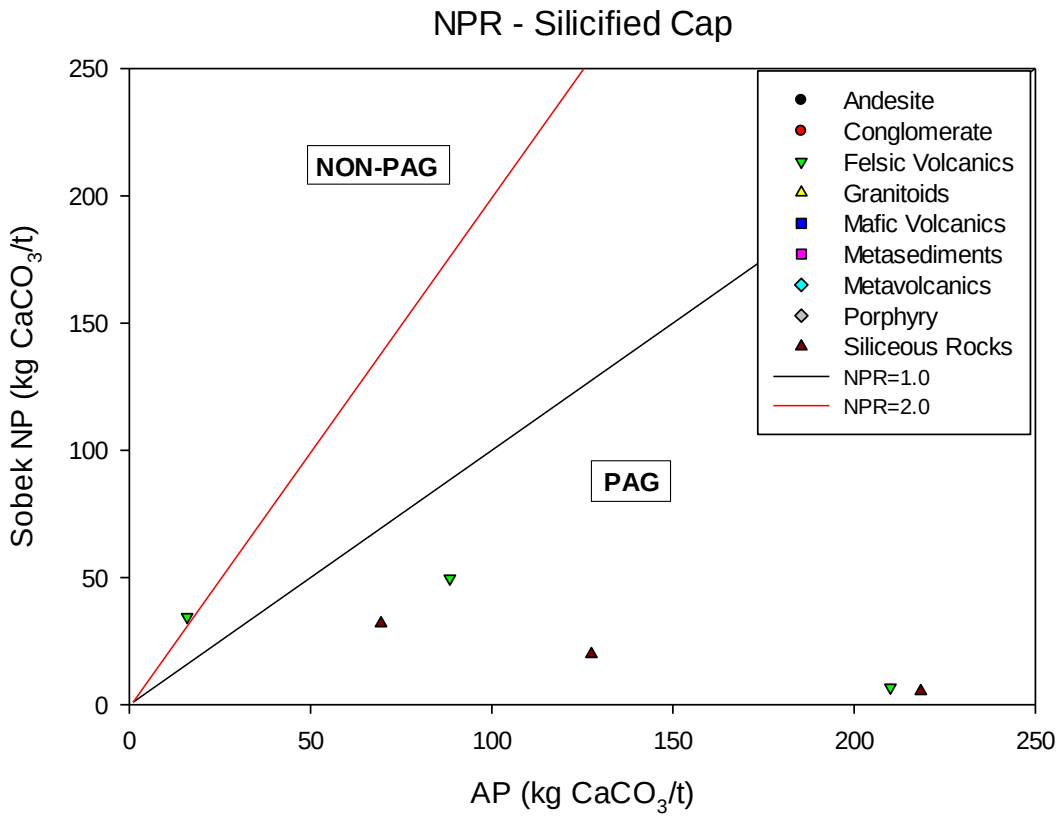

NPR - Bridge P1
Sobek NP (kg CaCO3/t)
AP (kg CaCO3/t)
NON-PAG
PAG
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
NPR=1.0
NPR=2.0
0
50
100
150
200

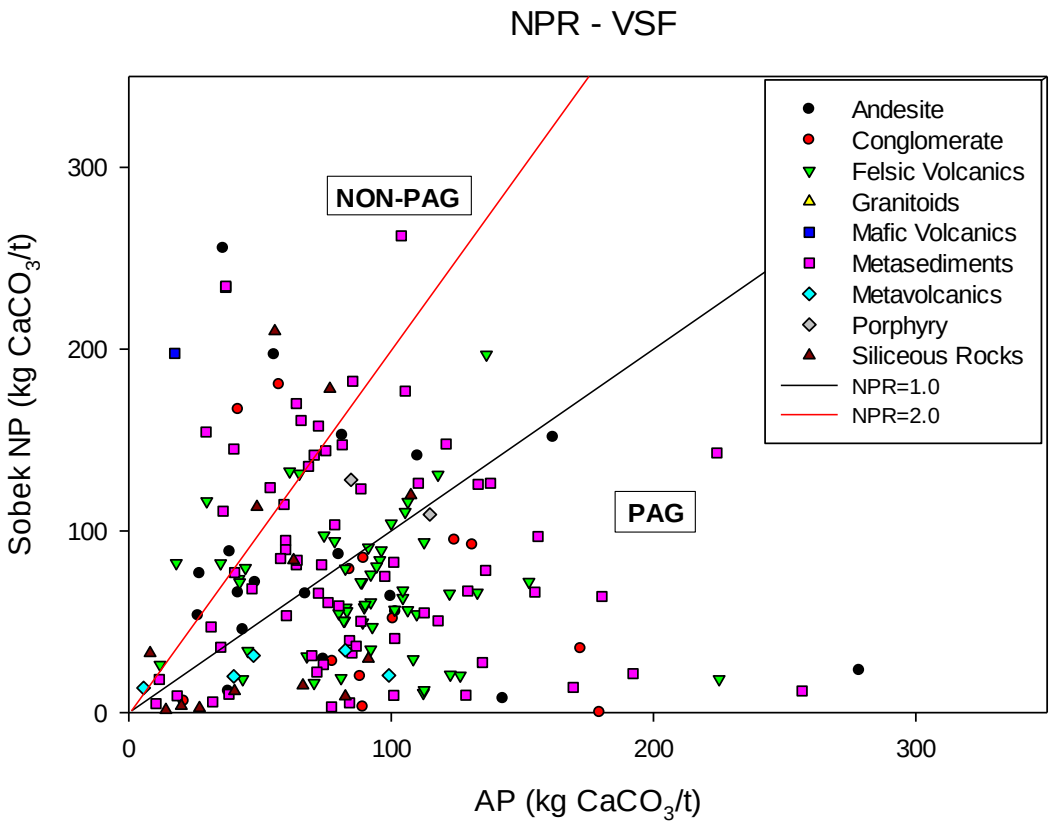

NPR - Conglomerate
Sobek NP (kg CaCO3/t)
AP (kg CaCO3/t)
NON-PAG
PAG
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
NPR=1.0
NPR=2.0
0
100
200
300
400
600

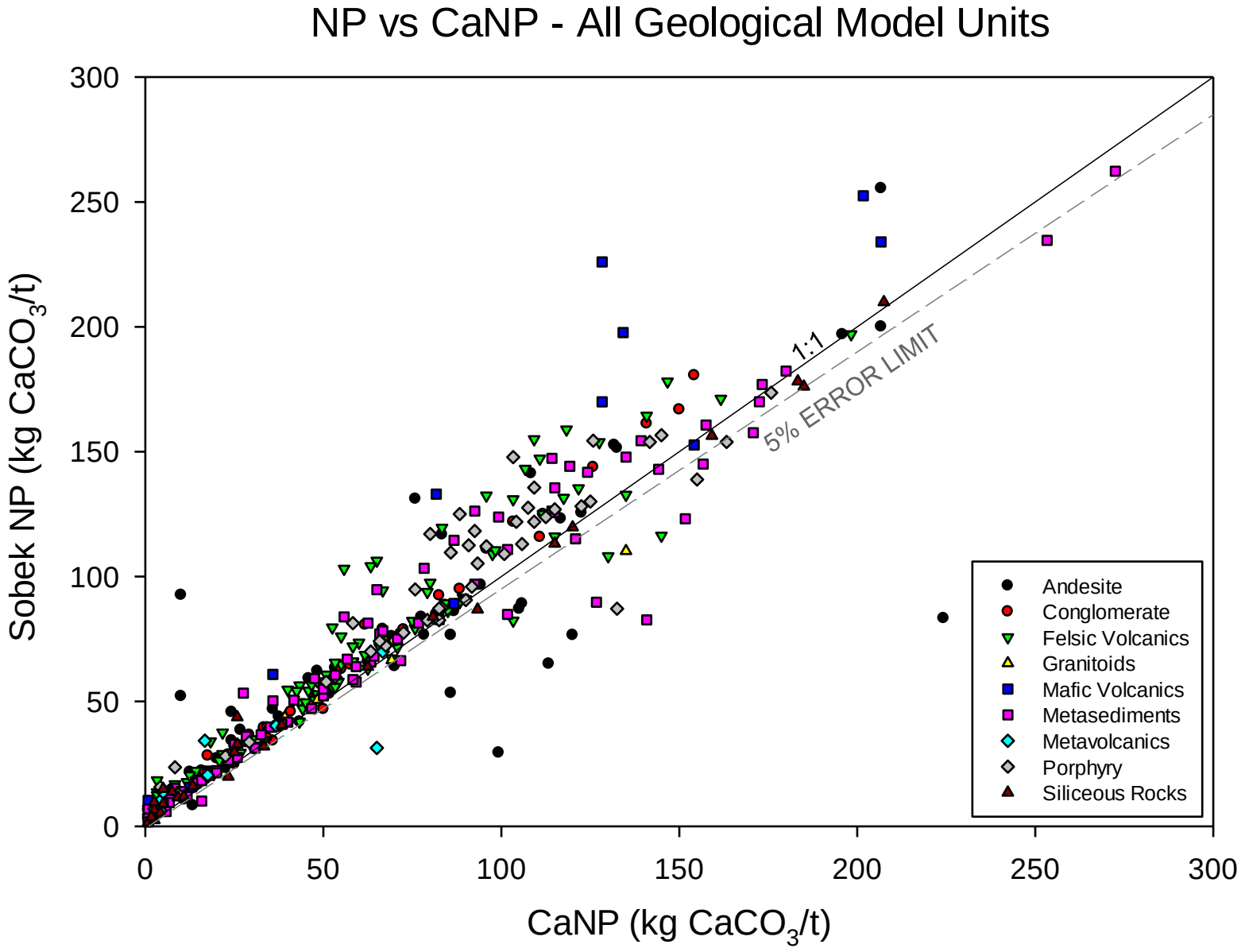

NPR - Fragmental
Sobek NP (kg CaCO3/t)
AP (kg CaCO3/t)
NON-PAG
PAG
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
NPR=1.0
NPR=2.0
0
50
100
150
200
250
300

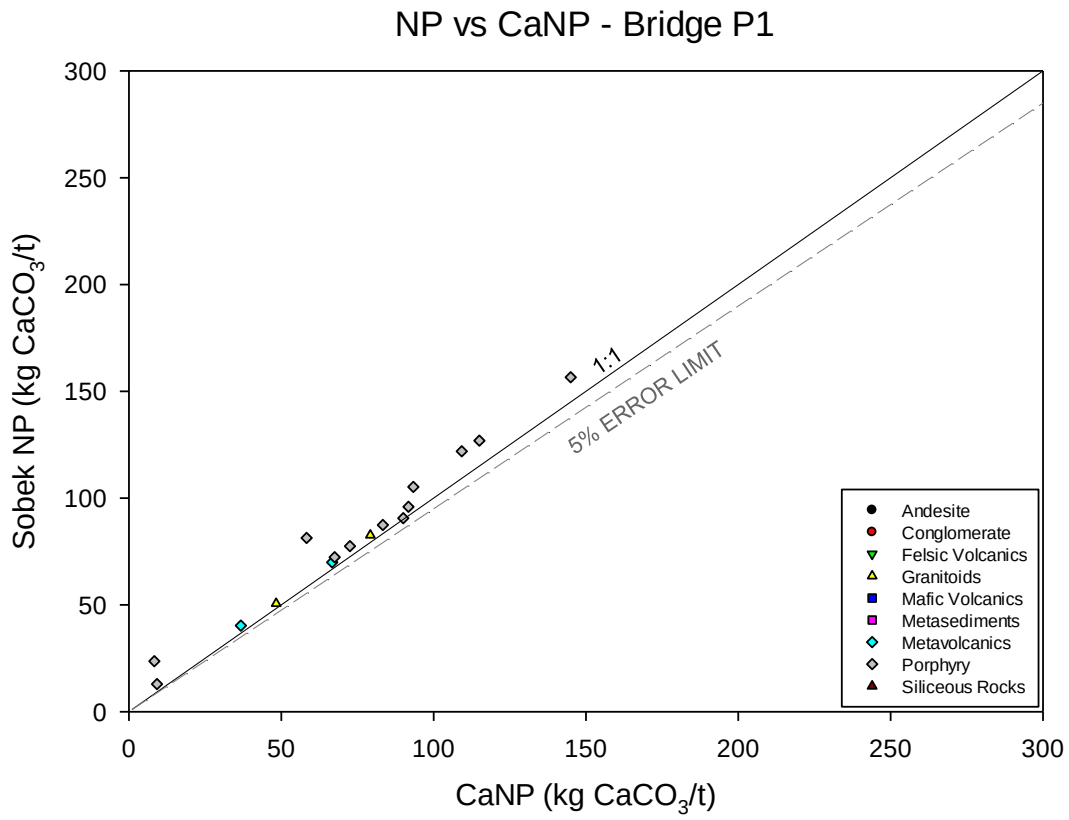

NPR - Office P1
Sobek NP (kg CaCO3/t)
AP (kg CaCO3/t)
NON-PAG
PAG
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
NPR=1.0
NPR=2.0
0
20
40
60
80
100
120
140
160
180

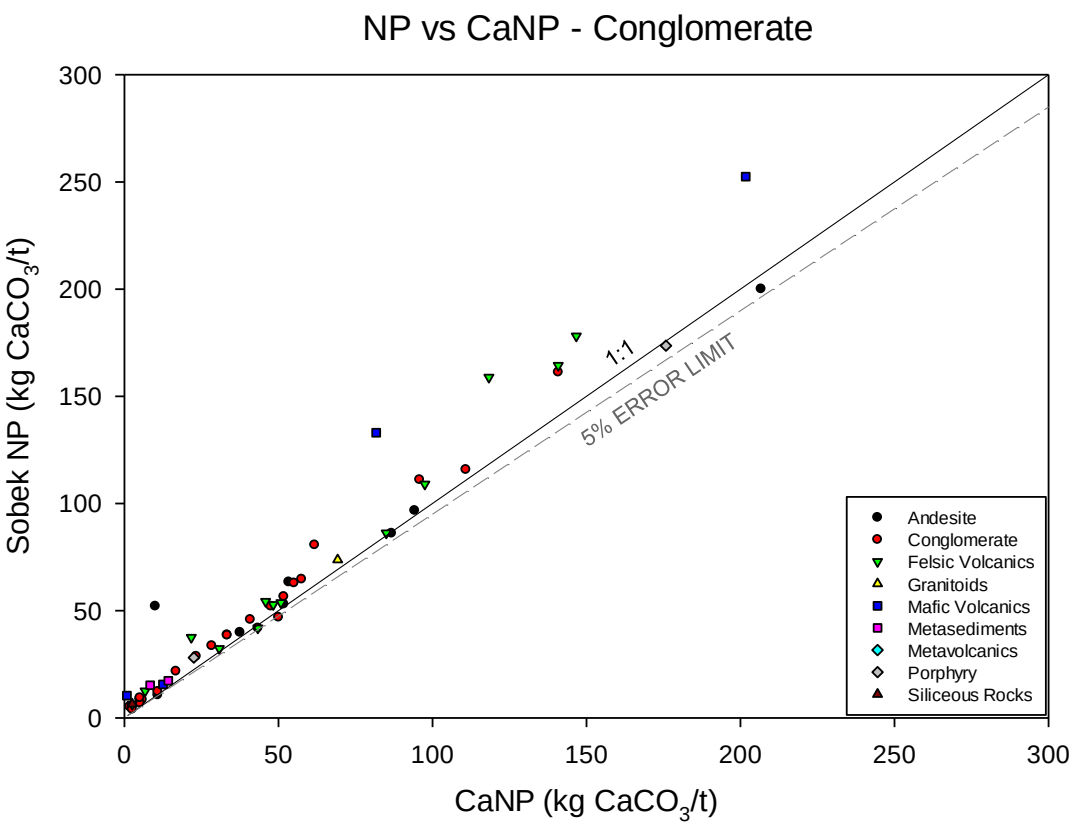

NPR - P2
Sobek NP (kg CaCO3/t)
AP (kg CaCO3/t)
NON-PAG
PAG
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
NPR=1.0
NPR=2.0
0
50
100
150
200
250
300

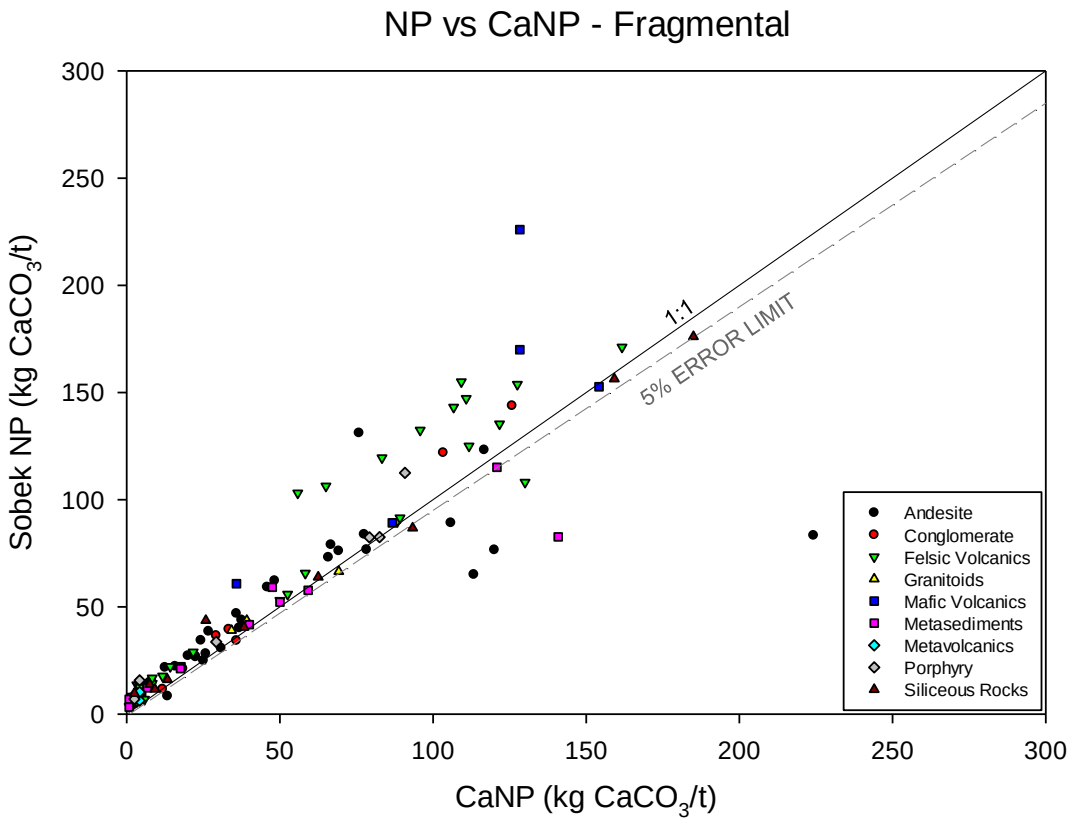

NPR - Silicified Cap
Sobek NP (kg CaCO3/t)
AP (kg CaCO3/t)
NON-PAG
PAG
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
NPR=1.0
NPR=2.0
0
50
100
150
200
250

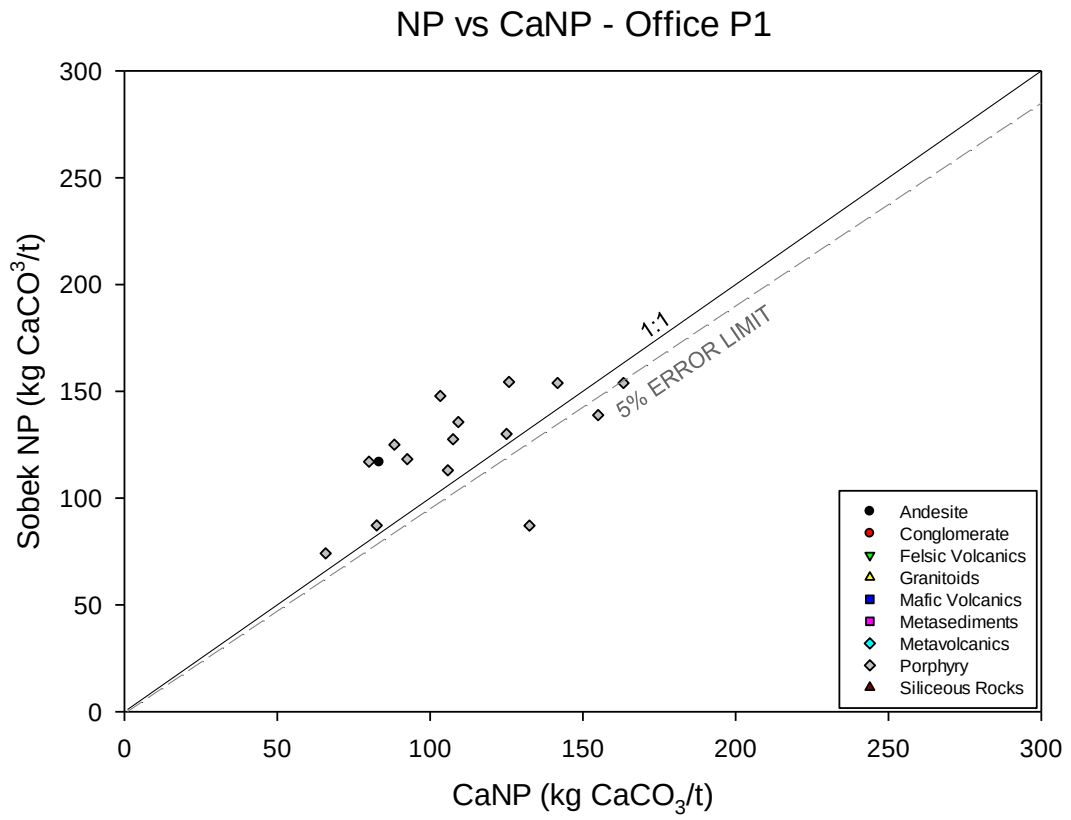

NPR - VSF
NON-PAG
PAG
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
NPR=1.0
NPR=2.0
Sobek NP (kg CaCO3/t)
AP (kg CaCO3/t)
0
100
200
300

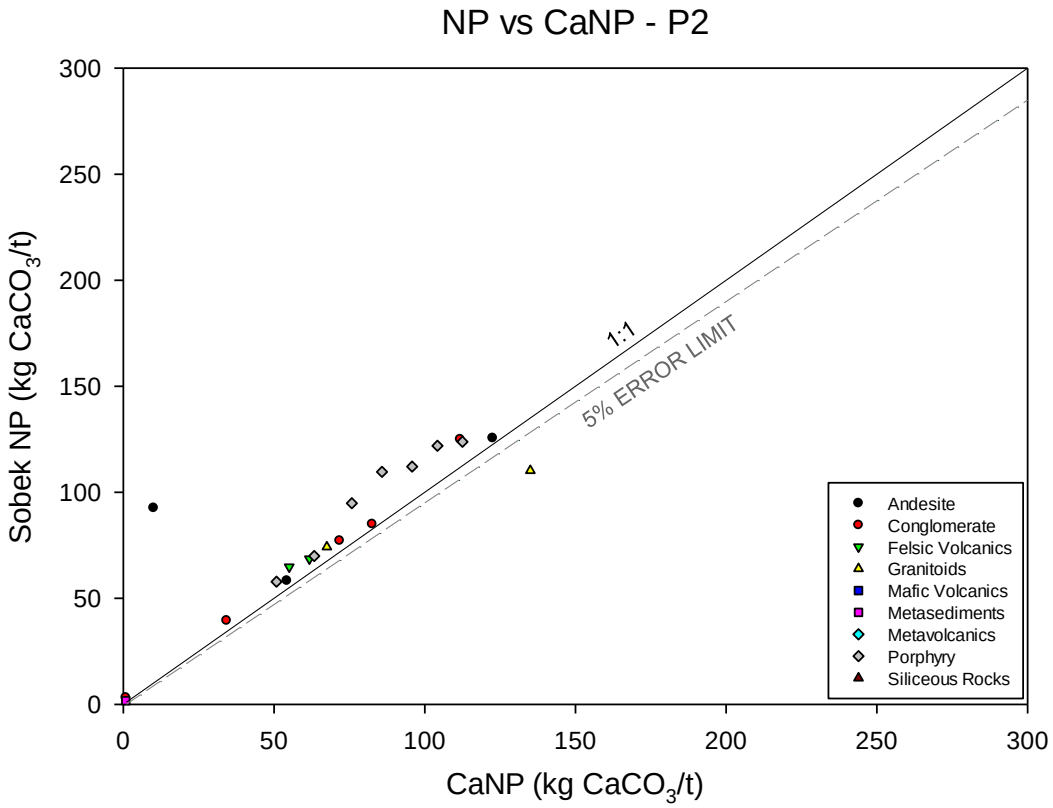

NP vs CaNP - All Geological Model Units
Sobek NP (kg CaCO3/t)
CaNP (kg CaCO3/t)
0
50
100
150
200
250
300
1:1
5% ERROR LIMIT
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks

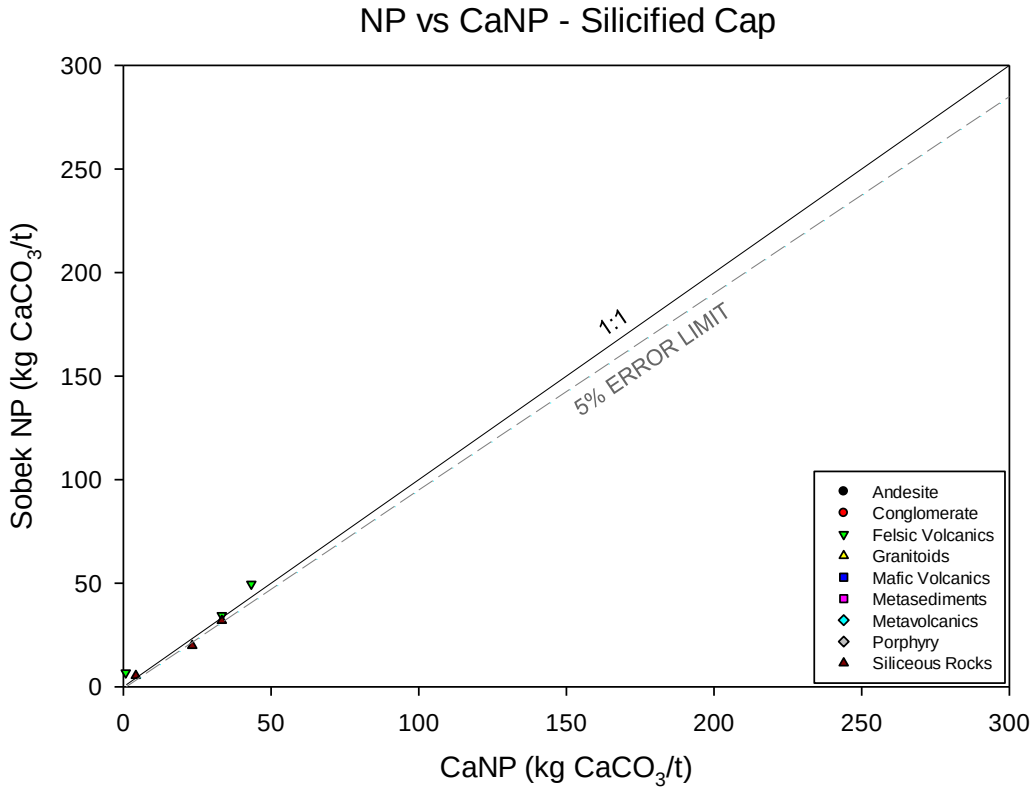

NP vs CaNP - Bridge P1
Sobek NP (kg CaCO3/t)
CaNP (kg CaCO3/t)
0
50
100
150
200
250
300
1:1
5% ERROR LIMIT
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks

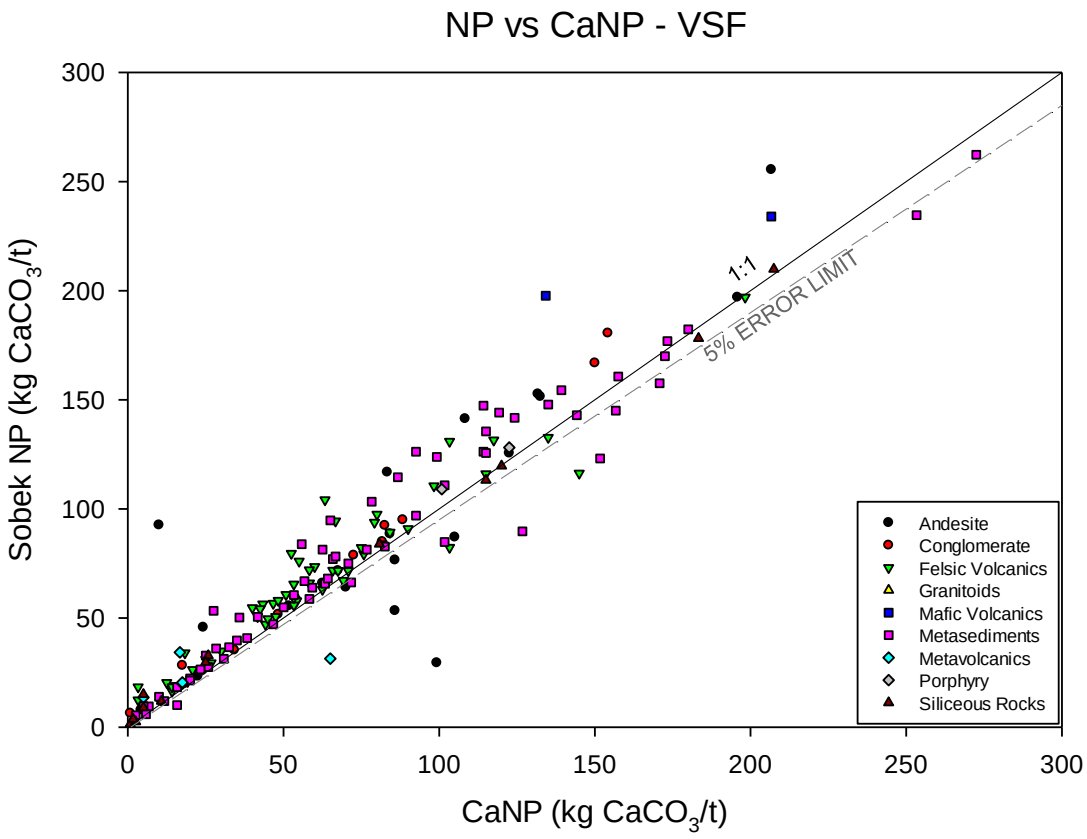

NP vs CaNP - Conglomerate
Sobek NP (kg CaCO3/t)
CaNP (kg CaCO3/t)
0
50
100
150
200
250
300
1:1
5% ERROR LIMIT
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks


NP vs CaNP - Fragmental
Sobek NP (kg CaCO3/t)
CaNP (kg CaCO3/t)
1:1
5% ERROR LIMIT
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
0
50
100
150
200
250
300

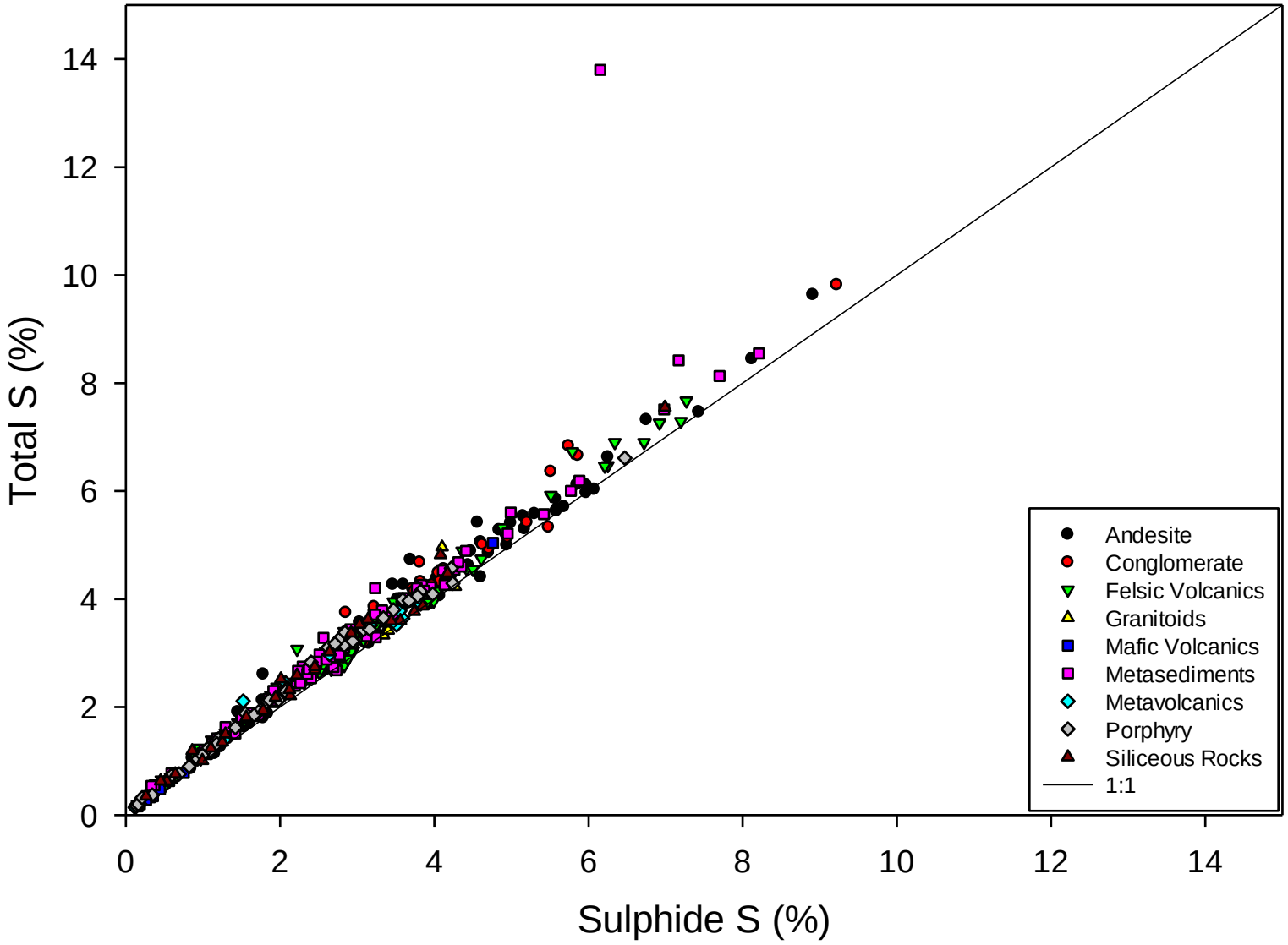

NP vs CaNP - Office P1
Sobek NP (kg CaCO3/t)
CaNP (kg CaCO3/t)
1:1
5% ERROR LIMIT
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
0
50
100
150
200
250
300

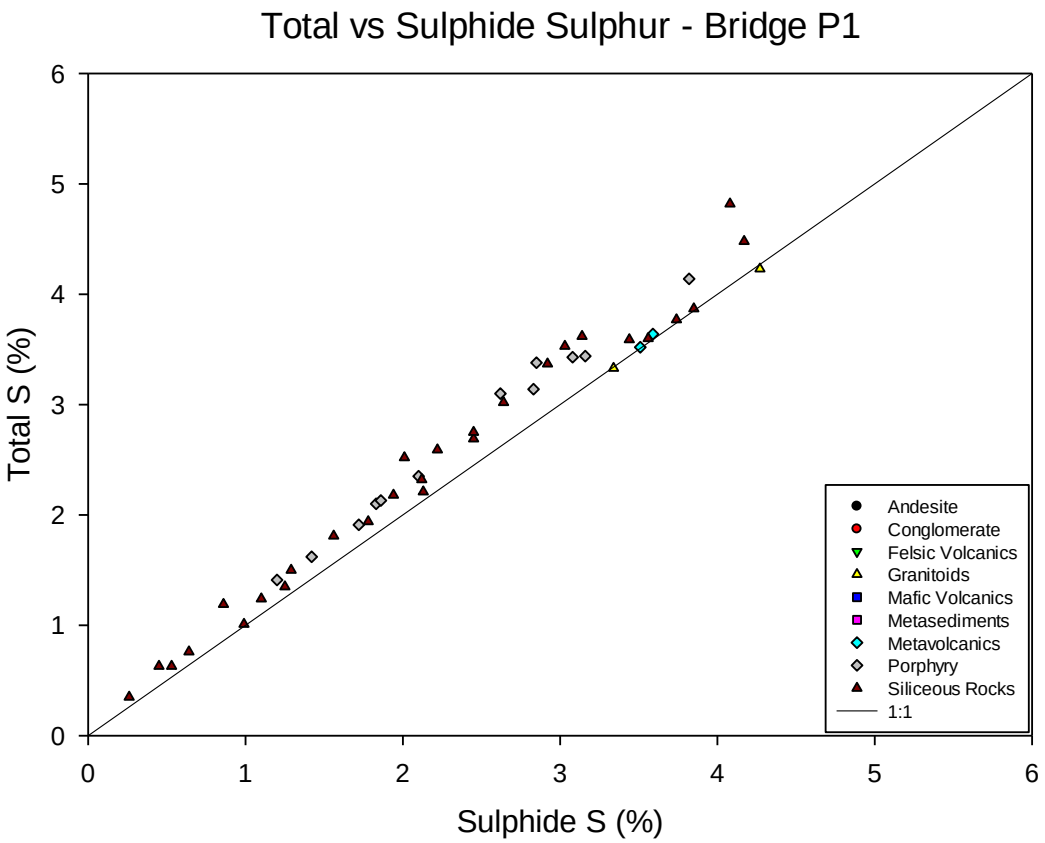

NP vs CaNP - P2
Sobek NP (kg CaCO3/t)
CaNP (kg CaCO3/t)
1:1
5% ERROR LIMIT
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
0
50
100
150
200
250
300

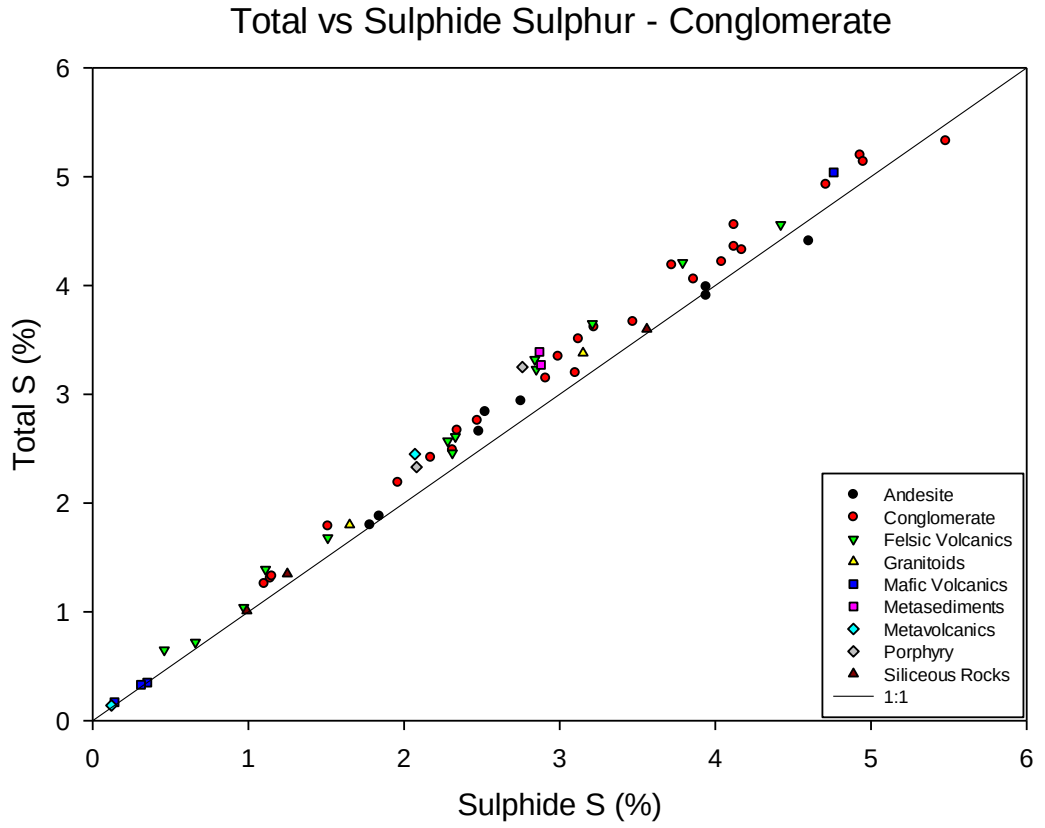

NP vs CaNP - Silicified Cap
Sobek NP (kg CaCO3/t)
CaNP (kg CaCO3/t)
1:1
5% ERROR LIMIT
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
0
50
100
150
200
250
300

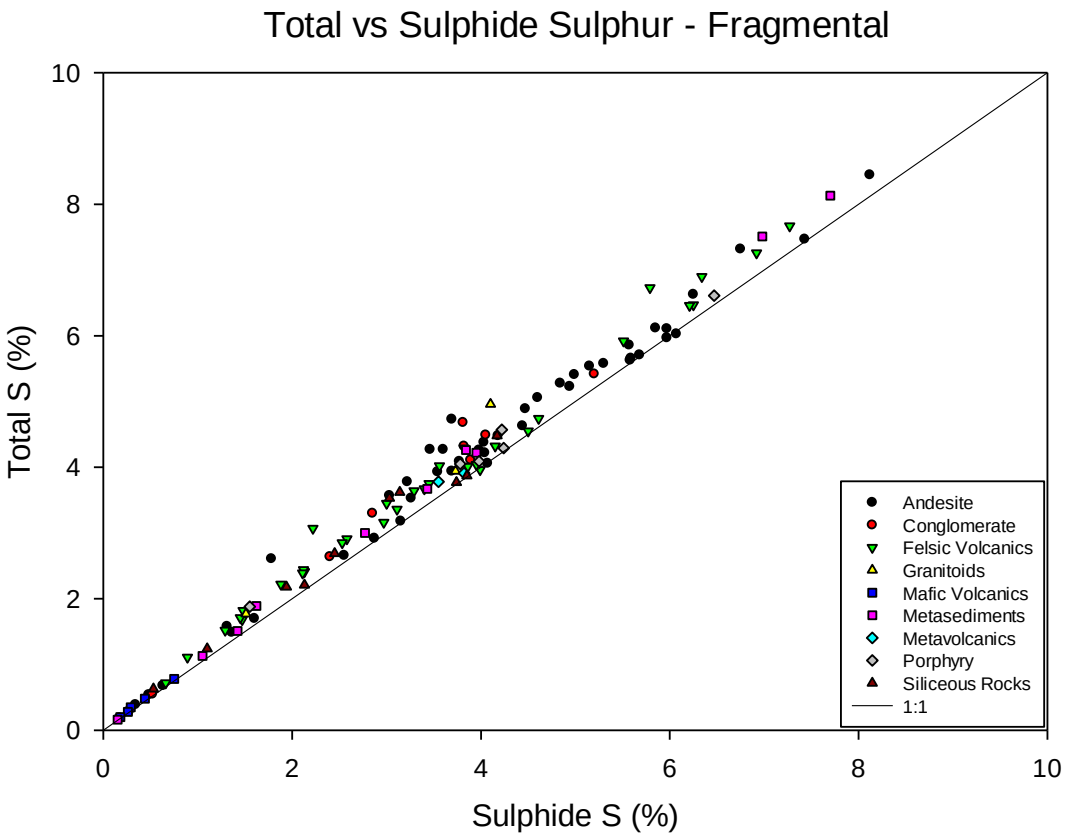

NP vs CaNP - VSF
Sobek NP (kg CaCO3/t)
CaNP (kg CaCO3/t)
0
50
100
150
200
250
300
1:1
5% ERROR LIMIT
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks

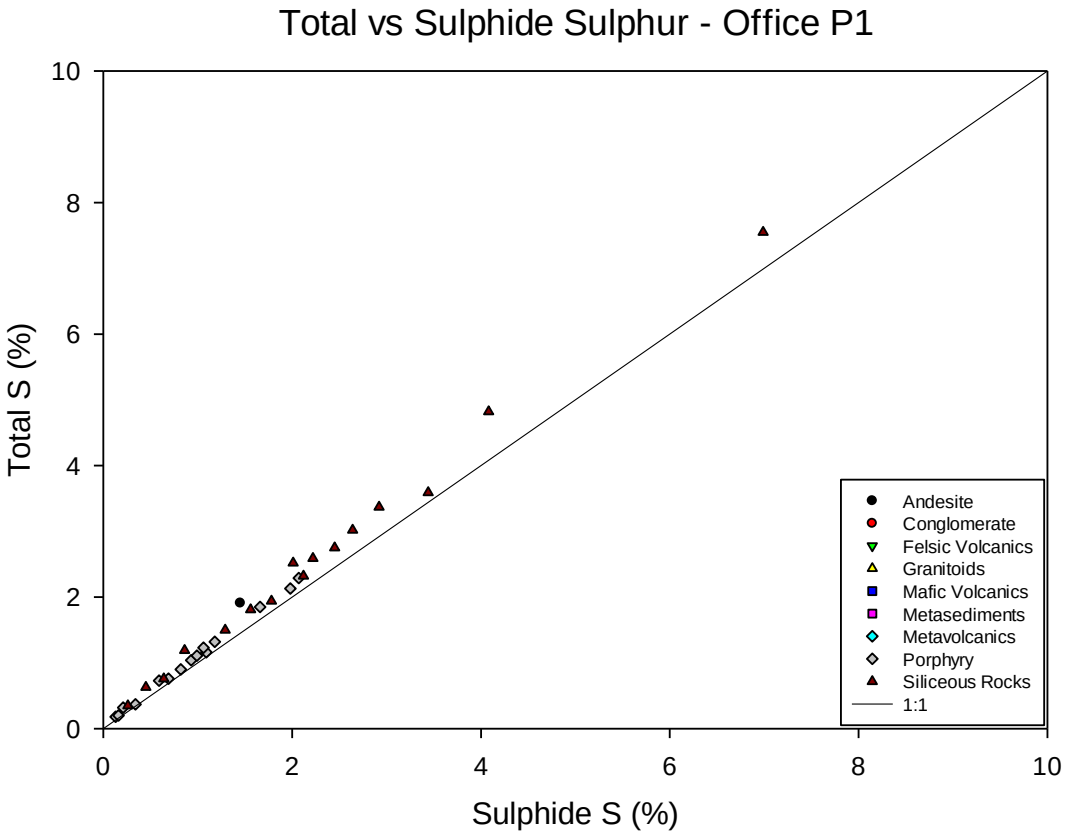
Total vs Sulphide Sulphur - All Geological Model Units

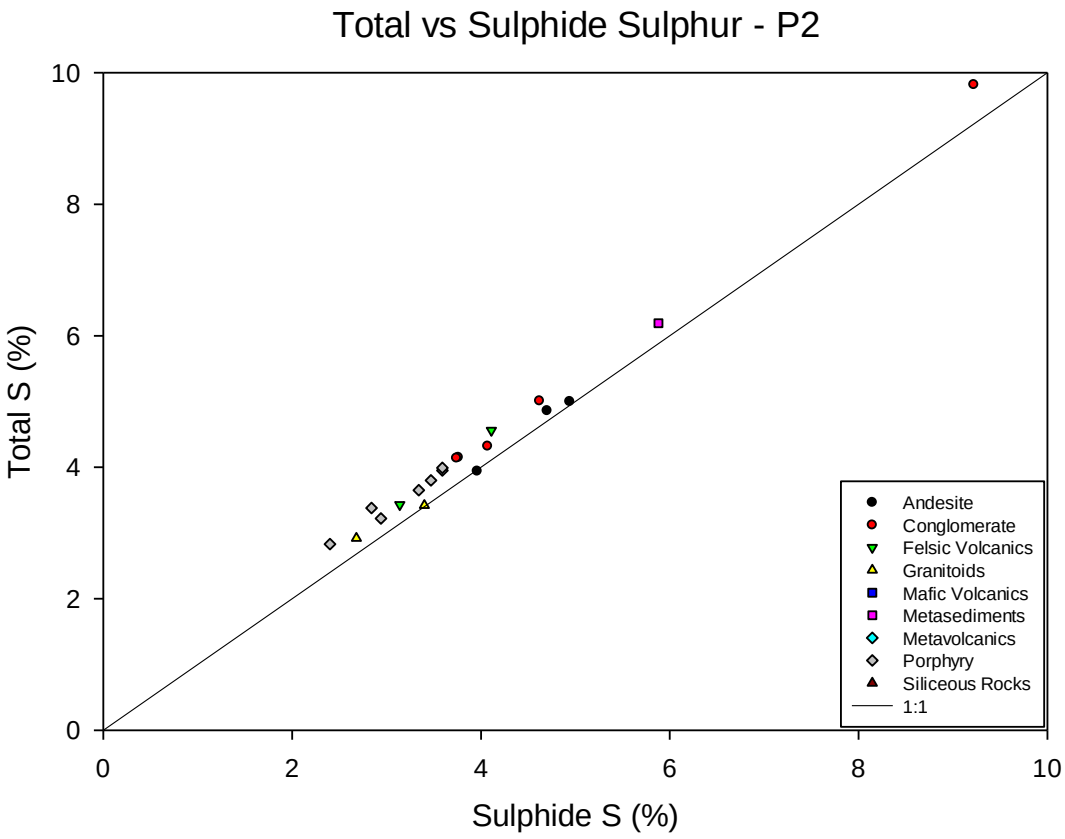


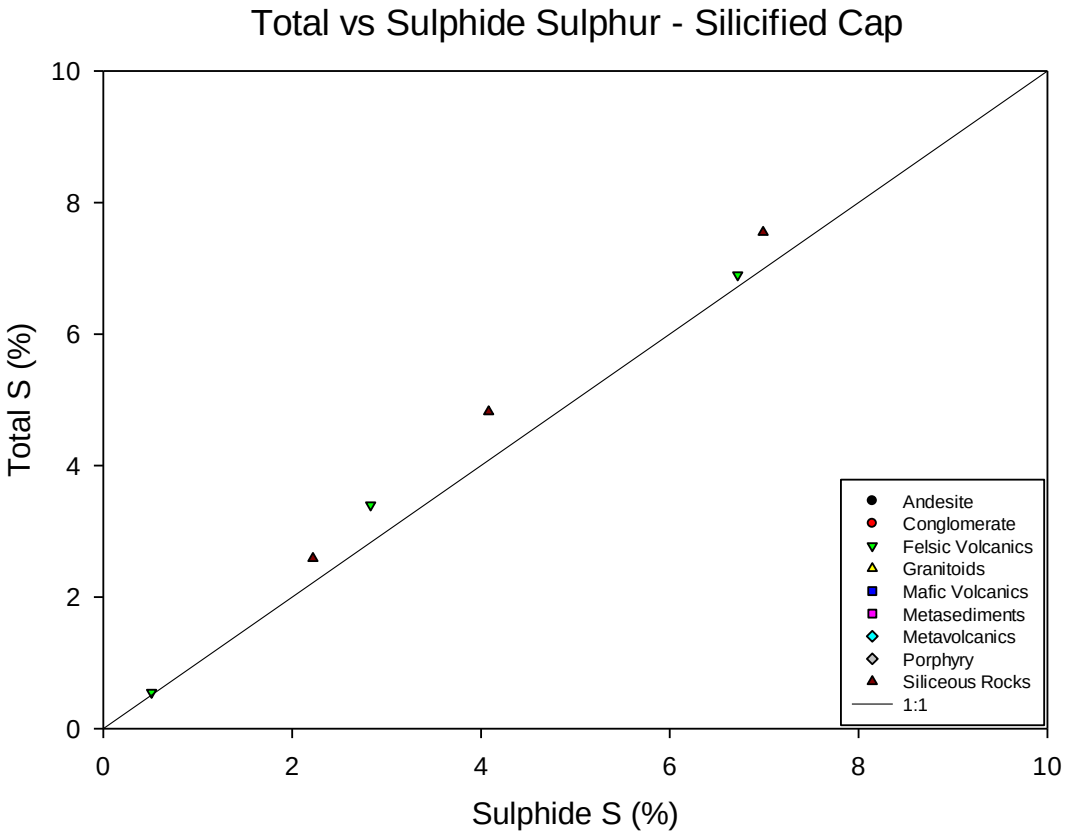

Total vs Sulphide Sulphur - Bridge P1
Total S (%)
Sulphide S (%)
0
1
2
3
4
5
6
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
1:1

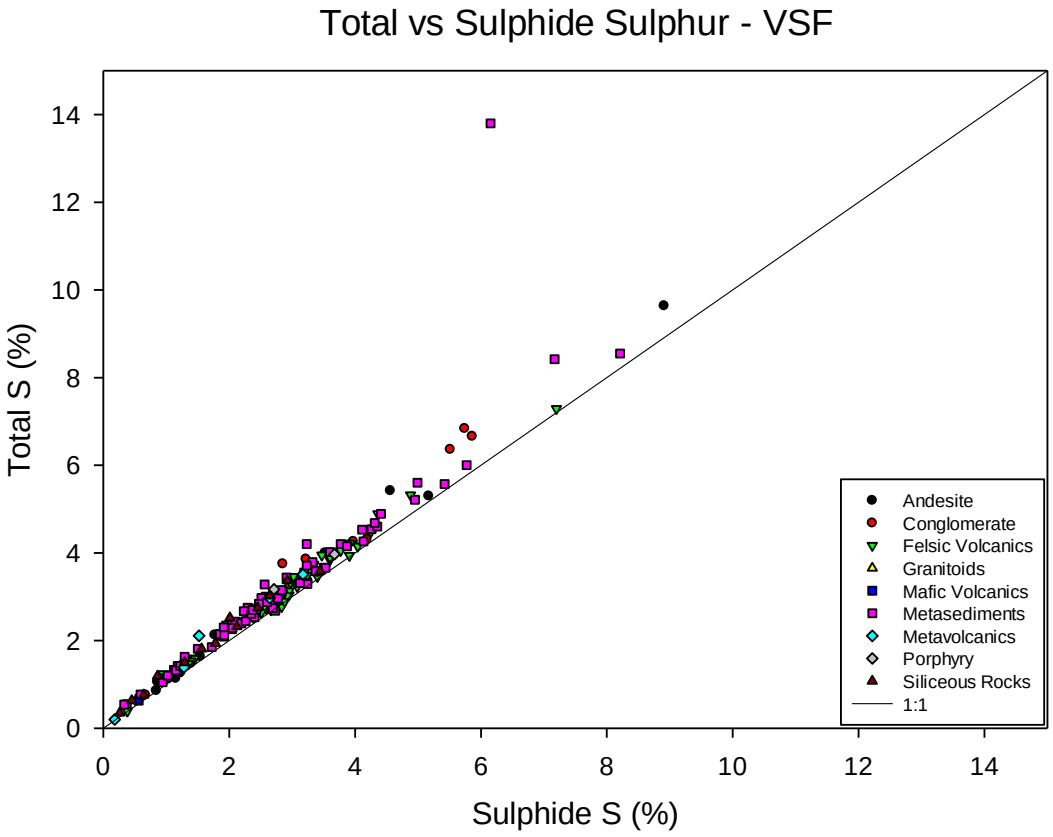

Total vs Sulphide Sulphur - Conglomerate
Total S (%)
Sulphide S (%)
0
1
2
3
4
5
6
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
1:1


Total vs Sulphide Sulphur - Fragmental
Total S (%)
Sulphide S (%)
0
2
4
6
8
10
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
1:1

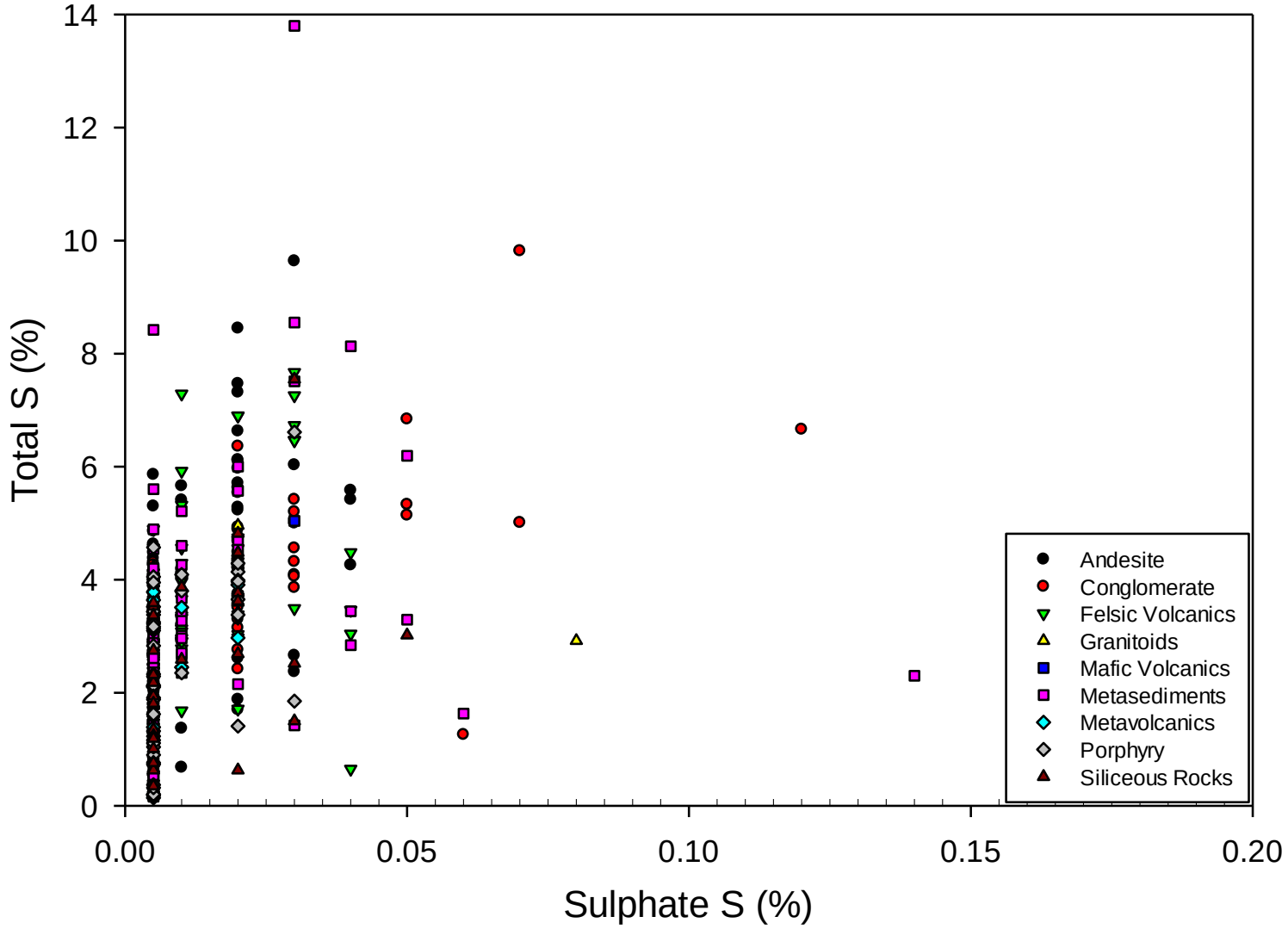

Total vs Sulphide Sulphur - Office P1
Total S (%)
Sulphide S (%)
0
2
4
6
8
10
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
1:1


Total vs Sulphide Sulphur - P2
Total S (%)
Sulphide S (%)
0
2
4
6
8
10
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
1:1

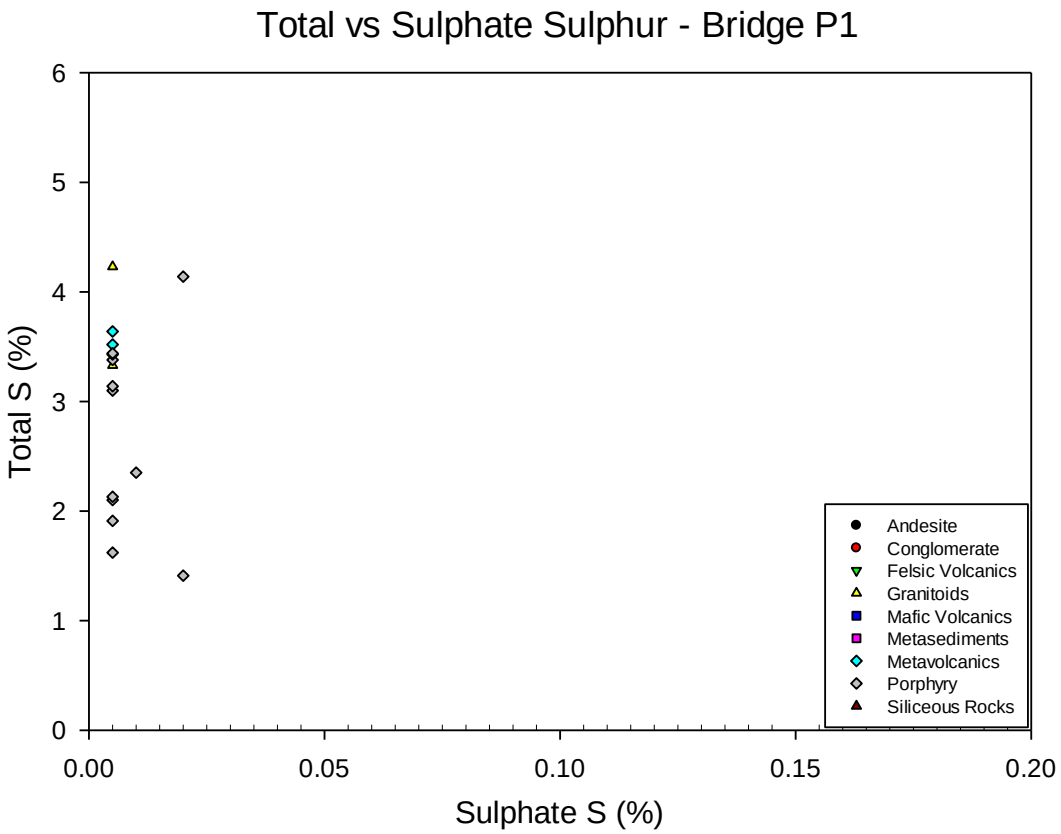

Total vs Sulphide Sulphur - Silicified Cap
Total S (%)
Sulphide S (%)
0
2
4
6
8
10
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
1:1

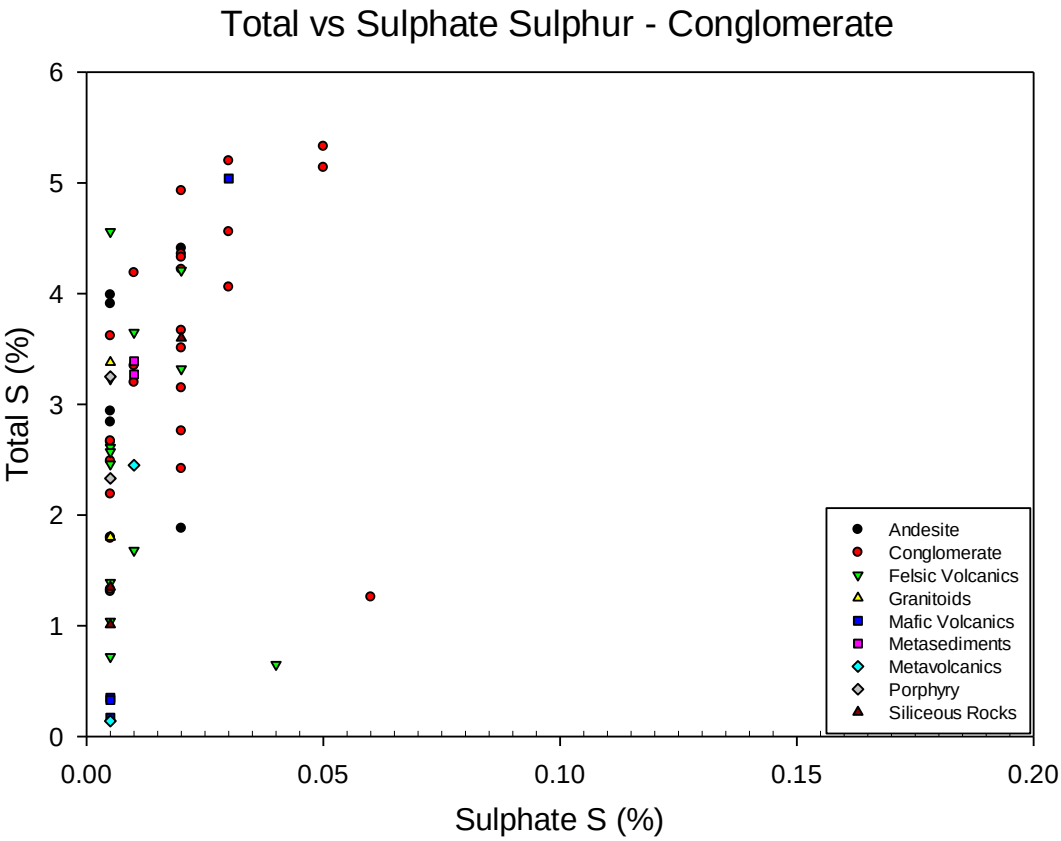

Total vs Sulphide Sulphur - VSF
Total S (%)
Sulphide S (%)
0
2
4
6
8
10
12
14
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks
1:1

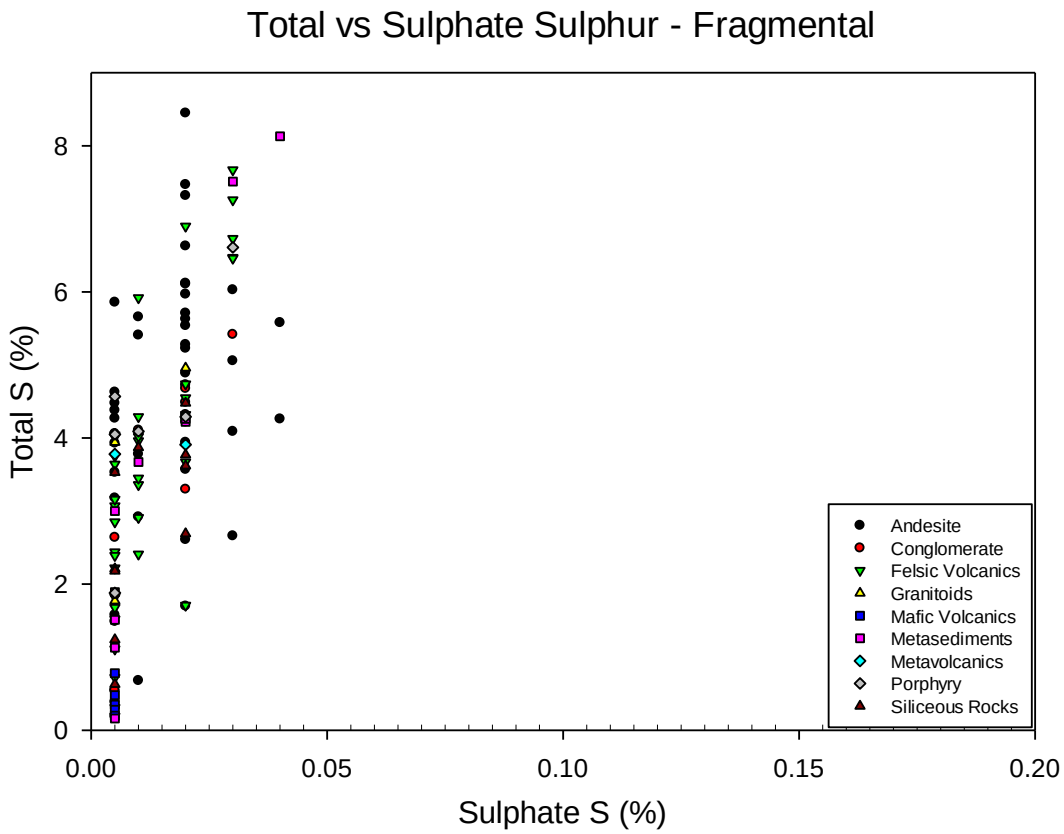
Total vs Sulphate Sulphur - All Geological Model Units

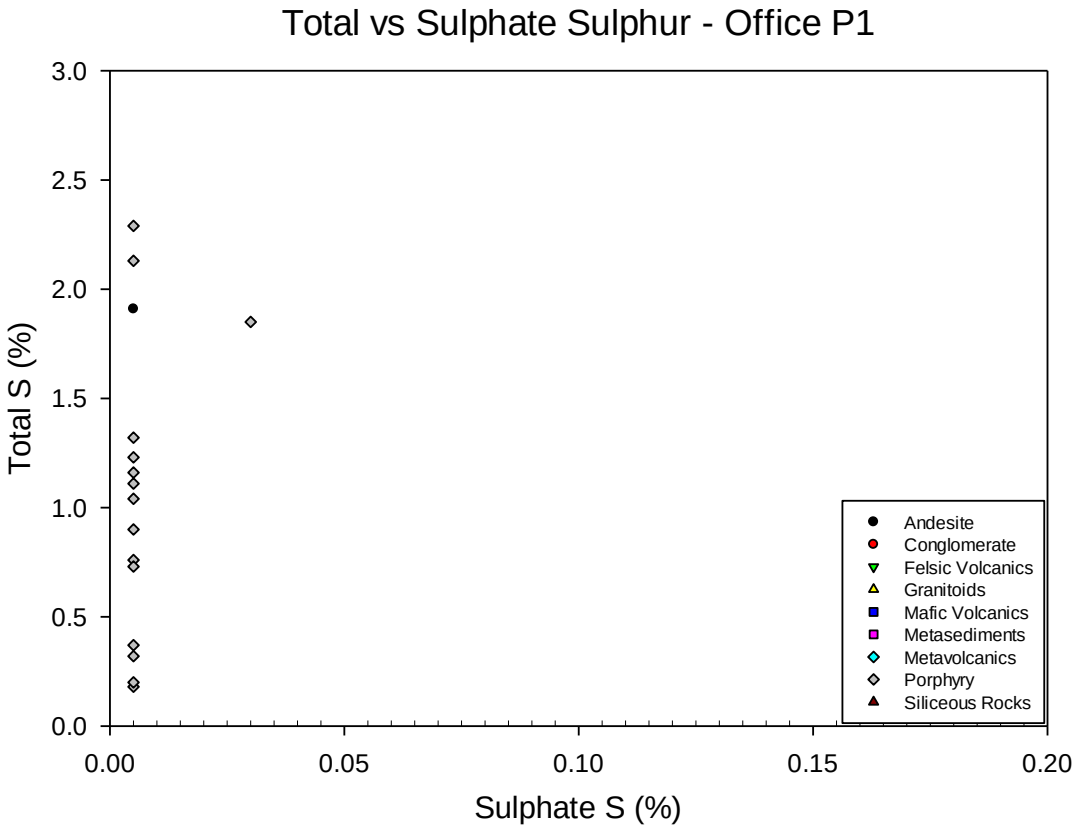


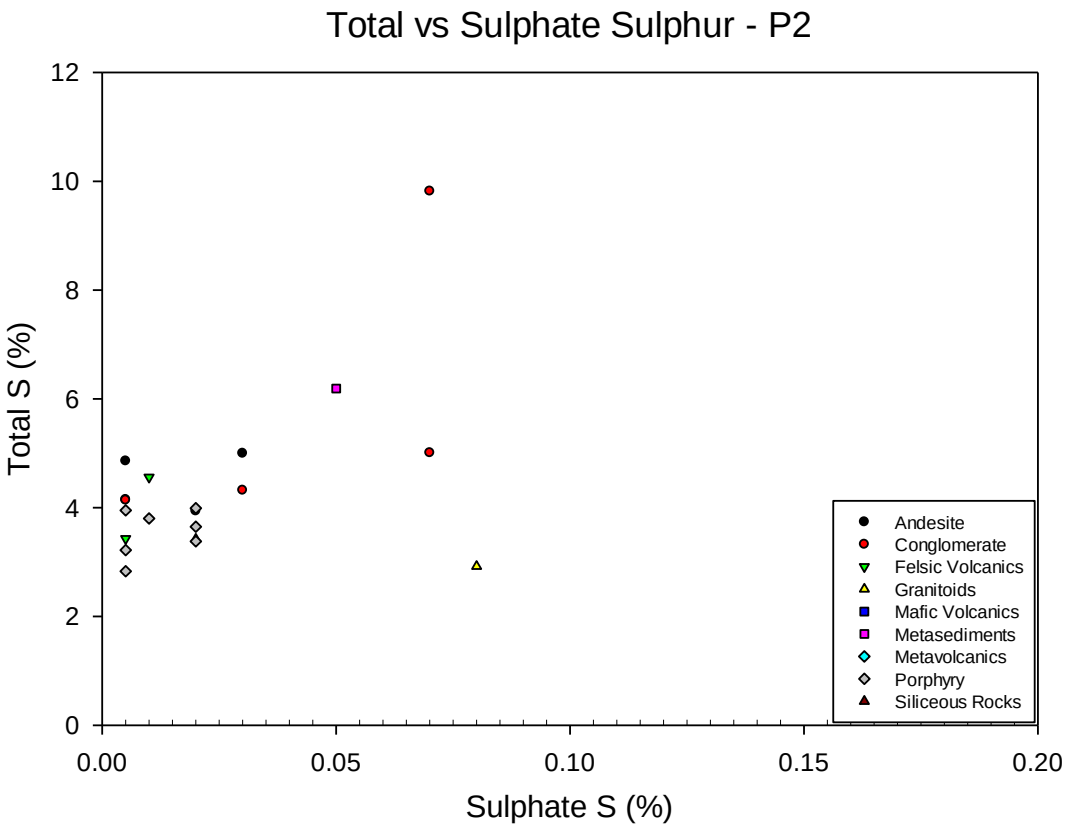
Note: detection limit for SO_4 is 0.01%. Many samples contained <0.01% SO_4 and are shown on Total vs Sulphate Sulphur plots as SO_4%=0.005%.

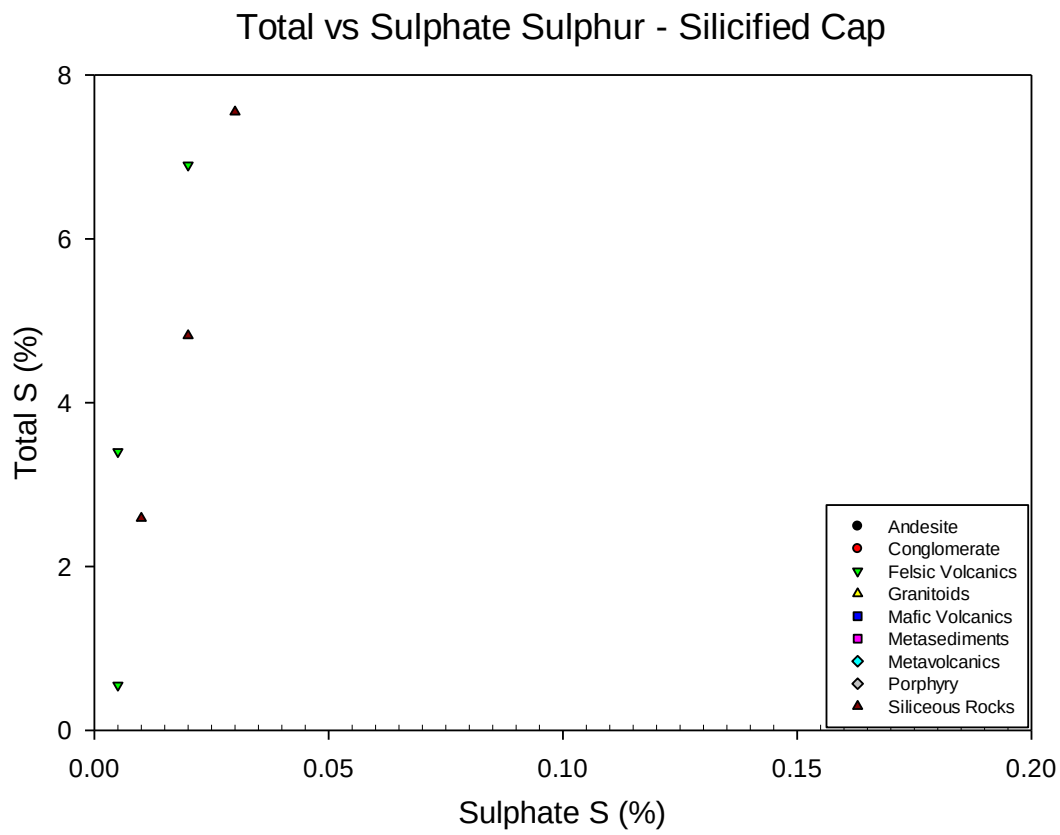

Total vs Sulphate Sulphur - Bridge P1
Total S (%)
Sulphate S (%)
0
1
2
3
4
5
6
0.00
0.05
0.10
0.15
0.20
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks

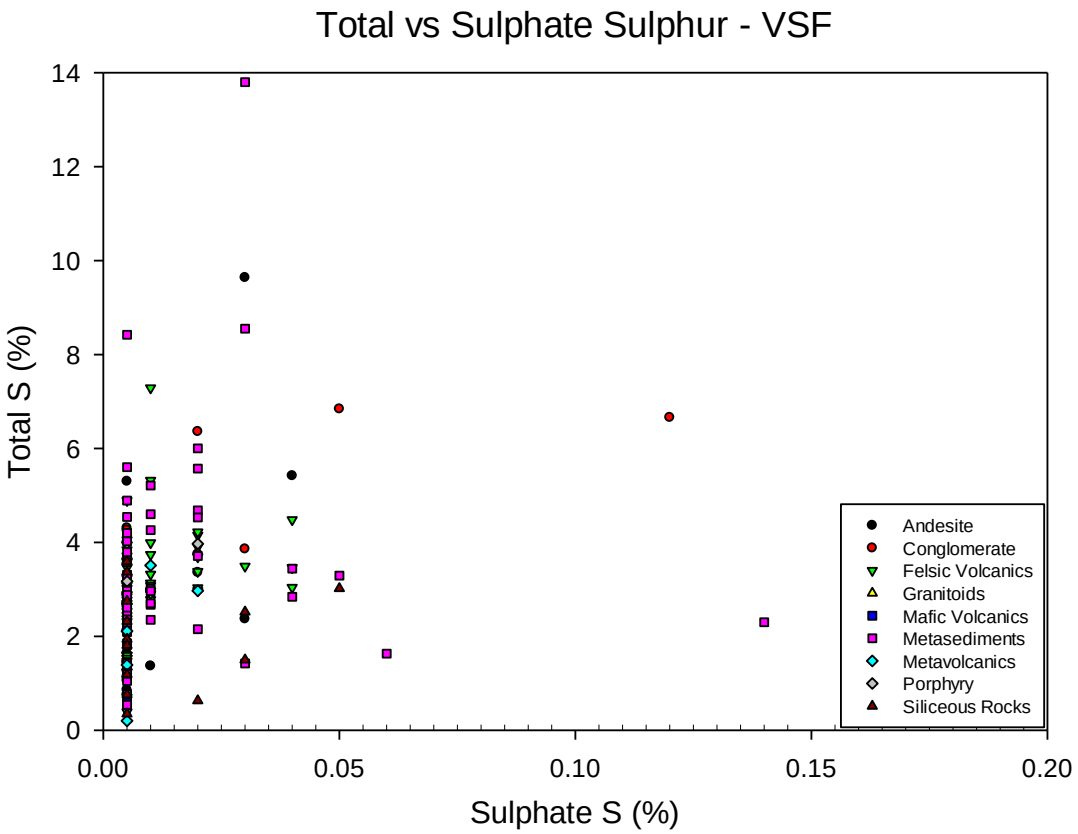

Total vs Sulphate Sulphur - Conglomerate
Total S (%)
Sulphate S (%)
0
1
2
3
4
5
6
0.00
0.05
0.10
0.15
0.20
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks


Total vs Sulphate Sulphur - Fragmental
Total S (%)
Sulphate S (%)
0
2
4
6
8
0.00
0.05
0.10
0.15
0.20
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks

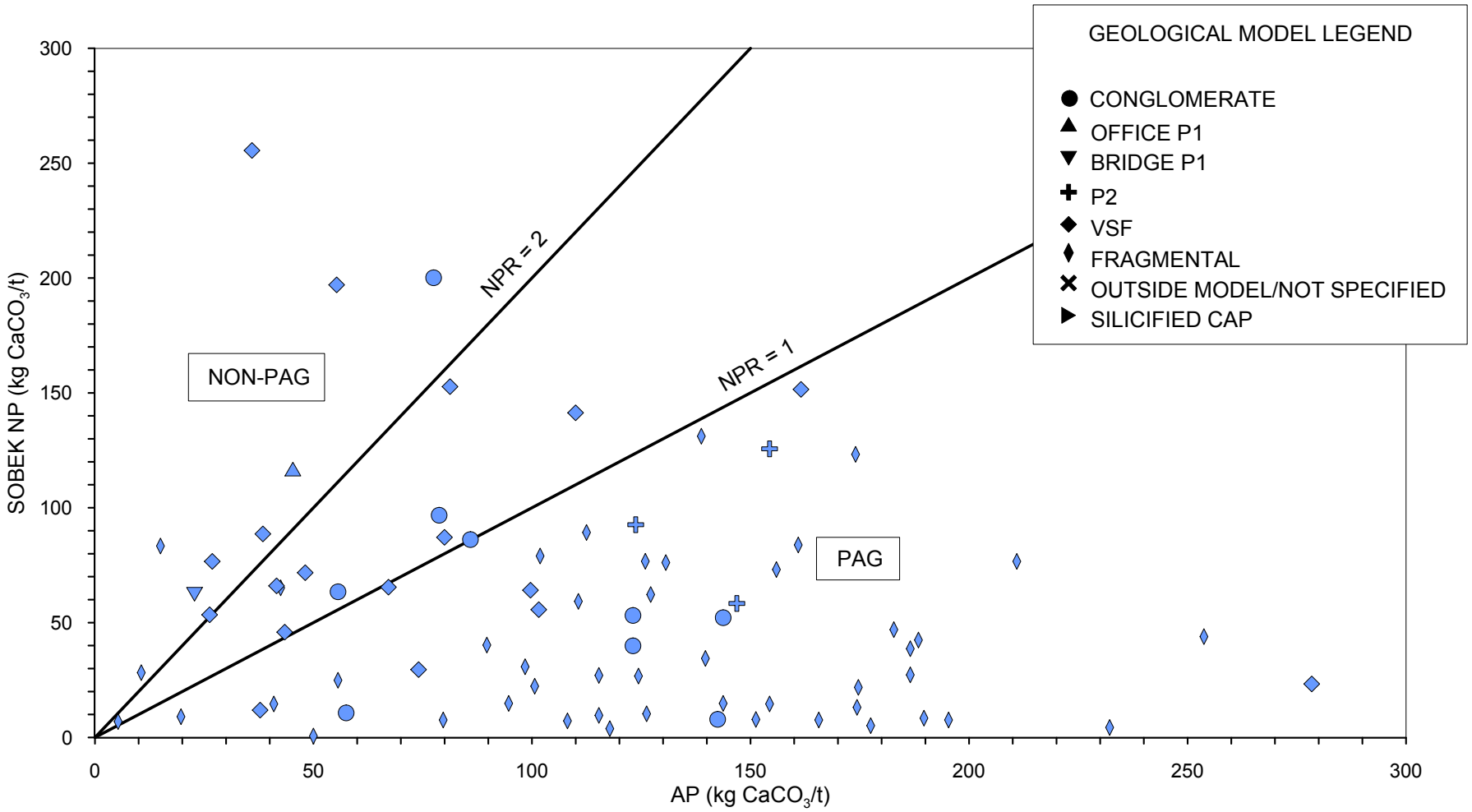

Total vs Sulphate Sulphur - Office P1
Total S (%)
Sulphate S (%)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
0.00
0.05
0.10
0.15
0.20
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks


Total vs Sulphate Sulphur - P2
Total S (%)
Sulphate S (%)
0
2
4
6
8
10
12
0.00
0.05
0.10
0.15
0.20
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks


Total vs Sulphate Sulphur - Silicified Cap
Total S (%)
Sulphate S (%)
0
2
4
6
8
0.00
0.05
0.10
0.15
0.20
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks


Total vs Sulphate Sulphur - VSF
Total S (%)
Sulphate S (%)
0
2
4
6
8
10
12
14
0.00
0.05
0.10
0.15
0.20
Andesite
Conglomerate
Felsic Volcanics
Granitoids
Mafic Volcanics
Metasediments
Metavolcanics
Porphyry
Siliceous Rocks

APPENDIX D2
WASTE ROCK – ABA PLOTS BY LOGGED LITHOLOGY



NOTES:
1. PAG INDICATES POTENTIALLY ACID GENERATING LITHOLOGIES; NON-PAG INDICATES LITHOLOGIES WHICH ARE NOT POTENTIALLY ACID-GENERATING
2. NP INDICATES NEUTRALIZING POTENTIAL; AP INDICATES ACID-GENERATING POTENTIAL

SCALE: AS SHOWN	DESIGNED: HKM
DATE: MAR 2014	CHECKED: TCC
DRAWN: HKM	APPROVED: SB

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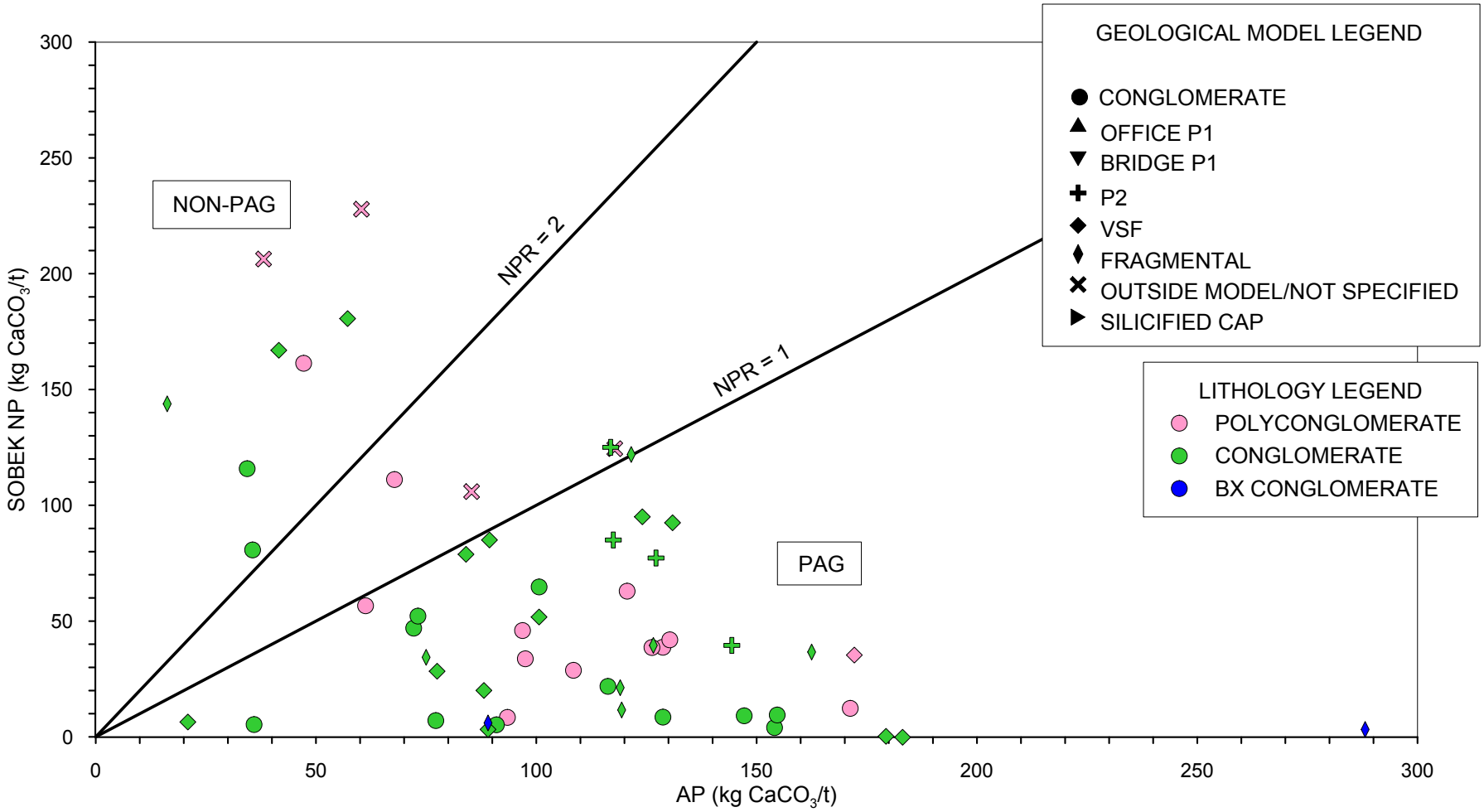
PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT
ML/ARD BASELINE REPORT

TITLE: NP vs AP
WASTE ROCK - ANDESITE

PROJECT No.	DWG No.	REV.
1008-010	D2-01	A

DWG. TO BE READ WITH BGC REPORT TITLED "BRUCEJACK ENVIRONMENTAL ASSESSMENT - ML/ARD BASELINE REPORT" DATED MAR 2014

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NOTES:
1. PAG INDICATES POTENTIALLY ACID GENERATING LITHOLOGIES; NON-PAG INDICATES LITHOLOGIES WHICH ARE NOT POTENTIALLY ACID-GENERATING.
2. NP INDICATES NEUTRALIZING POTENTIAL; AP INDICATES ACID-GENERATING POTENTIAL
3. CONGLOMERATES INCLUDE POLYCONGLOMERATE, METACONGLOMERATE, AND BX CONGLOMERATE.

SCALE: AS SHOWN	DESIGNED: HKM
DATE: MAR 2014	CHECKED: TCC
DRAWN: HKM	APPROVED: SB

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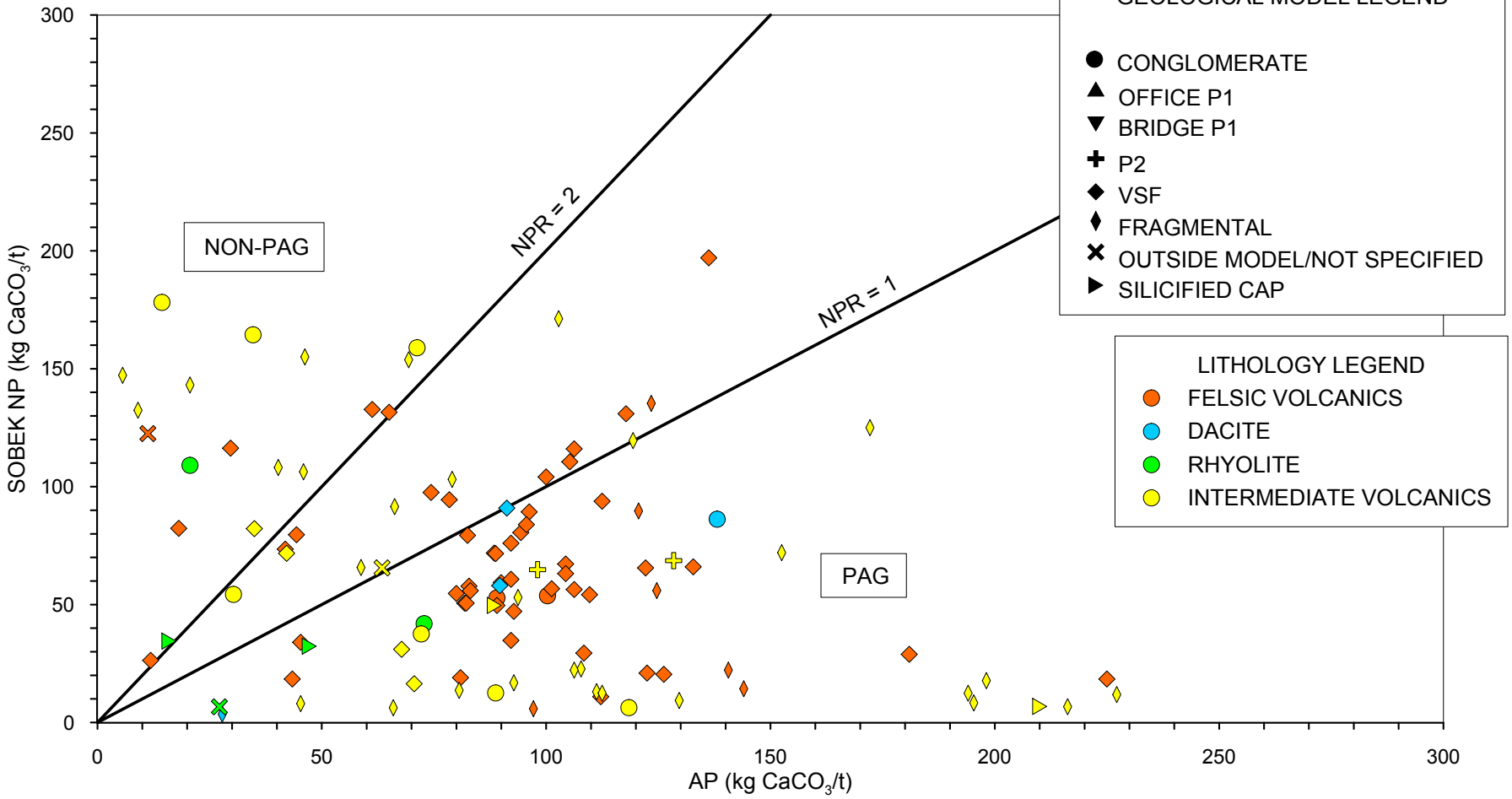
PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT
ML/ARD BASELINE REPORT

TITLE: NP vs AP
WASTE ROCK - CONGLOMERATE

PROJECT No.	DWG No.	REV.
1008-010	D2-02	A

DWG. TO BE READ WITH BGC REPORT TITLED "BRUCEJACK ENVIRONMENTAL ASSESSMENT - ML/ARD BASELINE REPORT" DATED MAR 2014

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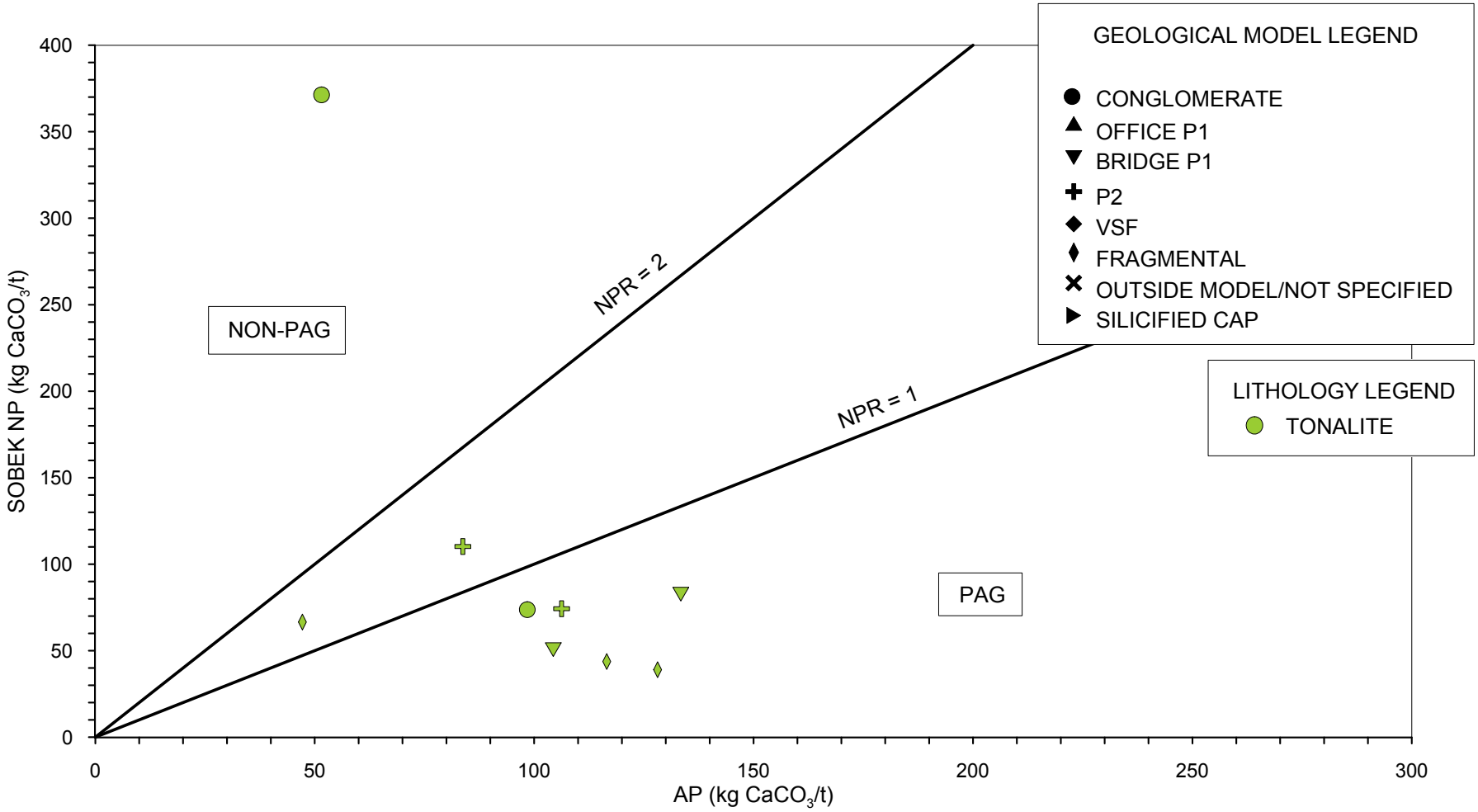
NOTES:
1. PAG INDICATES POTENTIALLY ACID GENERATING LITHOLOGIES; NON-PAG INDICATES LITHOLOGIES WHICH ARE NOT POTENTIALLY ACID-GENERATING.
2. NP INDICATES NEUTRALIZING POTENTIAL; AP INDICATES ACID-GENERATING POTENTIAL
3. FELSIC VOLCANICS INCLUDE META-FELSIC VOLCANICS, INTERMEDIATE VOLCANICS, DACITE, AND RHYOLITE

SCALE: AS SHOWN	DESIGNED: HKM	BGC ENGINEERING INC. AN APPLIED EARTH SCIENCES COMPANY	PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT ML/ARD BASELINE REPORT
DATE: MAR 2014	CHECKED: TCC		TITLE: NP vs AP WASTE ROCK - FELSIC VOLCANICS
DRAWN: HKM	APPROVED: SB	CLIENT: PRETIUM RESOURCES	PROJECT No. 1008-010 / DWG No. D2-03 / REV. A

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NOTES:
1. PAG INDICATES POTENTIALLY ACID GENERATING LITHOLOGIES; NON-PAG INDICATES LITHOLOGIES WHICH ARE NOT POTENTIALLY ACID-GENERATING.
2. NP INDICATES NEUTRALIZING POTENTIAL; AP INDICATES ACID-GENERATING POTENTIAL
3. GRANITOIDS INCLUDE TONALITE

SCALE: AS SHOWN	DESIGNED: HKM
DATE: MAR 2014	CHECKED: TCC
DRAWN: HKM	APPROVED: SB

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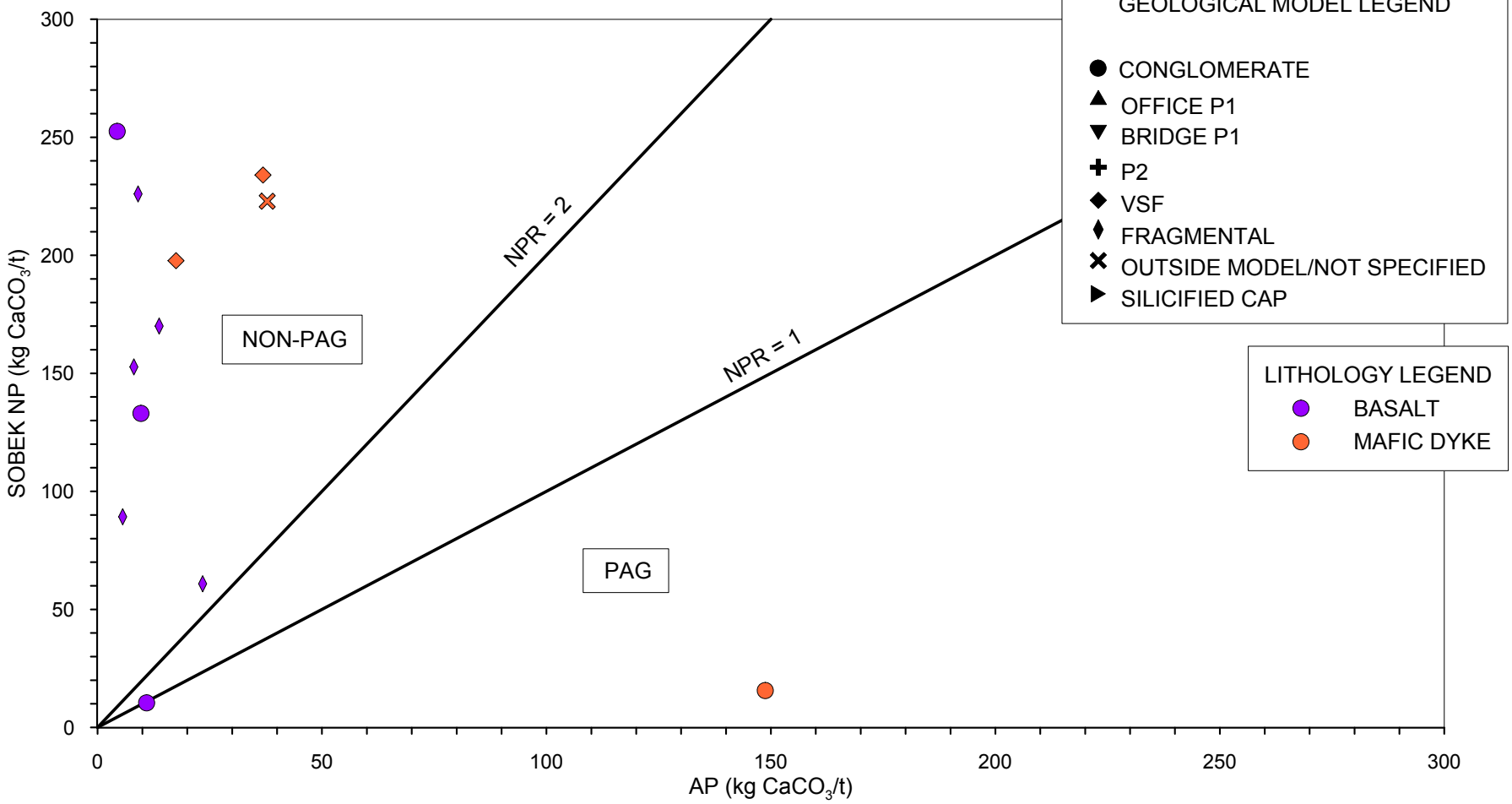
PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT
ML/ARD BASELINE REPORT

TITLE: NP vs AP
WASTE ROCK - GRANITOIDS

PROJECT No.	DWG No.	REV.
1008-010	D2-04	A

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NOTES:
1. PAG INDICATES POTENTIALLY ACID GENERATING LITHOLOGIES; NON-PAG INDICATES LITHOLOGIES WHICH ARE NOT POTENTIALLY ACID-GENERATING.
2. NP INDICATES NEUTRALIZING POTENTIAL; AP INDICATES ACID-GENERATING POTENTIAL
3. MAFIC VOLCANICS INCLUDE BASALT, META-INTERMEDIATE MAFIC VOLCANICS, AND MAFIC DYKES

SCALE: AS SHOWN	DESIGNED: HKM
DATE: MAR 2014	CHECKED: TCC
DRAWN: HKM	APPROVED: SB

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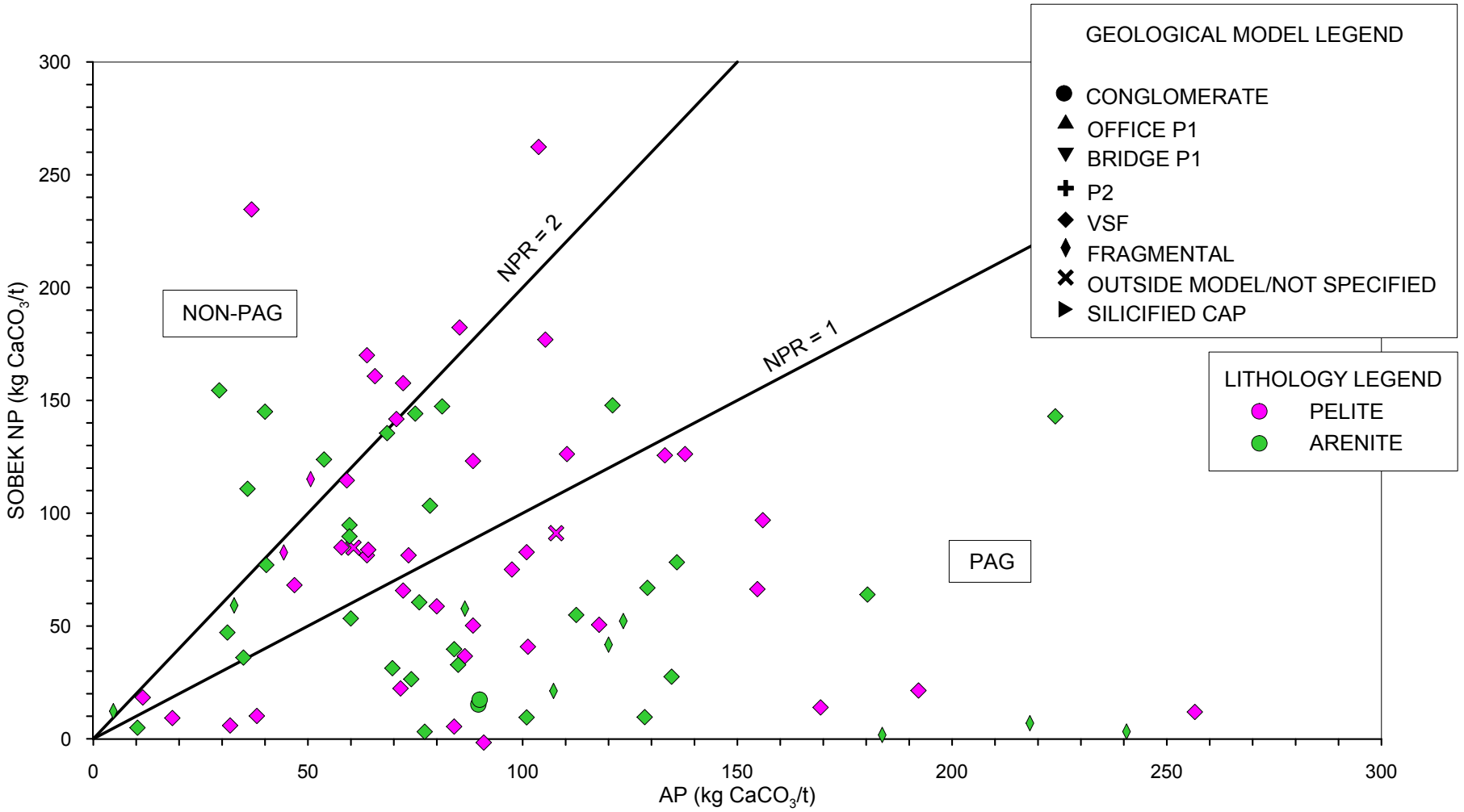
PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT
ML/ARD BASELINE REPORT

TITLE: NP vs AP
WASTE ROCK - MAFIC VOLCANICS

PROJECT No.	DWG No.	REV.
1008-010	D2-05	A

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N:\BGC\Projects\1008 Pretium\010 EA 2013\003 Water Quality\MLARD Baseline Report\05 Appendices\working files\Appendix D_files\AppendixD2\Static Data Plots\NP vs AP Mafic volcanics.grf



NOTES:
1. PAG INDICATES POTENTIALLY ACID GENERATING LITHOLOGIES; NON-PAG INDICATES LITHOLOGIES WHICH ARE NOT POTENTIALLY ACID-GENERATING.
2. NP INDICATES NEUTRALIZING POTENTIAL; AP INDICATES ACID-GENERATING POTENTIAL
3. METASEDIMENTS INCLUDE ARENITES AND PELITES

SCALE: AS SHOWN	DESIGNED: HKM
DATE: MAR 2014	CHECKED: TCC
DRAWN: HKM	APPROVED: SB

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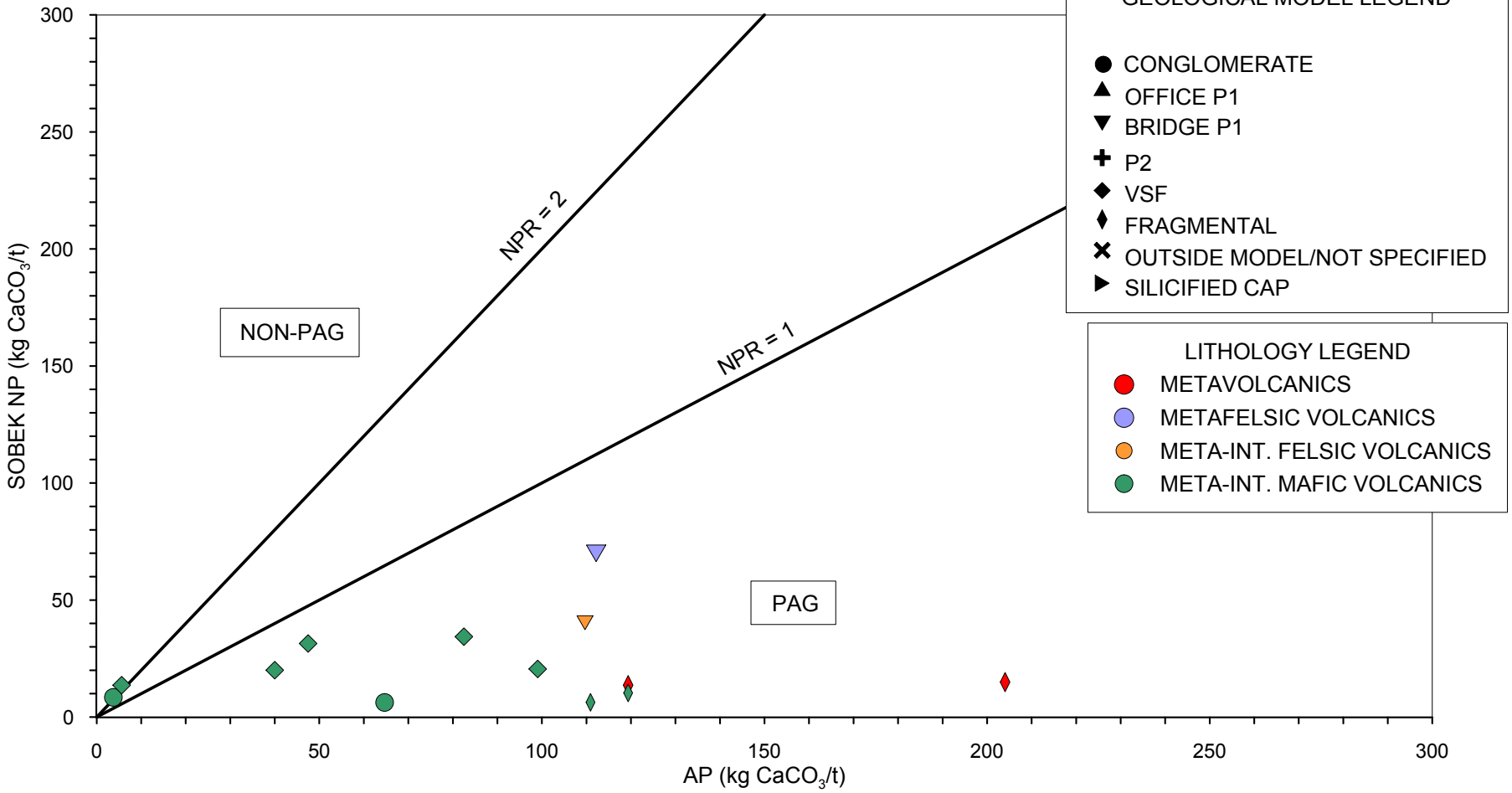
PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT
ML/ARD BASELINE REPORT

TITLE: NP vs AP
WASTE ROCK - METASEDIMENTS

PROJECT No.	DWG No.	REV.
1008-010	D2-06	A

DWG. TO BE READ WITH BGC REPORT TITLED "BRUCEJACK ENVIRONMENTAL ASSESSMENT - ML/ARD BASELINE REPORT" DATED MAR 2014

N:\BGC\Projects\1008 Pretium\010 EA 2013\003 Water Quality\ML ARD Baseline Report\05 Appendices\working files\Appendix D_files\AppendixD2\Static Data Plots\NP vs AP Metasediments.grf



NOTES:
1. NP INDICATES NEUTRALIZING POTENTIAL; AP INDICATES ACID-GENERATING POTENTIAL

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DATE: MAR 2014	CHECKED: TCC
DRAWN: HKM	APPROVED: SB

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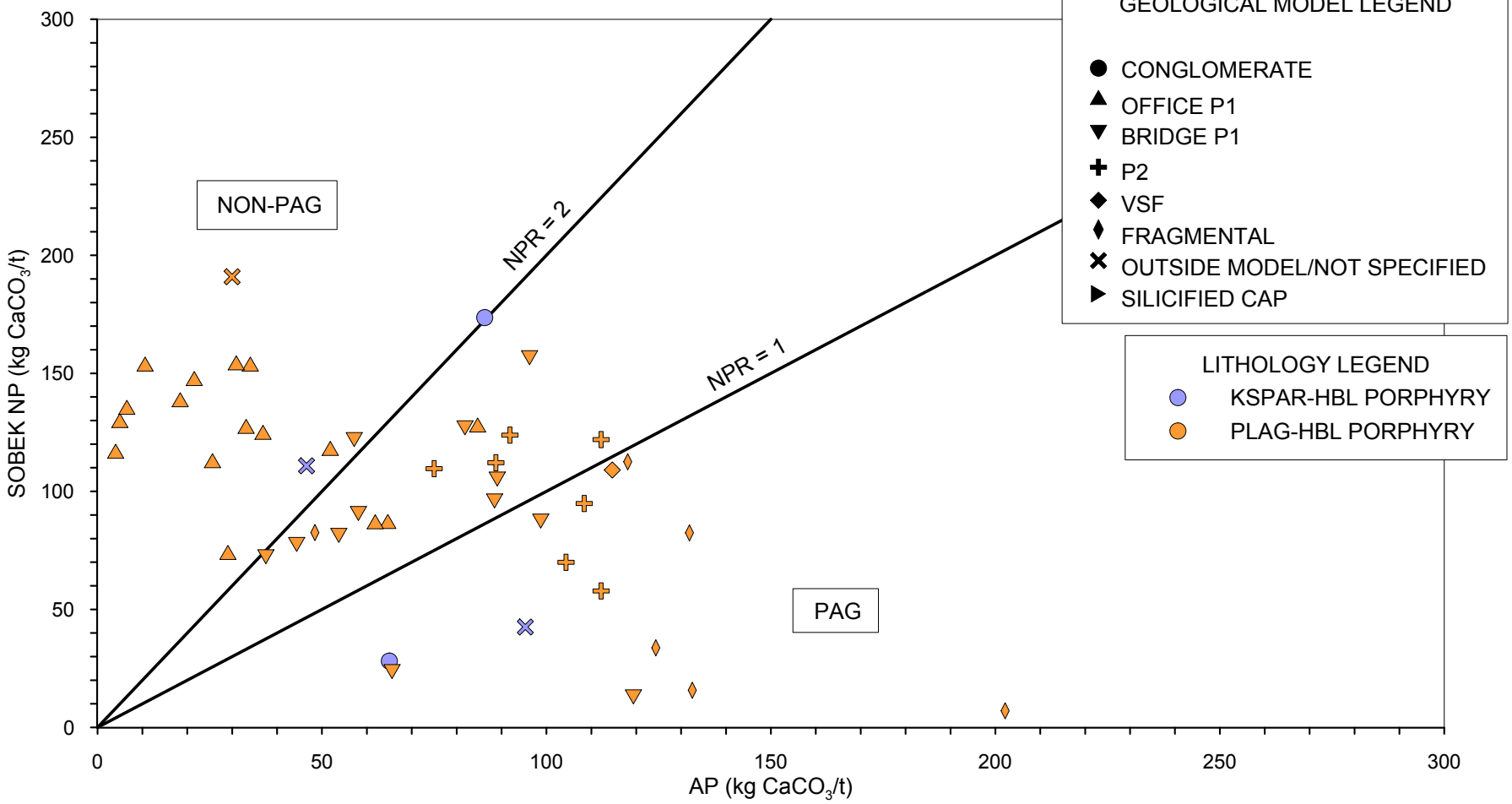
PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT
ML/ARD BASELINE REPORT

TITLE: NP vs AP
WASTE ROCK - METAVOLCANICS

PROJECT No.	DWG No.	REV.
1008-010	D2-07	A

DWG. TO BE READ WITH BGC REPORT TITLED "BRUCEJACK ENVIRONMENTAL ASSESSMENT - ML/ARD BASELINE REPORT" DATED MAR 2014

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NOTES:
1. PAG INDICATES POTENTIALLY ACID GENERATING LITHOLOGIES; NON-PAG INDICATES LITHOLOGIES WHICH ARE NOT POTENTIALLY ACID-GENERATING.
2. NP INDICATES NEUTRALIZING POTENTIAL; AP INDICATES ACID-GENERATING POTENTIAL
3. PORPHYRIES INCLUDE KSPAR-HBL PORPHYRY, KSPAR-HBL-PLAG PORPHYRY, KSPAR PORPHYRY, AND PLAG-HBL PORPHYRY

SCALE: AS SHOWN	DESIGNED: HKM
DATE: MAR 2014	CHECKED: TCC
DRAWN: HKM	APPROVED: SB

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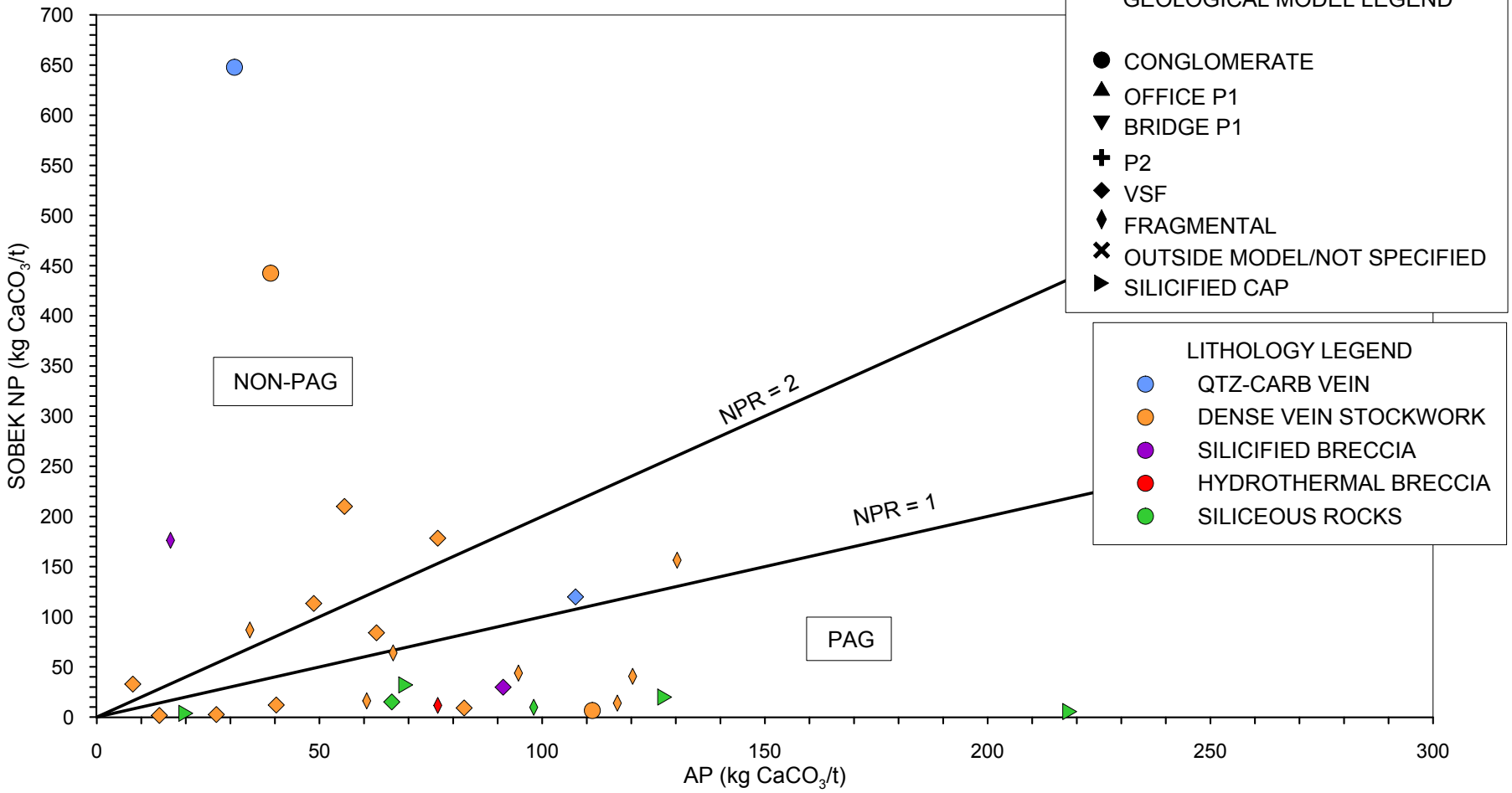
PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT
ML/ARD BASELINE REPORT

TITLE: NP vs AP
WASTE ROCK - PORPHYRIES

PROJECT No.	DWG No.	REV.
1008-010	D2-08	A

DWG. TO BE READ WITH BGC REPORT TITLED "BRUCEJACK ENVIRONMENTAL ASSESSMENT - ML/ARD BASELINE REPORT" DATED MAR 2014

N:\BGC\Projects\1008 Pretium\010 EA 2013\003 Water Quality\MLARD Baseline Report\05 Appendices\working files\Appendix D_files\AppendixD2\Static Data Plots\NP vs AP Porphyries.grf



NOTES:
1. PAG INDICATES POTENTIALLY ACID GENERATING LITHOLOGIES; NON-PAG INDICATES LITHOLOGIES WHICH ARE NOT POTENTIALLY ACID-GENERATING.
2. NP INDICATES NEUTRALIZING POTENTIAL; AP INDICATES ACID-GENERATING POTENTIAL
3. SILICEOUS ROCKS INCLUDE DENSE VEIN STOCKWORKS AND HYDROTHERMAL BRECCIA

SCALE:	AS SHOWN	DESIGNED:	HKM
DATE:	MAR 2014	CHECKED:	TCC
DRAWN:	HKM	APPROVED:	SB

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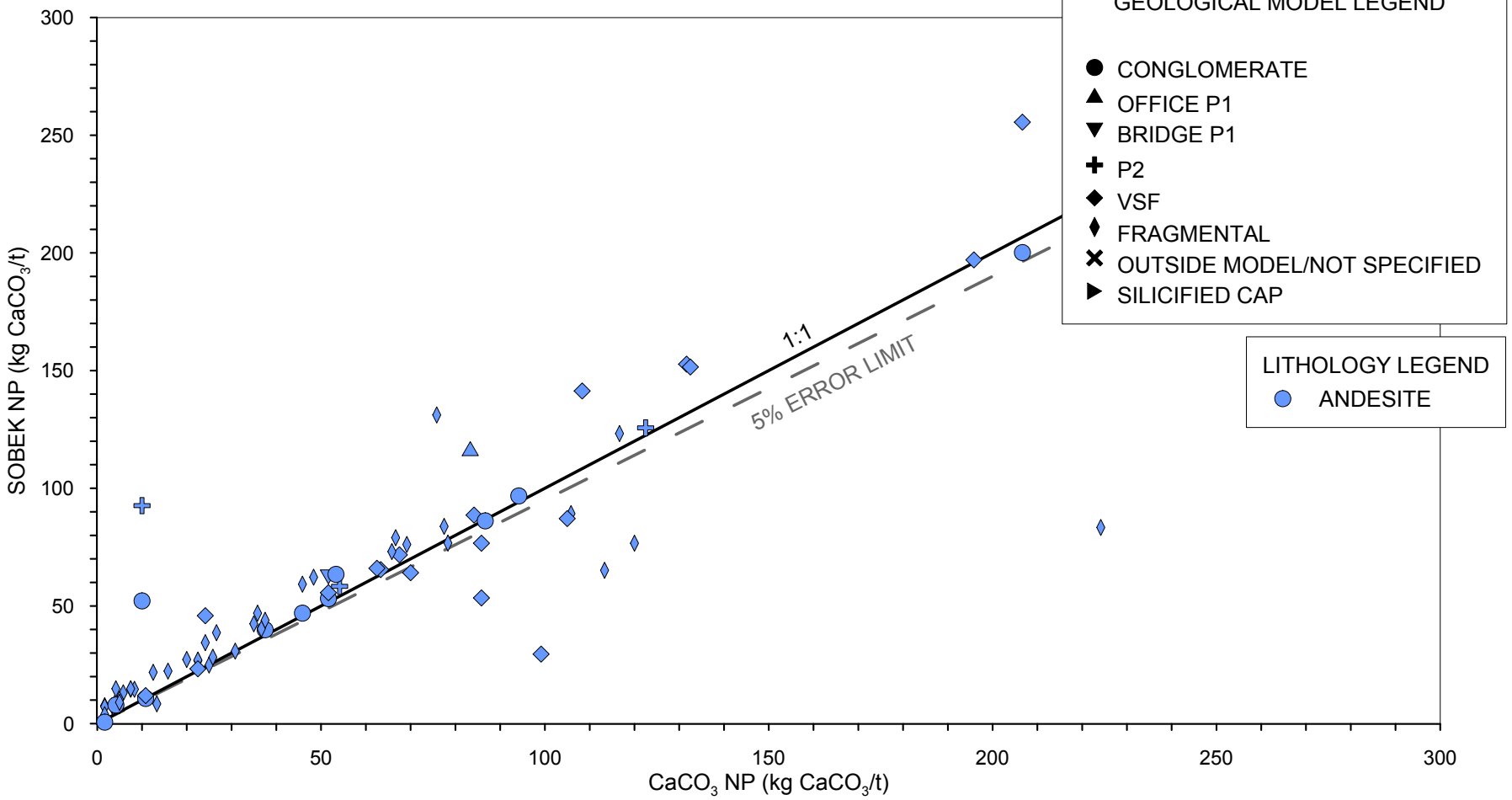
PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT
ML/ARD BASELINE REPORT

TITLE: NP vs AP
WASTE ROCK - SILICEOUS ROCKS

PROJECT No.	DWG No.	REV.
1008-010	D2-09	A

DWG. TO BE READ WITH BGC REPORT TITLED "BRUCEJACK ENVIRONMENTAL ASSESSMENT - ML/ARD BASELINE REPORT" DATED MAR 2014

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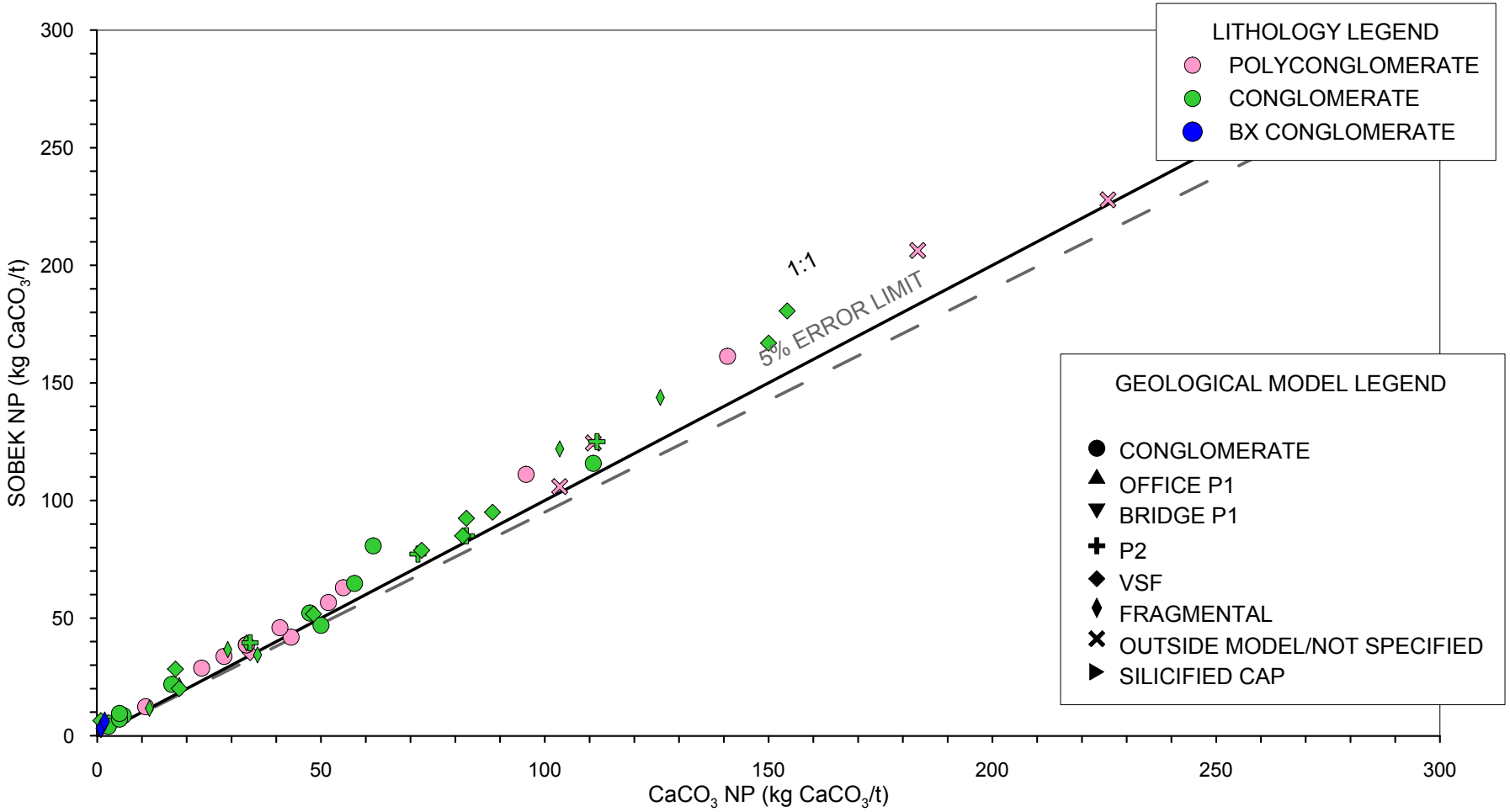
NOTES:
1. NP INDICATES NEUTRALIZING POTENTIAL.

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DATE: MAR 2014	CHECKED: TCC		TITLE: SOBEK NP vs $CaCO_3$ NP WASTEROCK - ANDESITE
DRAWN: HKM	APPROVED: SB	CLIENT: PRETIUM RESOURCES	PROJECT No. 1008-010 / DWG No. D2-10 / REV. A

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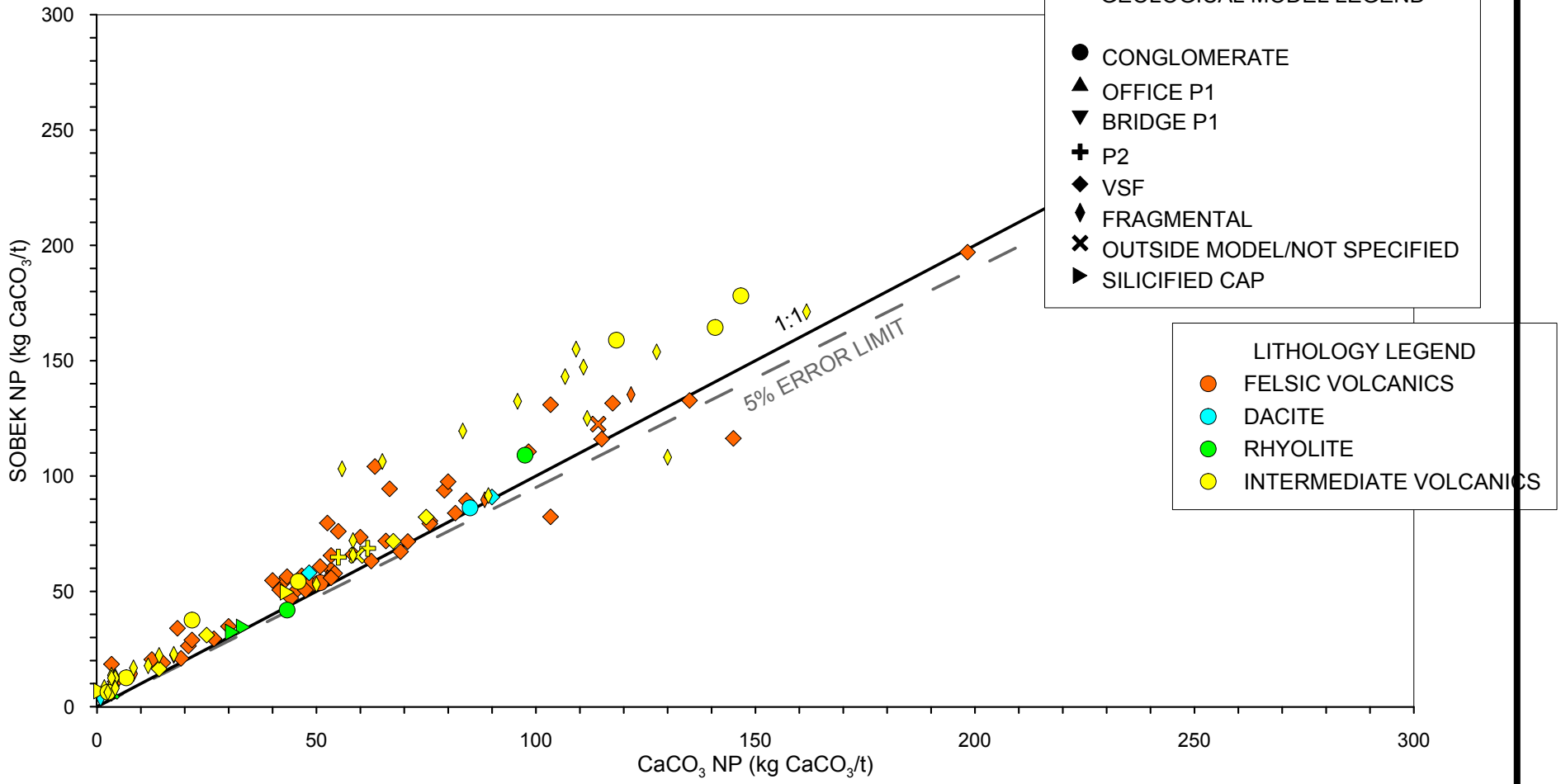
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1. NP INDICATES NEUTRALIZING POTENTIAL

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DATE: MAR 2014	CHECKED: TCC		TITLE: SOBEK NP vs $CaCO_3$ NP WASTE ROCK - CONGLOMERATE
DRAWN: HKM	APPROVED: SB	CLIENT: PRETIUM RESOURCES	PROJECT No. 1008-010 / DWG No. D2-11 / REV. A

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NOTES:
1. NP INDICATES NEUTRALIZING POTENTIAL

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DATE: MAR 2014	CHECKED: TCC	TITLE: SOBEK NP vs $CaCO_3$ NP WASTE ROCK - FELSIC VOLCANICS	
DRAWN: HKM	APPROVED: SB	PROJECT No. 1008-010	DWG No. D2-12 / REV. A

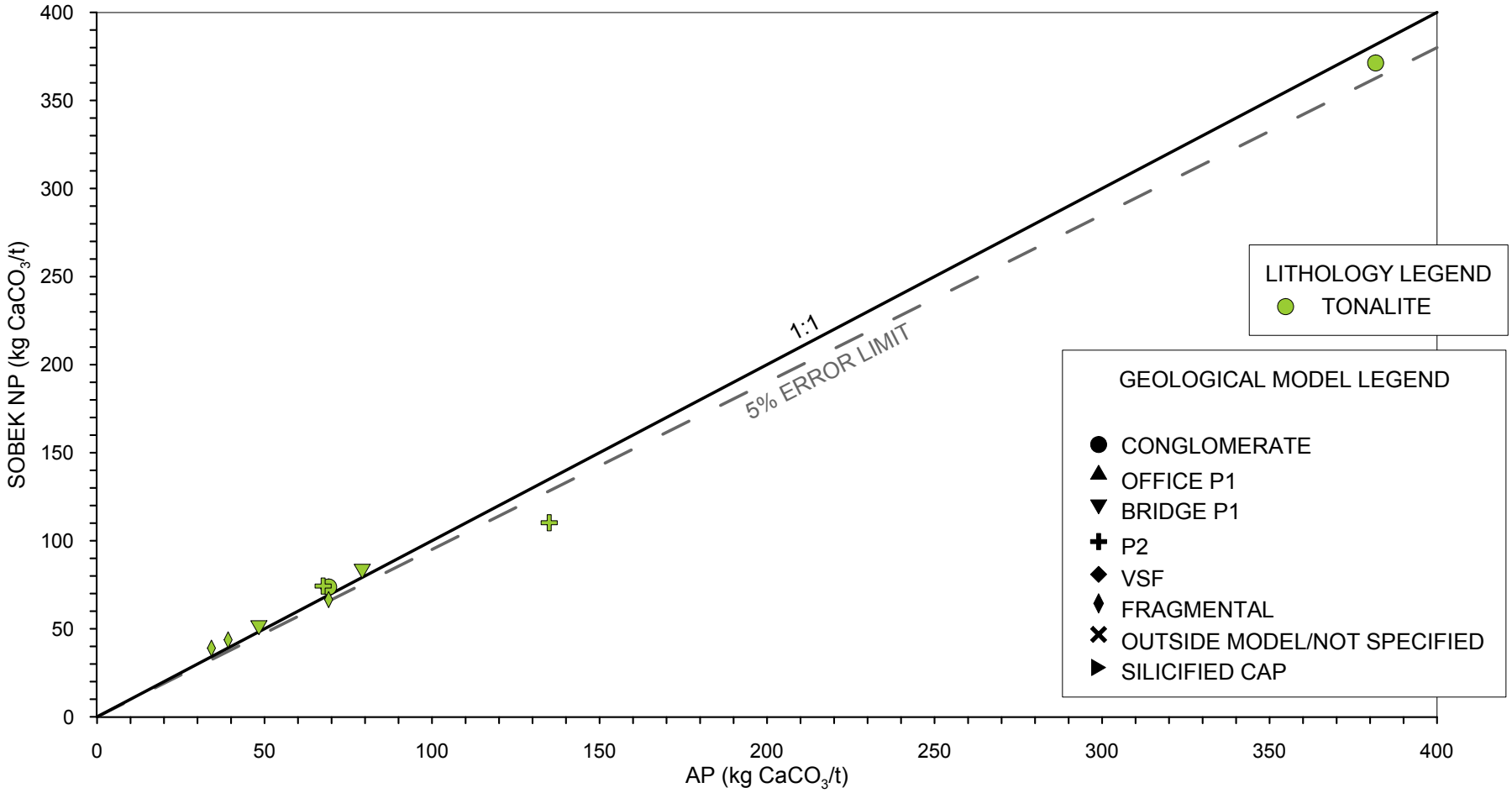
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NOTES:
1. NP INDICATES NEUTRALIZING POTENTIAL; AP INDICATES ACID-GENERATING POTENTIAL

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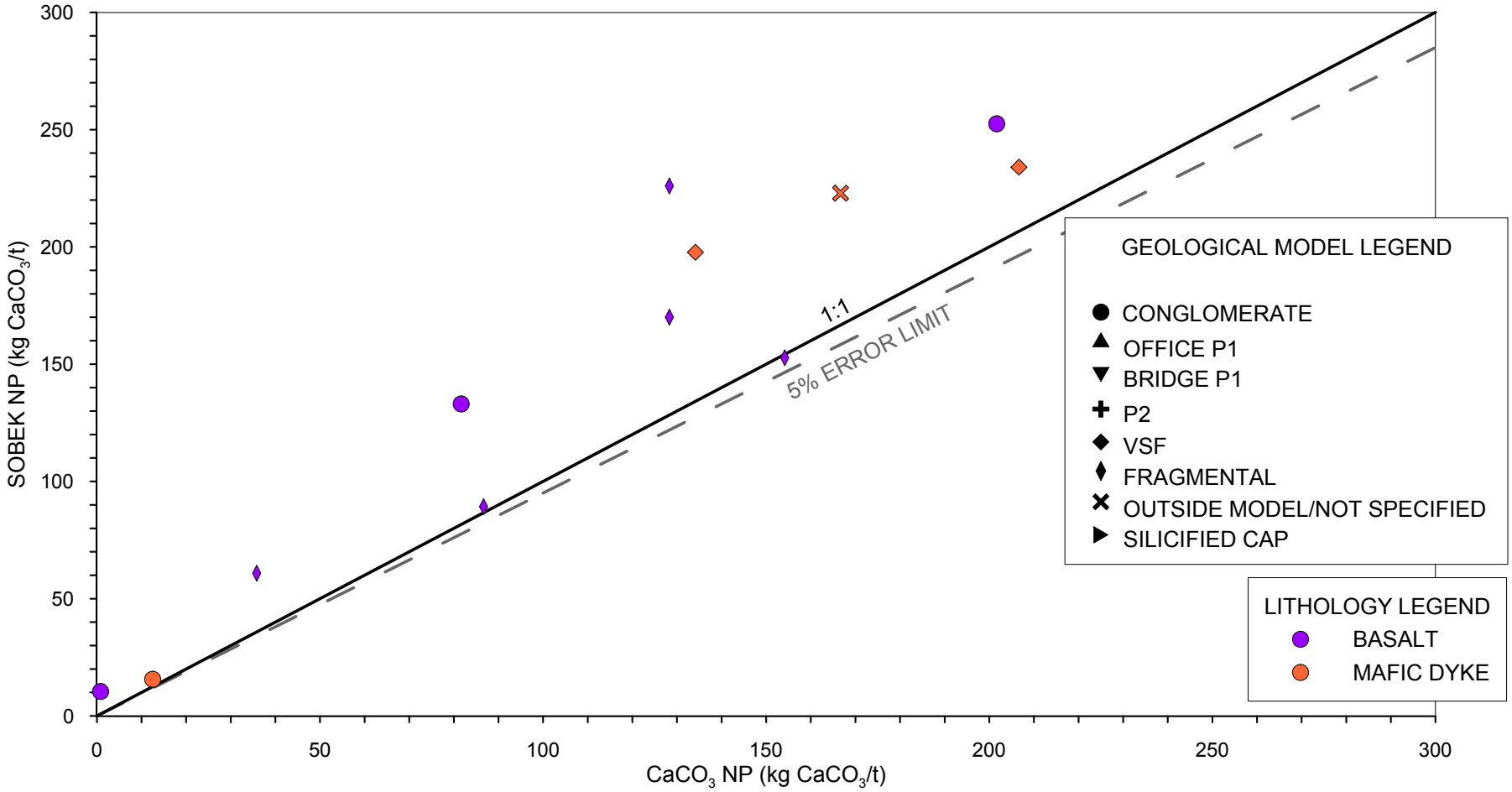
PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT
ML/ARD BASELINE REPORT

TITLE: SOBEK NP vs $CaCO_3$ NP
WASTE ROCK - GRANITOIDS

PROJECT No.	DWG No.	REV.
1008-010	D2-13	A

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NOTES:
1. NP INDICATES NEUTRALIZING POTENTIAL

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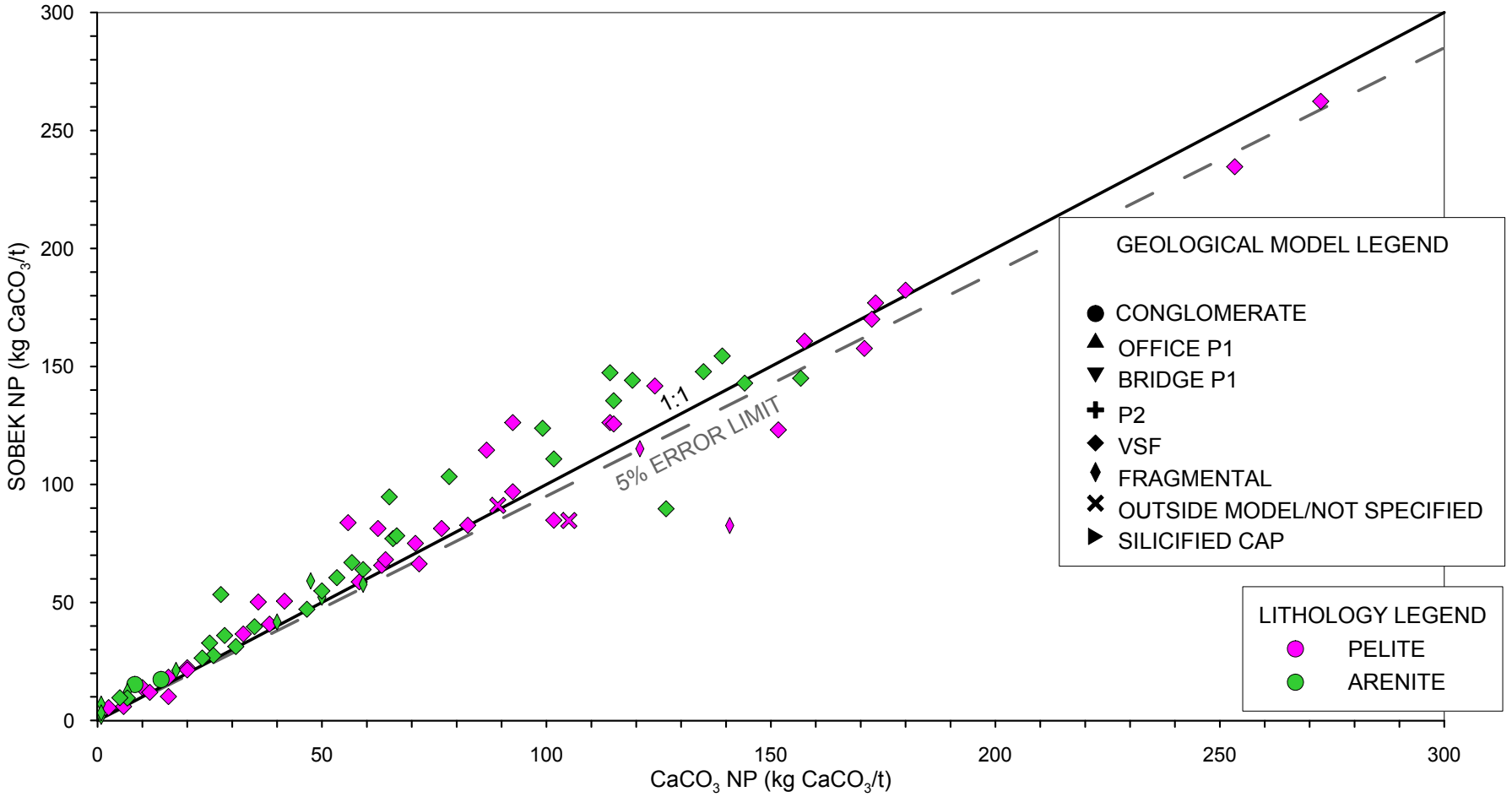
PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT
ML/ARD BASELINE REPORT

TITLE: SOBEK NP vs $CaCO_3$ NP
WASTE ROCK - MAFIC VOLCANICS

PROJECT No.	DWG No.	REV.
1008-010	D2-14	A

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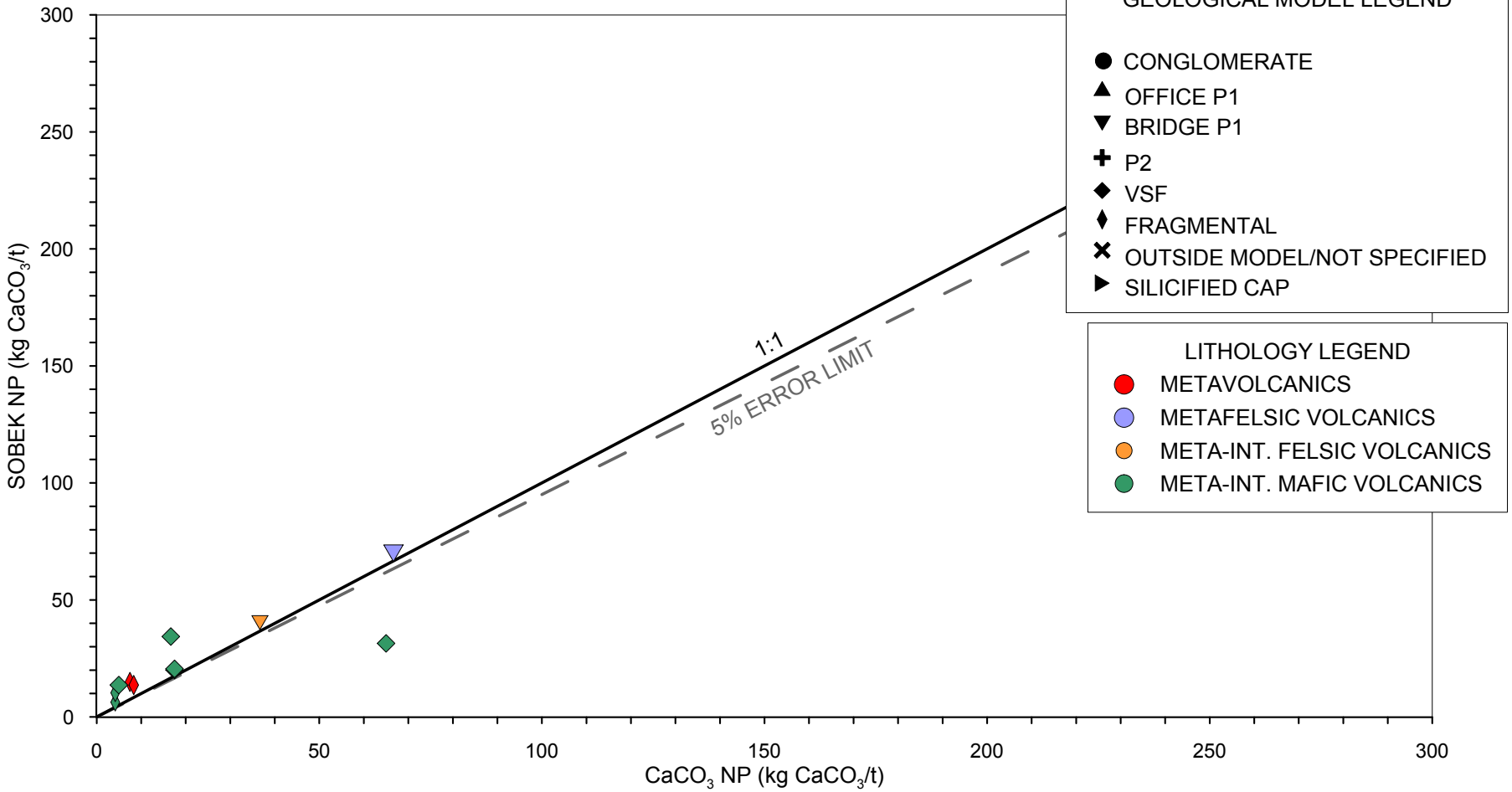
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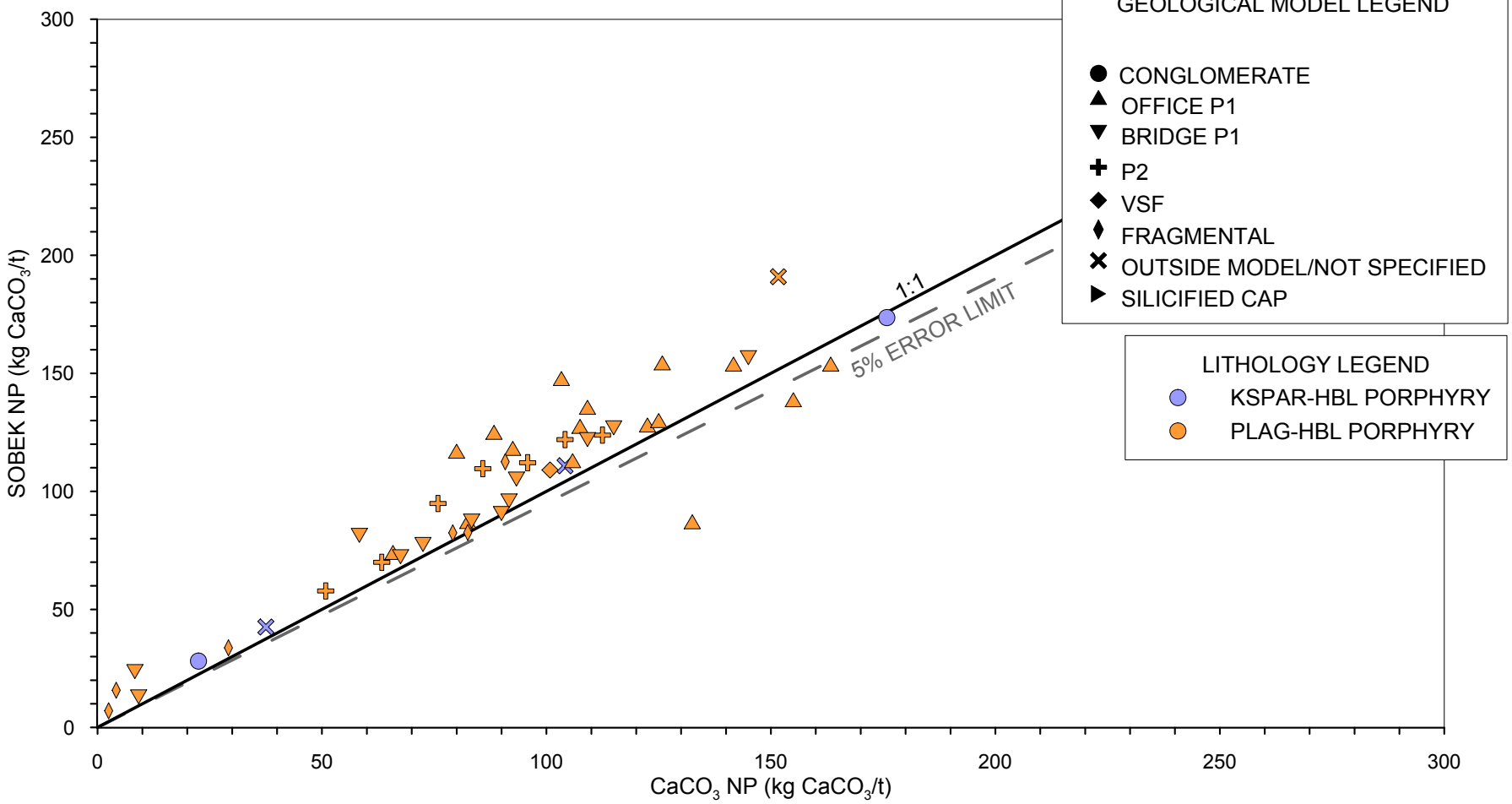
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DATE: MAR 2014	CHECKED: TCC		TITLE: SOBEK NP vs CaCO3 NP WASTE ROCK - METAVOLCANICS
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NOTES:
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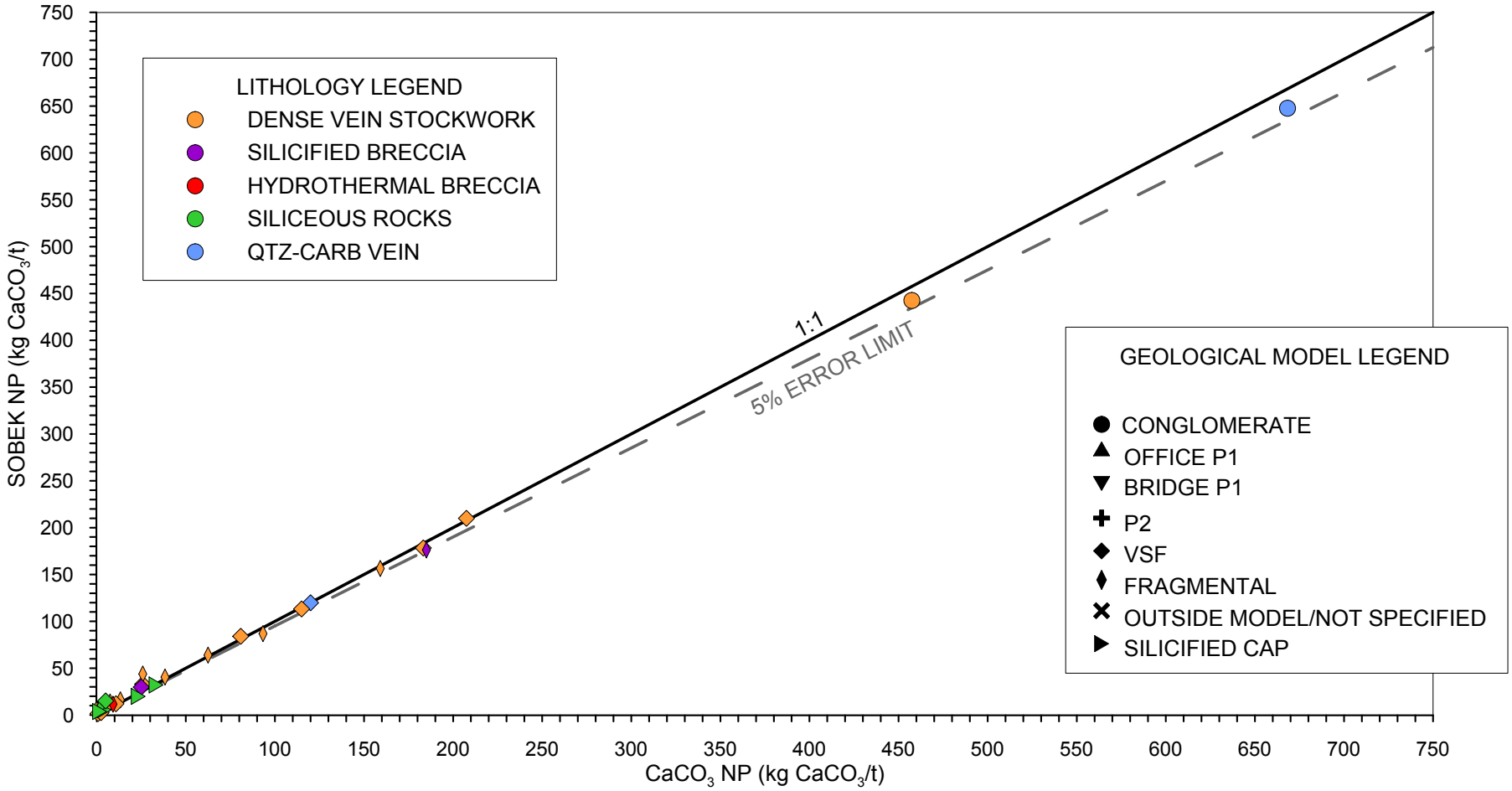
PROJECT: BRUCEJACK ENVIRONMENTAL ASSESSMENT
ML/ARD BASELINE REPORT

TITLE: SOBEK NP vs $CaCO_3$ NP
WASTER ROCK - PORPHYRY

PROJECT No.	DWG No.	REV.
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NOTES:
1. NP INDICATES NEUTRALIZING POTENTIAL

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DATE: MAR 2014	CHECKED: TCC		TITLE: SOBEK NP vs $CaCO_3$ NP WASTE ROCK - SILICEOUS ROCKS
DRAWN: HKM	APPROVED: SB	CLIENT: PRETIUM RESOURCES	PROJECT No. 1008-010 / DWG No. D2-18 / REV. A

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APPENDIX E
WASTE ROCK SFE

Sample ID	Lithology	Zone	Geological Model Unit	Physical Parameters							Ion Balance				Major Ions			
				pH meter	Redox meter mV	Conductivity meter uS/cm	Total Acidity (to pH 8.3) titration mg CaCO3/L	Alkalinity titration mg CaCO3/L	Sulphate Turbidity mg/L	Hardness CaCO3 mg/L	Major Anions Calc meq/L	Major Cations Calc meq/L	Difference Calc meq/L	Balance Calc %	Ca ICP-MS mg/L	Mg ICP-MS mg/L	K ICP-MS mg/L	Na ICP-MS mg/L
SU-011-001	Meta-felsic (floor)	VOK	Bridge P1	7.9	316.4	105	3.36	51.7	9	16.3	1.2	1.0	0.18	0.08	5.1	0.90	7.3	11.5
Comp 13-16	Plag-hbl Porphyry	VOK	Bridge P1	8.8	238.3	146	#N/A	67.5	12	4.3	1.6	1.5	0.15	0.05	1.5	0.11	5.1	27.0
Comp 13-9	Plag-hbl Porphyry	VOK	Bridge P1	8.0	274.4	136	3.55	49.7	24	6.03	1.5	1.4	0.14	0.05	2.0	0.23	2.9	25.6
SU-011-003	Tonalite (Int. Vol.)	VOK	Bridge P1	7.8	314.9	117	3.78	54.8	9	24.4	1.3	1.1	0.14	0.06	7.1	1.6	10.1	8.5
Comp 13-2	Conglomerate	VOK	Conglomerate	7.9	346.2	224	5.22	50.2	53	17.9	2.1	2.0	0.16	0.04	6.8	0.19	9.6	29.9
Comp 13-4	Conglomerate	WZ	Conglomerate	7.7	347.7	535	7.74	44.6	214	137	5.4	4.9	0.48	0.05	52.3	1.5	4.3	45.4
Comp 13-6	Conglomerate / Arenite	WZ	Conglomerate	7.6	287.1	205	4.78	48.1	58	30.6	2.2	2.0	0.22	0.05	11.2	0.61	6.4	25.6
Comp 13-17	Conglomerate	VOK	Conglomerate	6.4	269.0	487	11.50	3.3	223	187	4.7	4.3	0.39	0.04	54.2	12.5	11.9	2.2
Comp. 10	Kfs-Hbl-Porphyry	Gossan Hill	Conglomerate	7.7	280.8	254	4.12	59.2	79	97.1	2.8	2.3	0.51	0.10	37.1	1.1	9.8	2.2
BJ-BS-006/007	Poly-Conglomerate	VOK	Fragmental	7.6	314.0	387	5.90	39.2	132	71.1	3.5	3.3	0.21	0.03	24.8	2.2	11.6	35.3
BJ-UG-011/012/023	Poly-Conglomerate	VOK	Conglomerate	7.8	311.0	229	4.51	37.6	66	35.1	2.1	2.0	0.14	0.03	12.2	1.1	7.7	23.7
SU-039-006	Rhyolite (floor)	Gossan Hill	Conglomerate	8.2	314.0	112	1.72	75.5	3	5.11	1.6	1.2	0.41	0.15	1.8	0.15	5.0	20.5
Comp. 6	Andesite	GH/VOK/WZ	Fragmental	7.6	266.6	278	3.19	47.1	86	98.9	2.7	2.6	0.18	0.03	31.3	5.0	9.2	7.2
Comp. 2	Andesite	Gossan Hill	Fragmental	7.2	325.2	314	5.30	3.6	141	121	3.0	2.9	0.12	0.02	38.9	5.9	9.6	2.3
BJ-BS-004/005	Andesite	VOK	Fragmental	8.7	274.4	269	#N/A	72.2	39	5.07	2.3	2.5	-0.27	-0.06	1.8	0.12	4.8	50.3
Comp. 4	Andesite	WZ	Fragmental	5.8	232.9	318	5.53	1.5	111	80.9	2.3	2.8	-0.44	-0.09	28.4	2.4	12.0	15.9
Comp 13-12	Andesite	WZ	Fragmental	7.6	312.0	143	5.49	36.6	35	45.3	1.5	1.3	0.13	0.05	15.7	1.5	8.9	3.8
Comp 13-19	Andesite	VOK	Fragmental	8.0	297.9	250	6.65	55.2	57	17.9	2.3	2.2	0.06	0.01	5.6	0.93	7.5	37.6
Comp 13-5	Conglomerate	WZ	Fragmental	8.1	314.5	226	2.91	75.5	45	4.48	2.4	2.4	0.08	0.02	1.7	0.09	2.4	48.1
Comp 13-13	Dense Vein Stockwork	WZ	Fragmental	7.7	307.6	187	4.70	33.1	55	38.6	1.8	1.8	0.04	0.01	14.1	0.85	6.1	18.4
SU-096-002	Dense Vein Stockwork (low Au)	VOK	Fragmental	7.7	308.1	111	3.04	51.8	13	25	1.3	1.1	0.25	0.10	8.6	0.85	4.5	9.6
SU-041-008	Dense Vein Stockwork (low Au)	WZ	Fragmental	7.6	257.3	98	2.89	46.4	8	37.6	1.1	0.94	0.15	0.07	14.8	0.19	2.5	2.5
SU-123-001	Felsic Volcanics (roof)	WZ	Fragmental	8.0	297.9	130	2.98	54.3	19	28.3	1.5	1.2	0.30	0.11	10.0	0.79	9.2	7.9
Comp 13-7	Intermediate Volcanics	VOK	Fragmental	7.6	293.0	294	4.03	21.3	111	6.64	2.7	2.6	0.12	0.02	2.2	0.27	4.4	53.4
SU-121-002	Intermediate Volcanics	WZ	Fragmental	7.9	298.3	221	2.77	60.6	57	28.9	2.4	2.0	0.39	0.09	9.6	1.2	5.5	28.7
Comp. 1	Andesite	Gossan Hill	Fragmental/VSF	7.8	323.2	171	4.28	57.4	36	49.1	1.9	1.6	0.27	0.08	17.0	1.6	10.6	7.8
Comp 13-11	Plg-Hbl-Porphyry	VOK	P2/Fragmental	7.6	322.8	361	5.11	40.1	148	49.3	3.9	3.3	0.58	0.08	17.8	1.2	4.9	49.2
Comp. 5	Tonalite	WZ	Frag./Congl.	7.7	289.6	117	3.09	49.9	18	48.6	1.4	1.1	0.23	0.09	17.7	1.1	3.1	1.6
Comp 13-8	Plg-Hbl-Porphyry	VOK	Office P1	7.6	306.6	96	4.64	36.2	11	32	0.95	0.93	0.02	0.01	10.9	1.2	4.8	3.2
SU-146-002	Poly-Conglomerate	VOK	Office P1	7.6	313.5	364	4.83	63.8	128	154	3.9	3.5	0.44	0.06	60.8	0.57	2.0	6.9
SU-123-003	Plg-Hbl-Porphyry	WZ	P2	7.8	304.2	215	3.39	52.5	65	75.7	2.4	1.9	0.49	0.11	28.6	1.1	2.8	6.7
Comp 13-15	Plg-Hbl-Porphyry	WZ	P2	7.8	288.1	173	4.02	46.8	46	17.7	1.9	1.6	0.30	0.09	6.5	0.36	2.1	25.8
Comp 13-3	Siliceous rocks / Int. Volcanics	VOK	Silicified Cap	7.4	346.7	184	5.86	24.4	62	50.6	1.8	1.5	0.26	0.08	18.6	0.98	1.7	9.9
Comp. 3	Andesite	VOK	VSF	8.8	264.2	201	#N/A	116.0	9	2.74	2.5	2.0	0.54	0.12	0.99	0.06	5.0	39.5
SU-096-005	Andesite	VOK	VSF	7.8	310.5	256	3.33	72.2	65	41.8	2.8	2.3	0.46	0.09	14.6	1.3	7.4	29.4
Comp. 7	Arenite	VOK	VSF	7.9	297.9	122	2.78	61.7	13	23	1.5	1.2	0.33	0.12	8.0	0.73	6.3	12.2
SU-063-007	Arenite (roof)	WZ	VSF	7.8	303.2	166	2.84	59.8	33	28.5	1.9	1.6	0.33	0.10	10.1	0.77	9.6	16.2
Comp 13-14	Dense Vein Stockwork	VOK Ore Zone	VSF	8.3	275.9	196	2.57	61.2	42	5.89	2.1	1.9	0.18	0.04	2.2	0.07	3.8	38.0
BJ-BS-001/002	Felsic Volcanics	VOK	VSF	7.8	324.7	163	4.20	34.2	40	27.1	1.5	1.5	0.04	0.01	8.6	1.4	8.8	15.1
BJ-BS-008/011	Felsic Volcanics	VOK	VSF	7.6	350.1	408	5.02	37.4	119	65.9	3.2	3.5	-0.24	-0.04	24.8	0.98	9.7	42.8
BJ-BS-009/012	Felsic Volcanics	VOK	VSF	7.7	344.7	480	5.50	38.9	155	75.9	4.0	4.1	-0.07	-0.01	28.9	0.95	10.1	51.9
Comp. 9	Felsic Volcanics	VOK	VSF	7.5	315.4	176	2.90	34.4	56	57.1	1.9	1.6	0.30	0.09	18.1	2.9	9.3	3.4
SU-113-003	Felsic Volcanics	VOK	VSF	8.0	294.4	124	2.56	60.9	14	18.4	1.5	1.2	0.31	0.12	5.9	0.90	7.0	14.1
Comp 13-10	Intermediate Volcanics	VOK	VSF	8.7	257.3	243	#N/A	82.7	41	2.1	2.5	2.4	0.12	0.03	0.75	0.06	1.9	50.9
Comp 13-1	Pelite	VOK	VSF	7.9	334.5	135	5.60	40.8	19	35.5	1.2	1.2	0.05	0.02	12.0	1.3	9.5	4.0
Comp. 8	Pelite	VOK	VSF	8.2	288.1	131	2.08	68.2	17	9.05	1.7	1.2	0.49	0.17	3.1	0.32	4.8	20.5
SU-114-001	Silicified Breccia	VOK	VSF	7.7	309.1	119	2.97	53.5	17	47	1.4	1.2	0.27	0.10	16.6	1.4	5.3	1.2
# Values <DL				-	-	-	4	-	-	-	-	-	-	-	-	-	-	-

Notes
All tested materials consisted of 250g samples, 'shaken' for 24 hours in 750mL of water

Sample ID	Lithology	Zone	Geological Model Unit	Dissolved Metals																
				Al ICP-MS ug/L	Sb ICP-MS ug/L	As ICP-MS ug/L	Ba ICP-MS ug/L	Be ICP-MS ug/L	Bi ICP-MS ug/L	B ICP-MS ug/L	Cd ICP-MS ug/L	Cr ICP-MS ug/L	Co ICP-MS ug/L	Cu ICP-MS ug/L	Fe ICP-MS mg/L	Pb ICP-MS ug/L	Li ICP-MS mg/L	Mn ICP-MS ug/L	Hg ICP-MS ug/L	Mo ICP-MS ug/L	Ni ICP-MS ug/L
SU-011-001	Meta-felsic (floor)	VOK	Bridge P1	141	16.5	7.5	22.0	<0.02	0.01	26.3	0.011	<0.5	0.046	0.5	0.004	2.07	0.007	30.3	<0.01	0.87	<0.1
Comp 13-16	Plag-hbl Porphyry	VOK	Bridge P1	506	4.7	19.2	9.67	<0.02	<0.01	13.9	<0.003	<0.5	0.104	<0.5	0.006	0.38	0.042	2.7	<0.01	3.71	<0.1
Comp 13-9	Plag-hbl Porphyry	VOK	Bridge P1	406	3.9	3.3	12.7	<0.02	<0.01	12.2	0.01	<0.5	0.25	<0.5	0.008	0.12	0.049	8.8	<0.01	1.45	<0.1
SU-011-003	Tonalite (Int. Vol.)	VOK	Bridge P1	146	9.4	6.5	22.4	<0.02	<0.01	12.1	0.007	<0.5	0.047	1	0.007	0.64	0.011	44.0	0.01	2.22	<0.1
Comp 13-2	Conglomerate	VOK	Conglomerate	231	22.5	17.7	37.5	<0.02	0.01	41.2	0.021	<0.5	0.628	0.5	0.008	2.52	0.082	48.6	<0.01	1.95	0.3
Comp 13-4	Conglomerate	WZ	Conglomerate	78.0	10.5	27.2	24.8	<0.02	<0.01	28.8	0.095	<0.5	0.291	<0.5	<0.003	0.77	0.119	108	<0.01	0.56	0.2
Comp 13-6	Conglomerate / Arenite	WZ	Conglomerate	94.4	5.6	5.9	35.1	<0.02	<0.01	34.8	0.013	<0.5	0.71	<0.5	0.004	0.03	0.185	169	<0.01	2.2	0.7
Comp 13-17	Conglomerate	VOK	Conglomerate	21.0	2.0	3.2	88.3	1.44	<0.01	17.5	5.05	1.0	156	9.1	0.940	25.0	0.006	1930	<0.01	0.15	69.1
Comp. 10	Kfs-Hbl-Porphyry	Gossan Hill	Conglomerate	35.5	26.8	2.8	29.7	<0.02	<0.01	14.6	0.031	<0.5	1.81	1	<0.003	0.46	0.006	557	0.01	5.25	0.8
BJ-BS-006/007	Poly-Conglomerate	VOK	Fragmental	101	22.5	7.2	82.1	<0.02	<0.01	70.1	0.139	<0.5	0.134	0.5	<0.003	0.09	0.060	114	<0.01	1.34	0.3
BJ-UG-011/012/023	Poly-Conglomerate	VOK	Conglomerate	237	19.6	16.6	95.7	<0.02	<0.01	54.9	0.009	<0.5	0.363	<0.5	<0.003	0.06	0.043	48.2	<0.01	1.84	0.3
SU-039-006	Rhyolite (floor)	Gossan Hill	Conglomerate	322	2.3	7.2	5.92	<0.02	<0.01	25.3	0.009	<0.5	0.095	<0.5	0.024	0.89	0.050	16.9	<0.01	2.97	0.1
Comp. 6	Andesite	GH/VOK/WZ	Fragmental	110	9.5	57.8	25.8	<0.02	<0.01	31.9	<0.003	2.6	0.093	0.9	<0.003	0.04	0.018	49.3	0.01	6.27	0.9
Comp. 2	Andesite	Gossan Hill	Fragmental	18.8	1.0	13.3	37.3	0.83	<0.01	16.4	0.193	<0.5	8.34	1.9	0.128	2.46	0.022	2610	<0.01	0.1	5.6
BJ-BS-004/005	Andesite	VOK	Fragmental	973	12.1	66.7	69.5	<0.02	0.02	34.4	<0.003	<0.5	0.069	<0.5	0.025	0.47	0.125	3.4	<0.01	1.48	<0.1
Comp. 4	Andesite	WZ	Fragmental	95.6	2.5	1.6	57.1	2.62	<0.01	13.2	21.9	<0.5	33.5	5.9	1.45	23.0	0.037	1100	<0.01	0.5	12.9
Comp 13-12	Andesite	WZ	Fragmental	109	10.2	6.8	19.6	<0.02	<0.01	29.8	0.014	<0.5	0.362	0.5	<0.003	0.15	0.003	93.3	<0.01	7.45	0.4
Comp 13-19	Andesite	VOK	Fragmental	152	8.3	52.4	90.7	<0.02	<0.01	21.3	0.019	1.2	0.789	2.8	0.006	0.17	0.104	22.8	<0.01	1.34	1.0
Comp 13-5	Conglomerate	WZ	Fragmental	748	13.7	157	3.37	<0.02	<0.01	25.8	<0.003	<0.5	0.255	<0.5	0.003	0.07	0.166	2.7	<0.01	1	0.1
Comp 13-13	Dense Vein Stockwork	WZ	Fragmental	136	8.0	4.1	39.3	<0.02	0.01	29.2	0.005	<0.5	0.144	0.7	<0.003	0.14	0.081	112	<0.01	1.34	0.2
SU-096-002	Dense Vein Stockwork (low Au)	VOK	Fragmental	68.8	6.3	11.5	44.0	<0.02	<0.01	8.1	0.008	<0.5	0.16	0.8	0.004	0.31	0.012	81.1	0.01	2.98	0.6
SU-041-008	Dense Vein Stockwork (low Au)	WZ	Fragmental	28.7	4.3	7.7	13.2	<0.02	0.01	15.6	0.065	<0.5	0.202	0.8	0.003	2.28	0.014	88.4	0.01	2.83	0.4
SU-123-001	Felsic Volcanics (roof)	WZ	Fragmental	103	12.6	18.6	85.2	<0.02	<0.01	49.5	0.009	<0.5	0.094	1	<0.003	0.05	0.016	26.2	0.01	1.25	0.4
Comp 13-7	Intermediate Volcanics	VOK	Fragmental	89.7	5.2	10.6	35.7	<0.02	<0.01	20.5	0.068	<0.5	0.703	<0.5	0.010	0.20	0.212	49.3	<0.01	0.85	0.5
SU-121-002	Intermediate Volcanics	WZ	Fragmental	96.6	38.2	252	32.2	<0.02	<0.01	24.5	0.007	<0.5	0.038	<0.5	<0.003	<0.02	0.059	118	0.01	2.56	0.3
Comp. 1	Andesite	Gossan Hill	Fragmental/VSF	105	8.2	7.2	32.2	<0.02	<0.01	34	0.033	<0.5	0.213	2.6	0.006	0.22	0.014	79.1	<0.01	4.05	0.4
Comp 13-11	Plg-Hbl-Porphyry	VOK	P2/Fragmental	96.9	13.2	72.9	36.8	<0.02	<0.01	31.3	0.016	<0.5	0.306	<0.5	<0.003	0.07	0.121	144	<0.01	0.58	0.2
Comp. 5	Tonalite	WZ	Frag./Congl.	65.9	5.5	3.7	43.6	<0.02	<0.01	9.5	0.007	<0.5	1.91	<0.5	<0.003	3.49	0.004	130	0.01	1.71	1.0
Comp 13-8	Plg-Hbl-Porphyry	VOK	Office P1	295	5.8	9.1	97.0	<0.02	<0.01	9	0.011	<0.5	0.269	<0.5	0.004	0.05	0.010	21.8	<0.01	1.7	0.2
SU-146-002	Poly-Conglomerate	VOK	Office P1	4.4	6.8	4.5	26.5	0.03	<0.01	8.2	0.061	<0.5	48.7	0.8	<0.003	0.03	0.009	1380	0.17	26.66	27.2
SU-123-003	Plg-Hbl-Porphyry	WZ	P2	55.2	9.3	27.5	45.4	<0.02	<0.01	30.9	0.01	<0.5	0.071	0.9	<0.003	0.09	0.009	89.2	0.01	0.41	0.6
Comp 13-15	Plg-Hbl-Porphyry	WZ	P2	329	19.9	272	19.7	<0.02	<0.01	27.2	<0.003	<0.5	0.055	0.5	<0.003	0.05	0.048	17.6	<0.01	0.89	<0.1
Comp 13-3	Siliceous rocks / Int. Volcanics	VOK	Silicified Cap	5.8	4.4	1.6	29.3	0.03	<0.01	11.5	11.6	<0.5	1.97	0.5	<0.003	0.25	0.039	418	<0.01	1.05	8.2
Comp. 3	Andesite	VOK	VSF	454	14.5	112	18.0	<0.02	<0.01	28.5	0.013	<0.5	0.037	0.7	0.009	0.06	0.097	1.8	0.01	28.2	0.5
SU-096-005	Andesite	VOK	VSF	68.4	17.4	42.1	40.5	<0.02	<0.01	23.2	0.014	<0.5	0.128	1.2	0.003	0.23	0.039	102	0.01	4.17	0.8
Comp. 7	Arenite	VOK	VSF	140	18.9	23.2	16.7	<0.02	<0.01	22	0.004	<0.5	0.087	1.5	<0.003	0.04	0.024	24.5	0.01	4.05	0.6
SU-063-007	Arenite (roof)	WZ	VSF	109	8.4	13.2	7.32	<0.02	<0.01	47.5	0.011	<0.5	0.332	0.9	<0.003	0.11	0.054	57.4	<0.01	0.86	1.0
Comp 13-14	Dense Vein Stockwork	VOK Ore Zone	VSF	388	10.2	50.9	9.77	<0.02	<0.01	27.3	0.003	<0.5	0.074	0.8	0.004	0.09	0.048	9.6	<0.01	12.7	0.4
BJ-BS-001/002	Felsic Volcanics	VOK	VSF	278	12.1	18.5	40.9	<0.02	0.01	41.2	<0.003	<0.5	0.079	<0.5	<0.003	0.12	0.037	38.7	<0.01	4.21	0.3
BJ-BS-008/011	Felsic Volcanics	VOK	VSF	111	7.6	5.4	80.2	<0.02	<0.01	35.2	0.006	<0.5	0.11	0.8	<0.003	0.06	0.029	41.4	<0.01	2.95	0.3
BJ-BS-009/012	Felsic Volcanics	VOK	VSF	86.1	5.5	4.8	78.7	<0.02	<0.01	30	<0.003	<0.5	0.112	0.6	<0.003	<0.02	0.036	47.1	<0.01	3.34	0.3
Comp. 9	Felsic Volcanics	VOK	VSF	24.4	17.9	8.2	14.4	<0.02	<0.01	21.7	0.272	<0.5	1.18	0.5	<0.003	0.07	0.012	173	0.01	1.14	4.7
SU-113-003	Felsic Volcanics	VOK	VSF	172	31.1	39.3	28.7	<0.02	<0.01	28.9	<0.003	<0.5	0.091	0.8	<0.003	<0.02	0.022	14.2	<0.01	0.41	0.6
Comp 13-10	Intermediate Volcanics	VOK	VSF	496	7.7	57.5	22.8	<0.02	<0.01	23.8	0.009	<0.5	0.351	<0.5	0.010	0.16	0.116	5.2	<0.01	4.93	0.1
Comp 13-1	Pelite	VOK	VSF	127	6.6	5.6	34.8	<0.02	<0.01	16.7	0.019	<0.5	0.238	<0.5	0.004	0.27	0.007	52.3	<0.01	2.65	0.2
Comp. 8	Pelite	VOK	VSF	167	19.7	42.4	15.1	<0.02	<0.01	14.7	0.008	<0.5	0.057	<0.5	0.018	0.15	0.040	15.7	0.01	25.59	0.3
SU-114-001	Silicified Breccia	VOK	VSF	43.3	19.3	210	19.1	<0.02	<0.01	25.2	0.004	<0.5	0.933	<0.5	<0.003	<0.02	0.003	110	0.01	5.01	24.2
# Values <DL				-	-	-	-	42	41	-		44	-	18	23	4	-	-	31	-	6

Notes
All tested materials consisted of 250g samples, 'shaken' for 24 hours in 750mL of wate

Sample ID	Lithology	Zone	Geological Model Unit	Dissolved Metals												
				P ICP-MS mg/L	Se ICP-MS ug/L	Si ICP-MS mg/L	Ag ICP-MS ug/L	Sr ICP-MS ug/L	S ICP-MS mg/L	Tl ICP-MS ug/L	Sn ICP-MS ug/L	Ti ICP-MS ug/L	U ICP-MS ug/L	V ICP-MS ug/L	Zn ICP-MS ug/L	Zr ICP-MS ug/L
SU-011-001	Meta-felsic (floor)	VOK	Bridge P1	0.010	4.12	1.55	0.02	217	6.51	0.14	0.04	0.7	2.37	0.94	1	0.03
Comp 13-16	Plag-hbl Porphyry	VOK	Bridge P1	<0.009	3.75	2.33	<0.01	52.9	8.81	0.06	<0.01	0.3	0.50	2.46	<1	<0.01
Comp 13-9	Plag-hbl Porphyry	VOK	Bridge P1	<0.009	0.50	1.25	<0.01	58.7	10.2	<0.02	0.6	0.3	0.31	1.07	<1	<0.01
SU-011-003	Tonalite (Int. Vol.)	VOK	Bridge P1	<0.009	5.01	1.47	0.01	287	6.76	0.11	0.01	0.6	1.95	0.90	<1	0.03
Comp 13-2	Conglomerate	VOK	Conglomerate	<0.009	12.8	2.17	0.16	422	20.8	0.66	<0.01	1	3.72	0.96	<1	0.04
Comp 13-4	Conglomerate	WZ	Conglomerate	<0.009	31.1	1.43	0.01	712	70.1	0.24	<0.01	<0.1	0.41	0.32	2	<0.01
Comp 13-6	Conglomerate / Arenite	WZ	Conglomerate	<0.009	1.64	1.23	0.07	376	20.9	0.12	<0.01	0.4	1.45	0.38	1	<0.01
Comp 13-17	Conglomerate	VOK	Conglomerate	<0.009	6.30	0.77	0.01	2160	70.9	1.32	0.36	<0.1	5.43	0.56	552	<0.01
Comp. 10	Kfs-Hbl-Porphyry	Gossan Hill	Conglomerate	<0.009	1.65	1.23	0.02	278	24.8	0.95	0.05	0.2	7.86	0.18	2	0.08
BJ-BS-006/007	Poly-Conglomerate	VOK	Fragmental	<0.009	3.93	1.57	0.09	1300	44.8	0.85	<0.01	0.1	5.20	0.33	1	<0.01
BJ-UG-011/012/023	Poly-Conglomerate	VOK	Conglomerate	<0.009	1.66	1.49	0.04	634	26.3	0.69	<0.01	0.3	17.4	0.98	<1	0.01
SU-039-006	Rhyolite (floor)	Gossan Hill	Conglomerate	<0.009	1.21	1.49	<0.01	57.8	1.08	0.05	0.05	0.9	0.64	0.39	2	0.07
Comp. 6	Andesite	GH/VOK/WZ	Fragmental	0.063	5.02	3.78	<0.01	640	29.0	0.07	0.21	0.4	1.21	3.01	2	0.01
Comp. 2	Andesite	Gossan Hill	Fragmental	<0.009	1.10	0.99	<0.01	431	47.8	1.39	<0.01	0.3	0.29	0.19	20	0.03
BJ-BS-004/005	Andesite	VOK	Fragmental	0.016	5.46	2.47	0.07	123	40.8	0.08	<0.01	1.6	1.81	7.57	<1	0.05
Comp. 4	Andesite	WZ	Fragmental	<0.009	4.96	1.10	<0.01	791	44.4	0.87	0.01	0.2	1.13	0.22	525	<0.01
Comp 13-12	Andesite	WZ	Fragmental	<0.009	1.52	1.68	0.01	289	12.9	0.16	<0.01	0.2	3.29	0.61	<1	0.05
Comp 13-19	Andesite	VOK	Fragmental	<0.009	1.93	1.33	0.04	437	20.3	0.13	0.05	0.4	1.87	1.93	2	0.03
Comp 13-5	Conglomerate	WZ	Fragmental	<0.009	6.88	2.11	<0.01	22.6	26.4	0.05	<0.01	0.3	0.05	3.74	<1	0.03
Comp 13-13	Dense Vein Stockwork	WZ	Fragmental	<0.009	2.91	1.32	0.04	372	21.8	0.13	<0.01	0.2	0.68	0.37	<1	0.02
SU-096-002	Dense Vein Stockwork (low Au)	VOK	Fragmental	<0.009	4.11	1.77	0.05	525	6.00	0.10	0.02	0.3	1.78	1.07	1	0.03
SU-041-008	Dense Vein Stockwork (low Au)	WZ	Fragmental	<0.009	1.77	2.42	<0.01	251	3.82	0.09	<0.01	0.6	0.73	0.61	3	0.02
SU-123-001	Felsic Volcanics (roof)	WZ	Fragmental	<0.009	2.66	1.78	0.01	477	6.94	0.45	<0.01	0.2	0.95	1.99	1	0.02
Comp 13-7	Intermediate Volcanics	VOK	Fragmental	<0.009	0.95	1.07	0.09	137	39.1	0.09	0.03	0.4	0.14	0.26	3	0.05
SU-121-002	Intermediate Volcanics	WZ	Fragmental	<0.009	2.89	1.73	<0.01	375	19.7	0.09	0.23	0.4	0.21	1.49	<1	0.02
Comp. 1	Andesite	Gossan Hill	Fragmental/VSF	<0.009	2.63	1.39	0.13	546	16.0	0.08	0.01	0.8	1.69	1.06	2	0.02
Comp 13-11	Plg-Hbl-Porphyry	VOK	P2/Fragmental	<0.009	5.94	1.31	<0.01	713	45.1	0.13	0.58	<0.1	0.44	0.65	<1	0.01
Comp. 5	Tonalite	WZ	Frag./Congl.	<0.009	1.07	0.77	<0.01	428	7.09	0.14	<0.01	0.1	0.38	0.34	2	<0.01
Comp 13-8	Plg-Hbl-Porphyry	VOK	Office P1	<0.009	0.27	1.31	<0.01	165	5.34	0.07	0.75	<0.1	0.20	1.02	<1	<0.01
SU-146-002	Poly-Conglomerate	VOK	Office P1	<0.009	1.42	1.01	0.09	691	44.1	1.19	0.01	0.1	24.2	<0.03	1	<0.01
SU-123-003	Plg-Hbl-Porphyry	WZ	P2	<0.009	6.73	1.25	<0.01	1010	20.0	0.08	0.02	0.2	0.20	0.68	<1	<0.01
Comp 13-15	Plg-Hbl-Porphyry	WZ	P2	<0.009	7.85	1.29	<0.01	281	18.8	0.08	<0.01	0.2	0.12	1.75	<1	<0.01
Comp 13-3	Siliceous rocks / Int. Volcanics	VOK	Silicified Cap	0.013	9.30	0.72	0.12	674	21.6	0.24	<0.01	<0.1	2.67	<0.03	208	<0.01
Comp. 3	Andesite	VOK	VSF	<0.009	4.91	2.36	<0.01	40.1	3.95	0.03	0.07	0.6	0.06	6.82	2	0.08
SU-096-005	Andesite	VOK	VSF	<0.009	28.1	1.24	0.06	784	25.7	0.20	0.03	0.4	0.70	0.42	2	0.02
Comp. 7	Arenite	VOK	VSF	<0.009	0.72	1.60	0.02	232	5.53	0.10	0.04	0.3	0.30	1.64	2	0.02
SU-063-007	Arenite (roof)	WZ	VSF	<0.009	3.00	1.47	0.04	348	12.1	0.07	0.02	0.3	0.25	1.51	1	0.01
Comp 13-14	Dense Vein Stockwork	VOK Ore Zone	VSF	<0.009	1.35	1.78	<0.01	90.1	16.2	0.09	<0.01	0.4	2.30	2.93	<1	0.05
BJ-BS-001/002	Felsic Volcanics	VOK	VSF	<0.009	1.54	1.81	<0.01	361	15.2	0.25	<0.01	0.4	0.18	1.34	<1	<0.01
BJ-BS-008/011	Felsic Volcanics	VOK	VSF	0.028	1.48	1.11	0.04	723	42.2	0.27	0.02	<0.1	0.60	0.15	<1	0.02
BJ-BS-009/012	Felsic Volcanics	VOK	VSF	0.034	1.53	1.04	<0.01	815	50.4	0.22	<0.01	<0.1	0.52	0.12	<1	0.02
Comp. 9	Felsic Volcanics	VOK	VSF	<0.009	2.13	1.68	0.02	625	18.2	0.46	<0.01	0.4	0.31	0.25	1	0.02
SU-113-003	Felsic Volcanics	VOK	VSF	<0.009	0.55	1.80	0.05	370	6.19	0.12	0.03	0.3	0.14	3.52	2	0.05
Comp 13-10	Intermediate Volcanics	VOK	VSF	<0.009	4.42	2.02	0.05	48.0	18.3	0.03	1.05	0.3	1.71	6.19	<1	0.06
Comp 13-1	Pelite	VOK	VSF	<0.009	1.80	1.72	0.02	509	8.61	0.15	0.81	<0.1	0.38	0.75	<1	0.01
Comp. 8	Pelite	VOK	VSF	<0.009	1.81	2.24	0.01	185	5.70	0.08	0.4	0.2	0.72	2.45	<1	0.06
SU-114-001	Silicified Breccia	VOK	VSF	<0.009	1.15	2.05	<0.01	278	6.38	0.20	0.03	0.1	0.71	1.59	<1	0.01
# Values <DL				41	-	-	19	-	-	1	20	8	-	-	22	14

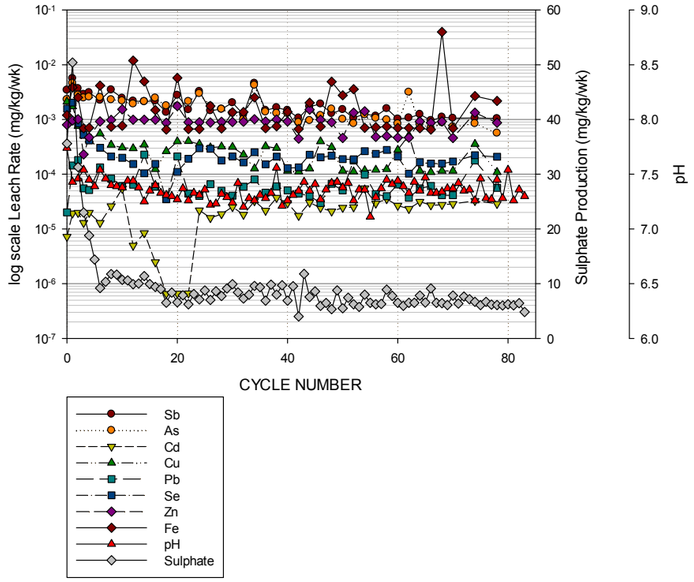
Notes

All tested materials consisted of 250g samples, 'shaken' for 24 hours in 750mL of wate

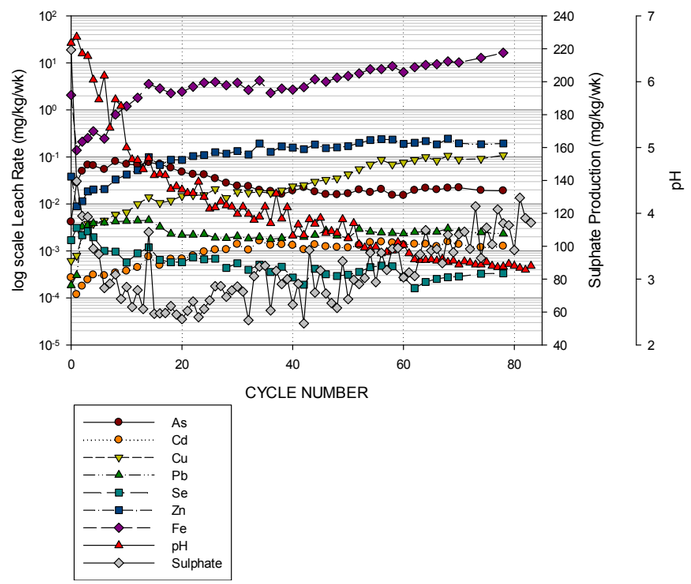
APPENDIX F
KINETIC TESTS PLOTS

APPENDIX F1
KINETIC TESTS PLOTS – pH, SO_4 and METALS

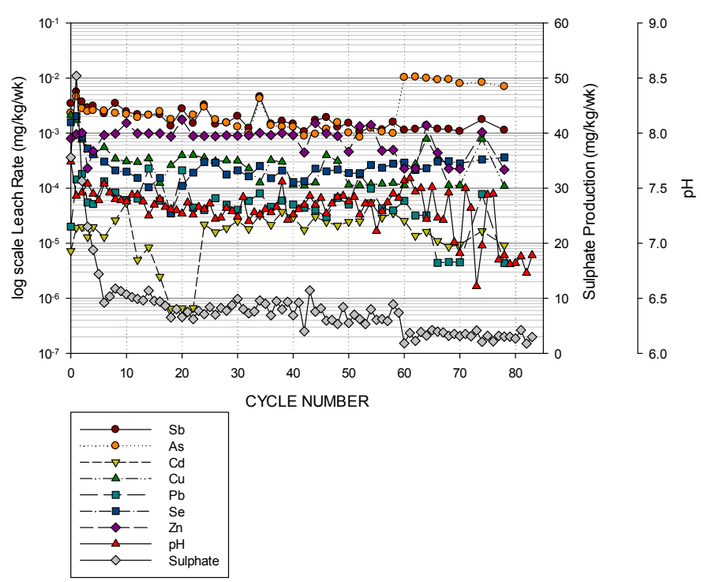
HUMIDITY CELL 1
FRAGMENTAL/VSF - ANDESITE



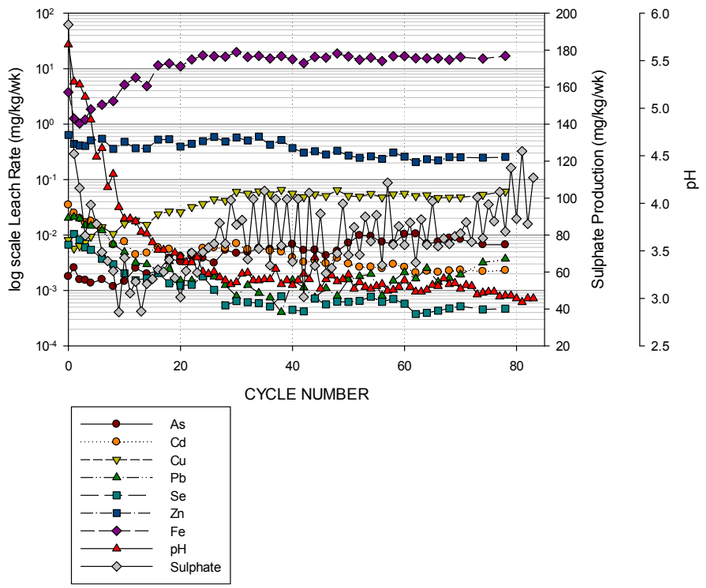
HUMIDITY CELL 2
FRAGMENTAL - ANDESITE



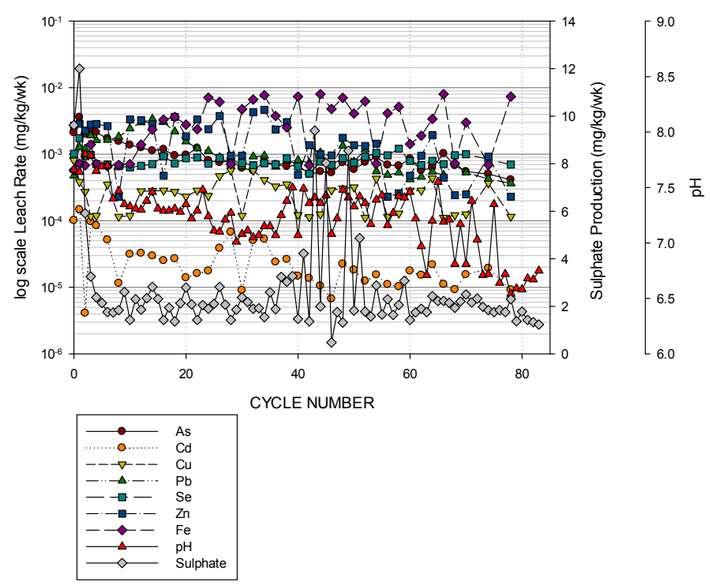
HUMIDITY CELL 3
VSF - ANDESITE



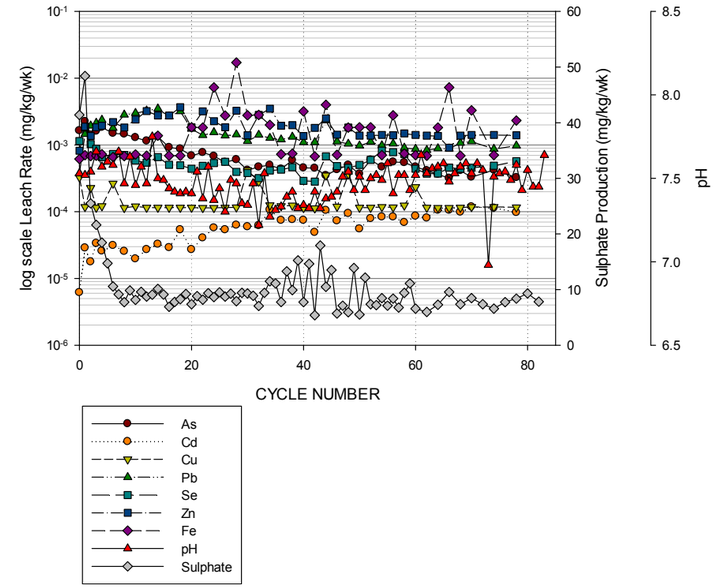
HUMIDITY CELL 4
FRAGMENTAL - ANDESITE



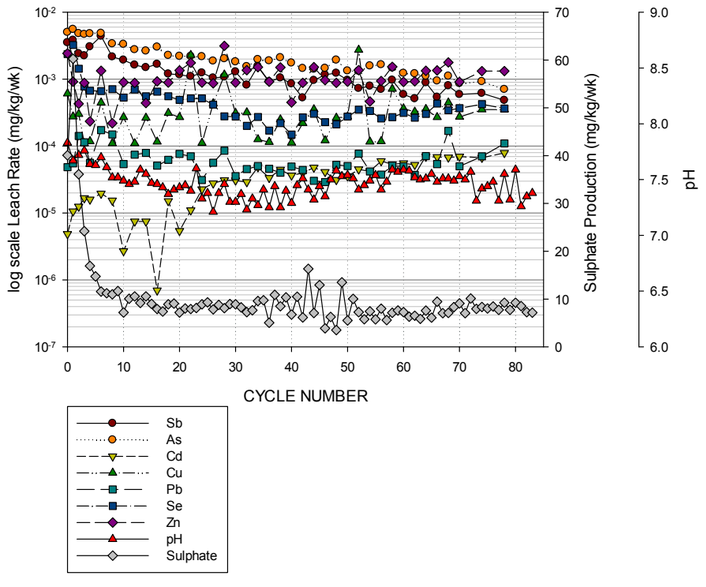
HUMIDITY CELL 5
FRAGMENTAL - SILICEOUS ROCKS (DENSE VEIN STOCK)



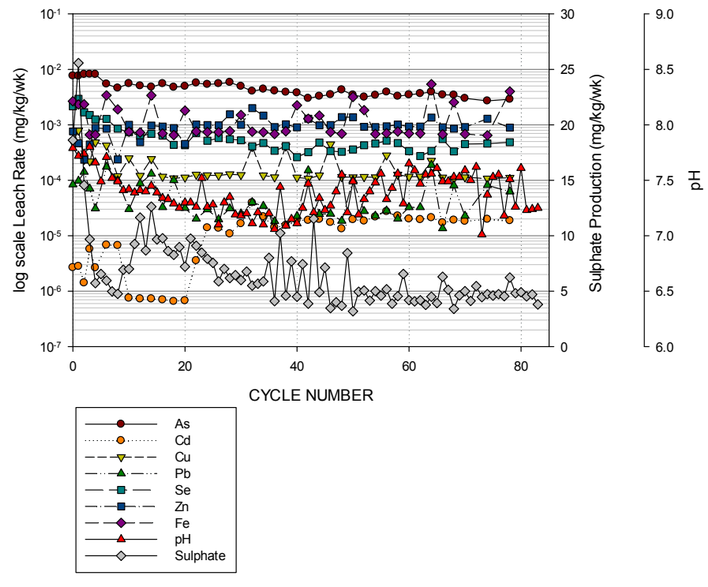
HUMIDITY CELL 6
FRAGMENTAL/CONGLOMERATE - GRANITOIDS (TONALITE)



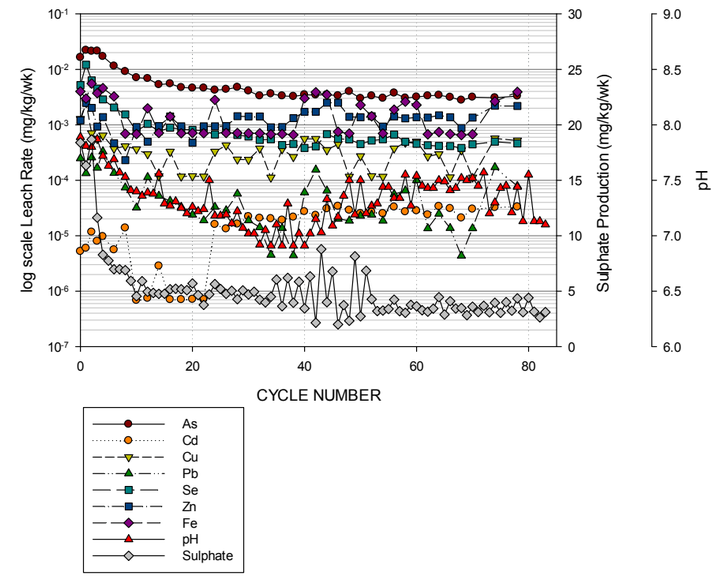
HUMIDITY CELL 7
VSF - METASEDIMENTS (ARENITE)



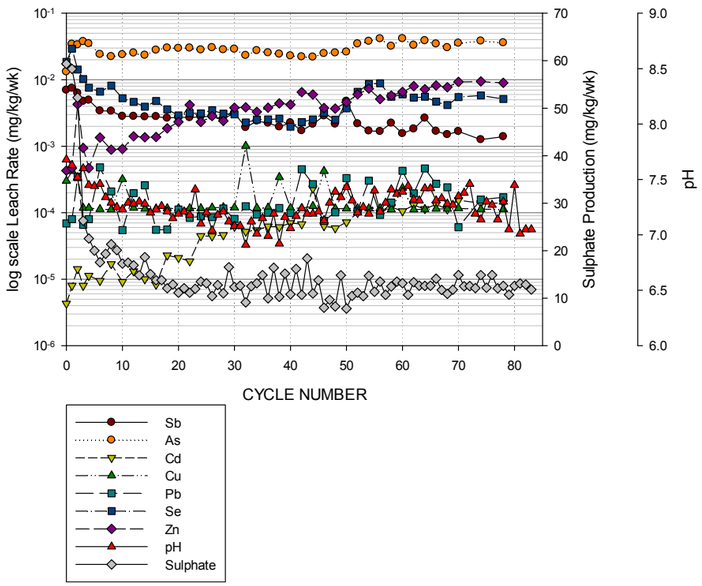
HUMIDITY CELL 8
FRAGMENTAL - SILICEOUS ROCKS (DENSE VEIN STOCK)



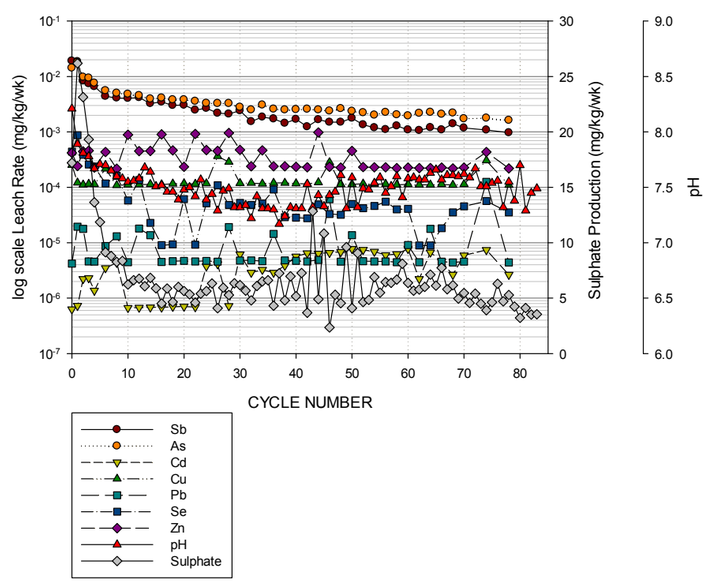
HUMIDITY CELL 9
FRAGMENTAL - META-VOLCANICS (META-INTERMEDIATE TO -MAFIC VOLCANICS)



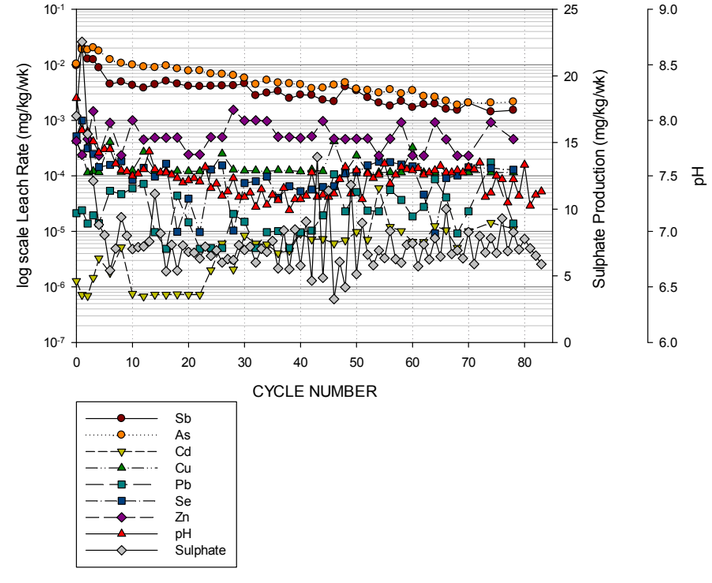
HUMIDITY CELL 10
VSF - ANDESITE



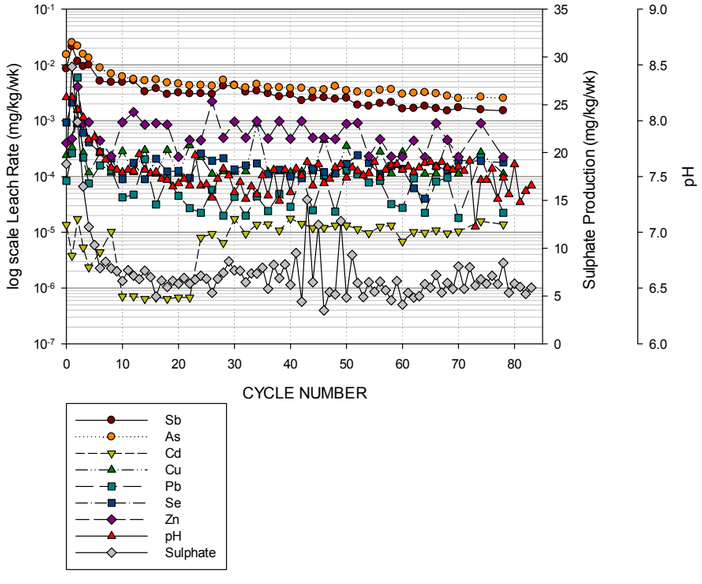
HUMIDITY CELL 11
VSF - FELSIC VOLCANICS



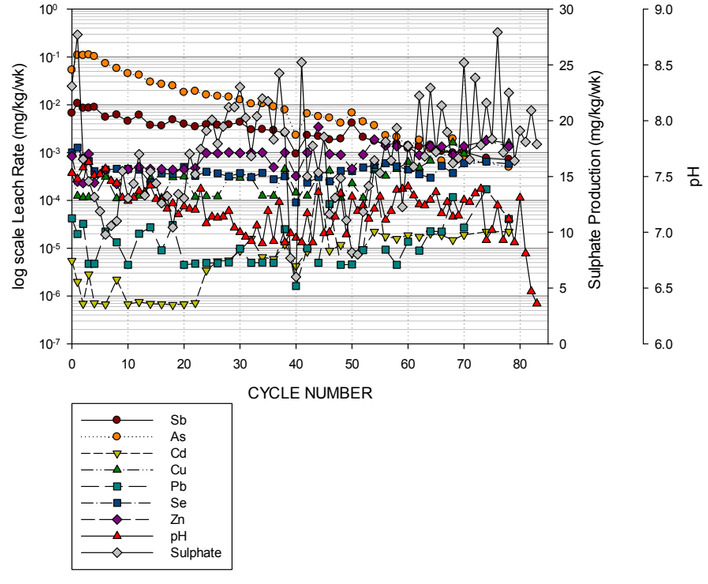
HUMIDITY CELL 12
VSF - METASEDIMENTS (ARENITE)



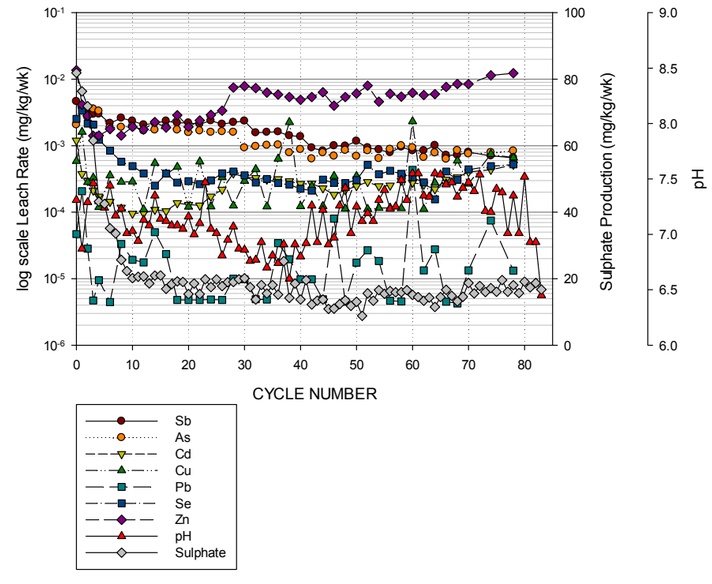
HUMIDITY CELL 13
VSF - METASEDIMENTS (PELITE)



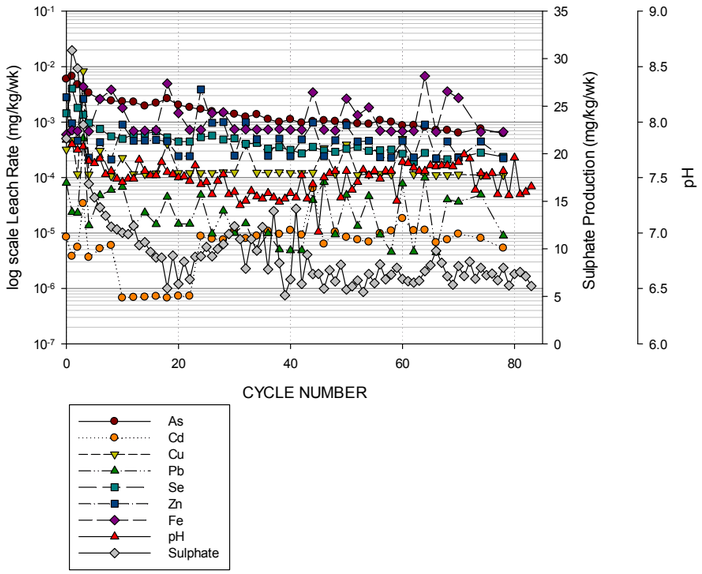
HUMIDITY CELL 14
VSF - SILICEOUS ROCKS (SILICIFIED BRECCIA)



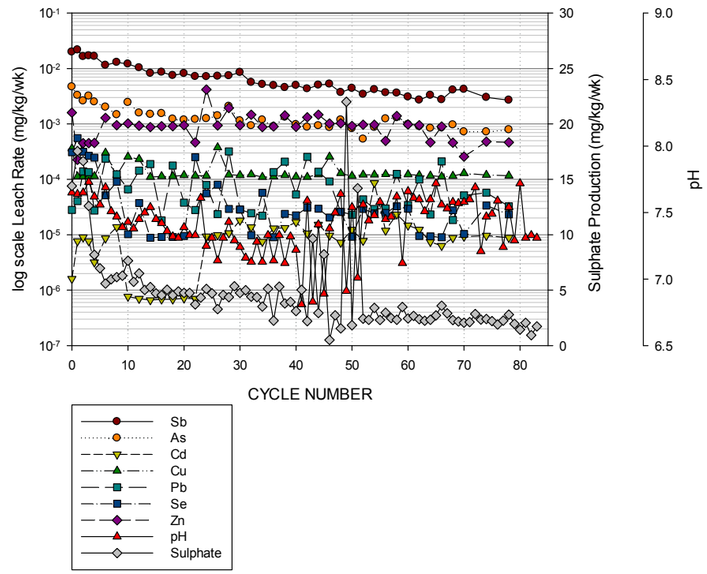
HUMIDITY CELL 15
VSF - FELSIC VOLCANICS



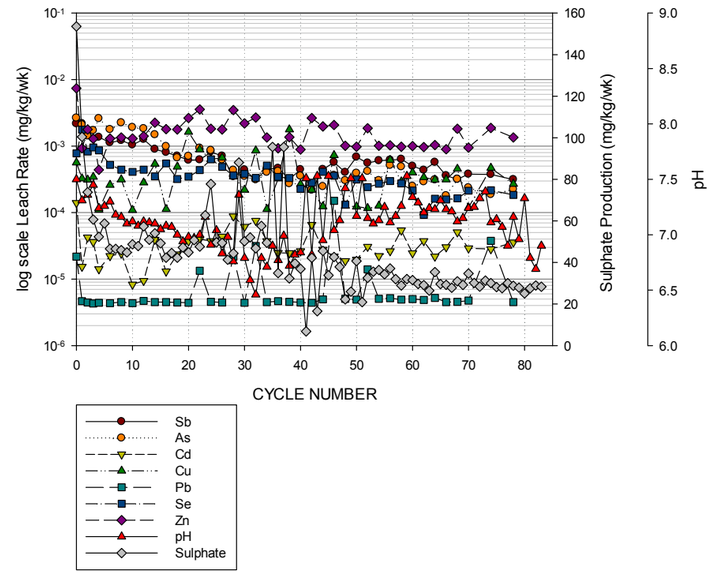
HUMIDITY CELL 16
FRAGMENTAL - FELSIC VOLCANICS



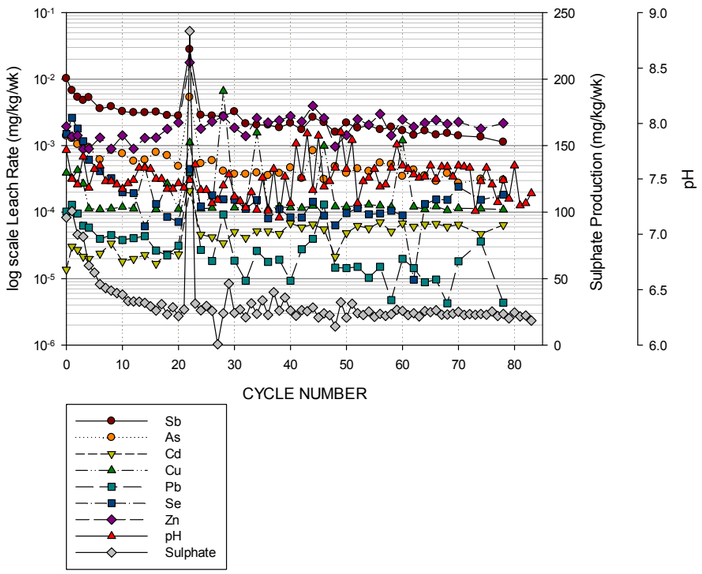
HUMIDITY CELL 17
VSF - FELSCI VOLCANICS (INTERMEDIATE VOLCANICS)



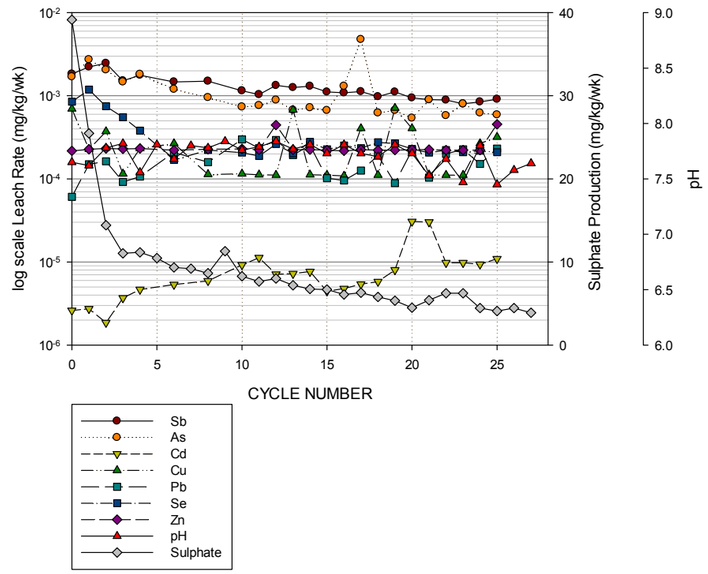
HUMIDITY CELL 18
VSF - CONGLOMERATE (POLY-CONGLOMERATE)



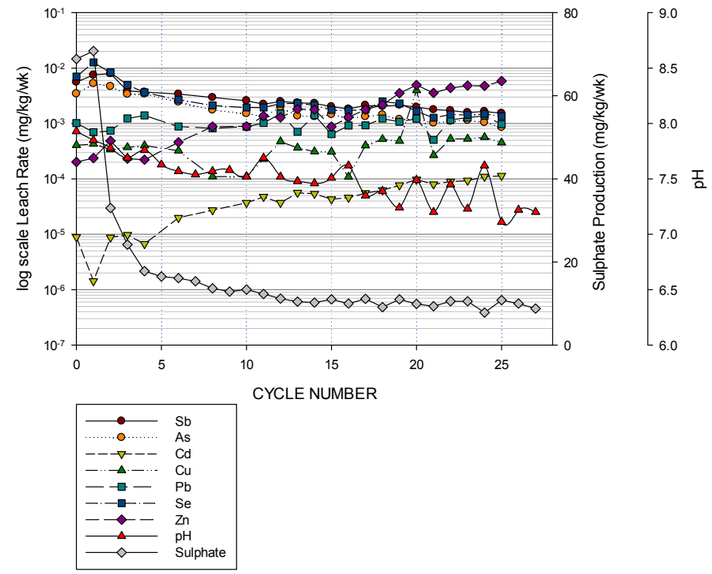
HUMIDITY CELL 19
CONGLOMERATE - PORPHYRY (KSP-HBL-PORPHYRY)



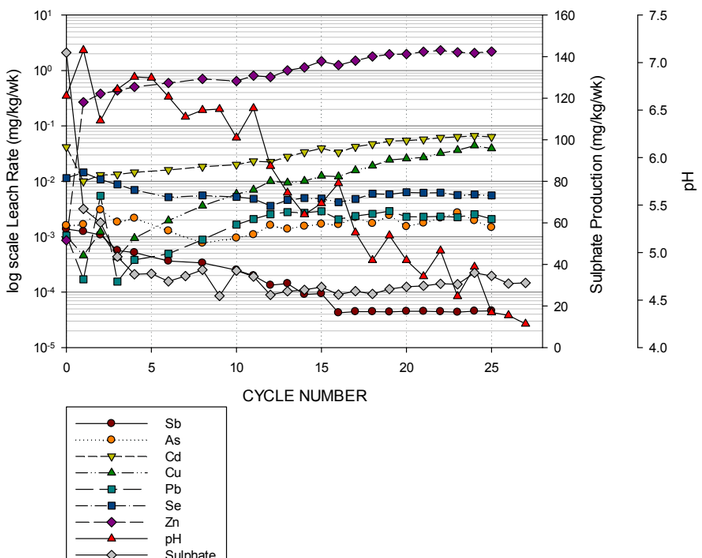
HUMIDITY CELL 20
VSF - METASEDIMENTS (PELITE)



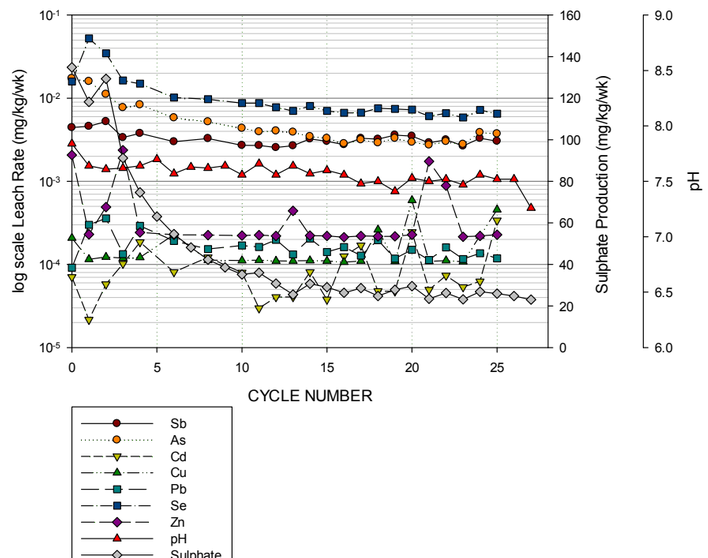
HUMIDITY CELL 21
CONGLOMERATE - CONGLOMERATE



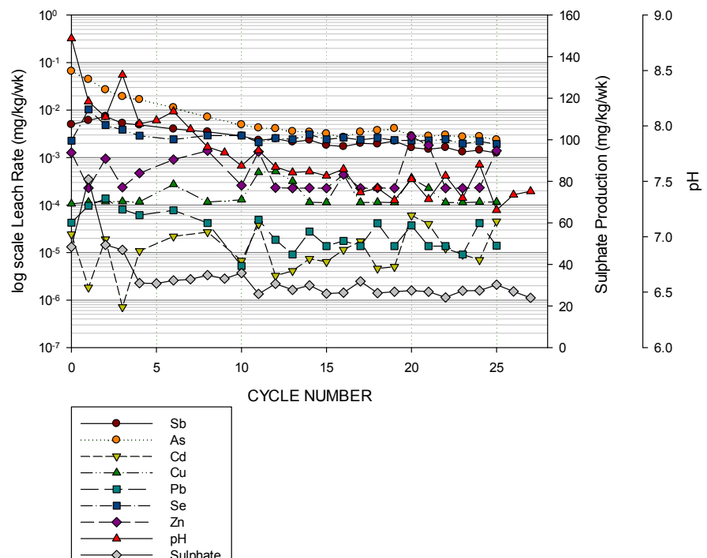
HUMIDITY CELL 22
SILICIFIED CAP - FELSIC VOLCANICS (INTERMEDIATE VOLCANICS)



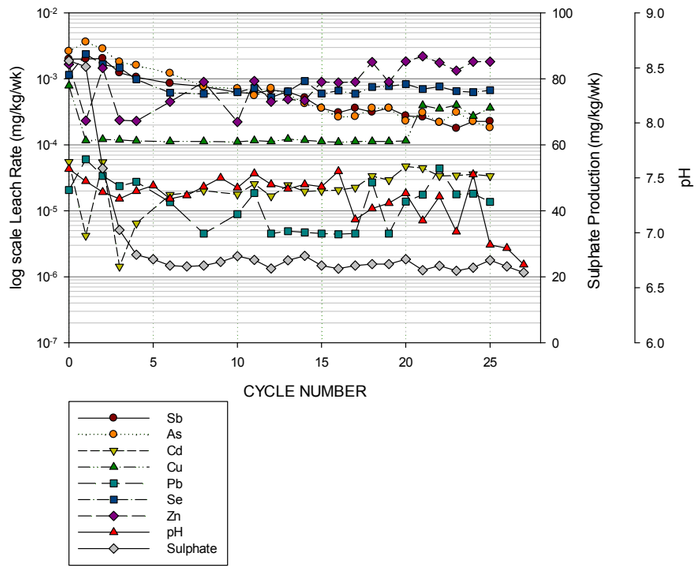
HUMIDITY CELL 23
CONGLOMERATE - CONGLOMERATE



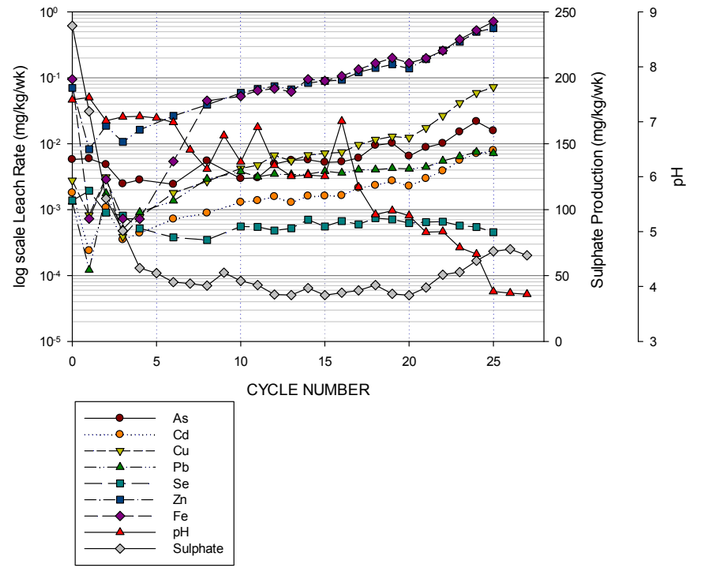
HUMIDITY CELL 24
CONGLOMERATE - CONGLOMERATE



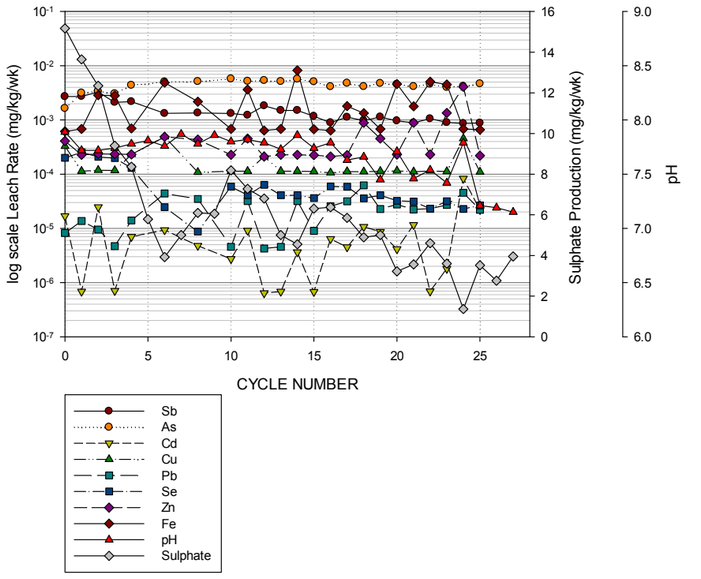
HUMIDITY CELL 25
CONGLOMERATE - CONGLOMERATE



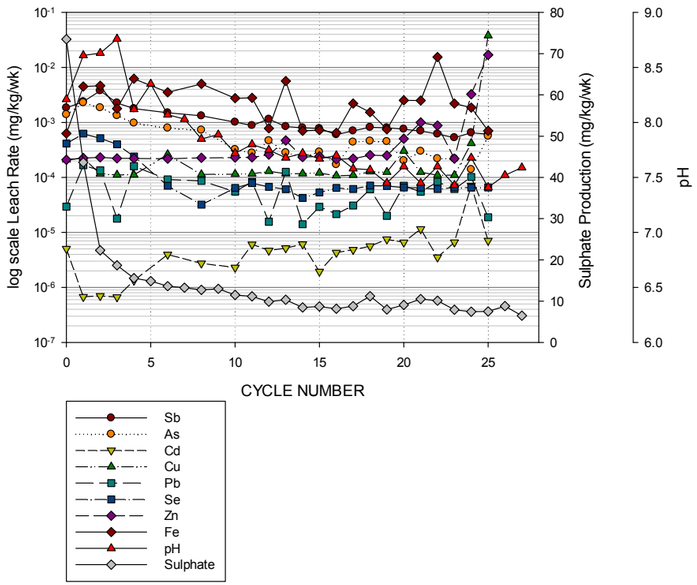
HUMIDITY CELL 26
FRAGMENTAL - FELSIC VOLCANICS (INTERMEDIATE VOLCANICS)



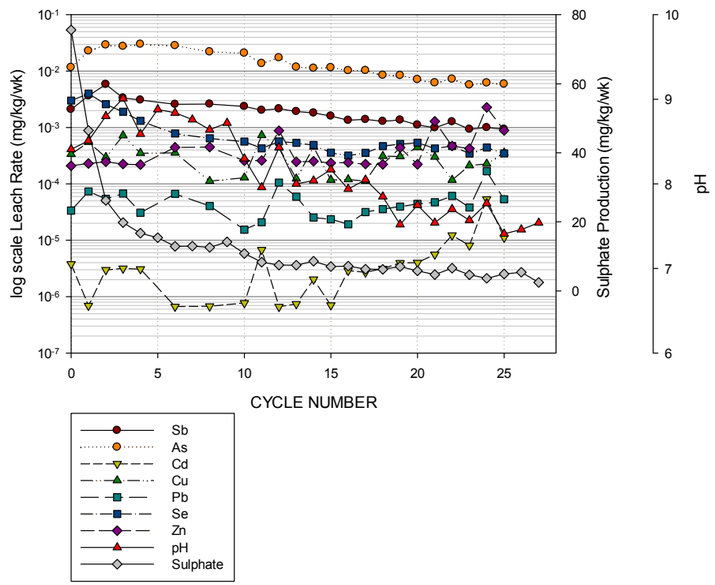
HUMIDITY CELL 27
OFFICE P1 - PORPHYRY (PLAG-HBL-PORPHYRY)



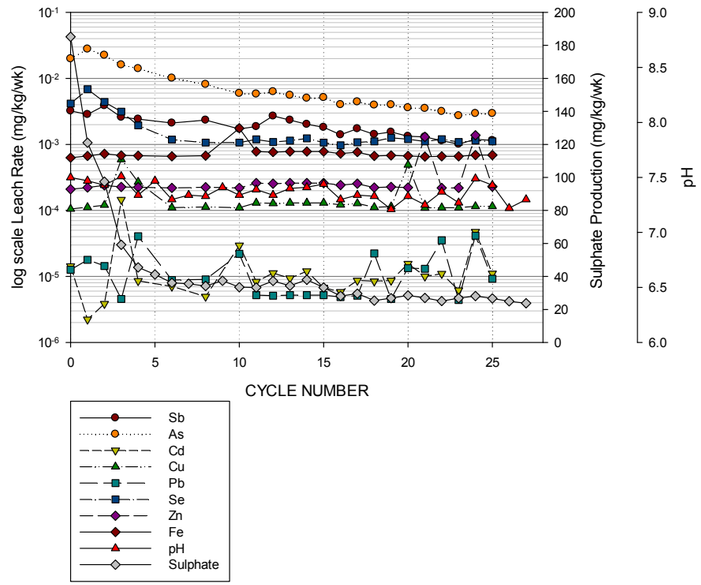
HUMIDITY CELL 28
BRIDGE P1 - PORPHYRY (PLAG-HBL-PORPHYRY)



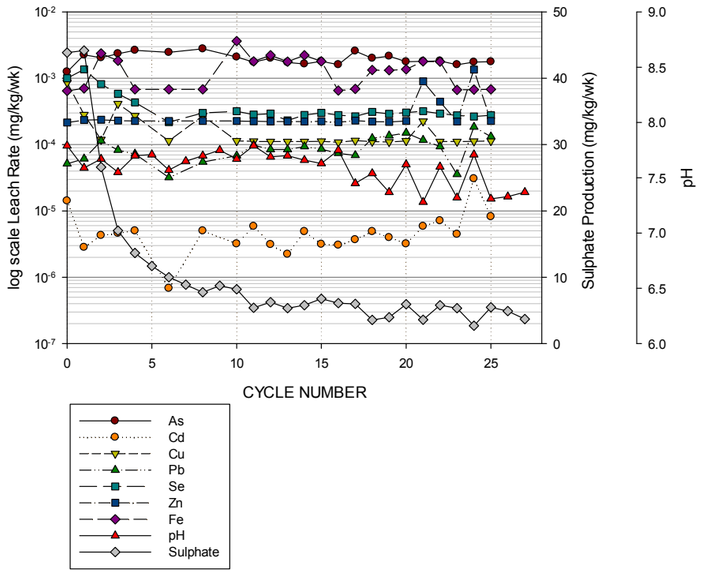
HUMIDITY CELL 29
VSF - FELSIC VOLCANICS (INTERMEDIATE VOLCANICS)



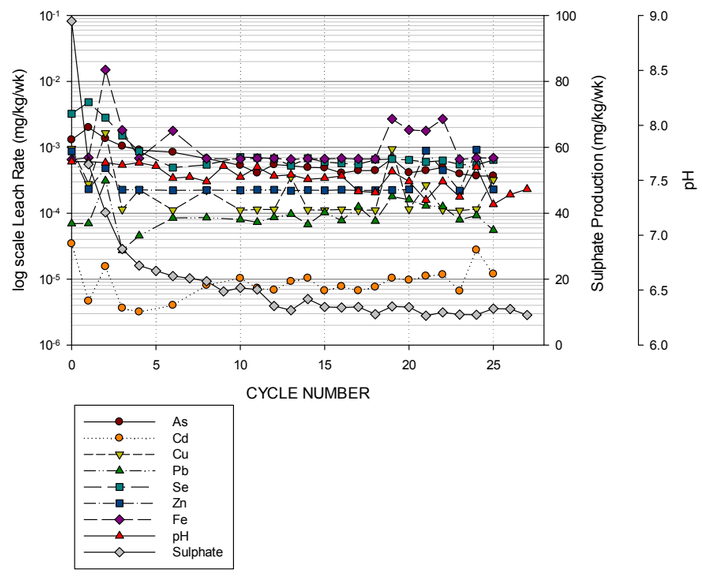
HUMIDITY CELL 30
P2/FRAGMENTAL - PORPHYRY (PLAG-HBL-PORPHYRY)



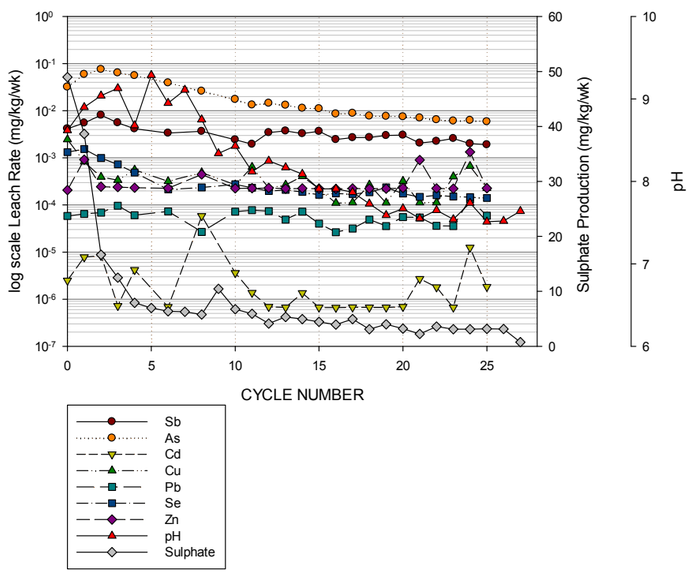
HUMIDITY CELL 31
FRAGMENTAL - ANDESITE



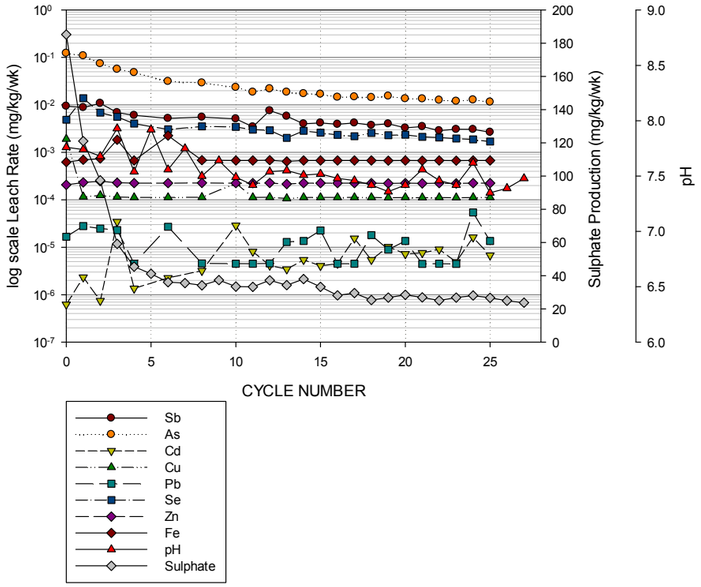
HUMIDITY CELL 32
FRAGMENTAL - SILICEOUS ROCKS (DENSE VEIN STOCK)



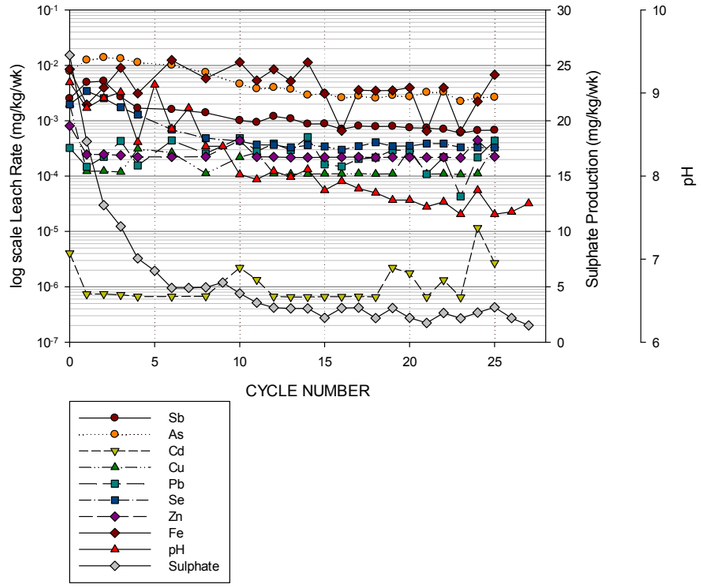
HUMIDITY CELL 33
VSF - SILICEOUS ROCKS (DENSE VEIN STOCK, ORE ZONE)



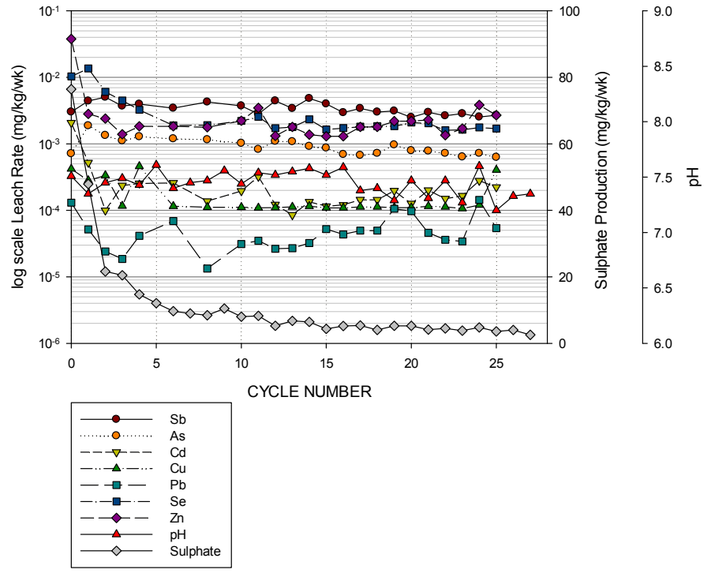
HUMIDITY CELL 34
P2 - PORPHYRY (PLAG-HBL-PORPHYRY)



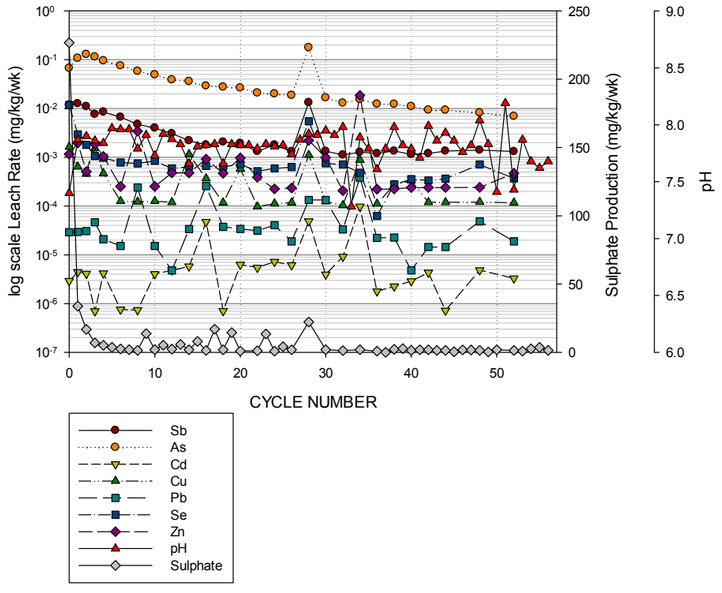
HUMIDITY CELL 35
BRIDGE P1 - PORHYRY (PLAG-HBL-PORPHYRY)



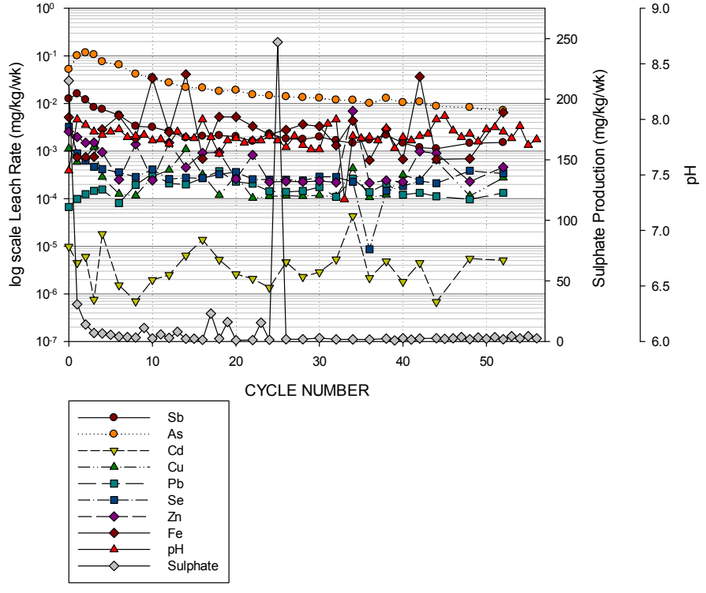
HUMIDITY CELL 36
SILICIFIED CAP - SILICEOUS ROCK (SILICIFIED ROCK)



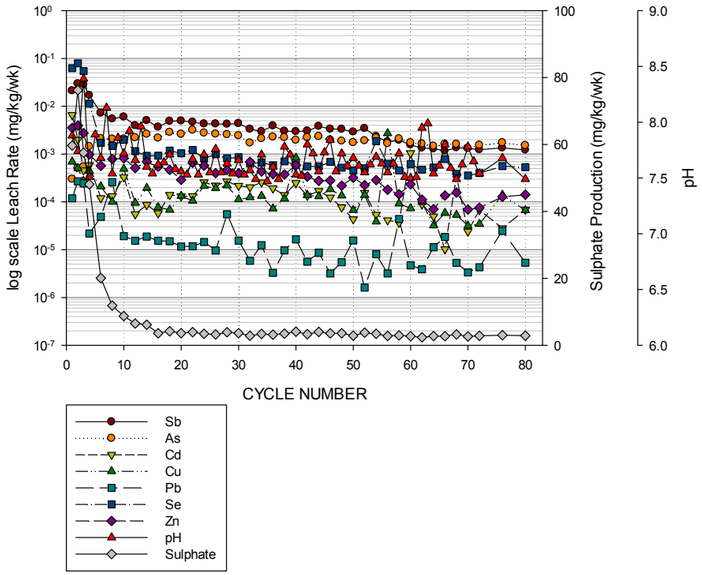
T1
FLOTATION TAILINGS (VOK)



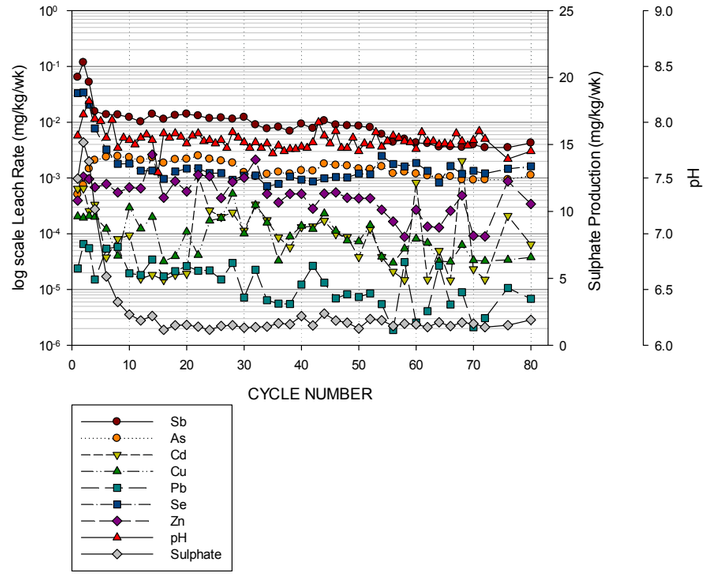
T2
FLOTATION TAILINGS (WZ)



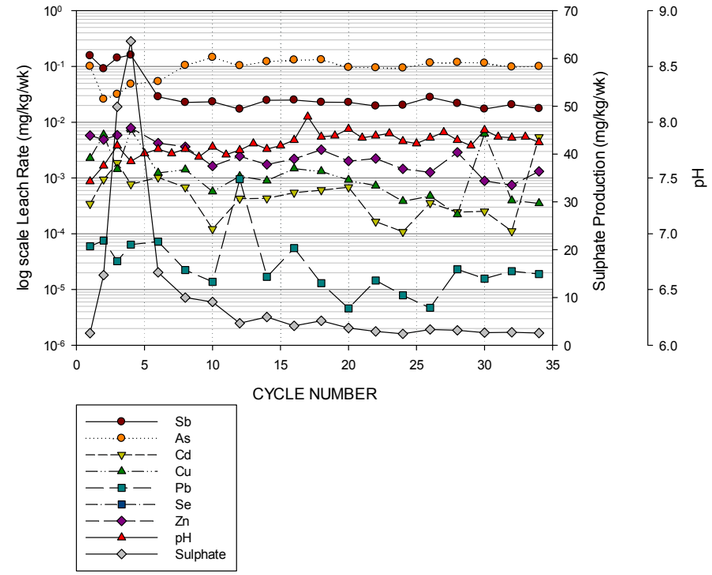
COLUMN 1
FRAGMENTAL (GH/WZ/VOK) - ANDESITE



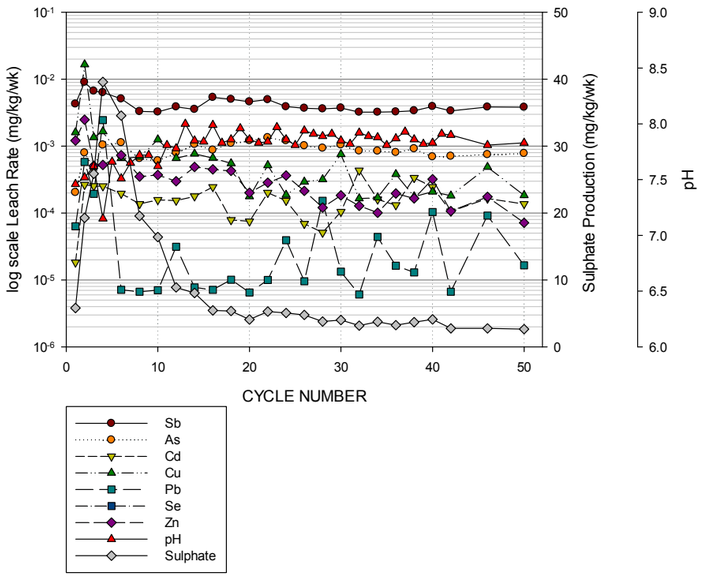
COLUMN 2
VSF (VOK) - FELSIC VOLCANICS



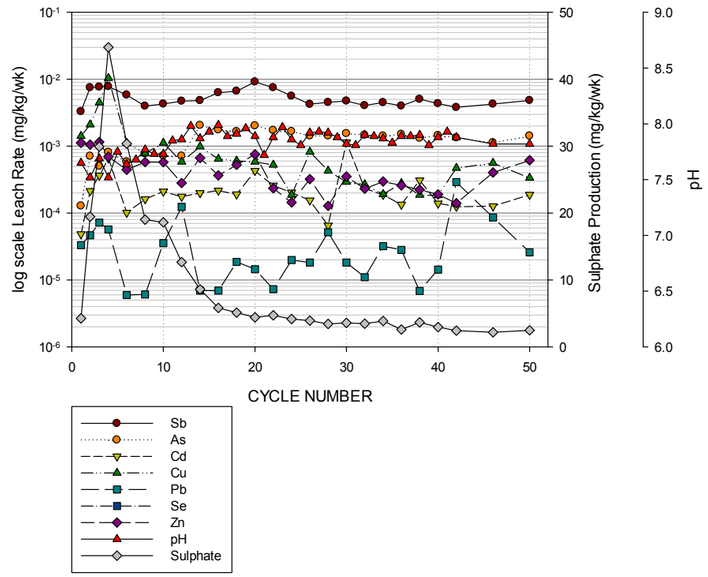
COLUMN 3 (BOTTOM)
WZ/VOK - TAILINGS CAKE



COLUMN 4
TAILINGS, UNSEALED



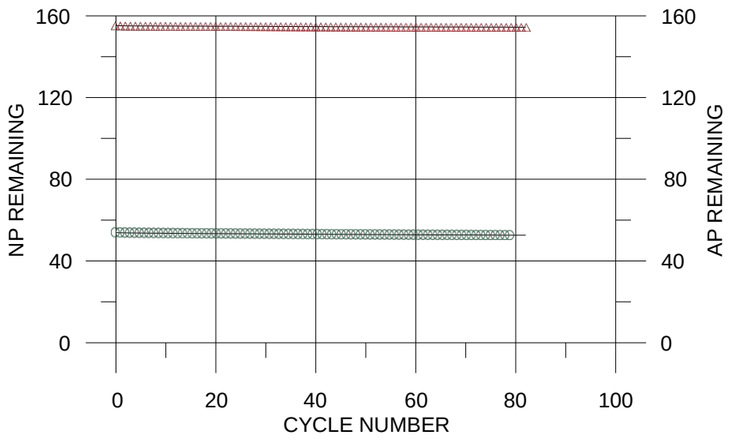
COLUMN 5
TAILINGS, SEALED



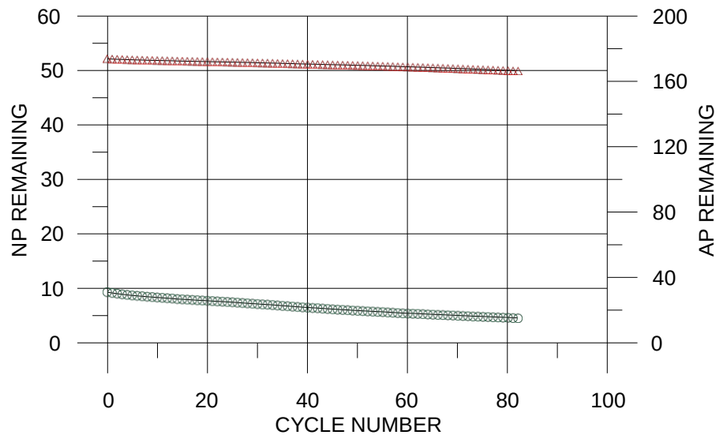
APPENDIX F2
KINETIC TESTS PLOTS – AP and NP

LITHOLOGY: ANDESITE

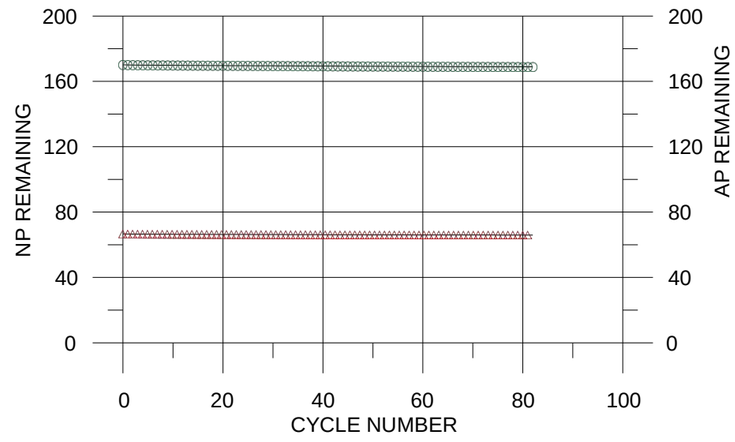
HC 1 (GH)
FRAGMENTAL/VSF - ANDESITE



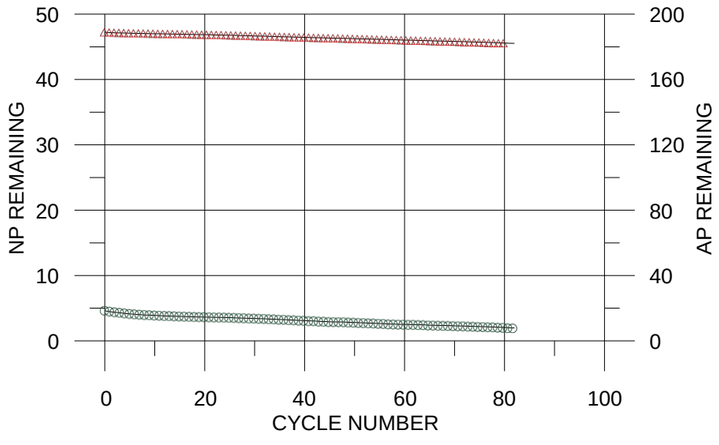
HC 2 (GH)
FRAGMENTAL - ANDESITE



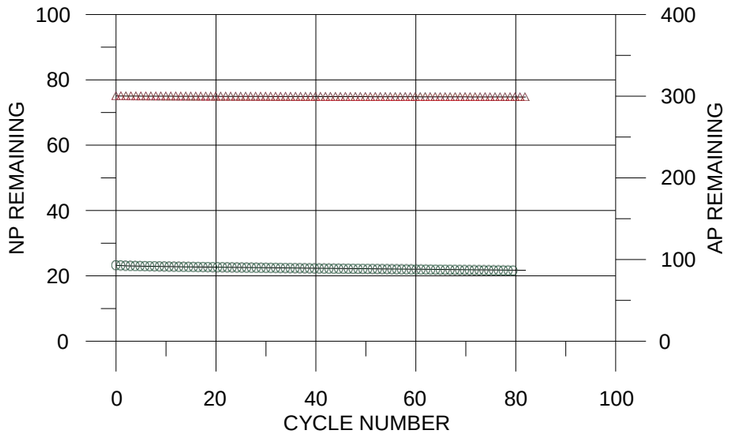
HC 3 (VOK)
VSF - ANDESITE



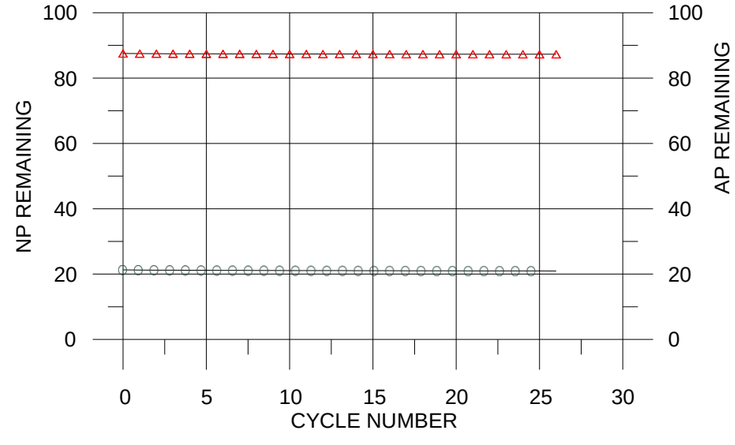
HC 4 (WZ)
FRAGMENTAL - ANDESITE



HC 10 (VOK)
VSF - ANDESITE



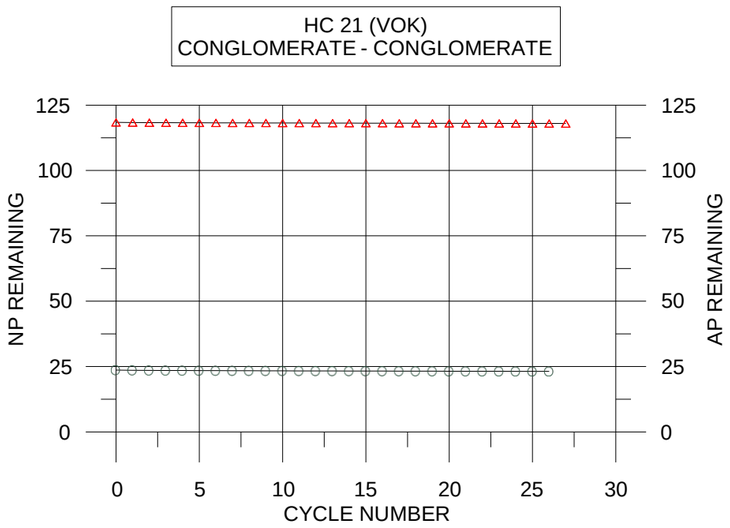
HC 31 (WZ)
FRAGMENTAL - ANDESITE

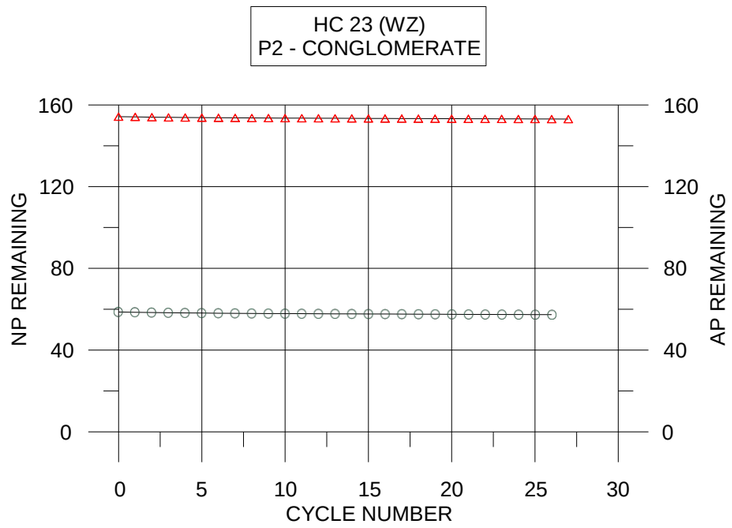


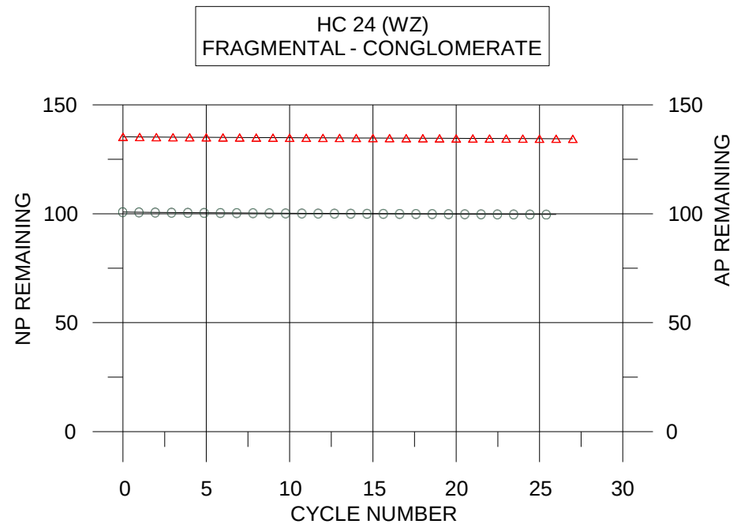
LEGEND
AP REMAINING
NP REMAINING

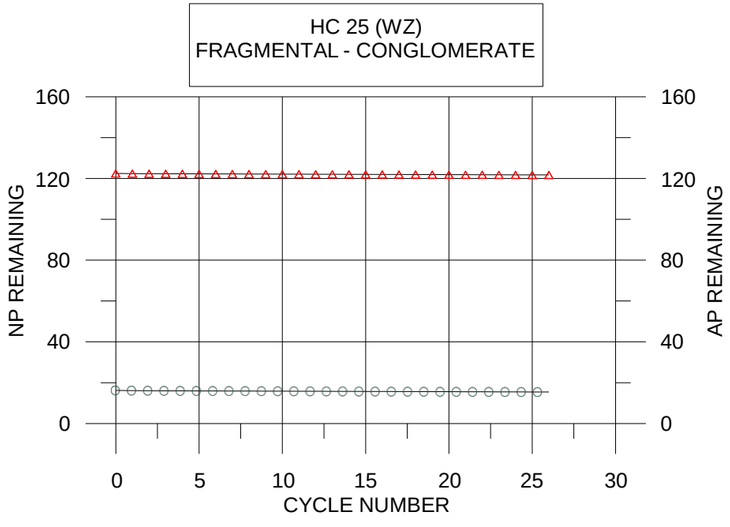
NOTES:
1. NP = NEUTRALIZATION POTENTIAL; AP = ACIDIFYING POTENTIAL
2. EMPIRICAL OPEN SYSTEM MODEL AROUND NEUTRAL pH USED TO CALCULATE NP CONSUMPTION
3. CYCLE LENGTH = 1 WEEK
4. ALL QUANTITIES REPORTED IN kg $CaCO_3$/t

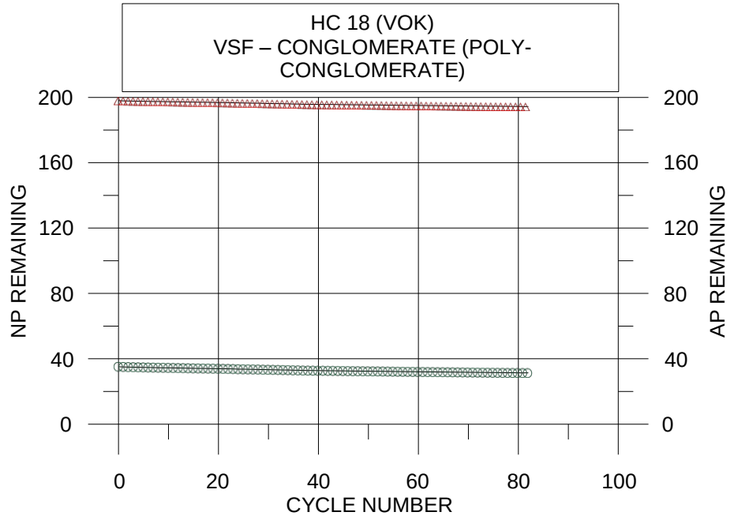
LITHOLOGY: CONGLOMERATE

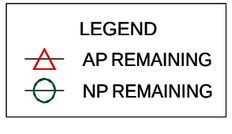






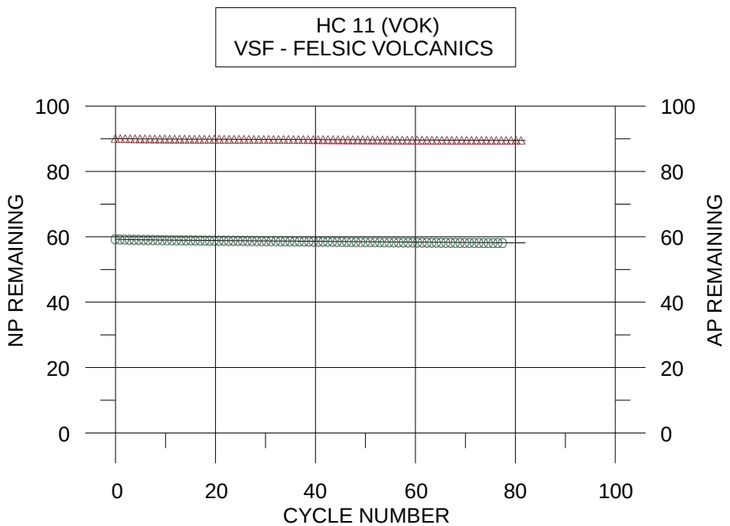


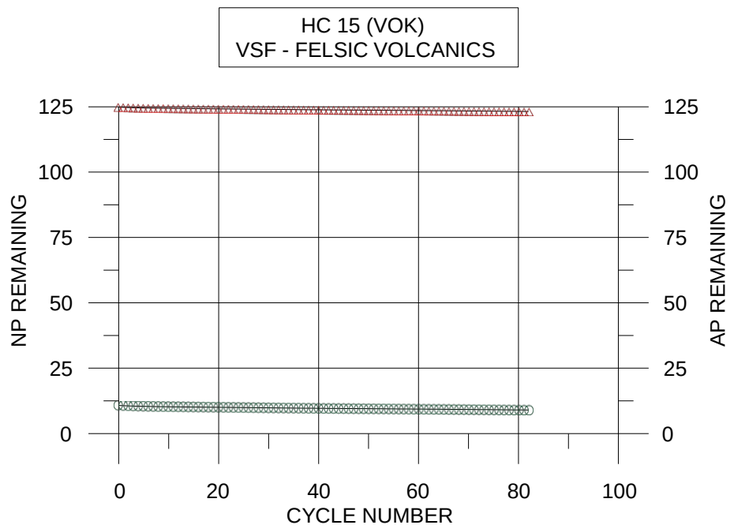


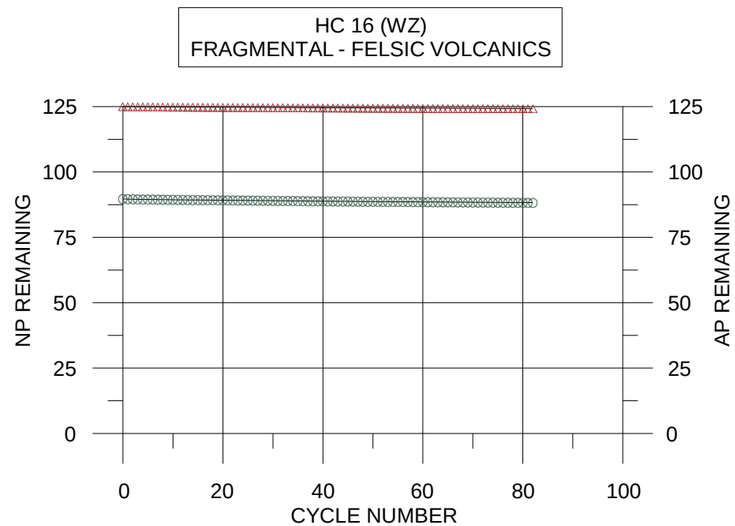


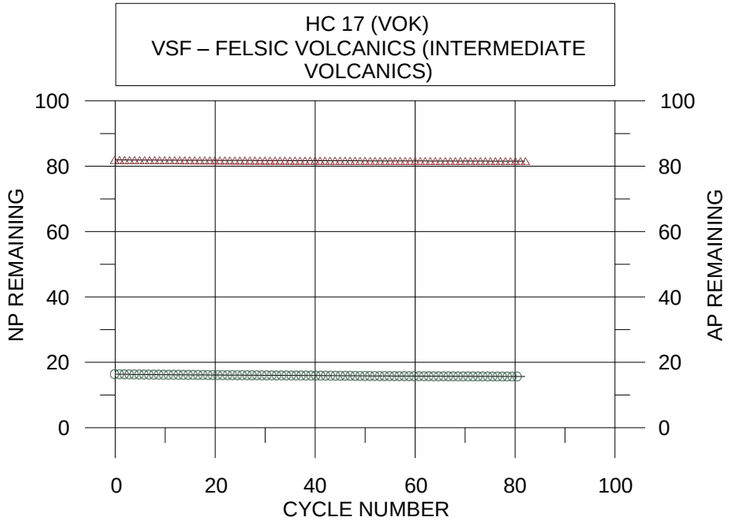
NOTES:
1. NP = NEUTRALIZATION POTENTIAL; AP = ACIDIFYING POTENTIAL
2. EMPIRICAL OPEN SYSTEM MODEL AROUND NEUTRAL pH USED TO CALCULATE NP CONSUMPTION
3. CYCLE LENGTH = 1 WEEK
4. ALL QUANTITIES REPORTED IN kg $CaCO_3$/t

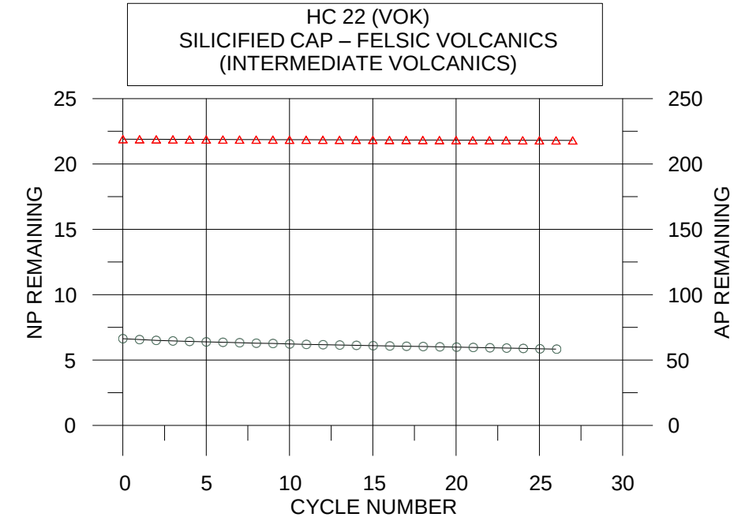
LITHOLOGY: FELSIC VOLCANICS

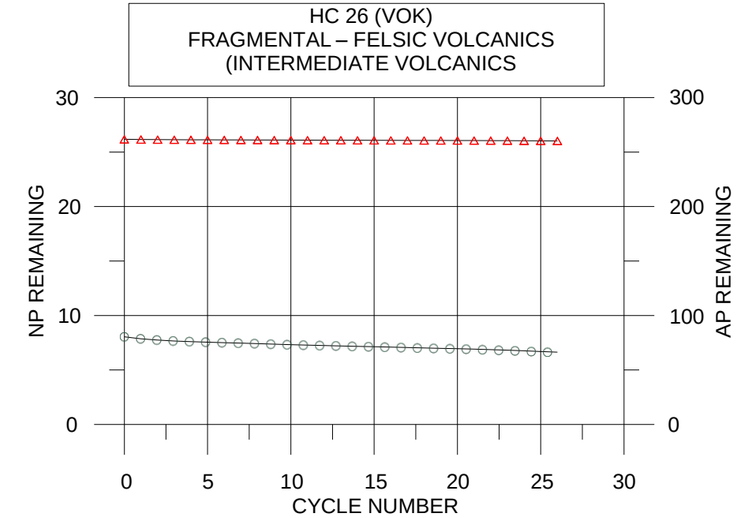


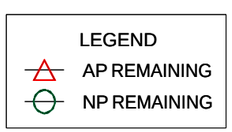






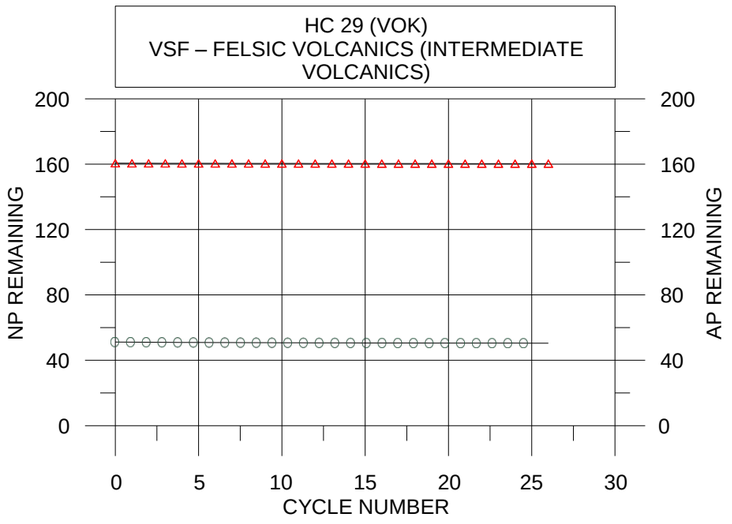


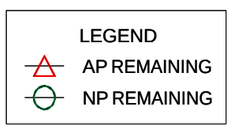




NOTES:
1. NP = NEUTRALIZATION POTENTIAL; AP = ACIDIFYING POTENTIAL
2. EMPIRICAL OPEN SYSTEM MODEL AROUND NEUTRAL pH USED TO CALCULATE NP CONSUMPTION
3. CYCLE LENGTH = 1 WEEK
4. ALL QUANTITIES REPORTED IN kg $CaCO_3$/t

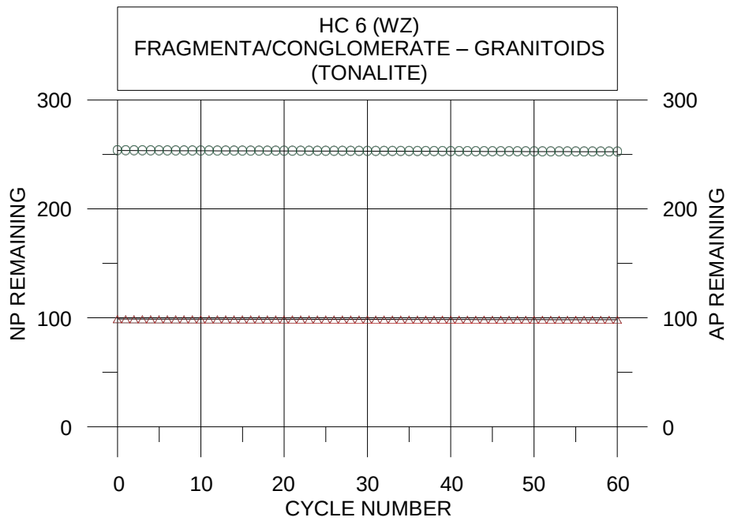
LITHOLOGY: FELSIC VOLCANICS





NOTES:
1. NP = NEUTRALIZATION POTENTIAL; AP = ACIDIFYING POTENTIAL
2. EMPIRICAL OPEN SYSTEM MODEL AROUND NEUTRAL pH USED TO CALCULATE NP CONSUMPTION
3. CYCLE LENGTH = 1 WEEK
4. ALL QUANTITIES REPORTED IN kg $CaCO_3$/t

LITHOLOGY: GRANITOIDS

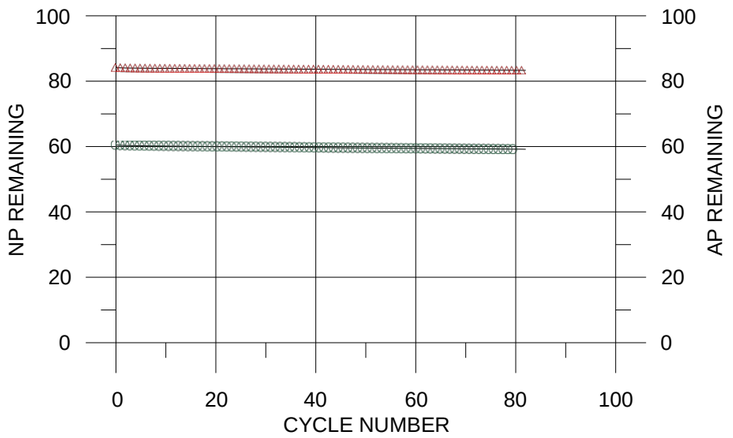


LEGEND
AP REMAINING
NP REMAINING

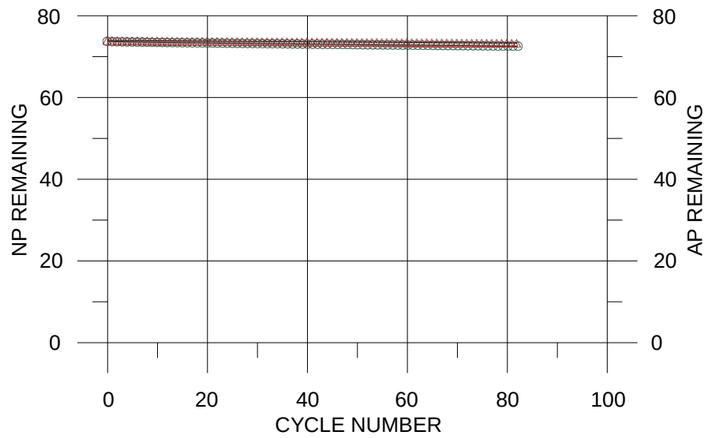
NOTES:
1. NP = NEUTRALIZATION POTENTIAL; AP = ACIDIFYING POTENTIAL
2. EMPIRICAL OPEN SYSTEM MODEL AROUND NEUTRAL pH USED TO CALCULATE NP CONSUMPTION
3. CYCLE LENGTH = 1 WEEK
4. ALL QUANTITIES REPORTED IN kg $CaCO_3$/t

LITHOLOGY: METASEDIMENTS

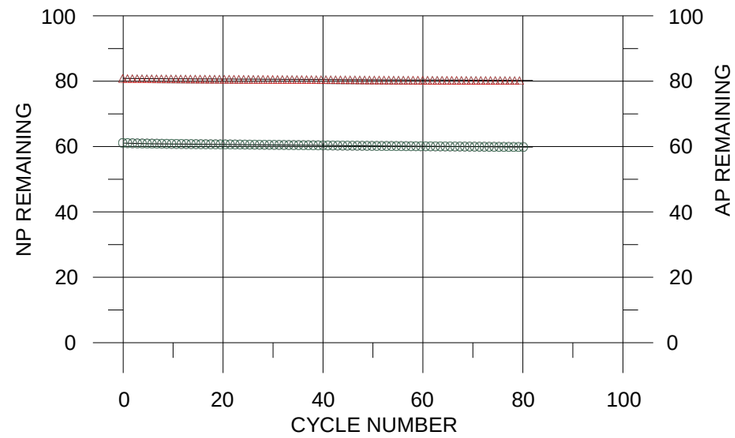
HC 7 (WZ)
VSF – METASEDIMENTS (ARENITE)



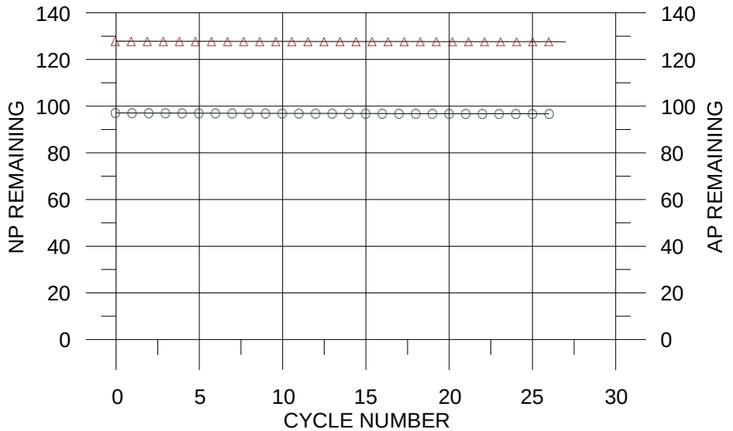
HC 12 (VOK)
VSF – METASEDIMENTS (ARENITE)



HC 13 (VOK)
VSF – METASEDIMENTS (PELITE)



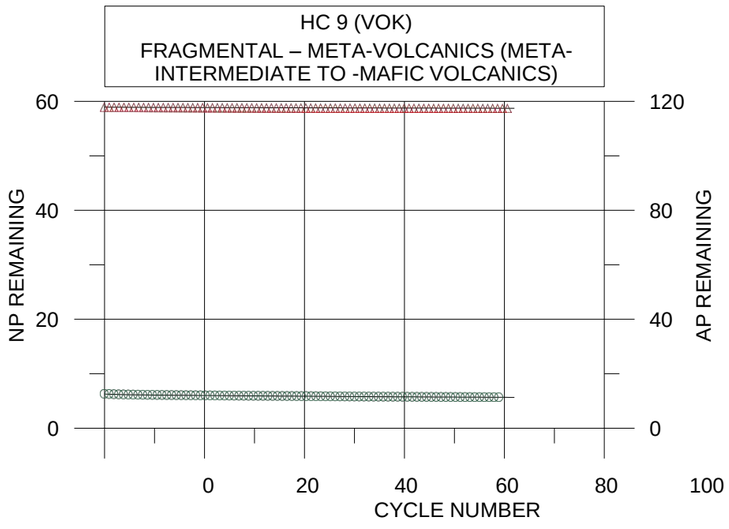
HC 20 (VOK)
VSF – METASEDIMENTS (PELITE)



LEGEND
AP REMAINING
NP REMAINING

NOTES:
1. NP = NEUTRALIZATION POTENTIAL; AP = ACIDIFYING POTENTIAL
2. EMPIRICAL OPEN SYSTEM MODEL AROUND NEUTRAL pH USED TO CALCULATE NP CONSUMPTION
3. CYCLE LENGTH = 1 WEEK
4. ALL QUANTITIES REPORTED IN kg $CaCO_3$/t

LITHOLOGY: META-VOLCANICS

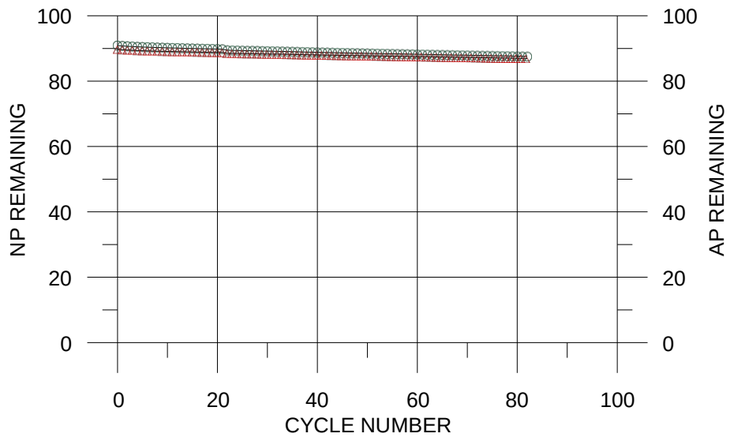


LEGEND
AP REMAINING
NP REMAINING

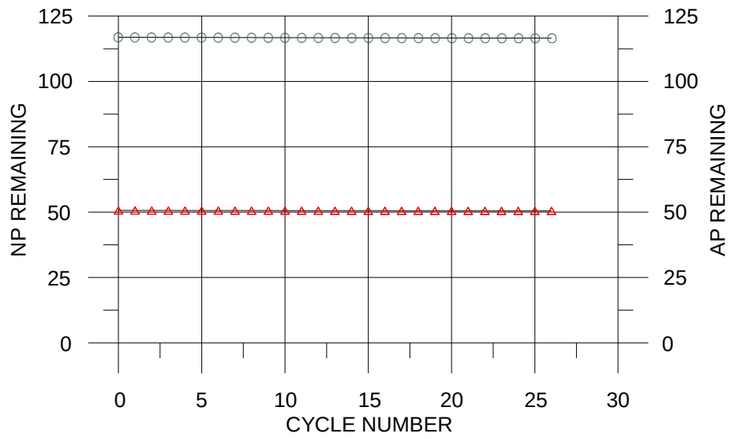
NOTES:
1. NP = NEUTRALIZATION POTENTIAL; AP = ACIDIFYING POTENTIAL
2. EMPIRICAL OPEN SYSTEM MODEL AROUND NEUTRAL pH USED TO CALCULATE NP CONSUMPTION
3. CYCLE LENGTH = 1 WEEK
4. ALL QUANTITIES REPORTED IN kg $CaCO_3$/t

LITHOLOGY: PORPHYRY

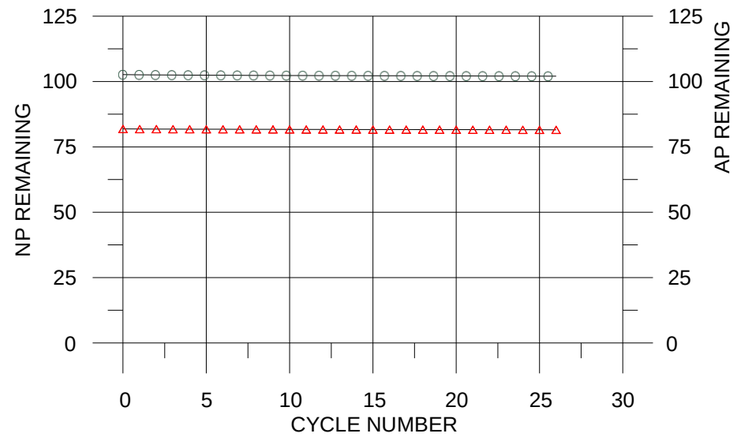
HC 19 (GH)
CONGLOMERATE – PORPHYRY (KSP-HBL-PORPHYRY)



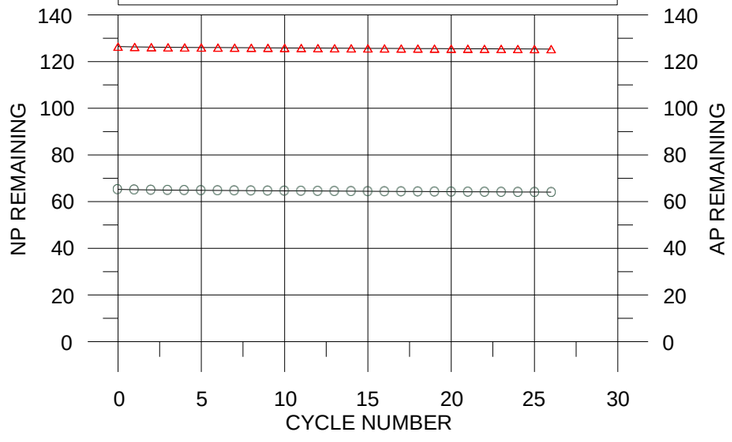
HC 27 (VOK)
OFFICE P1 – PORPHYRY (PLAG-HBL-PORPHYRY)



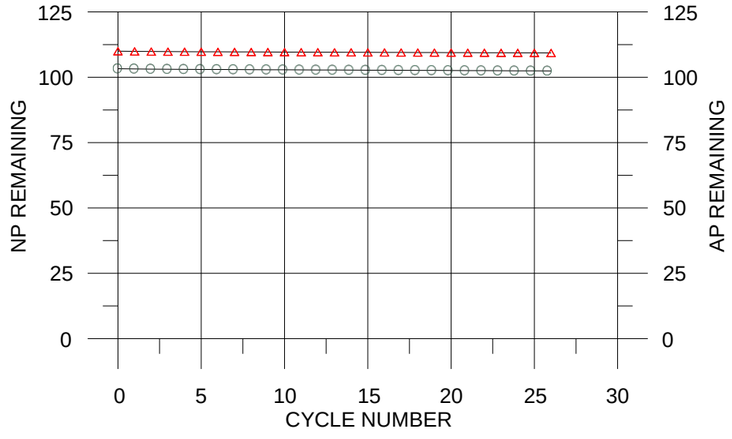
HC 28 (VOK)
BRIDGE P1 – PORHYRY (PLAG-HBL-PORPH)



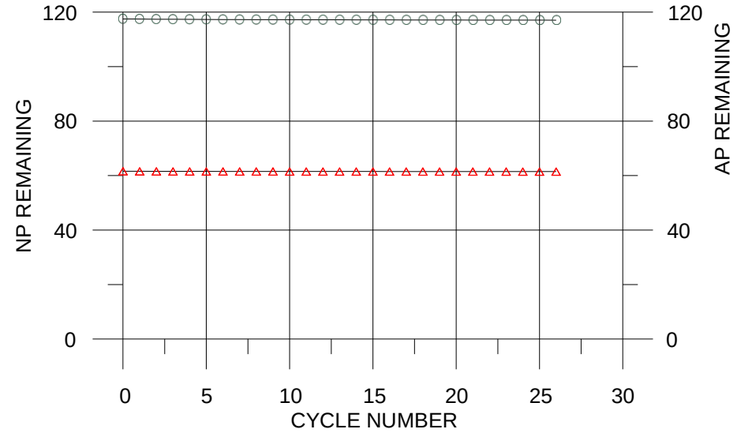
HC 30 (WZ)
P2/FRAGMENTAL – PORPHYRY (PLAG-HBL-PORPHYRY)



HC 34 (WZ)
P2 – PORPHYRY (PLAG-HBL-PORPHYRY)



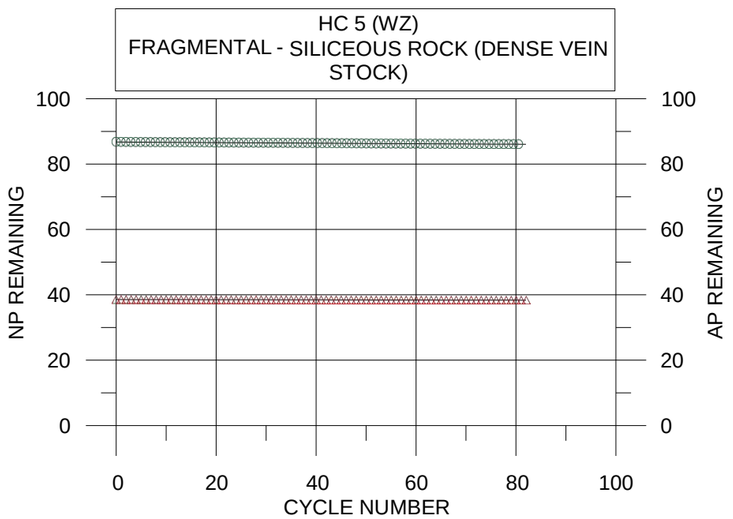
HC 35 (VOK)
BRIDGE P1 – PORHYRY (PLAG-HBL-PORPHYRY)

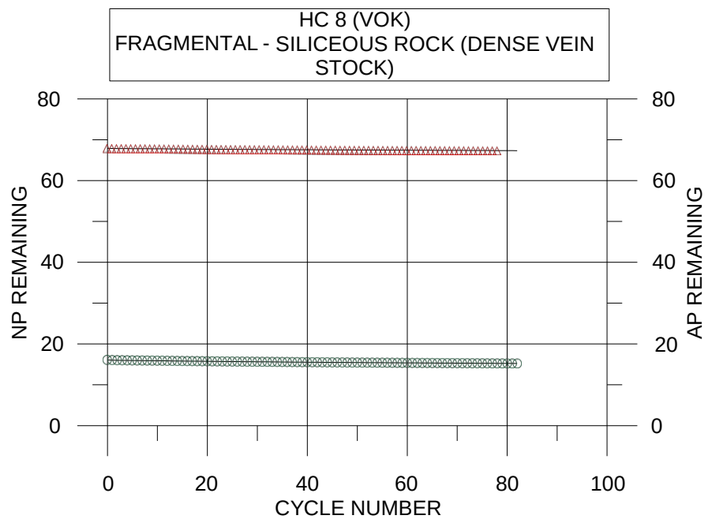


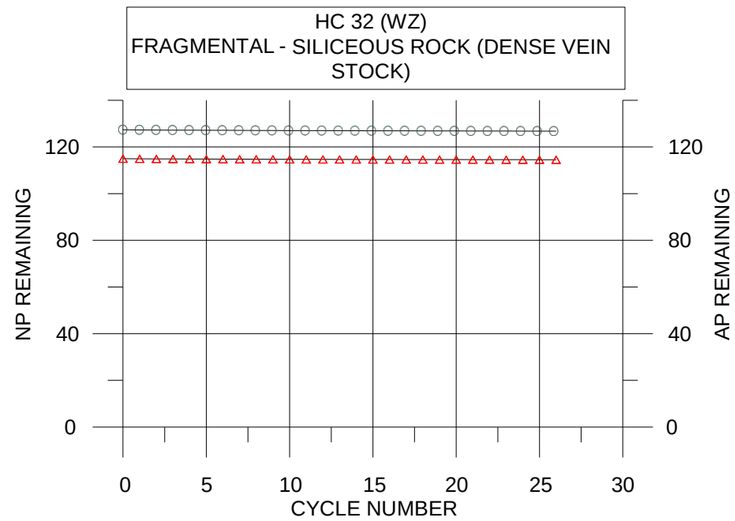
LEGEND
AP REMAINING
NP REMAINING

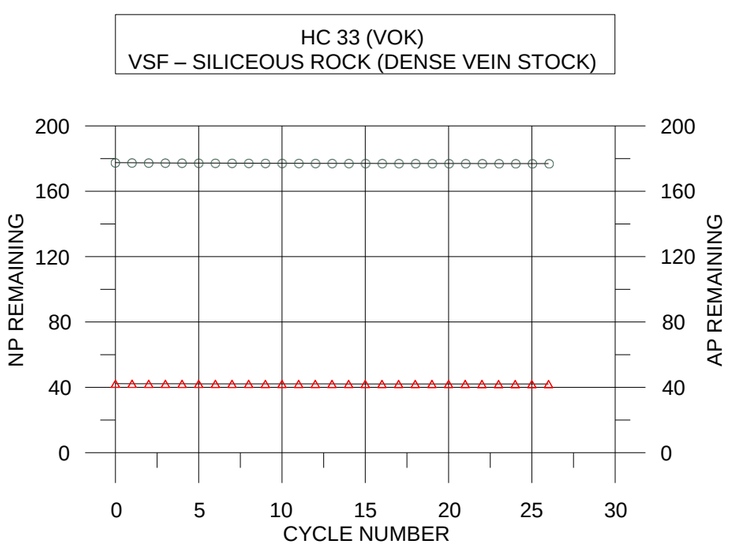
NOTES:
1. NP = NEUTRALIZATION POTENTIAL; AP = ACIDIFYING POTENTIAL
2. EMPIRICAL OPEN SYSTEM MODEL AROUND NEUTRAL pH USED TO CALCULATE NP CONSUMPTION
3. CYCLE LENGTH = 1 WEEK
4. ALL QUANTITIES REPORTED IN kg $CaCO_3$/t

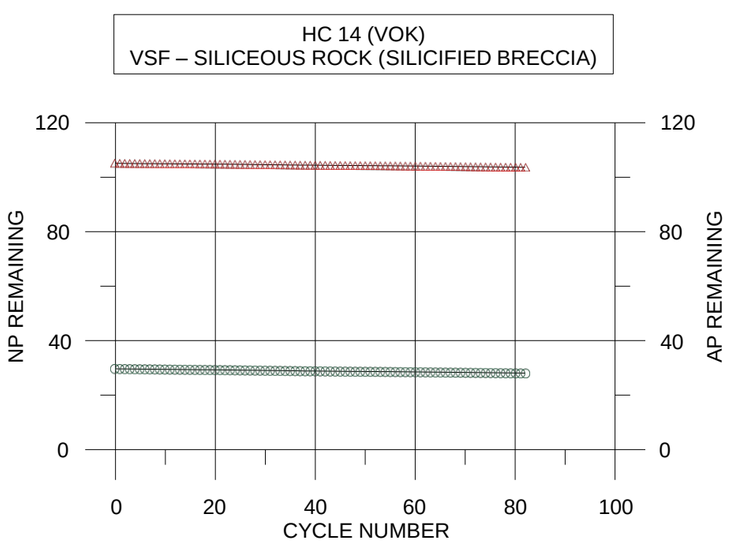
LITHOLOGY: SILICEOUS ROCK

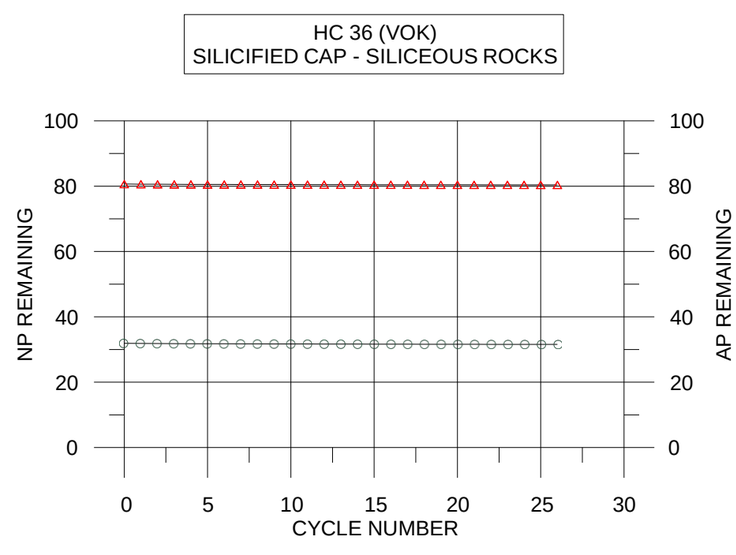


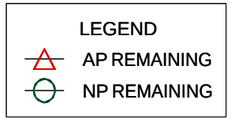






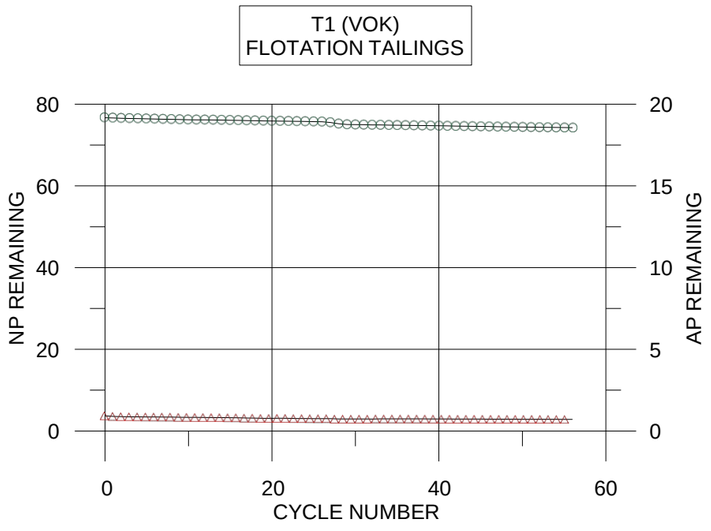


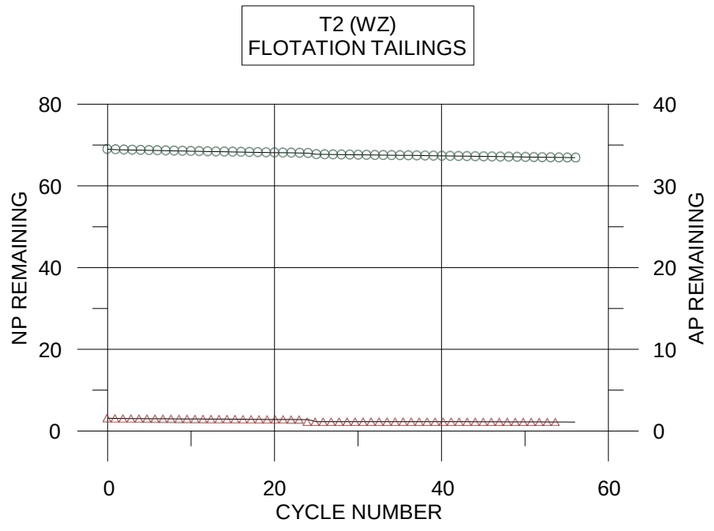


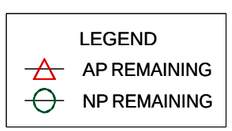


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4. ALL QUANTITIES REPORTED IN kg $CaCO_3$/t

LITHOLOGY: TAILINGS



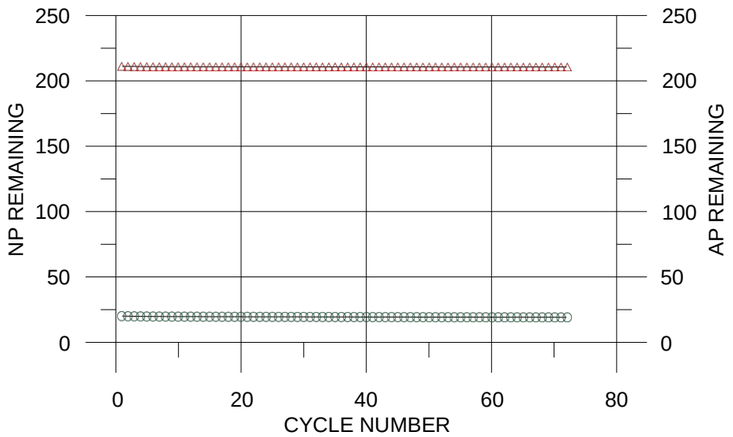




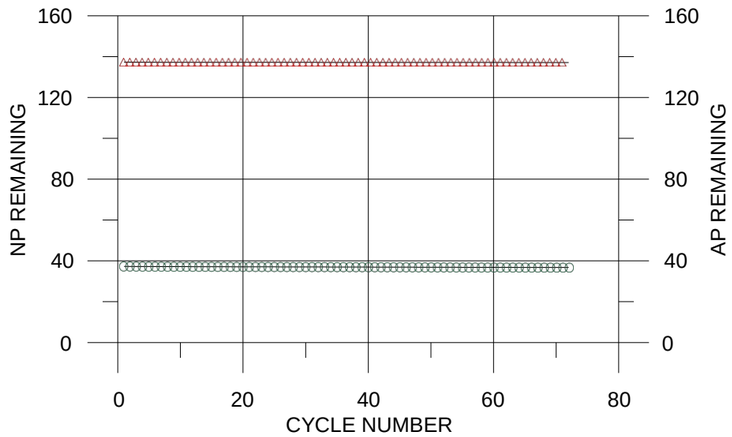
NOTES:
1. NP = NEUTRALIZATION POTENTIAL; AP = ACIDIFYING POTENTIAL
2. EMPIRICAL OPEN SYSTEM MODEL AROUND NEUTRAL pH USED TO CALCULATE NP CONSUMPTION
3. CYCLE LENGTH = 1 WEEK
4. ALL QUANTITIES REPORTED IN kg $CaCO_3$/t

COLUMN TESTS

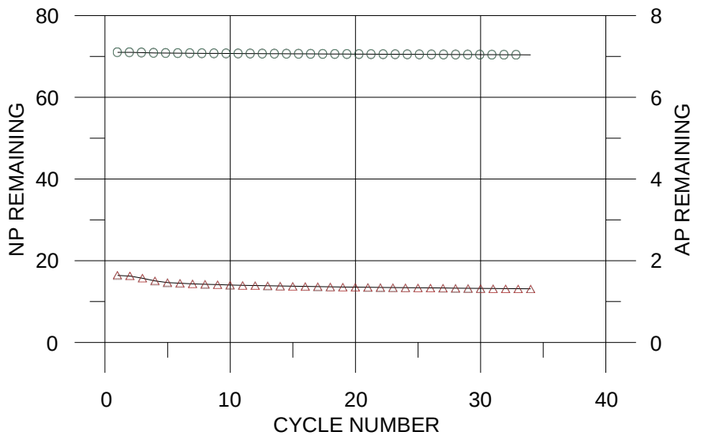
COLUMN 1 (GH/VOK/WZ)
FRAGMENTAL – ANDESITE [WASTE ROCK]



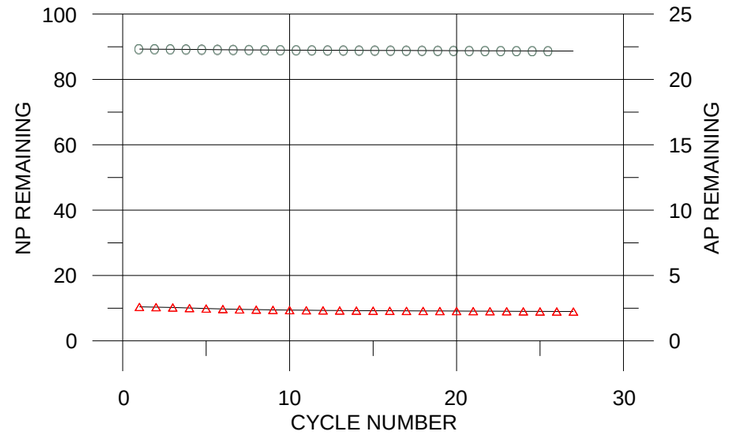
COLUMN 2 (VOK)
VSF – FELSIC VOLCANICS [WASTE ROCK]



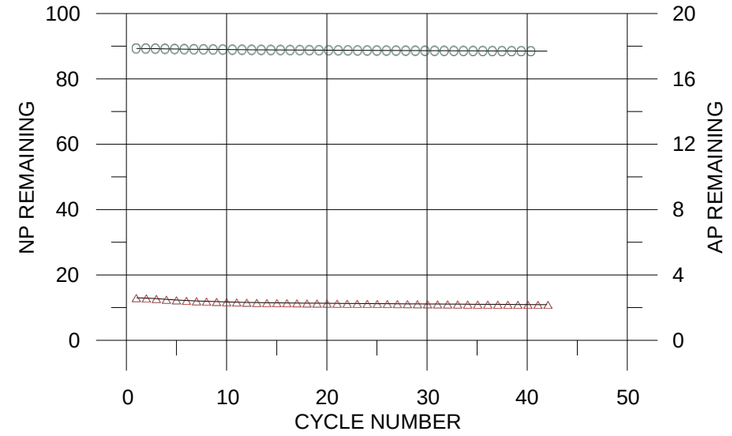
COLUMN 3 (WZ/VOK)
TAILINGS CAKE



COLUMN 4
TAILINGS, UNSEALED



COLUMN 5
TAILINGS, SEALED



LEGEND
AP REMAINING
NP REMAINING

NOTES:
1. NP = NEUTRALIZATION POTENTIAL; AP = ACIDIFYING POTENTIAL
2. EMPIRICAL OPEN SYSTEM MODEL AROUND NEUTRAL pH USED TO CALCULATE NP CONSUMPTION
3. CYCLE LENGTH = 1 WEEK
4. ALL QUANTITIES REPORTED IN kg $CaCO_3$/t

APPENDIX G
KINETIC TEST RAW DATA

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
21-Feb-13	0	500	420	8.21	298	452	#N/A	5.6	40.6	175	21.3	0.166	0.0044	0.0033	0.0417	< 0.00002	< 0.00001	0.0211	0.000012	7.15	< 0.0005	0.000234
26-Feb-13	1	500	450	8.61	297	302	#N/A	0	52.2	97	9.41	0.418	0.0053	0.0051	0.0157	< 0.00002	< 0.00001	0.0252	< 0.000003	3.06	< 0.0005	0.000237
5-Mar-13	2	500	465	8.63	333	189	#N/A	0	52.2	48	6.45	0.380	0.0081	0.0040	0.00995	< 0.00002	< 0.00001	0.0269	< 0.000003	2.14	< 0.0005	0.000143
12-Mar-13	3	500	445	8.76	300	157	#N/A	0	42.3	42	7.05	0.206	0.0051	0.0030	0.00530	< 0.00002	< 0.00001	0.0210	< 0.000003	2.30	< 0.0005	0.000012
19-Mar-13	4	500	445	8.12	349	140	#N/A	4.7	34.9	35	8.67	0.270	0.0040	0.0022	0.00923	< 0.00002	< 0.00001	0.0212	0.000003	2.74	< 0.0005	0.000073
26-Mar-13	5	500	450	8.35	347	124																
2-Apr-13	6	500	440	8.07	349	118	#N/A	3.4	29.7	31	16.3	0.237	0.0034	0.0018	0.0110	< 0.00002	< 0.00001	0.0204	0.000009	4.79	< 0.0005	0.000364
9-Apr-13	7	500	450	8.03	377	105																
16-Apr-13	8	500	455	7.85	368	93	#N/A	3.9	23.1	28	20.7	0.172	0.0029	0.0016	0.0124	< 0.00002	< 0.00001	0.0144	0.000006	6.18	< 0.0005	0.000052
23-Apr-13	9	500	440	7.89	363	106																
30-Apr-13	10	500	460	7.72	382	85	#N/A	3.6	21.5	25	25.4	0.110	0.0022	0.0007	0.0105	< 0.00002	< 0.00001	0.0130	0.000005	7.90	< 0.0005	0.000036
7-May-13	11	500	465	7.80	372	77	#N/A	5.8	21.7	24	24.9	0.0926	0.0019	0.0006	0.00949	< 0.00002	< 0.00001	0.0107	0.000013	7.65	< 0.0005	0.000064
14-May-13	12	500	520	7.75	387	75	#N/A	4.1	22.8	19	25.9	0.0662	0.0022	0.0009	0.0109	< 0.00002	< 0.00001	0.0117	0.000009	8.34	< 0.0005	0.000141
21-May-13	13	500	470	7.68	396	74	#N/A	3.7	18.3	22	25.7	0.0956	0.0018	0.0006	0.0104	< 0.00002	< 0.00001	0.0088	0.000011	8.23	< 0.0005	0.000042
28-May-13	14	500	470	7.72	389	72	#N/A	3.0	18.3	18	27.5	0.0672	0.0017	0.0005	0.00857	< 0.00002	< 0.00001	0.0093	0.000013	8.81	< 0.0005	0.000025
4-Jun-13	15	500	485	7.67	404.78	72.76	#N/A	4.78	20.95	18	26.8	0.0647	0.0016	0.0006	0.00848	< 0.00002	< 0.00001	0.01	0.000004	8.61	< 0.0005	0.000078
11-Jun-13	16	500	430	7.7	373.04	72.42	#N/A	6.94	21.03	19	25.5	0.0803	0.0014	0.0004	0.00831	< 0.00002	< 0.00001	0.0091	0.00001	8.11	< 0.0005	0.00002
18-Jun-13	17	500	440	7.58	346.67	70.53	#N/A	4.57	15.59	20	25.1	0.0805	0.0016	0.001	0.00776	< 0.00002	< 0.00001	0.01	0.000011	7.89	< 0.0005	0.000075
25-Jun-13	18	500	510	7.57	396.48	74.86	#N/A	3.88	20.2	22	27.9	0.0567	0.0016	0.0009	0.0082	< 0.00002	< 0.00001	0.0097	0.000011	8.87	< 0.0005	0.000065
2-Jul-13	19	500	500	7.45	425.29	75.14	#N/A	5	18.06	16	27.5	0.0587	0.0016	0.0009	0.00822	< 0.00002	< 0.00001	0.0095	0.000015	8.95	< 0.0005	0.000028
9-Jul-13	20	500	505	7.6	297.36	75.02	#N/A	5.91	20.31	18	30.3	0.0607	0.0015	0.0004	0.00892	< 0.00002	< 0.00001	0.0092	0.000013	9.76	< 0.0005	0.000171
16-Jul-13	21	500	500	7.45	390.62	80.44	#N/A	3.68	16.04	21	31.2	0.0436	0.0014	0.0006	0.0085	< 0.00002	< 0.00001	0.0092	0.000023	10.1	< 0.0005	0.000058
23-Jul-13	22	500	440	7.6	408.2	71.68	#N/A	5.91	16.96	23	28.8	0.122	0.0014	0.0005	0.0103	< 0.00002	< 0.00001	0.0085	0.000008	9.02	< 0.0005	0.000045
30-Jul-13	23	500	440	7.43	405.76	67.68	#N/A	3.75	14.65	18	27.3	0.102	0.0012	0.0005	0.00818	< 0.00002	< 0.00001	0.0086	0.000015	8.67	< 0.0005	0.000011
6-Aug-13	24	500	465	7.68	378.41	75.45	#N/A	6.28	18.01	16	29.4	0.0908	0.0014	0.0003	0.0088	0.00003	< 0.00001	0.01	0.000153	9.36	< 0.0005	0.000167
13-Aug-13	25	500	470	7.41	397	63	#N/A	2.8	14.2	16	25.9	0.0486	0.0013	0.0012	0.00667	< 0.00002	< 0.00001	0.0094	0.000015	8.28	< 0.0005	0.00005
20-Aug-13	26	500	490	7.52	394	77	#N/A	2.5	15.5	18												
27-Aug-13	27	500	505	7.59	387	63	#N/A	2.46	16.99													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0005	< 0.003	0.00007	0.096	0.851	0.0068	< 0.01	0.00426	0.0002	0.010	9.28	0.00098	1.11	< 0.00001	76.4	0.277	57.2	0.00003	0.00141	0.0003	0.000451	0.00110	< 0.001	0.00001
26-Feb-13	1	0.0005	0.010	0.00037	0.089	0.430	0.0046	< 0.01	0.00499	0.0001	< 0.009	4.40	0.00139	1.39	0.00003	51.3	0.112	37.1	0.00002	0.00029	0.0008	0.00128	0.00180	< 0.001	0.00003
5-Mar-13	2	< 0.0005	0.010	0.00029	0.066	0.266	0.0058	< 0.01	0.00384	0.0001	< 0.009	2.93	0.00111	1.17	0.00001	35.2	0.0605	17.4	< 0.00002	0.00021	0.0010	0.00128	0.00152	< 0.001	0.00004
12-Mar-13	3	< 0.0005	0.004	0.00004	0.048	0.319	0.0048	< 0.01	0.00246	< 0.0001	< 0.009	3.35	0.00090	1.04	< 0.00001	27.7	0.0659	13.1	< 0.00002	0.00015	0.0001	0.00127	0.00127	< 0.001	< 0.00001
19-Mar-13	4	< 0.0005	0.014	0.00036	0.047	0.442	0.0086	< 0.01	0.00189	< 0.0001	< 0.009	3.10	0.00054	1.01	< 0.00001	21.8	0.0806	11.4	< 0.00002	0.00010	0.0008	0.00140	0.00109	< 0.001	0.00002
26-Mar-13	5																								
2-Apr-13	6	0.0006	0.008	0.00021	0.038	1.05	0.0143	< 0.01	0.00166	0.0005	< 0.009	4.28	0.00016	1.04	0.00001	16.2	0.155	10.5	0.00003	0.00007	0.0007	0.00143	0.00096	< 0.001	< 0.00001
9-Apr-13	7																								
16-Apr-13	8	< 0.0005	0.011	0.00019	0.022	1.28	0.0177	< 0.01	0.00122	< 0.0001	< 0.009	3.75	0.00007	0.96	< 0.00001	7.77	0.185	8.17	< 0.00002	0.00005	0.0004	0.000998	0.00069	< 0.001	0.00001
23-Apr-13	9																								
30-Apr-13	10	< 0.0005	0.006	0.00012	0.015	1.38	0.0366	< 0.01	0.00109	< 0.0001	< 0.009	3.13	0.00014	0.83	< 0.00001	4.14	0.204	7.32	< 0.00002	0.00004	0.0005	0.00124	0.00053	< 0.001	< 0.00001
7-May-13	11	< 0.0005	0.006	0.00018	0.012	1.40	0.0375	< 0.01	0.00095	< 0.0001	< 0.009	3.26	0.00017	0.72	< 0.00001	3.38	0.208	7.26	< 0.00002	0.00002	0.0003	0.00107	0.00048	< 0.001	< 0.00001
14-May-13	12	< 0.0005	< 0.003	0.00003	0.009	1.23	0.0433	< 0.01	0.00083	< 0.0001	< 0.009	2.90	0.00013	0.76	< 0.00001	2.46	0.192	5.79	< 0.00002	0.00002	< 0.0001	0.000993	0.00038	< 0.001	< 0.00001
21-May-13	13	< 0.0005	0.012	0.00027	0.008	1.25	0.0462	< 0.01	0.00079	< 0.0001	< 0.009	2.88	0.00013	0.71	< 0.00001	2.08	0.195	6.36	< 0.00002	0.00002	0.0004	0.000815	0.00038	0.001	< 0.00001
28-May-13	14	< 0.0005	< 0.003	0.00003	0.008	1.34	0.0483	0.02	0.00073	< 0.0001	< 0.009	2.95	0.00009	0.6	< 0.00001	2.04	0.204	6.06	< 0.00002	0.00004	< 0.0001	0.000792	0.00033	< 0.001	< 0.00001
4-Jun-13	15	< 0.0005	< 0.003	0.00006	0.007	1.29	0.0502	< 0.01	0.00077	< 0.0001	< 0.009	2.79	0.00011	0.7	< 0.00001	1.63	0.19	5.52	< 0.00002	0.00003	< 0.0001	0.000814	0.00035	< 0.001	< 0.00001
11-Jun-13	16	< 0.0005	< 0.003	0.00005	0.006	1.28	0.0413	0.01	0.00081	0.0001	< 0.009	2.6	0.00015	0.57	< 0.00001	1.49	0.187	6.45	< 0.00002	0.00003	0.0002	0.000783	0.00031	< 0.001	< 0.00001
18-Jun-13	17	< 0.0005	0.005	0.00007	0.006	1.3	0.0419	< 0.01	0.00074	0.0001	< 0.009	2.72	0.00014	0.63	< 0.00001	1.4	0.18	5.68	< 0.00002	0.00006	0.0002	0.000797	0.00035	< 0.001	< 0.00001
25-Jun-13	18	< 0.0005	0.003	0.00012	0.005	1.4	0.0578	0.01	0.00085	0.0002	0.013	2.47	0.00014	0.29	< 0.00001	1.09	0.197	6.02	< 0.00002	0.00006	< 0.0001	0.000906	0.00032	< 0.001	< 0.00001
2-Jul-13	19	< 0.0005	< 0.003	0.00004	0.005	1.24	0.0622	0.01	0.00074	0.0001	< 0.009	2.39	0.00014	0.61	< 0.00001	0.91	0.182	5.88	< 0.00002	0.00002	< 0.0001	0.000845	0.00038	< 0.001	< 0.00001
9-Jul-13	20	0.0006	0.005	0.00014	0.005	1.44	0.0676	< 0.01	0.00077	0.0003	< 0.009	2.33	0.00013	0.67	< 0.00001	0.87	0.192	6.61	< 0.00002	0.00004	0.0002	0.000964	0.00029	0.001	0.00001
16-Jul-13	21	< 0.0005	0.005	0.00011	0.004	1.45	0.0725	< 0.01	0.00077	0.0003	< 0.009	2.31	0.00013	0.55	< 0.00001	0.76	0.199	6.83	< 0.00002	0.00002	< 0.0001	0.000927	0.00024	0.002	< 0.00001
23-Jul-13	22	< 0.0005	0.035	0.00019	0.004	1.52	0.0528	< 0.01	0.0008	< 0.0001	< 0.009	2.3	0.00014	0.64	< 0.00001	0.74	0.186	7.01	< 0.00002	0.0001	0.0007	0.000853	0.00038	0.002	0.00002
30-Jul-13	23	< 0.0005	0.005	0.00014	0.004	1.38	0.0523	< 0.01	0.0007	< 0.0001	< 0.009	2.09	0.00015	0.59	< 0.00001	0.59	0.175	6	< 0.00002	0.00002	0.0003	0.000837	0.00028	< 0.001	0.00001
6-Aug-13	24	0.0009	0.004	0.00022	0.004	1.45	0.0526	< 0.01	0.00081	0.0002	< 0.009	2.32	0.00014	0.68	< 0.00001	0.59	0.19	6.6	< 0.00002	0.00001	0.0002	0.001031	0.00034	0.007	< 0.00001
13-Aug-13	25	0.0808	< 0.003	0.00004	0.003	1.27	0.0548	< 0.01	0.00069	0.0002	< 0.009	1.83	0.00014	0.55	< 0.00001	0.47	0.159	4.89	< 0.00002	0.00004	< 0.0001	0.000707	0.00021	0.036	< 0.00001
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
21-Feb-13	0	500	405	9.13	204	276	#N/A	0.0	80.4	64	4.68	0.442	0.0062	0.0194	0.0167	< 0.00002	< 0.00001	0.0202	0.000010	1.71	< 0.0005	0.000232
26-Feb-13	1	500	490	8.82	286	216	#N/A	0.0	79.0	37	4.39	0.400	0.0101	0.0254	0.00695	< 0.00002	< 0.00001	0.0193	< 0.000003	1.61	< 0.0005	0.000054
05-Mar-13	2	500	495	8.94	301	182	#N/A	0.0	74.7	25	3.69	0.439	0.0105	0.0280	0.00827	< 0.00002	< 0.00001	0.0178	< 0.000003	1.33	< 0.0005	0.000121
12-Mar-13	3	500	475	9.01	290	144	#N/A	0.0	52.0	22	4.68	0.386	0.0057	0.0278	0.0101	< 0.00002	< 0.00001	0.0117	< 0.000003	1.70	< 0.0005	0.000057
19-Mar-13	4	500	445	8.41	322	122	#N/A	0.0	51.0	17	4.17	0.394	0.0038	0.0254	0.00589	< 0.00002	< 0.00001	0.0127	< 0.000003	1.51	< 0.0005	0.000060
26-Mar-13	5	500	460	9.10	284	108																
02-Apr-13	6	500	445	8.57	307	96	#N/A	0.0	41.0	11	5.97	0.506	0.0036	0.0226	0.0136	< 0.00002	< 0.00001	0.0107	< 0.000003	2.14	< 0.0005	0.000260
09-Apr-13	7	500	445	8.82	308	79																
16-Apr-13	8	500	450	8.36	314	72	#N/A	0.0	32.5	11	6.58	0.232	0.0031	0.0166	0.00791	< 0.00002	< 0.00001	0.0077	< 0.000003	2.40	< 0.0005	0.000070
23-Apr-13	9	500	435	8.36	323	79																
30-Apr-13	10	500	440	8.02	341	59	#N/A	2.8	26.1	10	9.40	0.283	0.0023	0.0105	0.0154	< 0.00002	< 0.00001	0.0070	0.000005	3.42	< 0.0005	0.000084
07-May-13	11	500	445	7.96	352	51	#N/A	4.7	26.2	8	8.51	0.0905	0.0021	0.0085	0.00940	< 0.00002	< 0.00001	0.0062	0.000003	3.05	< 0.0005	0.000075
14-May-13	12	500	445	8.06	352	53	#N/A	3.1	24.7	7	10.4	0.261	0.0027	0.0090	0.0158	< 0.00002	< 0.00001	0.0068	< 0.000003	3.73	< 0.0005	0.000181
21-May-13	13	500	435	7.99	361	50	#N/A	2.7	23.5	7	10.4	0.136	0.0025	0.0085	0.0129	< 0.00002	< 0.00001	0.0066	< 0.000003	3.78	< 0.0005	0.000061
28-May-13	14	500	435	8.08	359	47	#N/A	2.5	21.7	7	11.8	0.205	0.0020	0.0067	0.0156	< 0.00002	< 0.00001	0.0057	< 0.000003	4.27	< 0.0005	0.000078
04-Jun-13	15	500	440	7.83	381	48	#N/A	3.9	23.4	5	12.3	0.0919	0.0020	0.0071	0.0117	< 0.00002	< 0.00001	0.0070	< 0.000003	4.39	< 0.0005	0.000092
11-Jun-13	16	500	440	7.94	355	45	#N/A	6.1	24.0	7	12.0	0.0964	0.0016	0.0059	0.0105	< 0.00002	< 0.00001	0.0054	< 0.000003	4.32	< 0.0005	0.000038
18-Jun-13	17	500	445	7.85	348	45	#N/A	3.3	20.0	7	12.2	0.111	0.0018	0.0063	0.0129	< 0.00002	< 0.00001	0.0073	< 0.000003	4.33	< 0.0005	0.000085
25-Jun-13	18	500	435	7.80	298	42	#N/A	3.3	20.2	5	12.8	0.0986	0.0018	0.0059	0.0123	< 0.00002	< 0.00001	0.0065	< 0.000003	4.54	< 0.0005	0.000083
02-Jul-13	19	500	440	7.71	391	46	#N/A	4.7	20.2	7	13.3	0.105	0.0018	0.0065	0.0128	< 0.00002	< 0.00001	0.0080	0.000005	4.74	< 0.0005	0.000058
09-Jul-13	20	500	440	7.71	295	43	#N/A	5.2	21.4	5	14.0	0.0848	0.0017	0.0062	0.0130	< 0.00002	< 0.00001	0.0062	0.000004	4.98	< 0.0005	0.000230
16-Jul-13	21	500	435	7.63	367	44	#N/A	3.0	16.9	4	13.6	0.0665	0.0017	0.0075	0.0109	< 0.00002	< 0.00001	0.0055	< 0.000003	4.82	< 0.0005	0.000030
23-Jul-13	22	500	440	7.69	397	40	#N/A	5.2	18.1	6	13.6	0.126	0.0016	0.0075	0.0125	< 0.00002	< 0.00001	0.0061	0.000003	4.83	< 0.0005	0.000065
30-Jul-13	23	500	430	7.54	380	38	#N/A	3.4	15.6	5	13.7	0.0529	0.0014	0.0052	0.0101	< 0.00002	< 0.00001	0.0057	< 0.000003	4.90	< 0.0005	0.000032
06-Aug-13	24	500	445	7.83	359	39	#N/A	5.7	18.1	6	13.6	0.0912	0.0015	0.0060	0.0120	< 0.00002	< 0.00001	0.0060	0.000026	4.83	< 0.0005	0.000110
13-Aug-13	25	500	450	7.54	370	39	#N/A	3.5	15.0	7	13.9	0.224	0.0015	0.0059	0.0163	< 0.00002	< 0.00001	0.0064	0.000006	4.94	< 0.0005	0.000105
20-Aug-13	26	500	435	7.57	380	40	#N/A	2.6	15.0	5												
27-Aug-13	27	500	440	7.67	371	35	#N/A	2.1	14.9													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0049	0.021	0.00080	0.068	0.101	0.0034	< 0.01	0.00963	0.0002	0.083	7.67	0.00485	1.68	0.00239	54.2	0.0578	20.1	0.00008	0.00005	0.0021	0.000867	0.00330	0.002	0.00005
26-Feb-13	1	< 0.0005	0.004	0.00030	0.059	0.092	0.0024	< 0.01	0.0102	< 0.0001	< 0.009	4.15	0.00703	1.76	0.00002	37.1	0.0465	15.3	0.00006	< 0.00001	0.0005	0.00318	0.00230	< 0.001	< 0.00001
05-Mar-13	2	< 0.0005	0.008	0.00045	0.053	0.089	0.0024	< 0.01	0.00639	< 0.0001	< 0.009	4.12	0.00515	1.67	0.00002	35.0	0.0413	9.55	0.00006	< 0.00001	0.0008	0.00432	0.00224	< 0.001	0.00001
12-Mar-13	3	< 0.0005	0.019	0.00091	0.039	0.102	0.0040	0.30	0.00376	< 0.0001	0.011	3.97	0.00369	1.70	0.00002	28.6	0.0463	7.57	0.00005	< 0.00001	0.0008	0.00345	0.00200	< 0.001	0.00001
19-Mar-13	4	0.0007	0.007	0.00035	0.038	0.095	0.0018	< 0.01	0.00247	< 0.0001	< 0.009	3.59	0.00289	1.75	< 0.00001	22.3	0.0407	5.63	0.00004	0.00009	0.0004	0.00294	0.00190	< 0.001	0.00002
26-Mar-13	5																								
02-Apr-13	6	0.0006	0.028	0.00099	0.031	0.149	0.0047	< 0.01	0.00212	0.0002	0.009	3.97	0.00156	1.59	0.00002	17.4	0.0604	4.08	0.00006	< 0.00001	0.0016	0.00286	0.00169	< 0.001	0.00012
09-Apr-13	7																								
16-Apr-13	8	< 0.0005	0.013	0.00057	0.021	0.144	0.0047	< 0.01	0.00162	0.0002	< 0.009	3.63	0.00108	1.13	< 0.00001	10.7	0.0615	2.94	0.00004	0.00001	0.0005	0.00211	0.00104	< 0.001	< 0.00001
23-Apr-13	9																								
30-Apr-13	10	0.0005	0.026	0.00110	0.016	0.212	0.0113	< 0.01	0.00145	< 0.0001	< 0.009	3.91	0.00098	1.19	< 0.00001	6.58	0.0901	2.49	0.00005	0.00003	0.0015	0.00148	0.00094	0.001	0.00003
07-May-13	11	0.0006	0.012	0.00063	0.014	0.218	0.0177	< 0.01	0.00147	< 0.0001	< 0.009	4.00	0.00083	0.73	< 0.00001	5.16	0.0944	2.15	0.00004	< 0.00001	0.0002	0.00142	0.00057	< 0.001	< 0.00001
14-May-13	12	< 0.0005	0.019	0.00087	0.013	0.256	0.0127	< 0.01	0.00117	< 0.0001	< 0.009	4.53	0.00082	1.10	< 0.00001	4.30	0.109	1.67	0.00005	< 0.00001	0.0011	0.00139	0.00071	< 0.001	0.00003
21-May-13	13	< 0.0005	0.012	0.00068	0.012	0.245	0.0105	0.01	0.00126	< 0.0001	< 0.009	4.25	0.00076	0.81	< 0.00001	3.20	0.109	1.64	0.00005	< 0.00001	0.0003	0.00121	0.00059	< 0.001	0.00002
28-May-13	14	< 0.0005	0.026	0.00116	0.011	0.282	0.0120	< 0.01	0.00113	< 0.0001	< 0.009	4.37	0.00083	0.72	< 0.00001	2.66	0.121	1.47	0.00005	0.00002	0.0008	0.00110	0.00057	< 0.001	< 0.00001
04-Jun-13	15	< 0.0005	0.007	0.00037	0.010	0.326	0.0135	< 0.01	0.00112	< 0.0001	< 0.009	4.57	0.00078	0.77	< 0.00001	2.34	0.133	1.61	0.00004	0.00003	0.0001	0.00115	0.00045	< 0.001	< 0.00001
11-Jun-13	16	< 0.0005	< 0.003	0.00034	0.008	0.306	0.0146	< 0.01	0.00102	< 0.0001	< 0.009	3.85	0.00068	0.61	0.00001	1.75	0.126	1.71	0.00002	0.00002	0.0002	0.00101	0.00036	< 0.001	< 0.00001
18-Jun-13	17	< 0.0005	0.008	0.00046	0.008	0.331	0.0170	< 0.01	0.00101	< 0.0001	< 0.009	4.02	0.00078	0.73	< 0.00001	1.49	0.133	1.65	0.00004	0.00004	0.0003	0.000907	0.00043	< 0.001	< 0.00001
25-Jun-13	18	< 0.0005	0.008	0.00050	0.007	0.346	0.0158	< 0.01	0.00104	< 0.0001	< 0.009	3.88	0.00094	0.25	< 0.00001	1.18	0.143	1.47	0.00004	0.00002	0.0003	0.000893	0.00037	< 0.001	< 0.00001
02-Jul-13	19	< 0.0005	0.008	0.00067	0.007	0.363	0.0192	< 0.01	0.00102	0.0002	< 0.009	4.07	0.00079	0.61	< 0.00001	0.99	0.150	1.62	0.00004	0.00005	0.0003	0.000911	0.00041	< 0.001	< 0.00001
09-Jul-13	20	0.0007	0.009	0.00067	0.006	0.382	0.0241	< 0.01	0.00103	0.0002	< 0.009	3.79	0.00080	0.63	< 0.00001	0.84	0.151	1.79	0.00004	0.00001	0.0003	0.000907	0.00037	< 0.001	< 0.00001
16-Jul-13	21	< 0.0005	< 0.003	0.00025	0.005	0.388	0.0168	< 0.01	0.00110	0.0001	0.009	3.57	0.00089	0.54	< 0.00001	0.73	0.153	1.44	0.00003	0.00006	0.0001	0.000832	0.00030	< 0.001	< 0.00001
23-Jul-13	22	< 0.0005	0.009	0.00050	0.005	0.369	0.0218	< 0.01	0.00102	< 0.0001	< 0.009	3.27	0.00088	0.64	< 0.00001	0.58	0.148	1.39	0.00003	< 0.00001	0.0005	0.000793	0.00043	< 0.001	< 0.00001
30-Jul-13	23	< 0.0005	< 0.003	0.00010	0.005	0.364	0.0202	0.01	0.00094	< 0.0001	< 0.009	3.08	0.00077	0.47	< 0.00001	0.51	0.142	1.34	0.00003	< 0.00001	< 0.0001	0.000708	0.00024	< 0.001	< 0.00001
06-Aug-13	24	< 0.0005	0.005	0.00049	0.005	0.365	0.0247	< 0.01	0.00100	< 0.0001	< 0.009	3.13	0.00074	0.58	< 0.00001	0.43	0.146	1.39	0.00004	0.00001	0.0002	0.000797	0.00031	0.001	< 0.00001
13-Aug-13	25	0.0008	0.015	0.00097	0.004	0.390	0.0228	< 0.01	0.00101	0.0001	< 0.009	2.92	0.00073	0.67	< 0.00001	0.37	0.150	1.36	0.00004	0.00005	0.0012	0.000748	0.00045	< 0.001	0.00001
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L	Cu mg/L
24-Jan-12	0	500	390	7.76	308	579	#N/A	4.7	58.0	246	224	0.0360	0.0263	0.0036	0.0340	< 0.00002	< 0.00001	0.0200	0.000035	85.1	< 0.0005	0.00598	0.0010
31-Jan-12	1	500	460	7.50	294	499	#N/A	3.4	26.3	219	209	0.0364	0.0147	0.0028	0.0225	< 0.00002	< 0.00001	0.0134	0.000066	79.5	< 0.0005	0.00135	0.0007
7-Feb-12	2	500	475	7.45	334	398	#N/A	4.4	23.0	175	178	0.0411	0.0113	0.0022	0.0166	< 0.00002	< 0.00001	0.0141	0.000057	67.7	< 0.0005	0.000912	0.0009
14-Feb-12	3	500	445	7.70	353	416	#N/A	5.0	22.2	183	186	0.0323	0.0108	0.0025	0.0173	< 0.00002	< 0.00001	0.0127	0.000048	71.8	< 0.0005	0.000912	0.0006
21-Feb-12	4	500	450	7.42	355	332	#N/A	4.8	24.3	133	146	0.0280	0.0118	0.0021	0.0160	< 0.00002	< 0.00001	0.0145	0.000044	56.2	< 0.0005	0.000593	< 0.0005
28-Feb-12	5	500	460	7.59	354	251																	
6-Mar-12	6	500	440	7.62	346	256	#N/A	5.3	20.4	104	110	0.0272	0.0082	0.0014	0.0139	< 0.00002	< 0.00001	0.0116	0.000054	42.5	< 0.0005	0.000495	< 0.0005
13-Mar-12	7	500	440	7.48	343	232																	
20-Mar-12	8	500	450	7.48	304	219	#N/A	4.0	20.7	91	92.8	0.0226	0.0086	0.0019	0.0115	< 0.00002	< 0.00001	0.0117	0.000075	36.1	< 0.0005	0.000458	< 0.0005
27-Mar-12	9	500	460	7.45	315	213																	
3-Apr-12	10	500	475	7.41	328	188	#N/A	2.6	15.6	80	86.4	0.0382	0.0069	0.0016	0.0105	< 0.00002	< 0.00001	0.0100	0.000038	33.7	< 0.0005	0.000459	< 0.0005
10-Apr-12	11	500	440	7.46	317	191																	
17-Apr-12	12	500	450	7.49	317	184	#N/A	2.5	15.6	73	78.1	0.0359	0.0070	0.0013	0.0105	< 0.00002	< 0.00001	0.0113	0.000044	30.4	< 0.0005	0.000533	< 0.0005
24-Apr-12	13	500	435	7.60	345	191																	
1-May-12	14	500	435	7.60	334	179	#N/A	4.6	20.3	73	76.9	0.0348	0.0072	0.0014	0.00932	< 0.00002	< 0.00001	0.0092	0.000052	30.1	< 0.0005	0.000696	0.0011
8-May-12	15	500	445	7.59	355	170																	
15-May-12	16	500	440	7.50	287	179	#N/A	3.1	17.6	59	75.7	0.0298	0.0073	0.0018	0.00857	< 0.00002	< 0.00001	0.0106	0.000038	29.6	< 0.0005	0.000523	< 0.0005
22-May-12	17	500	450	7.50	305	176																	
29-May-12	18	500	445	7.41	312	168	#N/A	2.9	14.7	52	69.6	0.0335	0.0064	0.0016	0.00720	< 0.00002	< 0.00001	0.0091	0.000054	27.2	< 0.0005	0.000596	0.0006
5-Jun-12	19	500	445	7.41	336	166																	
12-Jun-12	20	500	445	7.46	321	148	#N/A	3.0	14.6	49	64.8	0.0347	0.0063	0.0011	0.00827	< 0.00002	< 0.00001	0.0087	0.000052	25.4	< 0.0005	0.000706	< 0.0005
19-Jun-12	21	500	445	7.42	355	158																	
26-Jun-12	22	500	4455	7.49	310	156	#N/A	3.4	15.8	53	69.1	0.0338	0.0063	0.0012	0.00778	< 0.00002	< 0.00001	0.0083	0.000047	27.1	< 0.0005	0.000872	< 0.0005
3-Jul-12	23	500	490	7.63	341	166																	
10-Jul-12	24	500	450	7.40	309	166	#N/A	3.6	16.8	58	70.9	0.0344	0.0064	0.0012	0.00812	< 0.00002	< 0.00001	0.0078	0.000102	27.9	< 0.0005	0.000722	< 0.0005
17-Jul-12	25	500	450	7.40	351	170																	
24-Jul-12	26	500	460	7.28	326	168	#N/A	2.4	15.2	56	69.8	0.0393	0.0061	0.0013	0.00792	< 0.00002	< 0.00001	0.0077	0.000091	27.5	< 0.0005	0.000723	< 0.0005
31-Jul-12	27	500	425	7.31	221	29																	
7-Aug-12	28	500	460	7.44	312	152	#N/A	2.6	15.2	52	66.4	0.0584	0.0061	0.0009	0.00880	< 0.00002	< 0.00001	0.0072	0.000074	26.2	< 0.0005	0.000853	0.0144
14-Aug-12	29	500	445	7.54	273	254																	
21-Aug-12	30	500	465	7.34	288	149	#N/A	2.7	15.1	52	64.1	0.0402	0.0070	0.0008	0.0073	< 0.00002	< 0.00001	0.0069	0.000108	25.3	< 0.0005	0.00067	< 0.0005
28-Aug-12	31	500	475	7.30	305	150																	
4-Sep-12	32	500	465	7.24	356	134	#N/A	3.5	13.4	45	57.6	0.0549	0.0046	0.0008	0.00663	< 0.00002	< 0.00001	0.0049	0.000088	22.7	< 0.0005	0.000695	< 0.0005
11-Sep-12	33	500	490	7.38	350	167																	
18-Sep-12	34	500	435	7.22	339	149	#N/A	2.7	14.9	54	63.2	0.0328	0.0047	0.0009	0.00713	< 0.00002	< 0.00001	0.0054	0.000119	25.0	< 0.0005	0.000899	0.0036
25-Sep-12	35	500	450	7.51	370	190																	
2-Oct-12	36	500	445	7.21	366	139	#N/A	3.0	14.6	51	57.9	0.0175	0.0046	0.0008	0.0057	< 0.00002	< 0.00001	0.0052	0.000116	22.9	< 0.0005	0.000911	< 0.0005
9-Oct-12	37	500	475	7.59	365	210																	
16-Oct-12	38	500	480	7.15	369	138	#N/A	2.7	14.1	54	58.3	0.0183	0.0039	0.0008	0.00528	< 0.00002	< 0.00001	0.0040	0.000098	23.1	< 0.0005	0.000649	< 0.0005
23-Oct-12	39	500	465	7.52	380	195																	
30-Oct-12	40	500	465	7.28	348	152	#N/A	2.9	16.7	56	68.2	0.0358	0.0047	0.0010	0.00630	< 0.00002	< 0.00001	0.0048	0.000146	27.0	< 0.0005	0.000867	< 0.0005
6-Nov-12	41	500	465	7.82	405	130																	
13-Nov-12	42	500	460	7.51	346	152	#N/A	5.2	15.4	57	69.6	0.0234	0.0038	0.0007	0.00572	< 0.00002	< 0.00001	0.0039	0.000128	27.6	< 0.0005	0.000989	< 0.0005
20-Nov-12	43	500	490	7.91	420	140																	
27-Nov-12	44	500	495	7.40	325	150	#N/A	4.8	20.1	57	67.2	0.0194	0.0054	0.0017	0.00599	< 0.00002	< 0.00001	0.0033	0.000132	26.6	< 0.0005	0.00105	< 0.0005
4-Dec-12	45	500	485	7.89	425	120																	
11-Dec-12	46	500	520	7.43	318	126	#N/A	2.3	14.4	46	52.1	0.0112	0.0043	0.0006	0.00621	< 0.00002	< 0.00001	0.0042	0.000106	20.7	< 0.0005	0.000625	0.0019
18-Dec-12	47	500	490	7.48	336	126																	

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
25-Dec-12	48	500	485	7.60	357	90	#N/A	3.9	16.6	29	41.3	0.0226	0.0033	0.0010	0.00374	< 0.00002	< 0.00001	0.0029	0.000044	16.4	< 0.0005	0.000349	< 0.0005
1-Jan-13	49	500	445	7.92	425	185																	
8-Jan-13	50	500	480	7.59	295	117	#N/A	3.7	16.2	43	63.0	0.0183	0.0046	0.0008	0.00567	< 0.00002	< 0.00001	0.0028	0.000101	25.0	< 0.0005	0.000516	< 0.0005
15-Jan-13	51	500	475	7.85	410	170																	
22-Jan-13	52	500	500	7.28	334	128	#N/A	4.6	15.8	48	53.2	0.0207	0.0037	0.0009	0.00622	< 0.00002	< 0.00001	0.0030	0.000124	21.1	< 0.0005	0.000607	< 0.0005
29-Jan-13	53	500	500	7.48	358	125																	
5-Feb-13	54	500	515	7.51	349	127	#N/A	4.2	12.5	49	51.2	0.0122	0.0039	0.0008	0.00550	< 0.00002	< 0.00001	0.0015	0.000111	20.3	< 0.0005	0.000534	< 0.0005
12-Feb-13	55	500	485	7.59	345	122																	
19-Feb-13	56	500	500	7.43	363	117	#N/A	3.3	13.1	47	49.7	0.0104	0.0035	0.0011	0.00534	< 0.00002	< 0.00001	0.0022	0.000141	19.7	< 0.0005	0.000684	< 0.0005
26-Feb-13	57	500	485	7.45	366	126																	
5-Mar-13	58	500	475	7.60	363	136	#N/A	5.5	21.1	49	58.4	0.0157	0.0040	0.0011	0.00499	< 0.00002	< 0.00001	0.0024	0.000107	23.2	< 0.0005	0.000569	< 0.0005
12-Mar-13	59	500	490	7.81	420	145																	
19-Mar-13	60	500	495	7.62	333	141	#N/A	6.4	16.2	52	58.7	0.0276	0.0034	0.0007	0.00569	< 0.00002	< 0.00001	0.0026	0.000137	23.3	< 0.0005	0.000738	0.0024
26-Mar-13	61	500	510	7.59	365	123																	
2-Apr-13	62	500	480	7.54	345	124	#N/A	5.4	14.5	50	57.6	0.0132	0.0030	0.0009	0.00517	< 0.00002	< 0.00001	0.0029	0.000126	22.9	< 0.0005	0.000712	< 0.0005
9-Apr-13	63	500	460	7.51	368	129																	
16-Apr-13	64	500	440	7.52	346	138	#N/A	5.3	15.3	58	62.8	0.0110	0.0038	0.0008	0.00508	< 0.00002	< 0.00001	0.0029	0.000148	25.0	< 0.0005	0.000822	< 0.0005
23-Apr-13	65	500	490	7.62	357	137																	
30-Apr-13	66	500	485	7.50	352	124	#N/A	5.2	14.7	54	57.8	0.0142	0.0030	0.0006	0.00462	< 0.00002	< 0.00001	0.0033	0.000137	23.0	< 0.0005	0.000732	< 0.0005
7-May-13	67	500	460	7.61	405	135																	
14-May-13	68	500	425	7.61	369	130	#N/A	5.2	15.3	54	58.6	0.0104	0.0036	0.0009	0.00477	< 0.00002	< 0.00001	0.0034	0.000142	23.3	< 0.0005	0.000964	< 0.0005
21-May-13	69	500	465	7.52	393	137																	
28-May-13	70	500	455	7.62	384	132	#N/A	4.5	14.0	55	62.1	0.0164	0.0031	0.0006	0.00448	< 0.00002	< 0.00001	0.0029	0.000142	24.7	< 0.0005	0.000718	< 0.0005
4-Jun-13	71	500	445	7.61	386	138																	
11-Jun-13	72	500	440	7.60	348	136	#N/A	8.0	17.8	53													
18-Jun-13	73	500	450	7.21	396	137																	
25-Jun-13	74	500	450	7.48	376	132	#N/A	5.0	14.2	52	56.5	0.0106	0.0030	0.0007	0.00421	< 0.00002	< 0.00001	0.0035	0.000104	22.5	< 0.0005	0.000577	< 0.0005
2-Jul-13	75	500	425	7.60	353	144																	
9-Jul-13	76	500	435	7.45	306	141	#N/A	6.8	14.0	58													
16-Jul-13	77	500	435	7.29	406	136																	
23-Jul-13	78	500	435	7.49	374	128	#N/A	6.7	15.5	54	58.8	0.0090	0.0026	0.0007	0.00431	< 0.00002	< 0.00001	0.0031	0.000147	23.4	< 0.0005	0.000791	< 0.0005
30-Jul-13	79	500	435	7.32	380	127																	
6-Aug-13	80	500	455	7.62	333	149	#N/A	7.6	15.5	54													
13-Aug-13	81	500	450	7.26	385	131																	
20-Aug-13	82	500	445	7.28	383	137	#N/A	3.2	10.8	50													
27-Aug-13	83	500	435	7.37	385	119																	

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	< 0.003	0.00026	0.016	2.77	1.01	< 0.01	0.00620	0.0042	< 0.009	25.0	0.00385	0.99	0.00002	8.80	0.584	78.3	0.00160	0.00003	0.0003	0.0143	0.00054	0.005	< 0.00001
31-Jan-12	1	< 0.003	0.00028	0.013	2.44	0.792	< 0.01	0.00438	0.0005	< 0.009	15.7	0.00569	0.86	< 0.00001	5.57	0.537	73.4	0.00095	0.00101	0.0002	0.00489	0.00029	0.003	< 0.00001
7-Feb-12	2	< 0.003	0.00020	0.009	2.03	0.594	< 0.01	0.00330	0.0024	< 0.009	11.7	0.00380	0.82	< 0.00001	3.01	0.456	58.5	0.00073	0.00086	0.0002	0.00279	0.00026	0.003	< 0.00001
14-Feb-12	3	< 0.003	0.00014	0.007	1.68	0.542	< 0.01	0.00320	0.0019	< 0.009	9.44	0.00262	0.85	< 0.00001	1.75	0.481	57.4	0.00062	0.00070	0.0002	0.00260	0.00023	0.002	< 0.00001
21-Feb-12	4	< 0.003	0.00013	0.005	1.28	0.513	< 0.01	0.00371	0.0011	< 0.009	7.60	0.00136	0.87	< 0.00001	0.89	0.365	44.9	0.00049	0.00067	< 0.0001	0.00259	0.00019	0.002	< 0.00001
28-Feb-12	5																							
6-Mar-12	6	< 0.003	0.00009	0.003	0.869	0.454	< 0.01	0.00342	0.0006	< 0.009	4.97	0.00094	0.78	< 0.00001	0.37	0.267	34.7	0.00035	0.00027	0.0001	0.00185	0.00021	0.003	< 0.00001
13-Mar-12	7																							
20-Mar-12	8	< 0.003	0.00010	0.003	0.666	0.458	< 0.01	0.00316	0.0001	< 0.009	3.83	0.00072	0.76	< 0.00001	0.24	0.220	27.2	0.00024	0.00034	< 0.0001	0.00180	0.00010	0.002	< 0.00001
27-Mar-12	9																							
3-Apr-12	10	< 0.003	0.00008	0.002	0.563	0.449	< 0.01	0.00337	0.0005	< 0.009	3.02	0.00042	0.69	< 0.00001	0.17	0.196	26.3	0.00025	0.00018	0.0002	0.00158	< 0.00003	0.003	< 0.00001
10-Apr-12	11																							
17-Apr-12	12	< 0.003	0.00009	0.002	0.503	0.465	0.01	0.00408	0.0004	< 0.009	2.65	0.00043	0.67	< 0.00001	0.12	0.178	22.7	0.00021	0.00010	0.0002	0.00162	0.00020	0.002	0.00001
24-Apr-12	13																							
1-May-12	14	< 0.003	0.00010	0.002	0.450	0.452	0.03	0.00347	0.0007	< 0.009	2.53	0.00014	0.64	< 0.00001	0.15	0.174	21.5	0.00020	0.00009	< 0.0001	0.00143	0.00020	0.003	< 0.00001
8-May-12	15																							
15-May-12	16	< 0.003	0.00006	0.002	0.418	0.478	0.02	0.00393	0.0003	< 0.009	2.41	0.00030	0.70	< 0.00001	0.14	0.171	20.9	0.00022	0.00019	0.0001	0.00139	0.00022	0.003	< 0.00001
22-May-12	17																							
29-May-12	18	< 0.003	0.00005	0.002	0.375	0.487	< 0.01	0.00428	0.0003	< 0.009	1.93	0.00019	0.60	< 0.00001	0.10	0.155	19.8	0.00019	0.00025	< 0.0001	0.00130	0.00020	0.004	< 0.00001
5-Jun-12	19																							
12-Jun-12	20	< 0.003	0.00007	0.001	0.337	0.495	0.03	0.00396	0.0004	< 0.009	1.80	0.00016	0.58	< 0.00001	0.10	0.145	17.3	0.00016	0.00013	0.0001	0.00118	0.00022	0.005	< 0.00001
19-Jun-12	21																							
26-Jun-12	22	< 0.003	0.00009	0.001	0.327	0.545	0.01	0.00414	0.0003	< 0.009	1.77	0.00010	0.66	< 0.00001	0.10	0.152	19.4	0.00017	0.00028	< 0.0001	0.00133	0.00028	0.004	< 0.00001
3-Jul-12	23																							
10-Jul-12	24	< 0.003	0.00006	0.001	0.315	0.568	0.02	0.00497	0.0005	< 0.009	1.69	0.00027	0.63	< 0.00001	0.11	0.155	19.8	0.00016	0.00012	0.0002	0.00111	0.00026	0.004	< 0.00001
17-Jul-12	25																							
24-Jul-12	26	< 0.003	0.00004	0.001	0.283	0.559	0.02	0.00461	0.0003	< 0.009	1.46	0.00039	0.57	< 0.00001	0.12	0.148	19.9	0.00012	0.00012	0.0002	0.00103	0.00036	0.005	< 0.00001
31-Jul-12	27																							
7-Aug-12	28	< 0.003	0.00020	0.001	0.251	0.490	< 0.01	0.00436	0.0001	< 0.009	1.56	0.00034	0.57	< 0.00001	0.10	0.142	19.3	0.00016	0.00060	< 0.0001	0.000905	0.00032	0.006	< 0.00001
14-Aug-12	29																							
21-Aug-12	30	< 0.003	0.00004	0.001	0.248	0.554	0.04	0.00491	0.0004	< 0.009	1.40	0.00033	0.57	< 0.00001	0.08	0.132	18.0	0.00015	0.00010	0.0001	0.00109	0.00024	0.004	< 0.00001
28-Aug-12	31																							
4-Sep-12	32	< 0.003	0.00002	< 0.001	0.193	0.469	0.05	0.00391	0.0005	< 0.009	1.05	0.00024	0.39	< 0.00001	0.07	0.119	15.9	0.00012	0.00013	< 0.0001	0.000921	0.00034	0.003	< 0.00001
11-Sep-12	33																							
18-Sep-12	34	< 0.003	0.00006	< 0.001	0.210	0.576	0.02	0.00406	0.0002	< 0.009	1.15	0.00035	0.48	< 0.00001	0.08	0.132	18.1	0.00012	0.00023	0.0001	0.000959	0.00024	0.006	< 0.00001
25-Sep-12	35																							
2-Oct-12	36	< 0.003	0.00004	< 0.001	0.182	0.521	0.01	0.00390	0.0002	< 0.009	1.01	0.00018	0.46	< 0.00001	0.06	0.123	16.8	0.00011	0.00007	< 0.0001	0.000950	0.00012	0.005	< 0.00001
9-Oct-12	37																							
16-Oct-12	38	< 0.003	0.00004	< 0.001	0.169	0.511	0.01	0.00357	0.0004	< 0.009	0.880	0.00023	0.43	< 0.00001	0.06	0.118	17.0	0.00009	0.00030	< 0.0001	0.00103	0.00016	0.005	< 0.00001
23-Oct-12	39																							
30-Oct-12	40	< 0.003	0.00002	< 0.001	0.195	0.644	0.01	0.00408	0.0005	< 0.009	1.02	0.00018	0.52	< 0.00001	0.06	0.140	19.5	0.00010	0.00013	< 0.0001	0.000983	0.00019	0.006	< 0.00001
6-Nov-12	41																							
13-Nov-12	42	< 0.003	0.00006	< 0.001	0.166	0.565	0.01	0.00312	0.0004	< 0.009	0.842	0.00018	0.46	< 0.00001	0.05	0.137	20.6	0.00010	0.00009	0.0002	0.000996	0.00015	0.005	< 0.00001
20-Nov-12	43																							
27-Nov-12	44	< 0.003	0.00008	< 0.001	0.179	0.622	< 0.01	0.00414	0.0004	< 0.009	0.852	0.00029	0.46	< 0.00001	0.05	0.134	18.0	0.00009	0.00007	0.0001	0.00157	0.00013	0.008	< 0.00001
4-Dec-12	45																							
11-Dec-12	46	< 0.003	0.00025	< 0.001	0.133	0.477	< 0.01	0.00363	< 0.0001	< 0.009	0.701	0.00017	0.40	< 0.00001	0.08	0.107	14.7	0.00009	0.00012	< 0.0001	0.00101	0.00008	0.005	< 0.00001
18-Dec-12	47																							

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	< 0.003	0.00003	< 0.001	0.099	0.247	< 0.01	0.00244	0.0002	< 0.009	0.608	0.00013	0.27	< 0.00001	0.03	0.0891	9.99	0.00007	0.00013	< 0.0001	0.000631	< 0.00003	0.002	< 0.00001
1-Jan-13	49																							
8-Jan-13	50	< 0.003	0.00003	< 0.001	0.130	0.434	< 0.01	0.00264	< 0.0001	0.019	0.756	0.00020	0.43	< 0.00001	0.04	0.118	14.7	0.00008	0.00006	< 0.0001	0.000718	0.00022	0.003	< 0.00001
15-Jan-13	51																							
22-Jan-13	52	< 0.003	0.00003	< 0.001	0.121	0.446	< 0.01	0.00280	0.0009	0.011	0.686	0.00023	0.32	< 0.00001	0.04	0.109	14.9	0.00008	0.00005	0.0004	0.000774	0.00031	0.005	0.00001
29-Jan-13	53																							
5-Feb-13	54	< 0.003	0.00002	< 0.001	0.107	0.415	0.02	0.00299	0.0003	< 0.009	0.687	0.00018	0.32	< 0.00001	0.03	0.108	15.5	0.00009	0.00003	< 0.0001	0.000749	0.00007	0.004	< 0.00001
12-Feb-13	55																							
19-Feb-13	56	< 0.003	0.00003	< 0.001	0.111	0.442	< 0.01	0.00310	0.0003	< 0.009	0.594	0.00019	0.21	< 0.00001	0.04	0.102	13.8	0.00007	0.00002	< 0.0001	0.000713	0.00006	0.006	< 0.00001
26-Feb-13	57																							
5-Mar-13	58	< 0.003	< 0.00002	< 0.001	0.122	0.416	< 0.01	0.00291	0.0003	< 0.009	0.675	0.00022	0.38	< 0.00001	0.07	0.120	16.1	0.00007	< 0.00001	< 0.0001	0.000731	< 0.00003	0.003	< 0.00001
12-Mar-13	59																							
19-Mar-13	60	< 0.003	0.00004	< 0.001	0.117	0.443	< 0.01	0.00303	0.0005	< 0.009	0.626	0.00018	0.37	< 0.00001	0.04	0.116	16.7	0.00009	0.00010	< 0.0001	0.000727	0.00006	0.005	< 0.00001
26-Mar-13	61																							
2-Apr-13	62	< 0.003	0.00003	< 0.001	0.105	0.406	< 0.01	0.00297	0.0006	0.010	0.607	< 0.00004	0.34	< 0.00001	0.05	0.106	15.6	0.00008	< 0.00001	< 0.0001	0.000609	< 0.00003	0.004	< 0.00001
9-Apr-13	63																							
16-Apr-13	64	< 0.003	0.00002	< 0.001	0.113	0.458	< 0.01	0.00281	0.0004	0.012	0.631	0.00030	0.38	< 0.00001	0.04	0.124	17.7	0.00008	0.00003	< 0.0001	0.000685	0.00004	0.005	< 0.00001
23-Apr-13	65																							
30-Apr-13	66	0.004	0.00002	< 0.001	0.104	0.438	< 0.01	0.00272	0.0004	< 0.009	0.572	0.00032	0.34	< 0.00001	0.04	0.107	15.7	0.00008	0.00003	< 0.0001	0.000630	0.00005	0.005	< 0.00001
7-May-13	67																							
14-May-13	68	< 0.003	< 0.00002	< 0.001	0.107	0.422	< 0.01	0.00299	0.0004	< 0.009	0.655	0.00036	0.40	< 0.00001	0.05	0.106	16.7	0.00008	< 0.00001	< 0.0001	0.000734	0.00005	0.005	< 0.00001
21-May-13	69																							
28-May-13	70	< 0.003	0.00004	< 0.001	0.108	0.410	< 0.01	0.00252	0.0004	< 0.009	0.666	0.00053	0.32	< 0.00001	0.04	0.116	16.9	0.00009	0.00001	< 0.0001	0.000641	0.00003	0.005	< 0.00001
4-Jun-13	71																							
11-Jun-13	72																							
18-Jun-13	73																							
25-Jun-13	74	< 0.003	0.00008	< 0.001	0.100	0.342	< 0.01	0.00305	0.0004	0.014	0.614	0.00034	0.31	< 0.00001	0.04	0.110	15.5	0.00007	0.00001	< 0.0001	0.000592	0.00005	0.004	< 0.00001
2-Jul-13	75																							
9-Jul-13	76																							
16-Jul-13	77																							
23-Jul-13	78	< 0.003	< 0.00002	< 0.001	0.100	0.390	< 0.01	0.00271	0.0004	< 0.009	0.576	0.00042	0.31	< 0.00001	0.04	0.112	17.1	0.00007	< 0.00001	< 0.0001	0.000592	0.00004	0.005	< 0.00001
30-Jul-13	79																							
6-Aug-13	80																							
13-Aug-13	81																							
20-Aug-13	82																							
27-Aug-13	83																							

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L
21-Feb-13	0	500	405	7.93	309	485	#N/A	6.5	45.3	170	19.7	0.310	0.0138	0.0085	0.0339	0.00002	< 0.00001	0.0353	0.000022	7.45	< 0.0005	0.000741
26-Feb-13	1	500	475	7.85	324	405	#N/A	4.5	28.0	149	19.8	0.196	0.0158	0.0111	0.0137	< 0.00002	< 0.00001	0.0427	0.000003	7.56	< 0.0005	0.000253
5-Mar-13	2	500	485	7.78	368	217	#N/A	4.0	25.6	68	13.3	0.180	0.0164	0.0096	0.00900	< 0.00002	< 0.00001	0.0446	0.000018	5.07	< 0.0005	0.000311
12-Mar-13	3	500	465	7.69	344	147	#N/A	3.1	16.7	52	16.4	0.150	0.0083	0.0073	0.0101	< 0.00002	0.00001	0.0320	0.000021	6.32	< 0.0005	0.000262
19-Mar-13	4	500	445	7.76	353	130	#N/A	5.3	21.8	40	15.8	0.226	0.0083	0.0077	0.0121	< 0.00002	0.00001	0.0360	0.000015	6.06	< 0.0005	0.000273
26-Mar-13	5	500	440	7.63	384	101																
2-Apr-13	6	500	460	7.57	356	98	#N/A	5.0	14.7	35	21.7	0.139	0.0074	0.0053	0.0126	< 0.00002	< 0.00001	0.0356	0.000043	8.29	< 0.0005	0.000599
9-Apr-13	7	500	465	7.54	387	87																
16-Apr-13	8	500	440	7.57	358	82	#N/A	4.6	11.7	31	23.7	0.0751	0.0067	0.0040	0.0112	< 0.00002	< 0.00001	0.0274	0.000062	9.11	< 0.0005	0.000663
23-Apr-13	9	500	440	7.58	375	87																
30-Apr-13	10	500	445	7.52	371	78	#N/A	4.1	10.8	30	25.2	0.0792	0.0058	0.0034	0.0125	< 0.00002	< 0.00001	0.0249	0.000083	9.69	< 0.0005	0.000961
7-May-13	11	500	455	7.69	354	71	#N/A	6.5	11.9	27	23.8	0.0654	0.0049	0.0029	0.00974	< 0.00002	< 0.00001	0.0226	0.000105	9.11	< 0.0005	0.00120
14-May-13	12	500	430	7.52	384	74	#N/A	4.6	11.2	26	25.2	0.185	0.0058	0.0046	0.0154	< 0.00002	< 0.00001	0.0226	0.000086	9.69	< 0.0005	0.00108
21-May-13	13	500	455	7.48	367	70	#N/A	3.8	9.6	23	23.5	0.046	0.0052	0.003	0.00916	< 0.00002	< 0.00001	0.0189	0.000124	9.03	< 0.0005	0.00147
28-May-13	14	500	445	7.46	399	70	#N/A	3.8	9.7	23	25.4	0.0931	0.0052	0.003	0.0115	< 0.00002	< 0.00001	0.0215	0.000121	9.79	< 0.0005	0.00145
4-Jun-13	15	500	440	7.51	402	72	#N/A	4.81	11.8	25	26	0.0511	0.0046	0.0033	0.00973	< 0.00002	< 0.00001	0.0218	0.000098	10	< 0.0005	0.000967
11-Jun-13	16	500	435	7.62	375	69	#N/A	6.95	12.4	23	24.6	0.0719	0.0042	0.0029	0.00953	< 0.00002	< 0.00001	0.0196	0.000106	9.46	< 0.0005	0.0012
18-Jun-13	17	500	445	7.35	358	71	#N/A	4.39	9.9	25	25	0.0805	0.0048	0.003	0.0108	< 0.00002	< 0.00001	0.0214	0.000125	9.63	< 0.0005	0.00145
25-Jun-13	18	500	435	7.39	389	69	#N/A	3.82	9.9	21	24.4	0.0773	0.0047	0.0033	0.0119	< 0.00002	< 0.00001	0.0194	0.000144	9.39	< 0.0005	0.00173
2-Jul-13	19	500	440	7.24	416.01	78.79	#N/A	4.61	9	25	24.4	0.0541	0.0049	0.0027	0.0114	< 0.00002	< 0.00001	0.0204	0.000175	9.41	< 0.0005	0.00221
9-Jul-13	20	500	450	7.49	337.4	66.86	#N/A	6.11	10.85	22	24.8	0.0575	0.0044	0.0027	0.0109	< 0.00002	< 0.00001	0.0194	0.000217	9.57	< 0.0005	0.00488
16-Jul-13	21	500	445	7.2	393.55	67.6	#N/A	3.43	7.3	21	24.1	0.0209	0.004	0.0023	0.00923	< 0.00002	< 0.00001	0.0175	0.00018	9.29	< 0.0005	0.00206
23-Jul-13	22	500	440	7.45	405.27	64.04	#N/A	5.85	10.08	24	24.5	0.0943	0.0039	0.0025	0.0119	< 0.00002	< 0.00001	0.0166	0.000204	9.45	< 0.0005	0.00258
30-Jul-13	23	500	440	7.23	394.53	66.24	#N/A	4.05	7.81	24	25.3	0.12	0.0036	0.0026	0.0125	< 0.00002	< 0.00001	0.0177	0.000212	9.76	< 0.0005	0.00267
6-Aug-13	24	500	435	7.62	362	70	#N/A	6.0	10.6	18	24.9	0.0833	0.0038	0.0024	0.01100	< 0.00002	< 0.00001	0.0165	0.000253	9.6	< 0.0005	0.002870
13-Aug-13	25	500	450	7.11	389	66	#N/A	2.7	6.1	24	24.9	0.0374	0.0034	0.0019	0.00885	< 0.00002	< 0.00001	0.0167	0.000254	9.63	< 0.0005	0.00318
20-Aug-13	26	500	455	7.22	393	70	#N/A	2.5	6.5	22												
27-Aug-13	27	500	435	7.2	393	62	#N/A	2.47	6.05													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0010	0.005	0.00251	0.171	0.271	0.0595	< 0.01	0.00304	0.0003	0.022	15.3	0.0173	1.23	0.00005	81.5	0.444	60.0	0.00089	0.00004	0.0021	0.00368	0.00100	< 0.001	0.00009
26-Feb-13	1	0.0009	< 0.003	0.00147	0.181	0.216	0.0365	< 0.01	0.00305	< 0.0001	< 0.009	9.52	0.0267	1.33	0.00004	57.1	0.426	52.4	0.00062	< 0.00001	0.0008	0.00360	0.00074	< 0.001	0.00003
5-Mar-13	2	0.0007	< 0.003	0.00153	0.088	0.146	0.0376	< 0.01	0.00244	0.0001	< 0.009	6.98	0.0172	1.37	0.00005	32.1	0.289	29.1	0.00044	< 0.00001	0.0008	0.00280	0.00068	0.001	0.00003
12-Mar-13	3	0.0008	0.008	0.00265	0.050	0.144	0.0430	< 0.01	0.00140	< 0.0001	< 0.009	5.97	0.0107	1.36	0.00003	19.4	0.323	16.9	0.00037	0.00006	0.0005	0.00187	0.00052	< 0.001	0.00003
19-Mar-13	4	0.0009	0.008	0.00315	0.044	0.161	0.0322	< 0.01	0.00125	0.0001	< 0.009	6.10	0.00818	1.40	< 0.00001	14.2	0.328	13.4	0.00042	0.00004	0.0009	0.00166	0.00063	< 0.001	0.00007
26-Mar-13	5																								
2-Apr-13	6	0.0007	0.005	0.00192	0.026	0.231	0.0543	< 0.01	0.00132	0.0005	< 0.009	5.91	0.00583	1.14	0.00001	6.76	0.451	10.8	0.00041	< 0.00001	0.0008	0.00176	0.00038	0.001	0.00010
9-Apr-13	7																								
16-Apr-13	8	< 0.0005	0.004	0.00187	0.014	0.234	0.0672	< 0.01	0.00095	0.0002	< 0.009	4.54	0.00482	1.01	< 0.00001	2.75	0.472	9.13	0.00032	0.00003	0.0004	0.00131	0.00029	0.002	0.00002
23-Apr-13	9																								
30-Apr-13	10	< 0.0005	0.006	0.00197	0.010	0.248	0.0766	0.01	0.00098	0.0002	< 0.009	3.89	0.00436	0.96	< 0.00001	1.49	0.478	8.50	0.00029	< 0.00001	0.0006	0.00139	0.00027	0.002	0.00005
7-May-13	11	0.0005	0.004	0.00224	0.008	0.246	0.0859	< 0.01	0.00089	0.0002	< 0.009	3.74	0.00427	0.85	0.00001	1.19	0.470	8.25	0.00028	< 0.00001	0.0005	0.00124	0.00023	0.003	0.00002
14-May-13	12	0.0011	0.009	0.00351	0.008	0.236	0.0784	< 0.01	0.00083	0.0002	< 0.009	3.89	0.00530	1.11	< 0.00001	1.00	0.460	7.96	0.00029	< 0.00001	0.0015	0.00126	0.00038	0.003	0.00005
21-May-13	13	0.0008	0.004	0.00156	0.006	0.223	0.0903	< 0.01	0.00081	0.0002	< 0.009	3.14	0.00509	0.76	< 0.00001	0.78	0.434	7.9	0.00022	< 0.00001	0.0003	0.000979	0.00016	0.004	0.00001
28-May-13	14	0.0007	0.007	0.00319	0.006	0.238	0.0913	< 0.01	0.0008	0.0003	< 0.009	3.24	0.00481	0.78	0.00001	0.72	0.46	7.58	0.00025	0.00002	0.0005	0.0011	0.00022	0.004	0.00002
4-Jun-13	15	0.0007	< 0.003	0.00146	0.006	0.236	0.0847	< 0.01	0.00073	0.0002	< 0.009	3.11	0.00399	0.85	< 0.00001	0.65	0.448	7.12	0.00022	0.00003	0.0001	0.00115	0.00016	0.002	< 0.00001
11-Jun-13	16	< 0.0005	< 0.003	0.00212	0.005	0.229	0.0823	0.01	0.00075	0.0003	< 0.009	2.74	0.00395	0.77	< 0.00001	0.56	0.428	7.81	0.00018	0.00004	0.0004	0.00103	0.00014	0.003	0.00001
18-Jun-13	17	0.0009	0.005	0.00209	0.005	0.237	0.0853	< 0.01	0.00077	0.0002	< 0.009	2.86	0.00404	0.9	< 0.00001	0.56	0.43	7.48	0.00019	0.00008	0.0005	0.00106	0.0002	0.004	0.00006
25-Jun-13	18	0.0012	0.006	0.00282	0.004	0.235	0.0998	0.02	0.00073	0.0003	0.017	2.66	0.00574	0.42	< 0.00001	0.46	0.439	7.32	0.00019	0.00002	0.0005	0.00111	0.0002	0.005	0.00003
2-Jul-13	19	0.0011	0.005	0.00244	0.005	0.221	0.0987	< 0.01	0.00092	0.0012	< 0.009	2.56	0.00524	0.76	< 0.00001	0.42	0.415	7.79	0.00018	0.00001	0.0005	0.00102	0.00017	0.008	< 0.00001
9-Jul-13	20	0.0088	0.004	0.00272	0.004	0.223	0.106	< 0.01	0.00072	0.0434	< 0.009	2.29	0.00371	0.78	< 0.00001	0.37	0.401	7.43	0.00019	0.00001	0.0008	0.00116	0.00022	0.011	0.00001
16-Jul-13	21	0.0006	0.012	0.00114	0.004	0.219	0.102	< 0.01	0.00075	0.0003	< 0.009	2.18	0.00285	0.64	< 0.00001	0.36	0.406	7.09	0.00014	< 0.00001	< 0.0001	0.000926	0.00009	0.008	< 0.00001
23-Jul-13	22	0.0012	0.008	0.00265	0.003	0.215	0.104	< 0.01	0.00071	0.0004	< 0.009	2.08	0.00331	0.78	0.00001	0.3	0.388	7.55	0.00016	0.00001	0.0008	0.000939	0.00021	0.01	0.00003
30-Jul-13	23	0.0012	0.007	0.00291	0.004	0.218	0.108	< 0.01	0.00073	0.0004	< 0.009	1.99	0.00326	0.79	< 0.00001	0.28	0.388	7.24	0.00016	0.00003	0.0008	0.000936	0.00024	0.011	0.00003
6-Aug-13	24	0.0013	0.004	0.00317	0.004	0.205	0.1150	< 0.01	0.00077	0.0005	< 0.009	1.95	0.00342	0.72	0.00002	0.27	0.373	7.31	0.00017	0.00001	0.0006	0.000999	0.00018	0.011	0.00003
13-Aug-13	25	0.001	< 0.003	0.00216	0.003	0.21	0.122	< 0.01	0.0007	0.0006	< 0.009	1.7	0.00299	0.64	< 0.00001	0.24	0.376	7.14	0.00014	0.00002	0.0002	0.000855	0.00005	0.013	0.00003
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L
21-Feb-13	0	500	415	7.58	328	563	#N/A	6.8	55.5	206	50.0	0.0407	0.0048	0.0063	0.0337	< 0.00002	< 0.00001	0.0468	0.000133	18.2	< 0.0005	0.00259
26-Feb-13	1	500	465	7.47	347	481	#N/A	5.8	22.9	180	46.1	0.0671	0.0043	0.0078	0.0243	< 0.00002	< 0.00001	0.0435	0.000009	16.6	< 0.0005	0.000567
5-Mar-13	2	500	485	7.37	367	284	#N/A	4.8	13.9	109	49.5	0.0635	0.0042	0.0059	0.0225	< 0.00002	< 0.00001	0.0447	0.000113	18.1	< 0.0005	0.000861
12-Mar-13	3	500	475	7.31	359	179	#N/A	4.3	11.0	72	40.2	0.0691	0.0026	0.0038	0.0207	< 0.00002	< 0.00001	0.0345	0.000003	14.8	< 0.0005	0.000322
19-Mar-13	4	500	460	7.38	375	156	#N/A	5.9	11.2	58	38.8	0.0514	0.0023	0.0035	0.0220	< 0.00002	< 0.00001	0.0388	0.000014	14.3	< 0.0005	0.000636
26-Mar-13	5	500	460	7.43	366	132																
2-Apr-13	6	500	450	7.31	372	128	#N/A	5.1	9.7	52	43.7	0.0288	0.0019	0.0027	0.0182	0.00002	< 0.00001	0.0345	0.000039	16.2	< 0.0005	0.00110
9-Apr-13	7	500	445	7.34	388	118																
16-Apr-13	8	500	450	7.42	362	117	#N/A	5.1	7.8	52	43.0	0.0131	0.0017	0.0017	0.0180	0.00003	< 0.00001	0.0260	0.000045	16.0	< 0.0005	0.00143
23-Apr-13	9	500	460	7.50	364	123																
30-Apr-13	10	500	445	7.41	362	124	#N/A	4.6	9.4	59	48.4	0.0249	0.0014	0.0016	0.0174	0.00003	< 0.00001	0.0221	0.000040	18.2	< 0.0005	0.00172
7-May-13	11	500	465	7.54	367	118	#N/A	6.8	9.2	54	46.1	0.0198	0.0013	0.0012	0.0154	0.00005	< 0.00001	0.0211	0.000055	17.2	< 0.0005	0.00184
14-May-13	12	500	450	7.44	371	109	#N/A	4.9	7.9	50	41.4	0.0105	0.0015	0.0016	0.0162	0.00006	< 0.00001	0.0191	0.000037	15.6	< 0.0005	0.00162
21-May-13	13	500	490	7.40	382	111	#N/A	4.8	7.8	51	43.8	0.0055	0.0013	0.0012	0.0162	0.00005	< 0.00001	0.0179	0.00005	16.6	< 0.0005	0.0016
28-May-13	14	500	470	7.44	390	124	#N/A	4.5	6.2	56	49.5	0.0044	0.0011	0.0009	0.0178	0.0001	< 0.00001	0.0195	0.000042	18.7	< 0.0005	0.00206
4-Jun-13	15	500	450	7.42	397.94	115.51	#N/A	5.01	5.76	52	42.7	0.0029	0.0008	0.0008	0.0141	0.00015	< 0.00001	0.0155	0.000045	16.1	< 0.0005	0.00278
11-Jun-13	16	500	440	7.56	351.07	117.01	#N/A	7.44	6.95	51	45.2	0.0025	0.0007	0.0006	0.0127	0.00013	< 0.00001	0.0163	0.000047	17.1	< 0.0005	0.00241
18-Jun-13	17	500	450	7.12	366.21	119.88	#N/A	4.65	4.15	52	45.6	0.0022	0.0008	0.0006	0.0121	0.0002	< 0.00001	0.0152	0.00005	17.2	< 0.0005	0.00292
25-Jun-13	18	500	450	7.22	388	115	#N/A	4.9	5.1	53	42.7	0.0014	0.0007	0.0008	0.013	0.00019	< 0.00001	0.0144	0.000075	16.1	< 0.0005	0.00303
2-Jul-13	19	500	450	7.27	425.78	131.41	#N/A	5.2	8.6	53	44.2	0.0022	0.0008	0.0008	0.0137	0.00028	< 0.00001	0.0173	0.000065	16.7	< 0.0005	0.00365
9-Jul-13	20	500	460	7.36	292.48	123.82	#N/A	6.7	5.9	55	48.9	0.004	0.0006	0.0005	0.0124	0.00035	< 0.00001	0.0163	0.000103	18.5	< 0.0005	0.00407
16-Jul-13	21	500	440	7.11	404.78	119.28	#N/A	3.8	3.1	50	44.6	0.0057	0.0006	0.0007	0.0127	0.00036	< 0.00001	0.0137	0.000101	16.9	< 0.0005	0.00411
23-Jul-13	22	500	440	7.33	394.04	108.7	#N/A	6.35	5.44	53	44	0.004	0.0005	0.0005	0.0109	0.00033	< 0.00001	0.0131	0.000077	16.7	< 0.0005	0.00362
30-Jul-13	23	500	445	7.01	402.34	115.54	#N/A	4.44	3.62	49	44.8	0.0012	0.0004	0.0007	0.00991	0.0004	< 0.00001	0.0127	0.000077	17	< 0.0005	0.00348
6-Aug-13	24	500	455	7.53	348	120	#N/A	7.0	5.2	50	44.5	0.0015	0.0005	0.0005	0.01090	0.00045	< 0.00001	0.0141	0.000079	16.9	< 0.0005	0.003700
13-Aug-13	25	500	455	6.89	408	122	#N/A	3.1	2.8	55	45.8	0.0012	0.0005	0.0004	0.00958	0.00037	< 0.00001	0.0121	0.000074	17.4	< 0.0005	0.00326
20-Aug-13	26	500	445	6.86	400	126	#N/A	3.4	2.7	52												
27-Aug-13	27	500	435	6.71	356	111	#N/A	2.83	2.26													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0019	< 0.003	0.00005	0.506	1.13	0.396	< 0.01	0.00256	0.0042	< 0.009	16.5	0.00277	0.67	0.00002	78.6	0.551	64.5	0.00029	0.00005	0.0005	0.00328	0.00016	0.004	< 0.00001
26-Feb-13	1	< 0.0005	< 0.003	0.00013	0.542	1.11	0.184	< 0.01	0.00273	0.0009	< 0.009	9.67	0.00510	0.92	0.00002	59.6	0.534	65.6	0.00014	< 0.00001	0.0004	0.00152	0.00022	< 0.001	< 0.00001
5-Mar-13	2	< 0.0005	< 0.003	0.00007	0.204	1.04	0.232	< 0.01	0.00180	0.0008	< 0.009	6.89	0.00342	1.08	< 0.00001	27.9	0.561	37.0	0.00011	0.00002	0.0006	0.00133	0.00026	0.003	0.00002
12-Mar-13	3	< 0.0005	0.004	0.00005	0.087	0.798	0.172	< 0.01	0.00125	0.0004	< 0.009	5.69	0.00311	0.96	< 0.00001	14.5	0.436	23.7	0.00007	0.00002	0.0004	0.000618	0.00027	< 0.001	< 0.00001
19-Mar-13	4	< 0.0005	< 0.003	0.00006	0.055	0.747	0.167	< 0.01	0.00115	0.0005	< 0.009	4.53	0.00214	0.93	< 0.00001	8.22	0.405	19.0	0.00008	0.00004	0.0002	0.000510	0.00022	< 0.001	0.00002
26-Mar-13	5																								
2-Apr-13	6	< 0.0005	< 0.003	0.00003	0.026	0.796	0.237	< 0.01	0.00101	0.0014	< 0.009	3.99	0.00137	0.87	< 0.00001	3.93	0.427	16.9	0.00008	< 0.00001	0.0001	0.000491	0.00014	0.001	< 0.00001
9-Apr-13	7																								
16-Apr-13	8	< 0.0005	< 0.003	< 0.00002	0.014	0.745	0.259	< 0.01	0.00078	0.0013	0.012	3.21	0.00132	0.82	< 0.00001	2.05	0.396	15.5	0.00007	0.00001	< 0.0001	0.000441	0.00010	0.002	< 0.00001
23-Apr-13	9																								
30-Apr-13	10	< 0.0005	< 0.003	0.00002	0.010	0.724	0.333	< 0.01	0.00060	0.0015	< 0.009	2.78	0.00141	0.86	< 0.00001	1.13	0.398	16.0	0.00007	< 0.00001	0.0002	0.000435	0.00014	< 0.001	< 0.00001
7-May-13	11	< 0.0005	< 0.003	0.00004	0.008	0.741	0.341	< 0.01	0.00064	0.0016	< 0.009	2.70	0.00156	0.81	< 0.00001	1.05	0.386	16.2	0.00006	< 0.00001	0.0001	0.000423	0.00013	0.002	< 0.00001
14-May-13	12	< 0.0005	< 0.003	< 0.00002	0.007	0.614	0.291	< 0.01	0.00076	0.0011	< 0.009	2.89	0.00117	0.81	< 0.00001	0.92	0.334	14.5	0.00006	< 0.00001	< 0.0001	0.000426	0.00008	0.001	< 0.00001
21-May-13	13	< 0.0005	< 0.003	< 0.00002	0.006	0.563	0.3	< 0.01	0.00042	0.0012	< 0.009	2.31	0.00132	0.77	< 0.00001	0.7	0.338	15.1	0.00006	0.00002	< 0.0001	0.000421	0.00005	0.001	< 0.00001
28-May-13	14	< 0.0005	0.005	< 0.00002	0.007	0.703	0.365	< 0.01	0.00047	0.0018	< 0.009	2.63	0.00197	0.7	< 0.00001	0.82	0.371	16.3	0.00006	0.00001	< 0.0001	0.000435	0.00004	0.001	< 0.00001
4-Jun-13	15	< 0.0005	< 0.003	< 0.00002	0.006	0.577	0.354	< 0.01	0.00033	0.002	< 0.009	2.31	0.00133	0.64	< 0.00001	0.61	0.31	14.2	0.00006	0.00003	< 0.0001	0.000409	0.00003	0.002	< 0.00001
11-Jun-13	16	< 0.0005	< 0.003	< 0.00002	0.005	0.618	0.367	< 0.01	0.00041	0.0021	< 0.009	2.14	0.00151	0.61	< 0.00001	0.63	0.32	16.9	0.00005	0.00003	< 0.0001	0.00039	< 0.00003	0.002	< 0.00001
18-Jun-13	17	< 0.0005	< 0.003	< 0.00002	0.005	0.62	0.391	< 0.01	0.00034	0.0024	< 0.009	2.28	0.00132	0.63	0.00001	0.63	0.32	16.3	0.00006	0.00004	< 0.0001	0.00044	< 0.00003	0.002	< 0.00001
25-Jun-13	18	< 0.0005	< 0.003	0.00006	0.005	0.611	0.416	< 0.01	0.00054	0.0027	0.009	2.2	0.00167	0.26	< 0.00001	0.56	0.309	14.9	0.00005	0.00016	< 0.0001	0.00056	< 0.00003	0.004	< 0.00001
2-Jul-13	19	< 0.0005	0.019	< 0.00002	0.005	0.612	0.442	< 0.01	0.00051	0.0031	< 0.009	2.39	0.00172	0.7	< 0.00001	0.52	0.304	16.8	0.00006	< 0.00001	< 0.0001	0.000637	0.00005	0.002	< 0.00001
9-Jul-13	20	< 0.0005	0.032	0.00003	0.005	0.643	0.491	< 0.01	0.00037	0.0038	< 0.009	2.09	0.00181	0.71	< 0.00001	0.5	0.319	17.5	0.00006	< 0.00001	< 0.0001	0.000656	< 0.00003	0.004	< 0.00001
16-Jul-13	21	0.0009	0.044	0.00004	0.004	0.568	0.465	< 0.01	0.00029	0.0038	< 0.009	1.9	0.00159	0.56	< 0.00001	0.41	0.29	15.8	0.00006	0.00002	< 0.0001	0.00065	0.00004	0.005	< 0.00001
23-Jul-13	22	0.0008	0.131	0.0001	0.004	0.577	0.45	< 0.01	0.00032	0.003	< 0.009	1.82	0.00174	0.59	< 0.00001	0.4	0.276	16	0.00005	< 0.00001	< 0.0001	0.000564	< 0.00003	0.004	< 0.00001
30-Jul-13	23	0.0009	0.048	0.00004	0.004	0.554	0.444	0.01	0.0003	0.003	< 0.009	1.74	0.00147	0.54	< 0.00001	0.36	0.268	15.4	0.00005	0.00003	< 0.0001	0.000661	< 0.00003	0.003	< 0.00001
6-Aug-13	24	0.0006	0.051	0.00004	0.004	0.525	0.4910	0.03	0.00024	0.0035	< 0.009	1.73	0.00138	0.67	< 0.00001	0.34	0.265	15.70	0.00006	< 0.00001	< 0.0001	0.000798	< 0.00003	0.004	< 0.00001
13-Aug-13	25	0.0008	0.051	0.00003	0.003	0.563	0.462	< 0.01	0.00028	0.0031	< 0.009	1.61	0.00148	0.63	< 0.00001	0.33	0.272	15.5	0.00005	0.00003	< 0.0001	0.000593	< 0.00003	0.004	< 0.00001
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L
24-Jan-12	0	500	410	6.59	78	1037	#N/A	9.8	13.0	535	454	0.0222	0.0013	0.0101	0.0544	0.00236	< 0.00001	0.0267	0.000658	148	< 0.0005	0.0426
31-Jan-12	1	500	465	6.68	188	590	#N/A	4.2	3.0	300	252	0.0139	0.0009	0.0614	0.0317	0.00071	< 0.00001	0.0177	0.000254	81.3	< 0.0005	0.00802
07-Feb-12	2	500	440	6.43	177	534	#N/A	5.7	2.0	269	243	0.0343	0.0006	0.113	0.0277	0.00199	< 0.00001	0.0206	0.000406	77.2	< 0.0005	0.0104
14-Feb-12	3	500	440	6.39	331	525	#N/A	7.1	2.0	268	251	0.0359	0.0010	0.153	0.0245	0.00221	0.00001	0.0275	0.000551	81.8	< 0.0005	0.0130
21-Feb-12	4	500	450	6.03	222	465	#N/A	7.5	2.2	219	208	0.0358	0.0006	0.146	0.0204	0.00312	< 0.00001	0.0236	0.000684	64.3	< 0.0005	0.0158
28-Feb-12	5	500	500	5.73	394	404																
06-Mar-12	6	500	460	6.09	281	372	#N/A	8.2	2.5	162	154	0.0472	0.0005	0.118	0.0184	0.00417	< 0.00001	0.0200	0.000650	48.7	< 0.0005	0.0132
13-Mar-12	7	500	455	5.30	386	391																
20-Mar-12	8	500	465	5.73	272	358	#N/A	9.7	1.0	178	145	0.0831	0.0009	0.173	0.0179	0.00594	< 0.00001	0.0125	0.000731	46.2	< 0.0005	0.0156
27-Mar-12	9	500	440	5.63	302	373																
03-Apr-12	10	500	470	5.00	344	336	#N/A	11.6	0.4	160	134	0.125	< 0.0002	0.148	0.0126	0.00751	< 0.00001	0.0119	0.000794	41.1	< 0.0005	0.0186
10-Apr-12	11	500	435	4.82	299	357																
17-Apr-12	12	500	450	4.81	320	358	#N/A	16.0	<0.1	163	134	0.223	0.0003	0.151	0.0134	0.0126	< 0.00001	0.0147	0.000984	38.8	< 0.0005	0.0241
24-Apr-12	13	500	480	4.67	494	330																
01-May-12	14	500	445	4.84	321	495	#N/A	30.8	0.4	244	203	0.287	0.0003	0.172	0.0140	0.01325	< 0.00001	0.0186	0.00170	55.6	< 0.0005	0.0372
08-May-12	15	500	445	4.58	417	336																
15-May-12	16	500	470	4.60	254	335	#N/A	20.1	<0.1	126	122	0.197	< 0.0002	0.150	0.0142	0.01100	< 0.00001	0.0112	0.00105	33.9	< 0.0005	0.0209
22-May-12	17	500	455	4.58	276	333																
29-May-12	18	500	445	4.37	299	357	2.2	18.0	<0.1	143	129	0.210	< 0.0002	0.132	0.00702	0.0110	< 0.00001	0.0091	0.00150	32.5	< 0.0005	0.0249
05-Jun-12	19	500	445	4.41	386	334																
12-Jun-12	20	500	435	4.36	368	320	3.1	23.3	<0.1	128	115	0.217	0.0013	0.110	0.00813	0.01096	< 0.00001	0.0083	0.00155	27.3	< 0.0005	0.0231
19-Jun-12	21	500	435	4.31	371	348																
26-Jun-12	22	500	440	4.31	323	351	4.1	26.1	<0.1	151	128	0.242	< 0.0002	0.0973	0.00750	0.01125	< 0.00001	0.0083	0.00179	30.1	< 0.0005	0.0247
03-Jul-12	23	500	440	4.48	463	331																
10-Jul-12	24	500	445	4.25	301	363	4.9	30.4	<0.1	139	130	0.293	0.0015	0.0944	0.00816	0.01079	< 0.00001	0.0087	0.00215	29.6	< 0.0005	0.0246
17-Jul-12	25	500	435	4.07	393	373																
24-Jul-12	26	500	440	4.09	338	385	5.7	29.1	0.0	172	135	0.367	< 0.0002	0.0791	0.00695	0.0123	< 0.00001	0.0073	0.0024	29.7	< 0.0005	0.0251
31-Jul-12	27	500	480	4.18	409	379																
07-Aug-12	28	500	450	4.12	320	358	4.8	25.2	0.0	154	130	0.261	0.0002	0.0618	0.00734	0.00935	< 0.00001	0.0092	0.00238	27.5	< 0.0005	0.0211
14-Aug-12	29	500	450	4.10	324	387																
21-Aug-12	30	500	455	3.99	334	419	7.0	30.8	0.0	166	154	0.467	0.0004	0.0532	0.0057	0.01086	0.00002	0.0082	0.00304	33.1	< 0.0005	0.0270
28-Aug-12	31	500	445	4.10	328	388																
04-Sep-12	32	500	440	3.99	438	325	7.7	29.3	0.0	125	110	0.538	< 0.0002	0.0537	0.00600	0.00977	< 0.00001	0.0052	0.00239	22.9	< 0.0005	0.0188
11-Sep-12	33	500	450	3.90	427	420																
18-Sep-12	34	500	495	3.95	361	423	7.5	32.2	0.0	177	149	0.650	0.0019	0.0396	0.00572	0.0101	< 0.00001	0.0083	0.00329	31.3	< 0.0005	0.0238
25-Sep-12	35	500	485	4.10	390	420																
02-Oct-12	36	500	455	3.85	388	366	7.7	26.2	0.0	134	112	0.606	< 0.0002	0.0409	0.0050	0.01008	< 0.00001	0.0066	0.002913	22.8	< 0.0005	0.0201
09-Oct-12	37	500	455	4.30	410	429																
16-Oct-12	38	500	490	3.92	418	375	8.3	32.0	0.0	157	126	0.819	< 0.0002	0.0328	0.00509	0.00920	< 0.00001	0.0060	0.00280	27.9	< 0.0005	0.0199
23-Oct-12	39	500	455	4.09	401	410																
30-Oct-12	40	500	445	3.66	370	375	13.0	33.3	0.0	145	115	1.06	< 0.0002	0.0430	0.00545	0.01080	< 0.00001	0.0061	0.00296	24.2	< 0.0005	0.0207
06-Nov-12	41	500	425	3.83	420	420																
13-Nov-12	42	500	435	3.67	407	351	15.2	41.8	0.0	122	96.5	1.21	< 0.0002	0.0513	0.00475	0.01068	< 0.00001	0.0045	0.00246	21.1	< 0.0005	0.0207
20-Nov-12	43	500	490	3.91	430	450																
27-Nov-12	44	500	495	3.84	366	384	10.6	41.2	0.0	145	118	1.50	< 0.0002	0.0366	0.00524	0.0124	< 0.00001	0.0040	0.00275	27.2	< 0.0005	0.0209
04-Dec-12	45	500	485	3.93	420	410																
11-Dec-12	46	500	505	3.70	381	365	12.2	37.0	0.0	141	104	1.18	< 0.0002	0.0316	0.00503	0.00914	< 0.00001	0.0045	0.00244	25.6	< 0.0005	0.0172
18-Dec-12	47	500	455	3.73	488	355																

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L
25-Dec-12	48	500	470	3.70	512	377	14.8	46.2	0.0	133	109	1.82	< 0.0002	0.0336	0.00705	0.01178	< 0.00001	0.0035	0.00254	25.5	< 0.0005	0.0200
01-Jan-13	49	500	500	3.91	425	420																
08-Jan-13	50	500	495	3.62	429	349	19.8	53.2	0.0	137	86.5	2.47	< 0.0002	0.0335	0.00683	0.01072	< 0.00001	0.0029	0.00236	20.3	< 0.0005	0.0194
15-Jan-13	51	500	485	3.85	435	390																
22-Jan-13	52	500	490	3.53	407	394	23.5	66.7	0.0	157	80.2	3.60	< 0.0002	0.0408	0.00696	0.01220	< 0.00001	0.0031	0.00270	17.4	< 0.0005	0.0206
29-Jan-13	53	500	480	3.48	429	397																
05-Feb-13	54	500	490	3.46	424	452	35.3	95.4	0.0	196	89.5	5.74	0.0003	0.0361	0.00576	0.0137	< 0.00001	0.0016	0.00308	18.9	< 0.0005	0.0232
12-Feb-13	55	500	470	3.49	486	394																
19-Feb-13	56	500	480	3.39	487	439	31.2	80.6	0.0	200	88.8	8.05	< 0.0002	0.0427	0.00516	0.01595	< 0.00001	0.0034	0.00325	19.1	< 0.0005	0.0239
26-Feb-13	57	500	455	3.41	484	431																
05-Mar-13	58	500	500	3.43	495	461	32.3	87.1	0.0	197	93.9	5.87	< 0.0002	0.0307	0.00553	0.0114	< 0.00001	0.0036	0.00297	21.0	< 0.0005	0.0224
12-Mar-13	59	500	465	3.56	450	473																
19-Mar-13	60	500	450	3.52	453	457	42.5	112.4	0.0	180	75.6	7.36	< 0.0002	0.0339	0.00535	0.0112	< 0.00001	0.0025	0.00299	16.1	< 0.0005	0.0233
26-Mar-13	61	500	460	3.39	544	422																
02-Apr-13	62	500	460	3.30	449	458	54.4	122.9	0.0	178	74.4	8.05	< 0.0002	0.0424	0.00522	0.0104	< 0.00001	0.0027	0.00304	16.4	< 0.0005	0.0239
09-Apr-13	63	500	445	3.29	579	475																
16-Apr-13	64	500	475	3.29	443	490	56.6	126.6	0.0	231	78.8	7.04	< 0.0002	0.0456	0.00570	0.00900	< 0.00001	0.0027	0.00292	18.3	< 0.0005	0.0243
23-Apr-13	65	500	455	3.30	451	475																
30-Apr-13	66	500	470	3.28	445	465	52.6	124.8	0.0	209	71.2	7.91	< 0.0002	0.0430	0.00545	0.00791	< 0.00001	0.0027	0.00264	16.6	< 0.0005	0.0222
07-May-13	67	500	425	3.31	470	470																
14-May-13	68	500	465	3.26	466	508	65.2	148.8	0.0	230	73.3	9.17	< 0.0002	0.0470	0.00532	0.00877	< 0.00001	0.0028	0.00339	16.1	< 0.0005	0.0277
21-May-13	69	500	470	3.28	468	460																
28-May-13	70	500	460	3.22	530	528	64.9	139.2	0.0	233	68.9	9.25	< 0.0002	0.0483	0.00460	0.00822	< 0.00001	0.0023	0.00300	15.8	< 0.0005	0.0228
04-Jun-13	71	500	450	3.27	606	523																
11-Jun-13	72	500	445	3.25	489	550	71.0	158.0	0.0	221												
18-Jun-13	73	500	450	3.22	458	581																
25-Jun-13	74	500	455	3.22	466	583	73.5	163.0	0.0	204	61.5	8.95	< 0.0002	0.0428	0.00428	0.00656	< 0.00001	0.0055	0.00260	13.9	< 0.0005	0.0240
02-Jul-13	75	500	450	3.26	575	532																
09-Jul-13	76	500	440	3.20	454	573	80.1	174.7	0.0	230												
16-Jul-13	77	500	440	3.18	458	584																
23-Jul-13	78	500	445	3.19	501	576	91.4	197.3	0.0	256	58.1	12.1	< 0.0002	0.0430	0.00380	0.00775	< 0.00001	0.0024	0.00283	12.7	< 0.0005	0.0282
30-Jul-13	79	500	455	3.23	445	533																
06-Aug-13	80	500	450	3.20	431	574	77.1	172.9	0.0	217												
13-Aug-13	81	500	465	3.17	445	585																
20-Aug-13	82	500	440	3.14	444	674	91.1	184.0	0.0	266												
27-Aug-13	83	500	450	3.20	441	543																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0015	5.06	0.00045	0.071	20.7	10.0	< 0.01	0.00018	0.0283	< 0.009	32.7	0.00414	1.59	< 0.00001	9.38	1.27	173	0.00295	0.00003	0.0004	0.00197	0.00037	0.093	< 0.00001
31-Jan-12	1	0.0017	0.299	0.00065	0.034	12.0	3.87	0.01	0.00027	0.0051	< 0.009	16.0	0.00663	1.13	< 0.00001	4.78	0.843	104	0.00129	0.00057	0.0003	0.000233	0.00031	0.019	< 0.00001
07-Feb-12	2	0.0050	0.481	0.00744	0.026	12.1	4.48	< 0.01	0.00014	0.0088	< 0.009	13.6	0.00490	1.38	< 0.00001	2.75	0.834	87.7	0.00111	0.00024	0.0003	0.000588	0.00018	0.026	< 0.00001
14-Feb-12	3	0.0086	0.575	0.00796	0.024	11.2	4.50	< 0.01	0.00770	0.0115	0.011	14.7	0.00594	1.63	0.00001	8.49	0.828	88.7	0.00100	0.00034	0.0003	0.000682	0.00023	0.042	0.00004
21-Feb-12	4	0.0084	0.782	0.00857	0.026	11.5	5.09	0.01	0.00006	0.0106	< 0.009	9.93	0.00434	1.50	< 0.00001	0.82	0.725	74.0	0.00087	0.00013	0.0002	0.000791	0.00012	0.045	< 0.00001
28-Feb-12	5																								
06-Mar-12	6	0.0096	0.534	0.00861	0.017	7.78	3.48	0.05	0.00048	0.0091	< 0.009	7.27	0.00218	1.90	< 0.00001	0.29	0.528	57.6	0.00070	0.00007	0.0002	0.00103	0.00020	0.045	< 0.00001
13-Mar-12	7																								
20-Mar-12	8	0.0127	1.72	0.00905	0.016	7.12	3.19	0.01	0.00062	0.0090	< 0.009	5.60	0.00208	1.36	0.00001	0.20	0.479	53.4	0.00045	0.00017	< 0.0001	0.00149	< 0.00003	0.071	< 0.00001
27-Mar-12	9																								
03-Apr-12	10	0.0140	2.56	0.00915	0.017	7.65	3.47	< 0.01	0.00008	0.0105	< 0.009	4.74	0.00121	1.30	0.00001	0.17	0.428	52.1	0.00049	0.00021	0.0001	0.00208	< 0.00003	0.090	0.00006
10-Apr-12	11																								
17-Apr-12	12	0.0221	4.04	0.00976	0.019	8.94	4.19	0.04	0.00007	0.0137	< 0.009	4.75	0.00198	1.72	< 0.00001	0.14	0.427	52.7	0.00047	0.00012	0.0001	0.00360	0.00012	0.116	< 0.00001
24-Apr-12	13																								
01-May-12	14	0.0314	8.02	0.0101	0.023	15.6	7.03	0.04	0.00012	0.0204	< 0.009	4.86	0.00268	3.15	< 0.00001	0.21	0.609	75.1	0.00050	0.00017	0.0003	0.00312	0.00020	0.223	< 0.00001
08-May-12	15																								
15-May-12	16	0.0224	6.10	0.00692	0.014	8.99	3.93	0.02	0.00006	0.0109	< 0.009	3.12	0.00137	1.64	< 0.00001	0.14	0.376	47.8	0.00038	0.00008	0.0001	0.00299	0.00014	0.143	0.00004
22-May-12	17																								
29-May-12	18	0.0265	5.12	0.00517	0.014	11.6	5.05	0.01	0.00008	0.0134	< 0.009	2.43	0.00129	1.25	0.00001	0.12	0.363	52.1	0.00029	0.00041	0.0002	0.00251	0.00021	0.195	< 0.00001
05-Jun-12	19																								
12-Jun-12	20	0.0341	5.62	0.00502	0.012	11.3	4.71	< 0.01	0.00013	0.0125	< 0.009	2.12	0.00132	1.27	0.00002	0.10	0.307	45.1	0.00028	0.00058	< 0.0001	0.00255	0.00014	0.199	< 0.00001
19-Jun-12	21																								
26-Jun-12	22	0.0352	7.09	0.00495	0.012	12.9	5.25	0.02	0.00007	0.0129	< 0.009	1.97	0.00166	1.51	< 0.00001	0.12	0.337	51.9	0.00024	0.00022	0.0001	0.00315	0.00023	0.236	0.00004
03-Jul-12	23																								
10-Jul-12	24	0.0347	8.51	0.00509	0.013	13.7	5.49	0.02	0.00034	0.0129	< 0.009	1.69	0.00149	1.74	< 0.00001	0.13	0.328	53.1	0.00021	0.00031	0.0006	0.00290	0.00015	0.246	< 0.00001
17-Jul-12	25																								
24-Jul-12	26	0.0470	8.96	0.00433	0.013	14.9	5.89	< 0.01	0.00005	0.0131	< 0.009	1.42	0.00155	1.56	0.00001	0.13	0.321	56.6	0.00018	0.00018	< 0.0001	0.00326	0.00018	0.287	< 0.00001
31-Jul-12	27																								
07-Aug-12	28	0.0298	7.43	0.00412	0.013	14.1	5.58	< 0.01	0.00010	0.0111	< 0.009	1.24	0.00097	1.67	0.00002	0.13	0.293	53.2	0.00019	0.00027	0.0001	0.00239	0.00019	0.260	< 0.00001
14-Aug-12	29																								
21-Aug-12	30	0.0395	8.32	0.00448	0.015	17.4	6.97	0.02	0.00013	0.0147	< 0.009	1.16	0.00120	2.14	0.00004	0.12	0.351	64.1	0.00019	0.00027	0.0002	0.00283	0.00017	0.293	0.00001
28-Aug-12	31																								
04-Sep-12	32	0.0394	6.08	0.00414	0.011	12.8	5.06	0.06	0.00008	0.0101	< 0.009	0.834	0.00090	1.15	0.00001	0.12	0.242	46.6	0.00015	0.00026	0.0002	0.00287	0.00049	0.256	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	0.0364	8.51	0.00394	0.016	17.1	6.83	0.05	0.00013	0.0128	< 0.009	1.08	0.00103	3.21	0.00004	0.11	0.333	62.0	0.00016	0.00043	0.0002	0.00243	0.00021	0.389	< 0.00001
25-Sep-12	35																								
02-Oct-12	36	0.0377	5.08	0.00390	0.013	13.3	5.27	0.02	0.00013	0.0106	< 0.009	0.907	0.00078	2.14	0.00002	0.09	0.247	48.9	0.00015	0.00014	0.0001	0.00257	0.00009	0.281	< 0.00001
09-Oct-12	37																								
16-Oct-12	38	0.0397	5.83	0.00382	0.013	13.7	5.63	0.01	0.00004	0.0108	< 0.009	0.933	0.00094	3.10	0.00002	0.09	0.295	55.3	0.00014	0.00133	< 0.0001	0.00214	0.00011	0.341	< 0.00001
23-Oct-12	39																								
30-Oct-12	40	0.0533	6.10	0.00473	0.013	13.2	5.50	0.02	0.00009	0.0111	< 0.009	0.943	0.00061	2.53	< 0.00001	0.09	0.267	52.2	0.00014	0.00014	0.0001	0.00259	0.00014	0.356	< 0.00001
06-Nov-12	41																								
13-Nov-12	42	0.0575	7.02	0.00453	0.011	10.6	4.34	0.02	0.00012	0.0108	< 0.009	0.745	0.00044	1.53	< 0.00001	0.09	0.221	47.0	0.00014	0.00008	< 0.0001	0.00300	0.00007	0.336	< 0.00001
20-Nov-12	43																								
27-Nov-12	44	0.0603	9.09	0.00439	0.016	12.2	5.17	0.01	0.00006	0.0110	< 0.009	0.943	0.00084	3.96	0.00001	0.08	0.283	53.2	0.00012	0.00011	< 0.0001	0.00246	< 0.00003	0.372	< 0.00001
04-Dec-12	45																								
11-Dec-12	46	0.0649	7.89	0.00535	0.012	9.80	4.11	< 0.01	0.00035	0.0087	< 0.009	0.901	0.00063	3.62	< 0.00001	0.11	0.250	43.4	0.00013	0.00051	0.0002	0.00200	0.00028	0.304	< 0.00001
18-Dec-12	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	0.0746	10.3	0.00445	0.013	11.1	4.08	< 0.01	0.00020	0.0101	< 0.009	0.825	0.00062	2.30	0.00003	0.07	0.299	51.5	0.00014	0.00014	< 0.0001	0.00277	< 0.00003	0.339	< 0.00001
01-Jan-13	49																								
08-Jan-13	50	0.0859	10.7	0.00380	0.013	8.68	3.61	0.01	0.00014	0.0096	< 0.009	0.738	0.00063	2.74	0.00006	0.08	0.199	42.2	0.00011	0.00013	0.0001	0.00285	0.00008	0.343	< 0.00001
15-Jan-13	51																								
22-Jan-13	52	0.112	12.2	0.00592	0.014	8.91	3.69	0.01	0.00005	0.0107	< 0.009	0.706	0.00073	2.95	0.00006	0.01	0.188	48.8	0.00013	0.00015	0.0002	0.00326	0.00010	0.406	< 0.00001
29-Jan-13	53																								
05-Feb-13	54	0.141	15.0	0.00520	0.019	10.3	4.24	0.01	0.00030	0.0117	< 0.009	0.722	0.00092	3.82	0.00008	0.09	0.213	61.7	0.00014	0.00005	< 0.0001	0.00348	< 0.00003	0.467	0.00002
12-Feb-13	55																								
19-Feb-13	56	0.182	15.4	0.00510	0.021	10.0	4.11	0.01	0.00019	0.0132	< 0.009	0.918	0.00101	5.03	0.00008	0.87	0.191	62.5	0.00013	0.00008	0.0001	0.00336	< 0.00003	0.496	0.00005
26-Feb-13	57																								
05-Mar-13	58	0.139	17.1	0.00478	0.016	10.1	4.10	< 0.01	0.00034	0.0112	< 0.009	0.705	0.00094	6.29	0.00010	0.16	0.221	62.5	0.00012	0.00004	0.0002	0.00252	< 0.00003	0.467	< 0.00001
12-Mar-13	59																								
19-Mar-13	60	0.169	14.1	0.00520	0.016	8.62	3.49	< 0.01	0.00004	0.0113	< 0.009	0.612	0.00062	3.69	0.00010	0.09	0.168	55.7	0.00013	0.00025	< 0.0001	0.00292	< 0.00003	0.423	0.00002
26-Mar-13	61																								
02-Apr-13	62	0.188	17.6	0.00546	0.017	8.16	3.40	0.03	0.00003	0.0144	< 0.009	0.586	0.00035	3.63	0.00012	0.09	0.171	60.2	0.00013	< 0.00001	< 0.0001	0.00285	< 0.00003	0.434	0.00002
09-Apr-13	63																								
16-Apr-13	64	0.210	19.1	0.00537	0.016	8.02	3.26	< 0.01	0.00009	0.0117	< 0.009	0.570	0.00046	4.78	0.00011	0.10	0.190	64.3	0.00012	0.00003	< 0.0001	0.00271	< 0.00003	0.457	0.00002
23-Apr-13	65																								
30-Apr-13	66	0.177	20.0	0.00540	0.015	7.24	3.04	< 0.01	0.00003	0.0107	< 0.009	0.506	0.00054	4.04	0.00011	0.10	0.162	61.2	0.00011	0.00003	< 0.0001	0.00229	< 0.00003	0.393	0.00003
07-May-13	67																								
14-May-13	68	0.229	23.2	0.00639	0.016	8.05	3.29	0.02	0.00016	0.0132	< 0.009	0.520	0.00059	5.19	0.00015	0.10	0.155	72.0	0.00011	0.00008	< 0.0001	0.00275	< 0.00003	0.524	0.00001
21-May-13	69																								
28-May-13	70	0.192	22.3	0.00550	0.016	7.15	2.93	0.02	0.00003	0.0114	< 0.009	0.497	0.00062	3.33	0.00013	0.08	0.153	62.7	0.00011	0.00005	< 0.0001	0.00231	< 0.00003	0.423	0.00002
04-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	0.202	28.2	0.00543	0.014	6.53	2.66	0.01	0.00019	0.0117	< 0.009	0.443	0.00072	2.79	0.00007	0.09	0.128	65.5	0.00009	0.00002	< 0.0001	0.00228	< 0.00003	0.410	0.00001
02-Jul-13	75																								
09-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	0.246	37.1	0.00521	0.016	6.39	2.54	0.03	0.00008	0.0130	< 0.009	0.404	0.00075	3.43	0.00009	0.06	0.117	74.2	0.00008	0.00003	< 0.0001	0.00247	< 0.00003	0.436	0.00001
30-Jul-13	79																								
06-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L
24-Jan-12	0	500	415	5.67	207	938	#N/A	18.9	2.5	467	288	0.201	0.0035	0.0043	0.0635	0.00488	< 0.00001	0.0181	0.0842	102	< 0.0005
31-Jan-12	1	500	475	5.28	257	583	#N/A	11.6	0.6	261	177	0.235	0.0022	0.0054	0.0472	0.00504	< 0.00001	0.0221	0.0522	62.5	< 0.0005
07-Feb-12	2	500	475	5.25	281	472	#N/A	10.9	0.7	222	171	0.276	0.0013	0.0033	0.0394	0.00527	< 0.00001	0.0213	0.0420	61.0	< 0.0005
14-Feb-12	3	500	450	5.12	425	424	#N/A	15.5	0.5	177	150	0.314	0.0009	0.0034	0.0324	0.00534	< 0.00001	0.0159	0.0369	54.0	< 0.0005
21-Feb-12	4	500	470	4.88	342	441	#N/A	20.0	<0.1	205	172	0.569	0.0010	0.0029	0.0267	0.00843	< 0.00001	0.0200	0.0379	62.6	< 0.0005
28-Feb-12	5	500	475	4.49	477	374															
06-Mar-12	6	500	450	4.58	438	376	#N/A	28.0	0.0	157	127	1.02	0.0012	0.0035	0.0268	0.00972	< 0.00001	0.0137	0.0288	46.4	< 0.0005
13-Mar-12	7	500	455	4.17	468	342															
20-Mar-12	8	500	455	4.31	385	328	5.5	26.5	0.0	133	102	0.617	0.0009	0.0026	0.0200	0.00902	< 0.00001	0.0072	0.014640	38.6	< 0.0005
27-Mar-12	9	500	440	3.96	373	312															
03-Apr-12	10	500	470	3.84	425	338	11.4	44.2	0.0	144	91.9	1.06	0.0004	0.0031	0.0135	0.0116	< 0.00001	0.0073	0.0161	34.5	< 0.0005
10-Apr-12	11	500	460	3.84	357	352															
17-Apr-12	12	500	460	3.81	390	312	13.4	46.5	0.0	119	61.6	1.19	0.0006	0.0055	0.0133	0.01151	< 0.00001	0.0045	0.00960	23.2	0.0012
24-Apr-12	13	500	425	3.70	547	321															
01-May-12	14	500	425	3.68	423	317	15.8	51.5	0.0	126	73.4	1.06	0.0007	0.0047	0.0167	0.0116	< 0.00001	0.0066	0.0111	27.7	0.0007
08-May-12	15	500	485	3.59	470	375															
15-May-12	16	500	490	3.51	367	393	27.6	81.8	0.0	125	71.7	1.89	0.0005	0.0046	0.0135	0.0130	< 0.00001	0.0063	0.0121	27.2	0.0009
22-May-12	17	500	460	3.51	371	407															
29-May-12	18	500	435	3.39	368	449	33.0	96.2	0.0	153	66.3	2.44	0.0007	0.0088	0.0110	0.0152	< 0.00001	0.0049	0.0127	25.2	0.0029
05-Jun-12	19	500	460	3.48	437	391															
12-Jun-12	20	500	450	3.44	425	372	29.5	86.2	0.0	103	48.8	2.03	0.0009	0.0073	0.00948	0.01022	< 0.00001	0.0031	0.009175	18.7	0.0026
19-Jun-12	21	500	445	3.38	425	419															
26-Jun-12	22	500	460	3.38	388	438	37.5	106.4	0.0	153	53.5	2.29	0.0004	0.0089	0.00796	0.00999	< 0.00001	0.0030	0.010299	20.6	0.0032
03-Jul-12	23	500	445	3.43	535	415															
10-Jul-12	24	500	445	3.28	385	482	47.3	124.8	0.0	159	47.8	3.03	0.0010	0.0086	0.00779	0.00980	< 0.00001	0.0036	0.0129	18.3	0.0067
17-Jul-12	25	500	450	3.26	445	477															
24-Jul-12	26	500	445	3.28	401	495	49.8	131.4	0.0	169	49.0	3.04	0.0005	0.0070	0.00601	0.00934	< 0.00001	0.0031	0.0133	19.0	0.0054
31-Jul-12	27	500	480	3.22	448	516															
07-Aug-12	28	500	445	3.19	404	521	55.5	132.8	0.0	169	48.6	3.00	0.0007	0.0120	0.00561	0.00785	< 0.00001	0.0029	0.0129	18.9	0.0080
14-Aug-12	29	500	465	3.15	402	587															
21-Aug-12	30	500	470	3.17	397	565	61.1	155.8	0.0	182	53.3	4.35	0.0008	0.0100	0.0049	0.00748	0.00002	0.0030	0.0149	20.8	0.0082
28-Aug-12	31	500	495	3.26	392	511															
04-Sep-12	32	500	495	3.27	453	430	41.6	102.5	0.0	135	45.2	3.57	0.0005	0.0099	0.00586	0.00535	< 0.00001	0.0025	0.0111	17.7	0.0057
11-Sep-12	33	500	485	3.19	455	570															
18-Sep-12	34	500	465	3.19	404	524	52.4	132.0	0.0	156	39.0	3.05	0.0011	0.0122	0.00396	0.00577	< 0.00001	0.0030	0.0123	15.2	0.0038
25-Sep-12	35	500	485	3.20	480	590															
02-Oct-12	36	500	485	3.20	407	487	44.6	104.0	0.0	131	40.8	2.54	0.0005	0.0114	0.0047	0.00451	< 0.00001	0.0026	0.01063	16.0	0.0041
09-Oct-12	37	500	485	3.31	490	570															
16-Oct-12	38	500	495	3.15	449	502	51.0	111.3	0.0	150	35.2	2.36	0.0004	0.0114	0.00542	0.00419	< 0.00001	0.0026	0.00999	13.8	0.0026
23-Oct-12	39	500	485	3.19	485	570															
30-Oct-12	40	500	475	3.14	393	463	50.3	107.1	0.0	138	35.8	2.12	0.0005	0.0143	0.00687	0.00357	< 0.00001	0.0029	0.00825	14.0	0.0029
06-Nov-12	41	500	475	3.19	490	580															
13-Nov-12	42	500	505	3.26	419	377	38.5	85.7	0.0	92	26.3	2.04	0.0005	0.0105	0.00813	0.00276	< 0.00001	0.0021	0.00640	10.3	0.0026
20-Nov-12	43	500	480	3.20	495	590															
27-Nov-12	44	500	495	3.43	391	390	30.6	93.2	0.0	128	29.0	2.06	0.0004	0.0108	0.00407	0.00323	< 0.00001	0.0015	0.00698	11.3	0.0020
04-Dec-12	45	500	490	3.10	490	530															
11-Dec-12	46	500	520	3.20	409	453	44.4	94.9	0.0	114	30.5	1.78	0.0006	0.0082	0.00737	0.00242	< 0.00001	0.0020	0.00588	12.0	0.0019
18-Dec-12	47	500	460	3.24	508	417															

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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
25-Dec-12	48	500	500	3.18	535	526	58.4	125.9	0.0	140	32.7	2.43	0.0006	0.0102	0.00578	0.00329	< 0.00001	0.0017	0.00759	12.8	0.0028
01-Jan-13	49	500	495	3.20	495	550															
08-Jan-13	50	500	520	3.25	422	442	43.8	94.4	0.0	133	31.0	2.27	0.0007	0.0138	0.00873	0.00228	< 0.00001	0.0021	0.00581	12.2	0.0030
15-Jan-13	51	500	500	3.10	480	490															
22-Jan-13	52	500	495	3.17	396	465	48.2	101.7	0.0	140	25.1	2.09	0.0006	0.0198	0.00794	0.00235	< 0.00001	0.0016	0.00532	9.86	0.0027
29-Jan-13	53	500	495	3.12	423	518															
05-Feb-13	54	500	470	3.10	432	531	58.8	123.0	0.0	163	27.2	2.55	0.0007	0.0201	0.00623	0.00261	< 0.00001	0.0003	0.00563	10.7	0.0025
12-Feb-13	55	500	500	3.13	495	519															
19-Feb-13	56	500	465	3.15	519	433	46.0	97.2	0.0	137	21.0	2.53	0.0005	0.0161	0.00484	0.00206	< 0.00001	0.0012	0.00536	8.18	0.0021
26-Feb-13	57	500	500	3.08	497	595															
05-Mar-13	58	500	495	3.09	509	545	62.2	124.2	0.0	151	25.9	2.32	0.0006	0.0141	0.00484	0.00194	< 0.00001	0.0015	0.00598	10.2	0.0016
12-Mar-13	59	500	465	3.12	490	520															
19-Mar-13	60	500	475	3.19	435	607	71.0	145.7	0.0	157	31.2	2.41	0.0006	0.0217	0.00708	0.00218	< 0.00001	0.0011	0.00552	12.3	0.0028
26-Mar-13	61	500	475	3.12	550	521															
02-Apr-13	62	500	465	3.07	432	514	72.5	140.3	0.0	140	23.5	2.15	0.0006	0.0226	0.00695	0.00179	< 0.00001	0.0015	0.00449	9.22	0.0024
09-Apr-13	63	500	450	3.07	595	551															
16-Apr-13	64	500	450	3.09	436	515	68.1	130.6	0.0	166	25.4	2.11	0.0006	0.0154	0.00594	0.00168	< 0.00001	0.0012	0.00494	9.95	0.0019
23-Apr-13	65	500	485	3.14	444	565															
30-Apr-13	66	500	480	3.13	444	463	59.3	123.0	0.0	154	22.7	1.98	0.0005	0.0157	0.00623	0.00138	< 0.00001	0.0017	0.00444	8.90	0.0018
07-May-13	67	500	490	3.21	485	470															
14-May-13	68	500	485	3.15	487	466	61.3	125.1	0.0	155	24.5	2.12	0.0006	0.0181	0.00647	0.00123	< 0.00001	0.0018	0.00465	9.64	0.0022
21-May-13	69	500	505	3.16	484	465															
28-May-13	70	500	490	3.10	561	513	65.9	126.9	0.0	165	27.1	2.17	0.0006	0.0171	0.00641	0.00132	< 0.00001	0.0014	0.00476	10.7	0.0020
04-Jun-13	71	500	480	3.14	616	517															
11-Jun-13	72	500	465	3.13	541	566	74.7	146.3	0.0	164											
18-Jun-13	73	500	455	3.04	465	604															
25-Jun-13	74	500	455	3.06	523	626	76.7	140.8	0.0	172	33.3	1.91	0.0006	0.0147	0.00615	0.00120	< 0.00001	0.0040	0.00485	13.1	0.0021
02-Jul-13	75	500	455	3.07	588	585															
09-Jul-13	76	500	460	3.07	461	668	88.2	166.6	0.0	190											
16-Jul-13	77	500	445	3.02	491	629															
23-Jul-13	78	500	455	3.03	542	590	80.6	158.4	0.0	180	29.4	2.56	0.0006	0.0146	0.00530	0.00136	< 0.00001	0.0017	0.00504	11.5	0.0021
30-Jul-13	79	500	475	3.03	482	657															
06-Aug-13	80	500	460	3.00	449	686	87.9	164.0	0.0	193											
13-Aug-13	81	500	470	2.96	498	705															
20-Aug-13	82	500	460	3.00	523	689	82.8	142.8	0.0	187											
27-Aug-13	83	500	450	3.00	465	661															

Date	Cycle No.	Co mg/L	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.109	0.0196	9.06	0.0489	0.095	8.09	3.67	0.01	0.00141	0.0430	< 0.009	32.6	0.0161	1.26	0.00002	53.2	1.86	148	0.00184	0.00002	0.0004	0.00330	0.00031	1.53	< 0.00001
31-Jan-12	1	0.0676	0.0120	2.66	0.04435	0.050	5.18	2.62	< 0.01	0.00043	0.0250	< 0.009	16.8	0.0220	2.41	0.00004	27.7	1.16	90.0	0.00115	0.00077	0.0005	0.00344	0.00030	0.923	< 0.00001
07-Feb-12	2	0.0644	0.0133	2.16	0.0417	0.035	4.47	2.47	< 0.01	0.00056	0.0239	< 0.009	12.7	0.0173	2.45	0.00003	14.4	1.11	73.5	0.00089	0.00018	0.0004	0.00390	0.00012	0.865	< 0.00001
14-Feb-12	3	0.0633	0.0161	2.68	0.0332	0.029	3.77	2.23	< 0.01	0.00030	0.0227	< 0.009	9.28	0.0133	2.21	0.00003	6.12	1.08	59.5	0.00075	0.00018	0.0003	0.00510	0.00012	0.897	< 0.00001
21-Feb-12	4	0.0681	0.0199	3.94	0.0311	0.029	3.78	2.41	< 0.01	0.00040	0.0243	< 0.009	9.89	0.0115	3.51	0.00003	3.12	1.14	67.1	0.00074	0.00018	0.0004	0.00731	0.00006	1.08	< 0.00001
28-Feb-12	5																									
06-Mar-12	6	0.0739	0.0308	4.98	0.0268	0.016	2.67	1.79	< 0.01	0.00052	0.0230	0.014	8.77	0.00829	1.66	0.00002	1.01	0.955	55.1	0.00067	0.00028	0.0002	0.00931	0.00014	1.21	0.00001
13-Mar-12	7																									
20-Mar-12	8	0.0399	0.0230	5.71	0.0150	0.005	1.44	1.00	< 0.01	0.00076	0.0134	< 0.009	4.99	0.00655	1.62	0.00001	0.37	0.788	43.8	0.00036	0.00020	< 0.0001	0.00768	< 0.00003	0.785	0.00002
27-Mar-12	9																									
03-Apr-12	10	0.0451	0.0342	10.9	0.0104	0.003	1.39	1.12	< 0.01	0.00030	0.0153	< 0.009	3.88	0.00434	3.19	0.00003	0.31	0.670	46.8	0.00037	0.00011	0.0002	0.0115	< 0.00003	1.02	0.00002
10-Apr-12	11																									
17-Apr-12	12	0.0363	0.0394	15.0	0.00687	0.002	0.880	0.735	0.02	0.00038	0.0123	< 0.009	2.19	0.00332	1.35	< 0.00001	0.19	0.454	36.4	0.00025	0.00025	0.0002	0.0103	0.00056	0.797	0.00001
24-Apr-12	13																									
01-May-12	14	0.0406	0.0360	11.4	0.00694	0.003	1.03	0.871	0.03	0.00047	0.0130	< 0.009	2.82	0.00388	1.59	< 0.00001	0.22	0.550	38.7	0.00029	0.00018	0.0001	0.00978	0.00022	0.856	0.00001
08-May-12	15																									
15-May-12	16	0.0408	0.0483	23.4	0.00478	0.002	0.896	0.904	0.02	0.00024	0.0133	< 0.009	2.13	0.00421	3.67	< 0.00001	0.22	0.487	48.2	0.00027	0.00028	0.0002	0.0123	0.00043	1.07	0.00004
22-May-12	17																									
29-May-12	18	0.0450	0.0610	28.5	0.00555	0.002	0.854	0.900	0.01	0.00036	0.0149	< 0.009	1.39	0.00309	2.03	< 0.00001	0.18	0.428	53.2	0.00019	0.00019	0.0001	0.0112	0.00137	1.23	0.00003
05-Jun-12	19																									
12-Jun-12	20	0.0324	0.0572	24.5	0.00332	0.002	0.526	0.605	< 0.01	0.00075	0.0110	0.023	0.922	0.00271	1.41	< 0.00001	0.16	0.299	41.3	0.00014	0.00020	0.0001	0.00654	0.00149	0.871	< 0.00001
19-Jun-12	21																									
26-Jun-12	22	0.0352	0.0696	31.8	0.00326	0.002	0.517	0.640	0.01	0.00040	0.0114	0.018	0.901	0.00275	2.09	< 0.00001	0.21	0.305	50.8	0.00013	0.00011	0.0001	0.00780	0.00211	0.958	0.00003
03-Jul-12	23																									
10-Jul-12	24	0.0370	0.0813	39.0	0.00398	0.002	0.492	0.676	0.03	0.00047	0.0123	0.032	0.973	0.00401	3.28	0.00002	0.22	0.266	54.8	0.00013	0.00022	0.0007	0.00640	0.00284	1.11	0.00001
17-Jul-12	25																									
24-Jul-12	26	0.0354	0.0992	37.7	0.00399	0.002	0.401	0.672	0.01	0.00047	0.0113	0.025	0.813	0.00231	2.75	0.00003	0.24	0.244	57.0	0.00011	0.00011	0.0002	0.00489	0.00246	1.32	0.00001
31-Jul-12	27																									
07-Aug-12	28	0.0303	0.0939	36.9	0.00281	0.002	0.353	0.612	0.02	0.00074	0.0107	0.040	0.681	0.00121	2.06	0.00002	0.20	0.194	58.7	0.00011	0.00023	0.0002	0.00414	0.00406	1.09	0.00002
14-Aug-12	29																									
21-Aug-12	30	0.0366	0.128	42.3	0.00167	0.002	0.326	0.645	< 0.01	0.00073	0.0126	0.031	0.691	0.00137	3.20	0.00005	0.28	0.217	64.4	0.00012	0.00030	0.0004	0.00391	0.00381	1.22	0.00007
28-Aug-12	31																									
04-Sep-12	32	0.0266	0.113	32.8	0.00251	0.001	0.223	0.518	0.01	0.00056	0.0090	0.040	0.599	0.00124	2.31	0.00004	0.21	0.169	50.7	0.00010	0.00018	0.0003	0.00260	0.00308	1.02	0.00003
11-Sep-12	33																									
18-Sep-12	34	0.0289	0.132	36.5	0.00193	0.001	0.234	0.579	0.03	0.00094	0.0097	0.052	0.796	0.00127	4.05	0.00004	0.24	0.155	53.1	0.00012	0.00022	0.0002	0.00227	0.00289	1.28	0.00001
25-Sep-12	35																									
02-Oct-12	36	0.0249	0.112	31.4	0.00153	< 0.001	0.184	0.504	< 0.01	0.00118	0.0084	0.046	0.688	0.00106	2.35	0.00004	0.18	0.150	50.0	0.00011	0.00025	0.0002	0.00187	0.00247	0.872	0.00001
09-Oct-12	37																									
16-Oct-12	38	0.0269	0.132	34.0	0.00082	< 0.001	0.192	0.543	0.01	0.00049	0.0091	0.062	0.792	0.00159	3.55	0.00004	0.17	0.137	51.5	0.00012	0.00020	0.0002	0.00163	0.00228	1.04	0.00003
23-Oct-12	39																									
30-Oct-12	40	0.0237	0.118	31.1	0.00323	< 0.001	0.180	0.449	0.02	0.00058	0.0081	0.065	0.814	0.00094	2.29	0.00003	0.16	0.132	48.1	0.00011	0.00023	0.0002	0.00154	0.00248	0.780	< 0.00001
06-Nov-12	41																									
13-Nov-12	42	0.0212	0.0957	24.9	0.00223	< 0.001	0.152	0.340	0.01	0.00054	0.0072	0.039	0.649	0.00083	2.05	0.00005	0.14	0.0903	38.1	0.00010	0.00012	0.0001	0.00118	0.00232	0.606	< 0.00001
20-Nov-12	43																									
27-Nov-12	44	0.0231	0.110	32.8	0.00149	< 0.001	0.173	0.455	0.01	0.00058	0.0080	0.049	0.806	0.00145	3.46	0.00006	0.14	0.108	45.3	0.00010	0.00030	< 0.0001	0.00138	0.00222	0.653	0.00001
04-Dec-12	45																									
11-Dec-12	46	0.0202	0.0973	30.4	0.00210	< 0.001	0.123	0.392	< 0.01	0.00072	0.0069	0.026	0.740	0.00108	2.35	0.00004	0.17	0.107	40.0	0.00010	0.00030	0.0003	0.000934	0.00174	0.545	< 0.00001
18-Dec-12	47																									

Date	Cycle No.	Co mg/L	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	0.0268	0.129	37.6	0.00158	< 0.001	0.165	0.458	< 0.01	0.00074	0.0093	0.046	0.807	0.00125	2.31	0.00012	0.13	0.132	50.7	0.00012	0.00017	< 0.0001	0.00118	0.00207	0.664	< 0.00001
01-Jan-13	49																									
08-Jan-13	50	0.0206	0.0978	31.8	0.00303	< 0.001	0.122	0.372	< 0.01	0.00064	0.0079	0.082	0.762	0.00120	2.03	0.00008	0.15	0.0965	40.9	0.00010	0.00013	0.0002	0.000976	0.00240	0.522	< 0.00001
15-Jan-13	51																									
22-Jan-13	52	0.0196	0.0994	29.3	0.00363	< 0.001	0.125	0.332	< 0.01	0.00053	0.0069	0.115	0.763	0.00131	1.84	0.00007	0.06	0.0887	42.1	0.00012	0.00012	0.0002	0.000926	0.00259	0.498	< 0.00001
29-Jan-13	53																									
05-Feb-13	54	0.0234	0.118	33.5	0.00420	< 0.001	0.134	0.369	< 0.01	0.00087	0.0079	0.122	0.898	0.00164	0.93	0.00006	0.14	0.0959	48.3	0.00015	0.00017	0.0001	0.00104	0.00300	0.559	< 0.00001
12-Feb-13	55																									
19-Feb-13	56	0.0191	0.103	29.5	0.00172	< 0.001	0.140	0.323	0.01	0.00081	0.0073	0.089	0.724	0.00134	2.12	0.00009	0.32	0.0660	41.2	0.00010	0.00008	0.0001	0.000705	0.00210	0.508	0.00001
26-Feb-13	57																									
05-Mar-13	58	0.0216	0.110	33.9	0.00302	< 0.001	0.115	0.388	< 0.01	0.00098	0.0079	0.085	0.775	0.00142	2.91	0.00009	0.16	0.0902	48.3	0.00011	0.00008	0.0001	0.000664	0.00177	0.620	< 0.00001
12-Mar-13	59																									
19-Mar-13	60	0.0243	0.117	35.4	0.00446	< 0.001	0.132	0.385	< 0.01	0.00093	0.0085	0.129	0.904	0.00121	2.00	0.00007	0.14	0.0912	53.1	0.00015	0.00005	< 0.0001	0.000780	0.00255	0.544	< 0.00001
26-Mar-13	61																									
02-Apr-13	62	0.0219	0.109	33.2	0.00352	< 0.001	0.120	0.321	< 0.01	0.00082	0.0086	0.123	0.841	0.00081	1.82	0.00010	0.13	0.0719	47.1	0.00014	0.00005	0.0001	0.000649	0.00255	0.444	< 0.00001
09-Apr-13	63																									
16-Apr-13	64	0.0231	0.116	34.2	0.00558	< 0.001	0.139	0.359	< 0.01	0.00102	0.0082	0.115	0.844	0.00088	1.65	0.00009	0.15	0.0753	48.9	0.00014	0.00019	0.0001	0.000706	0.00260	0.519	< 0.00001
23-Apr-13	65																									
30-Apr-13	66	0.0198	0.0974	31.9	0.00295	< 0.001	0.103	0.352	< 0.01	0.00078	0.0071	0.097	0.658	0.00090	2.12	0.00011	0.14	0.0634	44.8	0.00012	0.00007	< 0.0001	0.000484	0.00183	0.462	< 0.00001
07-May-13	67																									
14-May-13	68	0.0202	0.0975	29.9	0.00344	< 0.001	0.100	0.340	< 0.01	0.00097	0.0072	0.111	0.728	0.00098	2.15	0.00010	0.19	0.0611	46.2	0.00012	0.00007	0.0001	0.000492	0.00196	0.525	< 0.00001
21-May-13	69																									
28-May-13	70	0.0196	0.0974	32.9	0.00393	< 0.001	0.106	0.376	< 0.01	0.00103	0.0071	0.110	0.788	0.00106	1.80	0.00012	0.14	0.0717	46.3	0.00013	0.00007	0.0001	0.000521	0.00187	0.516	< 0.00001
04-Jun-13	71																									
11-Jun-13	72																									
18-Jun-13	73																									
25-Jun-13	74	0.0222	0.117	33.4	0.00696	< 0.001	0.115	0.374	0.01	0.00099	0.0081	0.112	0.945	0.00100	1.16	0.00012	0.17	0.0813	50.4	0.00014	0.00007	0.0001	0.000570	0.00222	0.546	< 0.00001
02-Jul-13	75																									
09-Jul-13	76																									
16-Jul-13	77																									
23-Jul-13	78	0.0253	0.134	37.3	0.00814	< 0.001	0.128	0.356	< 0.01	0.00110	0.0091	0.118	0.940	0.00103	1.92	0.00014	0.13	0.0696	55.6	0.00014	0.00006	0.0002	0.000656	0.00276	0.561	0.00002
30-Jul-13	79																									
06-Aug-13	80																									
13-Aug-13	81																									
20-Aug-13	82																									
27-Aug-13	83																									

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L
24-Jan-12	0	500	385	7.66	241	143	#N/A	3.3	28.3	25	37.3	0.0377	0.0049	0.0055	0.0141	< 0.00002	0.00002	0.0104	0.000263	14.4	< 0.0005	0.000406
31-Jan-12	1	500	480	7.64	229	119	#N/A	2.5	28.2	25	37.4	0.0423	0.0083	0.0075	0.0137	0.00003	0.00003	0.0132	0.000308	14.4	< 0.0005	0.000420
07-Feb-12	2	500	455	7.80	247	69	#N/A	3.1	26.0	13	26.5	0.0535	0.0046	0.0044	0.00753	0.00002	0.00003	0.0069	0.000009	10.3	< 0.0005	0.000316
14-Feb-12	3	500	465	7.79	353	52	#N/A	3.6	23.5	7	22.8	0.0646	0.0038	0.0048	0.00766	0.00003	0.00005	0.0050	0.000210	8.89	< 0.0005	0.000334
21-Feb-12	4	500	475	7.65	278	50	#N/A	4.5	24.8	5	23.1	0.0399	0.0037	0.0045	0.00691	0.00004	< 0.00001	0.0041	0.000178	9.06	< 0.0005	0.000330
28-Feb-12	5	500	475	7.69	344	44																
06-Mar-12	6	500	440	7.70	338	38	#N/A	4.4	20.5	4	17.7	0.0679	0.0027	0.0039	0.00586	0.00005	0.00006	0.0025	0.000117	6.97	< 0.0005	0.000270
13-Mar-12	7	500	435	7.40	333	38																
20-Mar-12	8	500	460	7.47	226	40	#N/A	3.3	21.5	4	19.5	0.0418	0.0025	0.0034	0.00581	< 0.00002	0.00004	0.0020	0.000025	7.71	< 0.0005	0.000068
27-Mar-12	9	500	465	7.35	267	41																
03-Apr-12	10	500	475	7.33	236	35	#N/A	2.7	16.7	3	17.9	0.0588	0.0017	0.0029	0.00512	0.00006	0.00005	0.0014	0.000066	7.08	< 0.0005	0.000261
10-Apr-12	11	500	465	7.31	261	38																
17-Apr-12	12	500	465	7.30	238	37	#N/A	2.9	15.8	4	17.5	0.0590	0.0018	0.0027	0.00522	0.00007	0.00007	0.0020	0.000070	6.95	< 0.0005	0.000270
24-Apr-12	13	500	475	7.38	365	37																
01-May-12	14	500	470	7.46	269	36	#N/A	3.8	17.2	6	17.2	0.0594	0.0019	0.0024	0.00485	0.00009	0.00008	0.0016	0.000063	6.84	< 0.0005	0.000296
08-May-12	15	500	475	7.31	335	37																
15-May-12	16	500	475	7.29	128	37	#N/A	2.9	16.0	3	17.2	0.0590	0.0020	0.0025	0.00487	0.00009	0.00009	0.0018	0.000053	6.84	< 0.0005	0.000217
22-May-12	17	500	445	7.29	154	35																
29-May-12	18	500	455	7.31	163	34	#N/A	2.9	16.6	3	17.4	0.0704	0.0017	0.0021	0.00422	0.00011	0.00005	0.0017	0.000059	6.91	< 0.0005	0.000296
05-Jun-12	19	500	440	7.28	244	37																
12-Jun-12	20	500	465	7.35	242	34	#N/A	3.0	15.7	6	17.0	0.0609	0.0019	0.0021	0.00449	0.00006	0.00003	0.0014	0.000030	6.77	< 0.0005	0.000186
19-Jun-12	21	500	455	7.22	343	36																
26-Jun-12	22	500	475	7.29	233	35	#N/A	3.2	17.5	3	17.6	0.0668	0.0016	0.0026	0.00404	0.00006	0.00003	0.0013	0.000034	7.02	< 0.0005	0.000194
03-Jul-12	23	500	465	7.48	315	35																
10-Jul-12	24	500	475	7.24	271	36	#N/A	3.7	15.7	4	17.2	0.0624	0.0019	0.0017	0.00433	0.00002	0.00002	0.0022	0.000037	6.83	< 0.0005	0.000103
17-Jul-12	25	500	475	7.11	357	35																
24-Jul-12	26	500	470	7.10	276	35	#N/A	2.7	15.0	6	16.6	0.0653	0.0013	0.0016	0.00374	< 0.00002	0.00002	0.0012	0.000082	6.62	< 0.0005	0.000130
31-Jul-12	27	500	460	7.21	341	35																
07-Aug-12	28	500	475	7.27	230	32	#N/A	2.9	15.6	3	16.0	0.0973	0.0013	0.0017	0.00373	0.00007	0.00003	0.0021	0.000142	6.38	< 0.0005	0.000306
14-Aug-12	29	500	465	7.01	146	33																
21-Aug-12	30	500	475	7.08	110	35	#N/A	2.7	15.0	5	17.1	0.0590	0.0018	0.0013	0.0037	< 0.00002	0.00003	0.0017	0.000019	6.81	< 0.0005	0.00003
28-Aug-12	31	500	485	7.11	167	35																
04-Sep-12	32	500	475	7.05	307	26	#N/A	3.7	12.1	4	13.1	0.109	0.0011	0.0012	0.00323	0.00004	0.00002	0.0014	0.000106	5.21	< 0.0005	0.000209
11-Sep-12	33	500	460	7.07	342	34																
18-Sep-12	34	500	515	7.15	243	37	#N/A	2.8	21.0	3	17.2	0.0680	0.0018	0.0015	0.00451	0.00004	0.00001	0.0018	0.000103	6.88	< 0.0005	0.000181
25-Sep-12	35	500	475	7.15	230	40																
02-Oct-12	36	500	470	7.07	263	30	#N/A	2.9	14.7	4	15.2	0.0247	0.0012	0.0015	0.0035	< 0.00002	< 0.00001	0.0017	0.000051	6.07	< 0.0005	0.000198
09-Oct-12	37	500	500	7.25	245	45																
16-Oct-12	38	500	505	7.38	333	30	#N/A	4.7	15.7	6	14.7	0.0348	0.0009	0.0013	0.00379	< 0.00002	0.00001	0.0013	0.000052	5.86	< 0.0005	0.000132
23-Oct-12	39	500	505	7.50	230	45																
30-Oct-12	40	500	490	7.07	243	34	#N/A	3.0	16.9	3	16.8	0.0448	0.0010	0.0014	0.00467	< 0.00002	< 0.00001	0.0020	0.000030	6.72	< 0.0005	0.000013
06-Nov-12	41	500	495	7.49	235	55																
13-Nov-12	42	500	455	7.36	275	26	#N/A	4.4	14.5	3	14.0	0.0305	0.0006	0.0011	0.00291	< 0.00002	0.00002	0.0013	0.000030	5.57	< 0.0005	0.000091
20-Nov-12	43	500	500	7.41	240	105																
27-Nov-12	44	500	500	7.36	197	40	#N/A	4.5	24.2	4	16.3	0.0301	0.0009	0.0011	0.00384	< 0.00002	0.00002	0.0003	0.000021	6.49	< 0.0005	0.000131
04-Dec-12	45	500	480	7.43	245	95																
11-Dec-12	46	500	480	7.08	239	29	#N/A	2.3	14.9	<2	16.6	0.0408	0.0014	0.0011	0.00301	< 0.00002	0.00008	0.0005	0.000014	6.63	< 0.0005	0.000011
18-Dec-12	47	500	485	7.22	363	31																

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L
25-Dec-12	48	500	440	7.48	336	30	#N/A	4.4	16.5	3	15.1	0.0569	0.0009	0.0017	0.00364	< 0.00002	0.00002	0.0003	0.000051	6.05	< 0.0005	0.000204
01-Jan-13	49	500	455	7.41	240	105																
08-Jan-13	50	500	455	7.33	279	26	#N/A	3.2	13.9	4	15.4	0.0625	0.0009	0.0013	0.00271	< 0.00002	0.00003	0.0004	0.000040	6.16	< 0.0005	0.000105
15-Jan-13	51	500	460	7.42	245	65																
22-Jan-13	52	500	445	7.36	130	34	#N/A	4.1	20.5	4	14.2	0.0453	0.0008	0.0017	0.00352	< 0.00002	0.00003	0.0008	0.000028	5.66	< 0.0005	0.000022
29-Jan-13	53	500	465	7.17	389	30																
05-Feb-13	54	500	480	7.39	342	29	#N/A	3.9	15.2	6	13.8	0.0286	0.0010	0.0019	0.00260	< 0.00002	< 0.00001	< 0.0002	0.000032	5.53	< 0.0005	0.000248
12-Feb-13	55	500	460	7.43	320	31																
19-Feb-13	56	500	460	7.16	356	29	#N/A	3.1	14.8	5	13.7	0.0234	0.0009	0.0015	0.00254	< 0.00002	< 0.00001	0.0004	0.000024	5.43	< 0.0005	0.000058
26-Feb-13	57	500	460	7.27	374	31																
05-Mar-13	58	500	515	7.42	356	35	#N/A	4.6	18.1	4	16.9	0.0248	0.0013	0.0013	0.00320	< 0.00002	< 0.00001	0.0010	0.000020	6.74	< 0.0005	0.000147
12-Mar-13	59	500	475	7.41	450	45																
19-Mar-13	60	500	475	7.46	199	31	#N/A	6.4	16.1	3	13.9	0.0239	0.0009	0.0018	0.00276	< 0.00002	0.00002	0.0002	0.000037	5.55	< 0.0005	0.000110
26-Mar-13	61	500	470	7.22	381	32																
02-Apr-13	62	500	475	6.97	355	29	#N/A	4.5	13.5	4	14.3	0.0299	0.0009	0.0012	0.00271	< 0.00002	< 0.00001	0.0006	0.000032	5.73	< 0.0005	0.000252
09-Apr-13	63	500	445	6.71	400	33																
16-Apr-13	64	500	485	7.20	346	32	#N/A	4.3	15.1	5	15.6	0.0389	0.0012	0.0013	0.00340	< 0.00002	< 0.00001	0.0005	0.000045	6.21	< 0.0005	0.000164
23-Apr-13	65	500	480	7.55	368	36																
30-Apr-13	66	500	445	7.19	355	30	#N/A	4.0	13.5	5	15.1	0.0245	0.0010	0.0023	0.00254	< 0.00002	< 0.00001	0.0012	0.000025	6.02	< 0.0005	0.000062
07-May-13	67	500	485	7.21	430	35																
14-May-13	68	500	485	6.81	391	35	#N/A	4.7	15.4	4	16.2	0.0313	0.0011	0.0014	0.00305	< 0.00002	0.00001	0.0011	0.000019	6.46	< 0.0005	0.000155
21-May-13	69	500	495	7.17	411	35																
28-May-13	70	500	500	6.81	392	37	#N/A	4.0	16.1	5	17.9	0.0302	0.0010	0.0011	0.00292	< 0.00002	< 0.00001	0.0007	0.000031	7.15	< 0.0005	0.000044
04-Jun-13	71	500	465	7.38	399	36																
11-Jun-13	72	500	465	7.03	388	36	#N/A	6.7	20.6	5												
18-Jun-13	73	500	465	6.71	425	34																
25-Jun-13	74	500	460	6.72	384	31	#N/A	4.1	13.7	4	14.3	0.0309	0.0008	0.0011	0.00230	< 0.00002	0.00001	0.0031	0.000042	5.73	< 0.0005	0.000094
02-Jul-13	75	500	445	7.35	402	33																
09-Jul-13	76	500	460	6.64	329	34	#N/A	6.5	15.6	4												
16-Jul-13	77	500	450	6.72	437	32																
23-Jul-13	78	500	460	6.54	386	31	#N/A	6.3	13.8	5	13.7	0.0207	0.0008	0.0009	0.00202	< 0.00002	0.00001	0.0014	0.000020	5.48	< 0.0005	0.000016
30-Jul-13	79	500	445	6.59	442	28																
06-Aug-13	80	500	445	6.58	354	31	#N/A	6.4	13.5	4												
13-Aug-13	81	500	435	6.68	426	29																
20-Aug-13	82	500	445	6.67	396	30	#N/A	3.0	11.0	3												
27-Aug-13	83	500	445	6.75	386	27																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0021	< 0.003	0.00124	0.033	0.319	0.0601	0.01	0.00478	0.0007	< 0.009	5.46	0.00264	2.05	< 0.00001	7.54	0.352	10.6	0.00017	0.00004	0.0004	0.000309	0.00067	0.007	0.00005
31-Jan-12	1	0.0008	< 0.003	0.00265	0.027	0.341	0.0691	0.01	0.00560	0.0004	< 0.009	3.38	0.00363	2.05	< 0.00001	4.76	0.367	9.46	0.00014	0.00080	0.0005	0.00119	0.00044	0.006	0.00002
07-Feb-12	2	0.0006	< 0.003	0.00264	0.010	0.197	0.0652	< 0.01	0.00338	0.0007	< 0.009	1.72	0.00206	1.25	0.00003	1.76	0.220	4.32	0.00009	0.00036	0.0003	0.000973	0.00032	0.005	0.00003
14-Feb-12	3	< 0.0005	0.003	0.00412	0.005	0.144	0.0749	0.07	0.00289	0.0004	< 0.009	1.02	0.00209	1.13	0.00003	0.81	0.180	2.74	0.00007	0.00050	0.0003	0.000886	0.00028	0.006	< 0.00001
21-Feb-12	4	< 0.0005	< 0.003	0.00341	0.003	0.119	0.0941	0.01	0.00242	0.0003	< 0.009	0.803	0.00150	1.05	0.00002	0.42	0.162	1.94	0.00005	0.00036	0.0001	0.000930	0.00020	0.006	< 0.00001
28-Feb-12	5																								
06-Mar-12	6	0.0008	< 0.003	0.00372	0.001	0.082	0.0720	0.01	0.00172	0.0002	< 0.009	0.583	0.00159	0.90	0.00003	0.21	0.118	1.31	0.00003	0.00037	0.0003	0.000672	0.00028	0.006	0.00002
13-Mar-12	7																								
20-Mar-12	8	< 0.0005	< 0.003	0.00399	< 0.001	0.068	0.0990	0.01	0.00149	< 0.0001	< 0.009	0.369	0.00144	0.69	0.00001	0.13	0.106	1.14	0.00004	0.00024	< 0.0001	0.000619	0.00010	< 0.001	< 0.00001
27-Mar-12	9																								
03-Apr-12	10	< 0.0005	< 0.003	0.00513	< 0.001	0.050	0.0915	< 0.01	0.00108	0.0002	< 0.009	0.263	0.00134	0.59	0.00003	0.11	0.0896	1.14	0.00002	0.00012	0.0001	0.000511	0.00005	0.007	< 0.00001
10-Apr-12	11																								
17-Apr-12	12	0.0006	0.003	0.00646	< 0.001	0.044	0.0877	0.01	0.00124	0.0002	< 0.009	0.232	0.00144	0.62	0.00001	0.07	0.0841	1.13	0.00002	0.00011	< 0.0001	0.000428	0.00017	0.007	< 0.00001
24-Apr-12	13																								
01-May-12	14	0.0006	0.005	0.00720	< 0.001	0.037	0.0760	0.03	0.00104	0.0002	< 0.009	0.205	0.00152	0.56	0.00003	0.08	0.0763	1.14	0.00003	0.00012	0.0003	0.000358	0.00027	0.006	< 0.00001
08-May-12	15																								
15-May-12	16	0.0006	0.007	0.00641	< 0.001	0.032	0.0549	0.01	0.00123	0.0001	< 0.009	0.192	0.00197	0.59	0.00002	0.07	0.0729	1.17	0.00002	0.00007	< 0.0001	0.000312	0.00017	0.001	< 0.00001
22-May-12	17																								
29-May-12	18	0.0006	0.008	0.00484	< 0.001	0.029	0.0494	0.01	0.00103	< 0.0001	< 0.009	0.162	0.00160	0.51	0.00004	0.06	0.0692	1.10	0.00002	0.00018	0.0001	0.000245	0.00020	0.008	< 0.00001
05-Jun-12	19																								
12-Jun-12	20	0.0005	0.006	0.00334	< 0.001	0.027	0.0386	0.01	0.00105	0.0001	< 0.009	0.153	0.00187	0.47	0.00003	0.06	0.0661	1.04	0.00004	0.00008	< 0.0001	0.000184	0.00015	0.004	< 0.00001
19-Jun-12	21																								
26-Jun-12	22	0.0006	0.005	0.00259	< 0.001	0.024	0.0308	0.01	0.00106	< 0.0001	< 0.009	0.141	0.00188	0.49	0.00002	0.07	0.0651	1.12	< 0.00002	0.00004	< 0.0001	0.000199	0.00032	0.007	< 0.00001
03-Jul-12	23																								
10-Jul-12	24	0.0005	0.015	0.00234	< 0.001	0.025	0.0275	0.01	0.00103	0.0001	< 0.009	0.142	0.00152	0.53	0.00002	0.07	0.0625	1.14	< 0.00002	0.00016	0.0002	0.000137	0.00032	0.005	< 0.00001
17-Jul-12	25																								
24-Jul-12	26	0.0010	0.013	0.00191	< 0.001	0.018	0.0245	< 0.01	0.00100	< 0.0001	< 0.009	0.113	0.00187	0.44	0.00002	0.06	0.0566	1.19	< 0.00002	0.00011	0.0001	0.000112	0.00021	0.008	< 0.00001
31-Jul-12	27																								
07-Aug-12	28	0.0012	< 0.003	0.00192	< 0.001	0.017	0.0191	< 0.01	0.00108	0.0002	< 0.009	0.106	0.00154	0.44	0.00002	0.07	0.0521	1.21	< 0.00002	0.00016	0.0002	0.000127	0.00032	0.002	< 0.00001
14-Aug-12	29																								
21-Aug-12	30	< 0.0005	0.010	0.00138	< 0.001	0.018	0.0180	< 0.01	0.00126	0.0001	< 0.009	0.106	0.00156	0.52	0.00002	0.07	0.0556	1.53	< 0.00002	0.00019	0.0001	0.00011	0.00024	0.002	< 0.00001
28-Aug-12	31																								
04-Sep-12	32	0.0012	0.014	0.00194	< 0.001	0.015	0.0133	< 0.01	0.00088	0.0001	< 0.009	0.079	0.00144	0.31	0.00001	0.07	0.0420	0.97	< 0.00002	0.00014	< 0.0001	0.000102	0.00041	0.009	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	0.0008	0.015	0.00184	< 0.001	0.016	0.0183	0.02	0.00113	< 0.0001	< 0.009	0.094	0.00142	0.53	0.00001	0.06	0.0534	1.13	< 0.00002	0.00023	< 0.0001	0.000127	0.00021	0.009	< 0.00001
25-Sep-12	35																								
02-Oct-12	36	0.0007	0.008	0.00138	< 0.001	0.014	0.0140	< 0.01	0.00099	< 0.0001	< 0.009	0.084	0.00150	0.41	0.00001	0.04	0.0465	1.07	< 0.00002	0.00008	< 0.0001	0.000108	0.00011	0.005	< 0.00001
09-Oct-12	37																								
16-Oct-12	38	0.0007	0.005	0.00158	< 0.001	0.013	0.0136	< 0.01	0.00077	0.0001	< 0.009	0.074	0.00172	0.36	0.00001	0.04	0.0429	0.90	< 0.00002	0.00014	< 0.0001	0.000106	0.00018	0.006	< 0.00001
23-Oct-12	39																								
30-Oct-12	40	< 0.0005	0.015	0.00166	< 0.001	0.015	0.0170	< 0.01	0.00090	< 0.0001	< 0.009	0.081	0.00134	0.42	< 0.00001	0.05	0.0489	1.03	< 0.00002	0.00007	< 0.0001	0.000102	0.00014	0.001	< 0.00001
06-Nov-12	41																								
13-Nov-12	42	< 0.0005	< 0.003	0.00163	< 0.001	0.011	0.0128	0.01	0.00066	< 0.0001	< 0.009	0.058	0.00112	0.27	0.00001	0.03	0.0383	0.88	< 0.00002	0.00007	< 0.0001	0.000072	0.00009	0.003	< 0.00001
20-Nov-12	43																								
27-Nov-12	44	< 0.0005	0.016	0.00211	< 0.001	0.012	0.0124	0.01	0.00077	0.0001	< 0.009	0.066	0.00155	0.37	0.00001	0.04	0.0452	0.94	< 0.00002	0.00014	< 0.0001	0.000080	0.00011	0.002	< 0.00001
04-Dec-12	45																								
11-Dec-12	46	0.0006	0.010	0.00139	< 0.001	0.012	0.0089	< 0.01	0.00068	< 0.0001	< 0.009	0.059	0.00145	0.30	0.00001	0.05	0.0415	0.85	< 0.00002	0.00027	0.0001	0.000064	0.00032	0.002	< 0.00001
18-Dec-12	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	0.0007	0.016	0.00304	< 0.001	0.011	0.0058	< 0.01	0.00081	< 0.0001	< 0.009	0.066	0.00198	0.30	0.00004	0.03	0.0469	1.37	< 0.00002	0.00010	< 0.0001	0.000062	< 0.00003	0.004	< 0.00001
01-Jan-13	49																								
08-Jan-13	50	0.0007	0.009	0.00169	< 0.001	0.010	0.0070	< 0.01	0.00058	< 0.0001	< 0.009	0.061	0.00165	0.32	0.00003	0.03	0.0401	0.84	< 0.00002	0.00008	0.0002	0.000053	0.00017	0.003	< 0.00001
15-Jan-13	51																								
22-Jan-13	52	< 0.0005	0.014	0.00266	< 0.001	0.010	0.0104	< 0.01	0.00058	0.0004	< 0.009	0.067	0.00207	0.24	0.00004	0.03	0.0401	0.89	< 0.00002	0.00007	0.0007	0.000062	0.00031	0.003	0.00002
29-Jan-13	53																								
05-Feb-13	54	0.0009	< 0.003	0.00115	< 0.001	< 0.001	0.0061	< 0.01	0.00073	< 0.0001	< 0.009	0.049	0.00217	0.20	< 0.00001	0.03	0.0406	0.74	< 0.00002	0.00002	< 0.0001	0.000061	0.00006	0.003	< 0.00001
12-Feb-13	55																								
19-Feb-13	56	< 0.0005	0.009	0.00106	< 0.001	0.030	0.0062	< 0.01	0.00080	< 0.0001	< 0.009	0.097	0.00209	0.12	0.00002	0.16	0.0372	0.98	< 0.00002	0.00007	< 0.0001	0.000049	< 0.00003	< 0.001	< 0.00001
26-Feb-13	57																								
05-Mar-13	58	< 0.0005	0.010	0.00103	< 0.001	0.012	0.0055	< 0.01	0.00094	0.0001	< 0.009	0.059	0.00235	0.35	0.00001	0.06	0.0472	1.13	< 0.00002	0.00002	< 0.0001	0.000063	< 0.00003	< 0.001	< 0.00001
12-Mar-13	59																								
19-Mar-13	60	0.0006	0.003	0.00088	< 0.001	0.009	0.0047	< 0.01	0.00074	< 0.0001	< 0.009	0.045	0.00167	0.27	< 0.00001	0.03	0.0377	0.99	< 0.00002	0.00007	< 0.0001	0.000053	0.00004	0.001	< 0.00001
26-Mar-13	61																								
02-Apr-13	62	0.0006	0.004	0.00096	< 0.001	0.009	0.0060	< 0.01	0.00079	0.0005	< 0.009	0.049	0.00145	0.25	< 0.00001	0.03	0.0395	1.04	< 0.00002	< 0.00001	< 0.0001	0.000044	< 0.00003	0.002	< 0.00001
09-Apr-13	63																								
16-Apr-13	64	0.0009	0.007	0.00112	< 0.001	0.010	0.0050	< 0.01	0.00088	0.0001	< 0.009	0.050	0.00164	0.30	< 0.00001	0.03	0.0422	1.01	< 0.00002	0.00005	0.0001	0.000060	< 0.00003	0.004	< 0.00001
23-Apr-13	65																								
30-Apr-13	66	< 0.0005	0.018	0.00109	< 0.001	0.010	0.0061	< 0.01	0.00072	< 0.0001	< 0.009	0.046	0.00160	0.26	0.00001	0.03	0.0406	1.12	< 0.00002	0.00002	< 0.0001	0.000020	< 0.00003	0.001	< 0.00001
07-May-13	67																								
14-May-13	68	< 0.0005	< 0.003	0.00156	< 0.001	0.010	0.0077	< 0.01	0.00086	< 0.0001	< 0.009	0.057	0.00200	0.35	0.00002	0.02	0.0424	0.87	< 0.00002	0.00002	< 0.0001	0.000060	0.00005	< 0.001	< 0.00001
21-May-13	69																								
28-May-13	70	< 0.0005	0.006	0.00106	< 0.001	0.010	0.0083	< 0.01	0.00074	< 0.0001	< 0.009	0.064	0.00200	0.30	0.00002	0.02	0.0490	0.97	< 0.00002	0.00004	< 0.0001	0.000057	< 0.00003	< 0.001	< 0.00001
04-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	0.0008	< 0.003	0.00093	< 0.001	0.009	0.0056	0.01	0.00061	< 0.0001	< 0.009	0.054	0.00183	0.24	0.00001	0.03	0.0413	0.91	< 0.00002	0.00002	< 0.0001	0.000046	0.00007	0.002	< 0.00001
02-Jul-13	75																								
09-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	< 0.0005	0.016	0.00079	< 0.001	0.009	0.0065	< 0.01	0.00059	< 0.0001	< 0.009	0.040	0.00152	0.24	0.00002	0.02	0.0391	0.91	< 0.00002	< 0.00001	< 0.0001	0.000041	< 0.00003	< 0.001	< 0.00001
30-Jul-13	79																								
06-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jan-12	0	500	380	7.79	301	193	#N/A	2.7	40.4	49	15.4	0.111	0.0085	0.0201	0.0185	< 0.00002	< 0.00001	0.0121	0.000007	5.28	< 0.0005	0.000332
31-Jan-12	1	500	465	7.72	285	178	#N/A	2.5	31.6	55	17.9	0.0994	0.0138	0.0163	0.0217	< 0.00002	< 0.00001	0.0130	0.000006	6.11	< 0.0005	0.000090
07-Feb-12	2	500	470	7.74	309	109	#N/A	2.7	28.0	31	16.4	0.151	0.0095	0.0173	0.0197	< 0.00002	< 0.00001	0.0099	0.000003	5.60	< 0.0005	0.000062
14-Feb-12	3	500	440	7.80	364	82	#N/A	3.4	22.7	22	16.3	0.120	0.0062	0.0186	0.0183	< 0.00002	< 0.00001	0.0077	0.000013	5.55	0.0010	0.000052
21-Feb-12	4	500	440	7.66	329	66	#N/A	3.7	23.5	13	16.2	0.102	0.0068	0.0185	0.0197	< 0.00002	< 0.00001	0.0075	0.000006	5.55	< 0.0005	0.000039
28-Feb-12	5	500	485	7.49	379	47																
06-Mar-12	6	500	425	7.71	357	58	#N/A	4.2	17.3	14	16.5	0.145	0.0063	0.0128	0.0228	< 0.00002	< 0.00001	0.0070	0.000016	5.57	< 0.0005	0.000092
13-Mar-12	7	500	415	7.52	357	50																
20-Mar-12	8	500	475	7.49	322	53	#N/A	3.2	15.6	10	19.6	0.0721	0.0049	0.0097	0.0259	< 0.00002	< 0.00001	0.0055	0.000014	6.71	< 0.0005	0.000079
27-Mar-12	9	500	490	7.41	334	54																
03-Apr-12	10	500	500	7.42	344	60	#N/A	2.3	15.6	14	23.9	0.0755	0.0039	0.0111	0.0244	< 0.00002	< 0.00001	0.0044	< 0.000003	8.21	< 0.0005	0.000049
10-Apr-12	11	500	495	7.39	327	70																
17-Apr-12	12	500	485	7.41	338	74	#N/A	2.5	12.8	24	28.5	0.0931	0.0046	0.0104	0.0280	< 0.00002	< 0.00001	0.0056	< 0.000003	9.82	< 0.0005	0.000104
24-Apr-12	13	500	465	7.40	369	70																
01-May-12	14	500	485	7.45	341	74	#N/A	4.1	13.4	26	30.5	0.0991	0.0050	0.0099	0.0273	< 0.00002	< 0.00001	0.0054	< 0.000003	10.6	< 0.0005	0.000121
08-May-12	15	500	495	7.39	379	73																
15-May-12	16	500	465	7.34	300	73	#N/A	3.1	10.8	21	29.6	0.0423	0.0047	0.0119	0.0215	< 0.00002	< 0.00001	0.0039	< 0.000003	10.3	< 0.0005	0.000097
22-May-12	17	500	455	7.33	316	71																
29-May-12	18	500	435	7.29	310	67	#N/A	2.6	9.6	19	28.0	0.0561	0.0038	0.0110	0.0163	< 0.00002	< 0.00001	0.0032	< 0.000003	9.78	< 0.0005	0.000127
05-Jun-12	19	500	465	7.25	356	72																
12-Jun-12	20	500	450	7.30	343	62	#N/A	2.9	9.5	16	26.2	0.0587	0.0038	0.0110	0.0180	< 0.00002	< 0.00001	0.0027	< 0.000003	9.16	< 0.0005	0.000085
19-Jun-12	21	500	485	7.30	375	75																
26-Jun-12	22	500	505	7.26	338	73	#N/A	3.1	12.6	18	31.2	0.0389	0.0051	0.0113	0.0197	< 0.00002	< 0.00001	0.0032	0.000007	11.0	< 0.0005	0.000164
03-Jul-12	23	500	510	7.52	372	63																
10-Jul-12	24	500	495	7.26	328	61	#N/A	3.5	12.0	16	25.3	0.0360	0.0046	0.0108	0.0179	< 0.00002	< 0.00001	0.0033	0.000028	9.00	< 0.0005	0.000137
17-Jul-12	25	500	510	7.28	374	56																
24-Jul-12	26	500	490	7.10	340	53	#N/A	2.2	9.9	12	22.5	0.0597	0.0038	0.0113	0.0168	< 0.00002	< 0.00001	0.0027	0.000028	7.98	< 0.0005	0.000138
31-Jul-12	27	500	500	7.30	370	54																
07-Aug-12	28	500	515	7.35	314	49	#N/A	2.5	10.1	12	22.2	0.0579	0.0041	0.0113	0.0170	< 0.00002	< 0.00001	0.0043	0.000021	7.87	< 0.0005	0.000127
14-Aug-12	29	500	490	7.19	290	51																
21-Aug-12	30	500	500	7.18	268	52	#N/A	2.6	11.1	12	22.2	0.0456	0.0045	0.0099	0.0172	< 0.00002	< 0.00001	0.0029	0.000033	7.79	< 0.0005	0.00016
28-Aug-12	31	500	510	7.20	313	51																
04-Sep-12	32	500	500	7.11	368	41	#N/A	3.3	9.3	11	17.9	0.0660	0.0028	0.0081	0.0147	< 0.00002	< 0.00001	0.0025	0.000079	6.28	< 0.0005	0.000151
11-Sep-12	33	500	495	7.21	385	45																
18-Sep-12	34	500	490	7.10	346	47	#N/A	2.5	11.3	12	19.8	0.0419	0.0032	0.0090	0.0170	< 0.00002	< 0.00001	0.0029	0.000045	6.87	< 0.0005	0.000199
25-Sep-12	35	500	505	7.20	380	60																
02-Oct-12	36	500	455	7.06	357	38	#N/A	2.7	8.6	9	15.8	0.0279	0.0023	0.0090	0.0145	< 0.00002	< 0.00001	0.0023	0.000031	5.52	< 0.0005	0.000207
09-Oct-12	37	500	455	7.44	375	83																
16-Oct-12	38	500	510	7.09	375	40	#N/A	2.2	10.5	9	16.8	0.0197	0.0024	0.0076	0.0144	< 0.00002	< 0.00001	0.0019	0.000030	5.84	< 0.0005	0.000145
23-Oct-12	39	500	445	7.15	380	65																
30-Oct-12	40	500	450	7.11	336	38	#N/A	2.8	9.7	10	17.2	0.0393	0.0024	0.0084	0.0145	< 0.00002	< 0.00001	0.0024	0.000042	5.99	< 0.0005	0.000140
06-Nov-12	41	500	430	7.25	385	65																
13-Nov-12	42	500	430	7.47	350	33	#N/A	4.2	7.7	9	15.5	0.0586	0.0016	0.0070	0.0166	< 0.00002	< 0.00001	0.0017	0.000044	5.43	< 0.0005	0.000234
20-Nov-12	43	500	500	7.21	390	85																
27-Nov-12	44	500	490	7.34	329	43	#N/A	4.3	10.8	10	19.4	0.0237	0.0025	0.0067	0.0148	< 0.00002	< 0.00001	0.0011	0.000040	6.78	< 0.0005	0.000217
04-Dec-12	45	500	450	7.23	395	60																
11-Dec-12	46	500	495	7.27	331	38	#N/A	2.4	9.7	7	18.4	0.0354	0.0031	0.0071	0.0122	< 0.00002	0.00003	0.0012	0.000035	6.49	< 0.0005	0.000139
18-Dec-12	47	500	460	7.40	374	35																

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
25-Dec-12	48	500	460	7.55	371	35	#N/A	3.6	10.6	8	16.2	0.0267	0.0023	0.0093	0.0128	< 0.00002	< 0.00001	0.0011	0.000029	5.53	< 0.0005	0.000196
01-Jan-13	49	500	450	7.21	390	70																
08-Jan-13	50	500	455	7.49	259	32	#N/A	2.8	8.5	7	15.8	0.0810	0.0023	0.0076	0.0137	< 0.00002	< 0.00001	0.0010	0.000043	5.55	< 0.0005	0.000172
15-Jan-13	51	500	430	7.19	385	45																
22-Jan-13	52	500	460	7.33	291	39	#N/A	4.7	8.7	11	15.7	0.0376	0.0021	0.0069	0.0131	< 0.00002	< 0.00001	0.0010	0.000040	5.43	< 0.0005	0.000172
29-Jan-13	53	500	470	7.40	380	36																
05-Feb-13	54	500	455	7.48	365	36	#N/A	3.6	8.3	11	15.0	0.0196	0.0022	0.0075	0.0123	< 0.00002	< 0.00001	< 0.0002	0.000048	5.19	< 0.0005	0.000213
12-Feb-13	55	500	470	7.56	368	39																
19-Feb-13	56	500	470	7.33	396	39	#N/A	3.0	9.2	11	16.2	0.0223	0.0022	0.0083	0.0138	< 0.00002	< 0.00001	0.0011	0.000058	5.62	< 0.0005	0.000260
26-Feb-13	57	500	440	7.43	395	36																
05-Mar-13	58	500	505	7.56	395	45	#N/A	4.4	11.8	9	19.0	0.0134	0.0025	0.0065	0.0148	< 0.00002	< 0.00001	0.0014	0.000045	6.63	< 0.0005	0.000298
12-Mar-13	59	500	455	7.29	350	55																
19-Mar-13	60	500	465	7.65	333	37	#N/A	6.2	9.1	9	15.7	0.0208	0.0016	0.0075	0.0115	< 0.00002	< 0.00001	0.0009	0.000043	5.42	< 0.0005	0.000163
26-Mar-13	61	500	450	7.59	392	37																
02-Apr-13	62	500	465	7.47	374	36	#N/A	4.2	8.8	9	15.8	0.0241	0.0015	0.0079	0.0113	< 0.00002	< 0.00001	0.0012	0.000042	5.50	< 0.0005	0.000330
09-Apr-13	63	500	440	7.55	390	35																
16-Apr-13	64	500	450	7.56	365	36	#N/A	4.6	9.6	10	15.6	0.0727	0.0030	0.0087	0.0155	< 0.00002	< 0.00001	0.0013	0.000047	5.38	< 0.0005	0.000245
23-Apr-13	65	500	440	7.61	379	36																
30-Apr-13	66	500	450	7.49	379	40	#N/A	4.0	8.7	14	17.4	0.0174	0.0019	0.0077	0.0126	< 0.00002	< 0.00001	0.0015	0.000038	6.07	< 0.0005	0.000198
07-May-13	67	500	445	7.49	415	45																
14-May-13	68	500	425	7.53	392	31	#N/A	4.0	8.5	8	13.1	0.0765	0.0023	0.0081	0.0132	< 0.00002	< 0.00001	0.0019	0.000045	4.53	< 0.0005	0.000314
21-May-13	69	500	465	7.53	407	39																
28-May-13	70	500	455	7.59	395	38	#N/A	3.5	8.3	11	17.0	0.0228	0.0016	0.0066	0.0119	< 0.00002	< 0.00001	0.0014	0.000040	5.87	< 0.0005	0.000174
04-Jun-13	71	500	425	7.50	416	39																
11-Jun-13	72	500	455	7.62	389	40	#N/A	6.7	10.0	12												
18-Jun-13	73	500	445	7.01	427	40																
25-Jun-13	74	500	430	7.37	376	34	#N/A	4.0	7.4	11	14.7	0.0179	0.0016	0.0063	0.0110	< 0.00002	< 0.00001	0.0024	0.000046	5.03	< 0.0005	0.000226
02-Jul-13	75	500	445	7.53	381	41																
09-Jul-13	76	500	430	7.55	309	39	#N/A	5.3	9.8	11												
16-Jul-13	77	500	430	7.18	411	42																
23-Jul-13	78	500	445	7.51	396	41	#N/A	5.5	9.3	14	17.3	0.0529	0.0012	0.0065	0.0130	< 0.00002	< 0.00001	0.0020	0.000042	5.98	< 0.0005	0.000210
30-Jul-13	79	500	455	7.26	404	42																
06-Aug-13	80	500	445	7.61	366	38	#N/A	6.2	9.0	11												
13-Aug-13	81	500	430	7.23	401	42																
20-Aug-13	82	500	470	7.24	396	44	#N/A	2.7	6.0	10												
27-Aug-13	83	500	420	7.25	402	36																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0013	0.007	0.00022	0.029	0.531	0.0228	0.01	0.00801	0.0007	< 0.009	5.81	0.00569	2.32	0.00011	25.4	0.299	16.7	0.00009	0.00005	0.0004	0.00169	0.00238	0.002	0.00006
31-Jan-12	1	0.0017	0.005	0.00021	0.029	0.637	0.0500	0.01	0.0110	0.0005	< 0.009	4.04	0.00631	1.63	0.00006	24.0	0.364	17.0	0.00008	0.00122	0.0006	0.00406	0.00140	0.001	0.00003
07-Feb-12	2	0.0005	0.005	0.00030	0.017	0.584	0.0363	< 0.01	0.00655	0.0003	< 0.009	3.44	0.00357	1.55	0.00005	13.7	0.328	9.74	0.00007	0.00060	0.0005	0.00332	0.00134	< 0.001	0.00006
14-Feb-12	3	0.0005	< 0.003	0.00016	0.010	0.586	0.0295	< 0.01	0.00479	0.0003	< 0.009	2.70	0.00342	1.30	0.00003	7.57	0.340	6.52	0.00006	0.00050	0.0004	0.00186	0.00135	0.001	0.00001
21-Feb-12	4	0.0011	< 0.003	0.00007	0.007	0.565	0.0279	0.01	0.00338	0.0002	< 0.009	3.09	0.00285	1.34	0.00002	4.51	0.345	4.17	0.00005	0.00082	0.0002	0.00220	0.00119	0.002	< 0.00001
28-Feb-12	5																								
06-Mar-12	6	0.0010	0.008	0.00041	0.005	0.636	0.0276	< 0.01	0.00388	0.0002	< 0.009	2.84	0.00301	1.39	0.00002	2.24	0.352	4.37	0.00004	0.00046	0.0002	0.00151	0.00116	0.002	< 0.00001
13-Mar-12	7																								
20-Mar-12	8	< 0.0005	0.004	0.00021	0.003	0.683	0.0578	0.01	0.00251	< 0.0001	< 0.009	2.22	0.00179	1.08	< 0.00001	0.94	0.373	3.44	0.00003	0.00022	0.0002	0.00135	0.00067	< 0.001	0.00002
27-Mar-12	9																								
03-Apr-12	10	0.0005	< 0.003	0.00006	0.002	0.811	0.0569	< 0.01	0.00265	0.0002	< 0.009	1.93	0.00148	0.96	< 0.00001	0.59	0.436	5.04	0.00003	0.00014	< 0.0001	0.000953	0.00054	0.002	< 0.00001
10-Apr-12	11																								
17-Apr-12	12	< 0.0005	< 0.003	0.00018	0.002	0.976	0.0704	0.02	0.00330	0.0002	< 0.009	1.74	0.00131	0.96	< 0.00001	0.37	0.503	6.86	0.00004	0.00010	0.0003	0.00101	0.00066	0.001	0.00001
24-Apr-12	13																								
01-May-12	14	0.0005	0.007	0.00027	0.001	1.00	0.0773	0.03	0.00348	0.0003	< 0.009	1.51	0.00142	0.98	< 0.00001	0.32	0.503	7.26	0.00004	0.00011	0.0004	0.000813	0.00072	0.002	0.00003
08-May-12	15																								
15-May-12	16	< 0.0005	< 0.003	0.00007	0.001	0.958	0.0698	0.01	0.00390	0.0002	< 0.009	1.36	0.00137	0.79	< 0.00001	0.23	0.474	7.42	0.00003	0.00006	< 0.0001	0.000615	0.00060	0.002	< 0.00001
22-May-12	17																								
29-May-12	18	< 0.0005	< 0.003	0.00023	0.001	0.870	0.0663	< 0.01	0.00368	< 0.0001	< 0.009	1.07	0.00100	0.66	< 0.00001	0.20	0.416	7.29	0.00003	0.00020	0.0002	0.000401	0.00056	0.002	< 0.00001
05-Jun-12	19																								
12-Jun-12	20	< 0.0005	0.004	0.00007	< 0.001	0.813	0.0616	< 0.01	0.00327	0.0001	< 0.009	0.952	0.00095	0.63	< 0.00001	0.17	0.372	6.35	0.00002	0.00005	0.0001	0.000365	0.00053	0.001	< 0.00001
19-Jun-12	21																								
26-Jun-12	22	< 0.0005	< 0.003	0.00004	< 0.001	0.915	0.0927	0.01	0.00402	< 0.0001	< 0.009	0.910	0.00141	0.76	< 0.00001	0.16	0.449	7.66	0.00002	0.00009	< 0.0001	0.000892	0.00049	0.002	< 0.00001
03-Jul-12	23																								
10-Jul-12	24	< 0.0005	< 0.003	0.00006	< 0.001	0.691	0.0753	0.02	0.00367	0.0001	< 0.009	0.723	0.00104	0.71	< 0.00001	0.16	0.332	5.61	< 0.00002	0.00014	0.0002	0.000478	0.00046	0.002	< 0.00001
17-Jul-12	25																								
24-Jul-12	26	< 0.0005	< 0.003	0.00004	< 0.001	0.625	0.0631	0.01	0.00348	0.0001	< 0.009	0.632	0.00118	0.64	< 0.00001	0.14	0.286	5.04	< 0.00002	0.00009	0.0001	0.000412	0.00048	0.002	< 0.00001
31-Jul-12	27																								
07-Aug-12	28	< 0.0005	< 0.003	0.00006	< 0.001	0.628	0.0607	< 0.01	0.00386	< 0.0001	< 0.009	0.603	0.00107	0.68	< 0.00001	0.13	0.277	5.07	< 0.00002	0.00024	< 0.0001	0.000404	0.00050	0.003	< 0.00001
14-Aug-12	29																								
21-Aug-12	30	< 0.0005	0.003	0.00005	< 0.001	0.660	0.0647	0.03	0.00395	0.0003	< 0.009	0.524	0.00105	0.64	< 0.00001	0.11	0.275	4.81	< 0.00002	0.00018	0.0002	0.00053	0.00051	0.002	< 0.00001
28-Aug-12	31																								
04-Sep-12	32	0.0008	< 0.003	0.00008	< 0.001	0.537	0.0524	0.03	0.00295	0.0003	< 0.009	0.400	0.00082	0.43	< 0.00001	0.10	0.206	3.61	< 0.00002	0.00015	0.0002	0.000426	0.00061	0.004	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	< 0.0005	< 0.003	0.00007	< 0.001	0.634	0.0570	< 0.01	0.00320	< 0.0001	< 0.009	0.461	0.00096	0.56	< 0.00001	0.09	0.232	4.06	< 0.00002	0.00011	< 0.0001	0.000469	0.00036	0.003	< 0.00001
25-Sep-12	35																								
02-Oct-12	36	< 0.0005	< 0.003	0.00004	< 0.001	0.498	0.0471	< 0.01	0.00269	< 0.0001	< 0.009	0.380	0.00075	0.46	< 0.00001	0.07	0.180	3.44	< 0.00002	0.00007	< 0.0001	0.000265	0.00031	0.002	< 0.00001
09-Oct-12	37																								
16-Oct-12	38	0.0008	< 0.003	0.00003	< 0.001	0.537	0.0573	< 0.01	0.00248	0.0001	< 0.009	0.348	0.00081	0.45	< 0.00001	0.06	0.188	3.25	< 0.00002	0.00014	< 0.0001	0.000451	0.00027	0.002	< 0.00001
23-Oct-12	39																								
30-Oct-12	40	< 0.0005	0.005	0.00005	< 0.001	0.555	0.0563	< 0.01	0.00259	0.0002	< 0.009	0.378	0.00058	0.48	< 0.00001	0.08	0.197	3.52	< 0.00002	0.00010	0.0002	0.000268	0.00036	0.002	< 0.00001
06-Nov-12	41																								
13-Nov-12	42	< 0.0005	0.003	0.00035	< 0.001	0.476	0.0502	0.01	0.00171	0.0001	< 0.009	0.349	0.00075	0.41	0.00002	0.06	0.172	3.64	< 0.00002	0.00007	0.0002	0.000186	0.00031	0.003	0.00002
20-Nov-12	43																								
27-Nov-12	44	< 0.0005	0.003	0.00005	< 0.001	0.595	0.0751	< 0.01	0.00201	< 0.0001	< 0.009	0.356	0.00098	0.45	< 0.00001	0.07	0.202	3.76	< 0.00002	0.00011	< 0.0001	0.000395	0.00020	0.002	< 0.00001
04-Dec-12	45																								
11-Dec-12	46	0.0009	< 0.003	0.00005	< 0.001	0.544	0.0596	< 0.01	0.00225	< 0.0001	< 0.009	0.356	0.00068	0.40	0.00001	0.08	0.177	3.36	< 0.00002	0.00026	0.0002	0.000299	0.00049	0.002	< 0.00001
18-Dec-12	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	< 0.0005	< 0.003	0.00004	< 0.001	0.585	0.0489	< 0.01	0.00203	0.0001	0.015	0.319	0.00071	0.32	< 0.00001	0.06	0.180	3.29	< 0.00002	0.00014	< 0.0001	0.000196	0.00014	0.003	< 0.00001
01-Jan-13	49																								
08-Jan-13	50	< 0.0005	0.007	0.00022	< 0.001	0.480	0.0470	< 0.01	0.00164	< 0.0001	< 0.009	0.323	0.00079	0.40	0.00001	0.05	0.142	2.97	< 0.00002	0.00014	0.0004	0.000157	0.00044	0.003	< 0.00001
15-Jan-13	51																								
22-Jan-13	52	< 0.0005	0.004	0.00006	< 0.001	0.513	0.0535	< 0.01	0.00180	0.0002	0.009	0.299	0.00093	0.34	< 0.00001	< 0.01	0.152	3.37	< 0.00002	0.00012	0.0001	0.000185	0.00033	0.002	0.00002
29-Jan-13	53																								
05-Feb-13	54	< 0.0005	< 0.003	0.00005	< 0.001	0.505	0.0558	< 0.01	0.00189	< 0.0001	< 0.009	0.256	0.00101	0.32	< 0.00001	0.08	0.147	3.17	< 0.00002	0.00003	< 0.0001	0.000194	0.00014	0.002	< 0.00001
12-Feb-13	55																								
19-Feb-13	56	0.0006	< 0.003	0.00006	< 0.001	0.522	0.0600	< 0.01	0.00218	0.0001	< 0.009	0.263	0.00110	0.24	< 0.00001	0.06	0.144	3.38	< 0.00002	0.00003	0.0001	0.000224	0.00019	0.002	< 0.00001
26-Feb-13	57																								
05-Mar-13	58	< 0.0005	< 0.003	0.00004	< 0.001	0.600	0.0704	< 0.01	0.00186	0.0002	< 0.009	0.296	0.00093	0.41	< 0.00001	0.07	0.176	4.02	< 0.00002	< 0.00001	< 0.0001	0.000288	0.00008	0.002	< 0.00001
12-Mar-13	59																								
19-Mar-13	60	< 0.0005	< 0.003	0.00007	< 0.001	0.518	0.0521	< 0.01	0.00176	< 0.0001	< 0.009	0.263	0.00072	0.36	< 0.00001	0.05	0.130	3.50	< 0.00002	0.00007	< 0.0001	0.000132	0.00015	0.002	< 0.00001
26-Mar-13	61																								
02-Apr-13	62	< 0.0005	< 0.003	0.00007	< 0.001	0.502	0.0515	< 0.01	0.00173	0.0006	< 0.009	0.239	0.00059	0.34	< 0.00001	0.06	0.130	3.35	< 0.00002	0.00002	< 0.0001	0.000132	0.00011	0.002	0.00001
09-Apr-13	63																								
16-Apr-13	64	0.0005	0.012	0.00042	< 0.001	0.528	0.0510	< 0.01	0.00185	0.0002	< 0.009	0.380	0.00075	0.58	< 0.00001	0.07	0.127	3.24	< 0.00002	0.00004	0.0003	0.000206	0.00028	0.003	0.00002
23-Apr-13	65																								
30-Apr-13	66	< 0.0005	< 0.003	0.00003	< 0.001	0.557	0.0608	0.01	0.00161	0.0001	< 0.009	0.290	0.00123	0.37	< 0.00001	0.07	0.132	3.84	< 0.00002	0.00003	< 0.0001	0.000125	0.00015	0.002	< 0.00001
07-May-13	67																								
14-May-13	68	< 0.0005	0.006	0.00019	< 0.001	0.442	0.0454	< 0.01	0.00123	< 0.0001	< 0.009	0.323	0.00078	0.51	< 0.00001	0.05	0.102	2.48	< 0.00002	0.00001	0.0003	0.000188	0.00029	0.002	0.00005
21-May-13	69																								
28-May-13	70	< 0.0005	< 0.003	0.00005	< 0.001	0.559	0.0565	< 0.01	0.00110	0.0002	< 0.009	0.297	0.00099	0.31	< 0.00001	0.08	0.123	3.60	< 0.00002	0.00004	< 0.0001	0.000127	0.00011	0.002	< 0.00001
04-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	< 0.0005	< 0.003	0.00019	< 0.001	0.519	0.0536	0.02	0.00122	0.0002	0.016	0.279	0.00107	< 0.01	< 0.00001	0.07	0.107	3.27	< 0.00002	0.00002	< 0.0001	0.000133	0.00011	0.003	< 0.00001
02-Jul-13	75																								
09-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	< 0.0005	0.009	0.00014	< 0.001	0.586	0.0604	< 0.01	0.00095	0.0001	0.011	0.282	0.00109	0.36	0.00001	0.05	0.113	4.18	< 0.00002	0.00001	0.0002	0.000120	0.00018	0.002	0.00003
30-Jul-13	79																								
06-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L	Cu mg/L
24-Jan-12	0	500	400	7.89	293	206	#N/A	2.8	46.7	46	6.37	0.194	0.0209	0.0411	0.0246	< 0.00002	< 0.00001	0.0171	0.000013	2.21	< 0.0005	0.000045	0.0032
31-Jan-12	1	500	495	7.81	277	144	#N/A	2.3	37.3	33	5.29	0.195	0.0419	0.0447	0.0186	< 0.00002	< 0.00001	0.0163	0.000012	1.82	< 0.0005	0.000040	0.0051
07-Feb-12	2	500	505	7.80	303	126	#N/A	2.7	33.1	37	5.56	0.218	0.0366	0.0420	0.0209	< 0.00002	< 0.00001	0.0158	0.000023	1.90	< 0.0005	0.000031	0.0014
14-Feb-12	3	500	465	7.87	353	100	#N/A	2.8	27.4	25	2.80	0.241	0.0248	0.0461	0.0154	< 0.00002	< 0.00001	0.0122	0.000017	0.94	< 0.0005	0.000023	0.0012
21-Feb-12	4	500	460	7.72	320	89	#N/A	3.2	26.4	18	3.7	0.213	0.0242	0.0371	0.0212	< 0.00002	< 0.00001	0.0120	0.000021	1.25	< 0.0005	0.000029	0.0014
28-Feb-12	5	500	470	7.63	369	75																	
06-Mar-12	6	500	465	7.69	354	68	#N/A	3.6	20.4	15	4.14	0.132	0.0174	0.0247	0.0167	< 0.00002	< 0.00001	0.0092	0.000012	1.39	< 0.0005	0.000039	0.0008
13-Mar-12	7	500	465	7.57	351	62																	
20-Mar-12	8	500	460	7.53	321	57	#N/A	2.9	14.6	15	4.98	0.0708	0.0158	0.0199	0.0188	< 0.00002	< 0.00001	0.0071	0.000030	1.66	< 0.0005	0.000033	0.0009
27-Mar-12	9	500	460	7.41	333	51																	
03-Apr-12	10	500	455	7.40	339	46	#N/A	2.2	11.6	10	5.62	0.0516	0.0129	0.0156	0.0166	< 0.00002	< 0.00001	0.0064	< 0.000003	1.89	< 0.0005	0.000017	0.0008
10-Apr-12	11	500	485	7.36	324	48																	
17-Apr-12	12	500	495	7.39	332	41	#N/A	2.4	10.1	10	7.22	0.0957	0.0119	0.0138	0.0260	< 0.00002	< 0.00001	0.0069	< 0.000003	2.41	< 0.0005	0.000045	0.0006
24-Apr-12	13	500	470	7.38	367	40																	
01-May-12	14	500	475	7.56	331	38	#N/A	3.3	9.3	10	8.04	0.0527	0.0106	0.0112	0.0187	< 0.00002	< 0.00001	0.0064	0.000006	2.72	< 0.0005	0.000044	< 0.0005
08-May-12	15	500	460	7.29	381	40																	
15-May-12	16	500	470	7.27	304	44	#N/A	2.9	8.6	11	10.3	0.0373	0.0123	0.0117	0.0226	< 0.00002	< 0.00001	0.0058	< 0.000003	3.44	< 0.0005	0.000037	0.0007
22-May-12	17	500	480	7.31	319	42																	
29-May-12	18	500	470	7.25	317	42	#N/A	2.5	8.3	11	11.9	0.0359	0.0124	0.0100	0.0224	< 0.00002	< 0.00001	0.0053	< 0.000003	3.99	< 0.0005	0.000051	< 0.0005
05-Jun-12	19	500	470	7.20	359	42																	
12-Jun-12	20	500	475	7.26	344	40	#N/A	3.0	8.7	12	11.9	0.0376	0.0124	0.0097	0.0258	< 0.00002	< 0.00001	0.0047	< 0.000003	3.98	< 0.0005	0.000037	< 0.0005
19-Jun-12	21	500	470	7.22	368	38																	
26-Jun-12	22	500	470	7.24	332	40	#N/A	3.0	8.8	8	12.6	0.0379	0.0120	0.0098	0.0245	< 0.00002	< 0.00001	0.0044	< 0.000003	4.19	< 0.0005	0.000051	< 0.0005
03-Jul-12	23	500	475	7.50	375	38																	
10-Jul-12	24	500	470	7.18	328	43	#N/A	3.3	8.0	12	12.8	0.0334	0.0134	0.0090	0.0240	< 0.00002	< 0.00001	0.0044	0.000034	4.26	< 0.0005	0.000048	0.0007
17-Jul-12	25	500	470	7.18	375	43																	
24-Jul-12	26	500	475	7.19	343	43	#N/A	2.1	7.7	10	13.6	0.0445	0.0132	0.0092	0.0243	< 0.00002	< 0.00001	0.0042	0.000028	4.49	< 0.0005	0.000067	0.0009
31-Jul-12	27	500	480	7.11	377	41																	
07-Aug-12	28	500	475	7.22	315	37	#N/A	2.5	6.4	9	13.0	0.0538	0.0136	0.0100	0.0231	< 0.00002	< 0.00001	0.0051	0.000034	4.31	< 0.0005	0.000068	0.0005
14-Aug-12	29	500	475	7.07	298	41																	
21-Aug-12	30	500	470	7.02	282	40	#N/A	2.6	7.0	10	13.8	0.0415	0.0161	0.0087	0.0223	< 0.00002	< 0.00001	0.0038	0.000047	4.53	< 0.0005	0.00005	0.0005
28-Aug-12	31	500	480	7.02	322	40																	
04-Sep-12	32	500	470	6.92	374	31	#N/A	3.4	5.6	9	11.0	0.0585	0.0104	0.0071	0.0189	< 0.00002	< 0.00001	0.0030	0.000044	3.59	< 0.0005	0.000051	0.0008
11-Sep-12	33	500	460	7.05	394	33																	
18-Sep-12	34	500	450	6.91	394	34	#N/A	2.3	6.1	10	11.2	0.0439	0.0117	0.0081	0.0191	< 0.00002	< 0.00001	0.0033	0.000045	3.64	< 0.0005	0.000059	< 0.0005
25-Sep-12	35	500	455	7.10	360	53																	
02-Oct-12	36	500	455	6.91	394	31	#N/A	2.6	5.4	8	10.8	0.0164	0.0109	0.0073	0.0167	< 0.00002	< 0.00001	0.0033	0.000042	3.49	< 0.0005	0.000141	0.0008
09-Oct-12	37	500	450	7.29	365	55																	
16-Oct-12	38	500	440	6.91	397	28	#N/A	2.6	4.2	9	9.6	0.0180	0.0092	0.0074	0.0139	< 0.00002	< 0.00001	0.0026	0.000049	3.08	< 0.0005	0.000087	0.0006
23-Oct-12	39	500	440	7.02	370	53																	
30-Oct-12	40	500	430	6.91	345	32	#N/A	2.4	6.2	8	11.6	0.0779	0.0122	0.0081	0.0223	< 0.00002	< 0.00001	0.0033	0.000063	3.70	< 0.0005	0.000092	0.0013
06-Nov-12	41	500	425	7.02	370	60																	
13-Nov-12	42	500	430	7.15	354	19	#N/A	3.8	5.5	5	7.8	0.129	0.0111	0.0080	0.0223	< 0.00002	< 0.00001	0.0033	0.000054	2.43	< 0.0005	0.000111	0.0013
20-Nov-12	43	500	480	7.03	375	75																	
27-Nov-12	44	500	500	7.33	334	29	#N/A	3.9	8.3	8	13.2	0.0565	0.0120	0.0070	0.0280	< 0.00002	< 0.00001	0.0035	0.000061	4.21	< 0.0005	0.000107	0.0007
04-Dec-12	45	500	455	7.09	380	60																	
11-Dec-12	46	500	500	7.17	336	28	#N/A	2.2	7.8	4	11.5	0.0217	0.0146	0.0067	0.0248	< 0.00002	0.00002	0.0037	0.000068	3.70	0.0007	0.000083	0.0009
18-Dec-12	47	500	485	7.36	375	28																	

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L	Cu mg/L
25-Dec-12	48	500	465	7.50	376	24	#N/A	3.6	7.0	5	9.83	0.0186	0.0103	0.0086	0.0218	< 0.00002	< 0.00001	0.0032	0.000062	3.03	< 0.0005	0.000163	< 0.0005
01-Jan-13	49	500	445	7.19	385	75																	
08-Jan-13	50	500	455	7.50	287	24	#N/A	2.9	5.5	6	9.47	0.0251	0.0107	0.0066	0.0190	< 0.00002	< 0.00001	0.0025	0.000055	3.00	< 0.0005	0.000090	0.0006
15-Jan-13	51	500	460	7.20	380	60																	
22-Jan-13	52	500	475	7.27	303	27	#N/A	4.3	6.3	9	9.56	0.0342	0.0091	0.0070	0.0207	< 0.00002	< 0.00001	0.0030	0.000056	2.98	< 0.0005	0.000065	< 0.0005
29-Jan-13	53	500	460	7.29	387	25																	
05-Feb-13	54	500	465	7.44	370	24	#N/A	3.4	5.8	7	8.8	0.0175	0.0083	0.0065	0.0189	< 0.00002	< 0.00001	0.0018	0.000054	2.72	< 0.0005	0.000143	< 0.0005
12-Feb-13	55	500	465	7.44	381	27																	
19-Feb-13	56	500	470	7.34	391	27	#N/A	2.9	5.9	9	9.66	0.0476	0.0084	0.0080	0.0205	< 0.00002	< 0.00001	0.0028	0.000070	2.99	< 0.0005	0.000112	0.0008
26-Feb-13	57	500	440	7.34	404	26																	
05-Mar-13	58	500	435	7.55	394	29	#N/A	4.0	5.8	7	10.6	0.0982	0.0098	0.0070	0.0210	< 0.00002	< 0.00001	0.0040	0.000062	3.28	< 0.0005	0.000216	0.0011
12-Mar-13	59	500	465	7.27	380	30																	
19-Mar-13	60	500	455	7.54	339	27	#N/A	5.8	6.0	8	9.35	0.0751	0.0077	0.0070	0.0212	< 0.00002	< 0.00001	0.0030	0.000062	2.84	< 0.0005	0.000100	0.0011
26-Mar-13	61	500	445	7.45	408	27																	
02-Apr-13	62	500	450	7.43	376	28	#N/A	4.0	5.7	7	10.8	0.0200	0.0082	0.0074	0.0190	< 0.00002	< 0.00001	0.0037	0.000053	3.32	< 0.0005	0.000228	0.0006
09-Apr-13	63	500	455	7.43	402	28																	
16-Apr-13	64	500	495	7.50	374	33	#N/A	4.5	8.4	9	13.1	0.0161	0.0109	0.0069	0.0204	< 0.00002	< 0.00001	0.0034	0.000068	4.05	< 0.0005	0.000095	0.0006
23-Apr-13	65	500	445	7.49	396	23																	
30-Apr-13	66	500	455	7.41	393	27	#N/A	3.6	5.5	9	10.6	0.0161	0.0080	0.0069	0.0167	< 0.00002	< 0.00001	0.0035	0.000068	3.26	< 0.0005	0.000076	< 0.0005
07-May-13	67	500	450	7.43	430	28																	
14-May-13	68	500	435	7.52	397	22	#N/A	3.8	4.5	8	8.21	0.0200	0.0100	0.0064	0.0126	< 0.00002	< 0.00001	0.0034	0.000048	2.45	< 0.0005	0.000191	0.0008
21-May-13	69	500	450	7.50	415	22																	
28-May-13	70	500	450	7.52	402	25	#N/A	3.1	4.9	8	9.53	0.0198	0.0092	0.0070	0.0157	< 0.00002	< 0.00001	0.0043	0.000067	2.87	< 0.0005	0.000081	< 0.0005
04-Jun-13	71	500	435	7.45	427	26																	
11-Jun-13	72	500	460	7.57	411	25	#N/A	6.1	5.9	8													
18-Jun-13	73	500	445	7.20	433	25																	
25-Jun-13	74	500	440	7.30	387	25	#N/A	3.8	4.7	9	9.63	0.0487	0.0072	0.0070	0.0197	< 0.00002	< 0.00001	0.0051	0.000073	2.84	< 0.0005	0.000116	0.0013
02-Jul-13	75	500	440	7.43	398	25																	
09-Jul-13	76	500	445	7.45	311	27	#N/A	5.4	5.9	9													
16-Jul-13	77	500	435	7.21	417	27																	
23-Jul-13	78	500	435	7.44	409	27	#N/A	5.5	5.9	10	10.1	0.100	0.0072	0.0076	0.0191	0.00003	< 0.00001	0.0055	0.000076	2.95	< 0.0005	0.000101	0.0012
30-Jul-13	79	500	435	7.13	415	26																	
06-Aug-13	80	500	440	7.55	380	28	#N/A	5.7	5.5	10													
13-Aug-13	81	500	445	7.13	413	26																	
20-Aug-13	82	500	440	7.13	406	28	#N/A	2.7	3.9	6													
27-Aug-13	83	500	440	7.10	411	25																	

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.010	0.00062	0.035	0.204	0.0075	0.04	0.00825	0.0004	< 0.009	3.90	0.0130	2.35	0.00057	34.4	0.176	18.3	0.00005	0.00005	0.0005	0.00192	0.00366	0.003	0.00012
31-Jan-12	1	0.006	0.00027	0.027	0.180	0.0105	0.02	0.0113	0.0004	< 0.009	2.15	0.0245	1.77	0.00004	23.7	0.135	14.4	0.00004	0.00111	0.0009	0.00331	0.00215	0.005	0.00029
07-Feb-12	2	0.011	0.00051	0.023	0.199	0.0141	< 0.01	0.00749	0.0003	< 0.009	2.04	0.0125	1.78	0.00010	22.1	0.146	11.1	0.00004	0.00039	0.0009	0.00325	0.00184	0.004	0.00032
14-Feb-12	3	0.008	0.00036	0.018	0.112	0.0063	< 0.01	0.00568	0.0007	< 0.009	1.44	0.00967	1.60	0.00010	18.6	0.0802	8.01	0.00003	0.00023	0.0011	0.00212	0.00208	0.002	0.00029
21-Feb-12	4	0.010	0.00072	0.016	0.152	0.0116	0.01	0.00509	< 0.0001	< 0.009	1.74	0.00624	1.57	0.00007	15.9	0.108	6.94	0.00003	0.00014	0.0008	0.00195	0.00142	0.003	0.00026
28-Feb-12	5																							
06-Mar-12	6	0.007	0.00029	0.009	0.164	0.0095	< 0.01	0.00427	0.0005	< 0.009	1.57	0.00442	1.45	0.00005	10.6	0.125	5.21	0.00003	0.00005	0.0008	0.00129	0.00124	0.001	0.00005
13-Mar-12	7																							
20-Mar-12	8	< 0.003	0.00016	0.008	0.202	0.0163	< 0.01	0.00372	0.0002	< 0.009	1.64	0.00335	1.12	0.00003	8.45	0.150	4.39	0.00003	0.00006	0.0002	0.000807	0.00069	< 0.001	0.00005
27-Mar-12	9																							
03-Apr-12	10	< 0.003	0.00007	0.006	0.221	0.0155	< 0.01	0.00361	< 0.0001	< 0.009	1.57	0.00169	0.90	< 0.00001	5.79	0.166	3.81	0.00002	0.00002	< 0.0001	0.000522	0.00048	0.002	< 0.00001
10-Apr-12	11																							
17-Apr-12	12	0.004	0.00023	0.005	0.291	0.0238	0.02	0.00361	0.0001	< 0.009	1.59	0.00210	1.03	0.00002	3.74	0.195	3.21	0.00003	0.00007	0.0004	0.000282	0.00063	0.001	0.00010
24-Apr-12	13																							
01-May-12	14	< 0.003	0.00011	0.004	0.306	0.0226	0.05	0.00328	0.0001	< 0.009	1.52	0.00162	0.79	< 0.00001	2.99	0.203	3.12	0.00003	0.00009	0.0002	0.000168	0.00060	0.002	0.00002
08-May-12	15																							
15-May-12	16	0.003	0.00009	0.004	0.418	0.0257	< 0.01	0.00397	0.0002	< 0.009	1.88	0.00189	0.82	< 0.00001	2.56	0.290	3.88	0.00004	0.00002	0.0001	0.000250	0.00049	0.003	0.00001
22-May-12	17																							
29-May-12	18	< 0.003	0.00007	0.003	0.480	0.0319	< 0.01	0.00411	< 0.0001	< 0.009	1.79	0.00176	0.78	< 0.00001	1.87	0.324	3.99	0.00003	0.00011	0.0001	0.000249	0.00040	0.002	< 0.00001
05-Jun-12	19																							
12-Jun-12	20	< 0.003	0.00005	0.003	0.478	0.0335	0.01	0.00342	< 0.0001	< 0.009	1.72	0.00171	0.73	< 0.00001	1.51	0.324	3.57	0.00003	0.00002	< 0.0001	0.000214	0.00038	0.001	0.00002
19-Jun-12	21																							
26-Jun-12	22	< 0.003	0.00004	0.003	0.512	0.0373	< 0.01	0.00353	< 0.0001	< 0.009	1.69	0.00168	0.73	< 0.00001	1.39	0.339	3.80	0.00003	0.00002	< 0.0001	0.000203	0.00049	0.002	0.00002
03-Jul-12	23																							
10-Jul-12	24	0.006	0.00007	0.002	0.522	0.0387	0.02	0.00363	0.0002	< 0.009	1.66	0.00143	0.72	< 0.00001	1.20	0.337	3.80	0.00003	0.00059	0.0002	0.000161	0.00036	0.002	< 0.00001
17-Jul-12	25																							
24-Jul-12	26	< 0.003	0.00006	0.002	0.572	0.0419	0.01	0.00379	0.0001	< 0.009	1.54	0.00163	0.68	< 0.00001	1.06	0.350	4.04	0.00002	0.00006	0.0001	0.000171	0.00044	0.002	0.00002
31-Jul-12	27																							
07-Aug-12	28	< 0.003	0.00012	0.002	0.540	0.0383	< 0.01	0.00422	0.0001	< 0.009	1.50	0.00138	0.66	< 0.00001	0.86	0.323	4.10	0.00003	0.00018	< 0.0001	0.000097	0.00045	0.003	< 0.00001
14-Aug-12	29																							
21-Aug-12	30	< 0.003	0.00004	0.002	0.597	0.0445	0.03	0.00418	0.0001	< 0.009	1.38	0.00131	0.67	< 0.00001	0.78	0.344	4.15	0.00003	0.00014	0.0002	0.00012	0.00038	0.003	< 0.00001
28-Aug-12	31																							
04-Sep-12	32	< 0.003	0.00003	0.001	0.481	0.0357	< 0.01	0.00298	0.0001	< 0.009	1.10	0.00114	0.43	< 0.00001	0.53	0.269	3.05	< 0.00002	0.00011	< 0.0001	0.000102	0.00042	0.003	< 0.00001
11-Sep-12	33																							
18-Sep-12	34	< 0.003	< 0.00002	0.001	0.514	0.0358	< 0.01	0.00307	< 0.0001	< 0.009	1.18	0.00122	0.56	< 0.00001	0.62	0.277	3.33	< 0.00002	0.00011	< 0.0001	0.000074	0.00032	0.002	< 0.00001
25-Sep-12	35																							
02-Oct-12	36	< 0.003	0.00003	0.001	0.494	0.0340	< 0.01	0.00270	< 0.0001	< 0.009	1.05	0.00095	0.52	< 0.00001	0.43	0.259	3.15	< 0.00002	0.00003	< 0.0001	0.000068	0.00020	0.002	< 0.00001
09-Oct-12	37																							
16-Oct-12	38	< 0.003	< 0.00002	< 0.001	0.468	0.0316	< 0.01	0.00223	< 0.0001	< 0.009	0.946	0.00103	0.42	< 0.00001	0.42	0.228	2.88	< 0.00002	0.00021	< 0.0001	0.000050	0.00031	0.003	< 0.00001
23-Oct-12	39																							
30-Oct-12	40	0.007	0.00014	0.001	0.571	0.0373	0.01	0.00209	0.0002	< 0.009	1.28	0.00089	0.67	0.00003	0.48	0.290	3.25	< 0.00002	0.00008	0.0004	0.000079	0.00037	0.004	0.00002
06-Nov-12	41																							
13-Nov-12	42	0.009	0.00036	< 0.001	0.425	0.0260	0.01	0.00165	0.0001	< 0.009	1.17	0.00095	0.75	0.00005	0.35	0.195	2.12	0.00003	0.00005	0.0006	0.000082	0.00039	0.004	0.00010
20-Nov-12	43																							
27-Nov-12	44	0.007	0.00013	< 0.001	0.650	0.0506	< 0.01	0.00163	< 0.0001	< 0.009	1.35	0.00136	0.71	0.00002	0.40	0.322	2.78	< 0.00002	0.00011	0.0002	0.000186	0.00027	0.005	0.00011
04-Dec-12	45																							
11-Dec-12	46	< 0.003	0.00004	< 0.001	0.543	0.0393	< 0.01	0.00160	0.0002	< 0.009	1.16	0.00112	0.54	0.00003	0.40	0.258	2.36	< 0.00002	0.00041	0.0002	0.000132	0.00035	0.005	0.00002
18-Dec-12	47																							

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	< 0.003	0.00004	< 0.001	0.547	0.0352	< 0.01	0.00150	< 0.0001	< 0.009	1.08	0.00117	0.40	0.00003	0.30	0.244	2.84	< 0.00002	0.00007	< 0.0001	0.000068	0.00007	0.003	< 0.00001
01-Jan-13	49																							
08-Jan-13	50	0.005	0.00005	< 0.001	0.480	0.0310	< 0.01	0.00133	< 0.0001	< 0.009	1.02	0.00099	0.44	0.00001	0.28	0.201	2.19	< 0.00002	0.00025	0.0002	0.000052	0.00032	0.003	0.00001
15-Jan-13	51																							
22-Jan-13	52	0.003	0.00005	< 0.001	0.515	0.0320	< 0.01	0.00135	0.0001	< 0.009	0.956	0.00110	0.41	0.00002	0.15	0.215	2.40	< 0.00002	0.00011	0.0001	0.000085	0.00028	0.003	0.00002
29-Jan-13	53																							
05-Feb-13	54	< 0.003	0.00004	< 0.001	0.493	0.0304	< 0.01	0.00142	< 0.0001	< 0.009	0.872	0.00118	0.36	< 0.00001	0.24	0.207	2.20	< 0.00002	0.00005	< 0.0001	0.000064	0.00011	0.002	< 0.00001
12-Feb-13	55																							
19-Feb-13	56	0.004	0.00012	< 0.001	0.533	0.0309	< 0.01	0.00157	< 0.0001	< 0.009	0.837	0.00142	0.31	0.00001	0.18	0.205	2.46	< 0.00002	0.00005	0.0002	0.000082	0.00019	0.003	0.00012
26-Feb-13	57																							
05-Mar-13	58	0.006	0.00015	< 0.001	0.593	0.0373	< 0.01	0.00137	0.0002	< 0.009	0.990	0.00114	0.53	0.00001	0.24	0.242	2.96	< 0.00002	0.00001	0.0004	0.000055	0.00018	0.003	0.00016
12-Mar-13	59																							
19-Mar-13	60	0.005	0.00022	< 0.001	0.550	0.0284	0.01	0.00142	< 0.0001	< 0.009	0.846	0.00100	0.49	< 0.00001	0.15	0.193	2.51	< 0.00002	0.00008	0.0002	0.000055	0.00018	0.003	0.00013
26-Mar-13	61																							
02-Apr-13	62	< 0.003	0.00003	< 0.001	0.606	0.0312	< 0.01	0.00156	0.0004	< 0.009	0.850	0.00095	0.40	< 0.00001	0.17	0.220	2.75	< 0.00002	0.00003	< 0.0001	0.000056	0.00008	0.003	< 0.00001
09-Apr-13	63																							
16-Apr-13	64	< 0.003	0.00005	< 0.001	0.723	0.0361	< 0.01	0.00148	< 0.0001	< 0.009	0.878	0.00084	0.49	< 0.00001	0.15	0.272	3.02	< 0.00002	0.00008	< 0.0001	0.000133	0.00010	0.003	0.00002
23-Apr-13	65																							
30-Apr-13	66	< 0.003	0.00003	< 0.001	0.596	0.0282	< 0.01	0.00139	< 0.0001	< 0.009	0.731	0.00091	0.38	< 0.00001	0.13	0.201	2.66	< 0.00002	0.00004	< 0.0001	0.000023	0.00010	0.003	0.00004
07-May-13	67																							
14-May-13	68	< 0.003	< 0.00002	< 0.001	0.506	0.0217	< 0.01	0.00128	< 0.0001	< 0.009	0.653	0.00088	0.42	0.00001	0.17	0.160	2.16	< 0.00002	0.00003	< 0.0001	0.000048	0.00008	0.002	< 0.00001
21-May-13	69																							
28-May-13	70	< 0.003	0.00003	< 0.001	0.574	0.0283	< 0.01	0.00135	< 0.0001	< 0.009	0.772	0.00099	0.37	< 0.00001	0.15	0.187	2.32	< 0.00002	0.00005	< 0.0001	0.000044	0.00009	0.003	< 0.00001
04-Jun-13	71																							
11-Jun-13	72																							
18-Jun-13	73																							
25-Jun-13	74	0.006	0.00039	< 0.001	0.620	0.0293	0.01	0.00115	0.0002	0.012	0.757	0.00113	0.08	0.00001	0.11	0.192	2.62	< 0.00002	0.00008	0.0002	0.000046	0.00014	0.005	0.00003
02-Jul-13	75																							
09-Jul-13	76																							
16-Jul-13	77																							
23-Jul-13	78	0.009	0.00018	< 0.001	0.676	0.0307	< 0.01	0.00108	< 0.0001	< 0.009	0.749	0.00106	0.50	0.00001	0.12	0.188	2.77	< 0.00002	0.00004	0.0005	0.000044	0.00021	0.005	0.00026
30-Jul-13	79																							
06-Aug-13	80																							
13-Aug-13	81																							
20-Aug-13	82																							
27-Aug-13	83																							

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jan-12	0	500	400	7.84	314	196	#N/A	2.9	39.2	54	24.2	0.142	0.0115	0.0149	0.0420	< 0.00002	< 0.00001	0.0561	0.000021	8.55	< 0.0005	0.000074
31-Jan-12	1	500	475	7.80	274	213	#N/A	2.7	34.1	65	34.8	0.120	0.0189	0.0141	0.0443	< 0.00002	< 0.00001	0.0748	0.000008	12.0	< 0.0005	0.000076
07-Feb-12	2	500	460	7.75	313	179	#N/A	3.1	30.7	63	42.5	0.0944	0.0126	0.0103	0.0409	< 0.00002	< 0.00001	0.0661	0.000012	14.8	< 0.0005	0.000090
14-Feb-12	3	500	435	7.78	362	156	#N/A	3.7	26.8	53	41.3	0.0956	0.0102	0.0099	0.0505	< 0.00002	< 0.00001	0.0569	0.000078	14.5	< 0.0005	0.000100
21-Feb-12	4	500	455	7.65	320	130	#N/A	4.0	26.1	37	38.5	0.0693	0.0111	0.0074	0.0536	< 0.00002	< 0.00001	0.0589	0.000008	13.3	< 0.0005	0.000054
28-Feb-12	5	500	440	7.63	371	116																
06-Mar-12	6	500	435	7.67	368	109	#N/A	4.4	24.3	33	36.4	0.0999	0.0088	0.0059	0.0483	< 0.00002	< 0.00001	0.0475	0.000012	12.6	< 0.0005	0.000081
13-Mar-12	7	500	435	7.53	360	104																
20-Mar-12	8	500	425	7.56	313	99	#N/A	3.2	21.4	29	35.3	0.0820	0.0085	0.0057	0.0463	< 0.00002	< 0.00001	0.0433	0.000014	12.2	< 0.0005	0.000082
27-Mar-12	9	500	450	7.49	325	97																
03-Apr-12	10	500	450	7.46	352	86	#N/A	2.5	20.3	26	32.7	0.0939	0.0075	0.0052	0.0399	< 0.00002	< 0.00001	0.0375	< 0.000003	11.4	< 0.0005	0.000080
10-Apr-12	11	500	455	7.49	328	93																
17-Apr-12	12	500	460	7.49	341	90	#N/A	2.7	20.3	27	33.8	0.0574	0.0071	0.0050	0.0316	< 0.00002	< 0.00001	0.0359	< 0.000003	11.8	< 0.0005	0.000067
24-Apr-12	13	500	465	7.66	360	84																
01-May-12	14	500	465	7.56	352	81	#N/A	3.8	17.9	23	31.8	0.0545	0.0063	0.0042	0.0286	< 0.00002	< 0.00001	0.0273	< 0.000003	11.1	< 0.0005	0.000067
08-May-12	15	500	465	7.52	378	80																
15-May-12	16	500	478	7.52	295	84	#N/A	2.8	18.1	19	33.2	0.0486	0.0068	0.0046	0.0316	< 0.00002	< 0.00001	0.0317	< 0.000003	11.5	< 0.0005	0.000058
22-May-12	17	500	420	7.64	317	82																
29-May-12	18	500	450	7.55	316	74	#N/A	2.7	22.4	13	29.8	0.123	0.0078	0.0059	0.0521	< 0.00002	< 0.00001	0.0243	< 0.000003	10.5	< 0.0005	0.000071
05-Jun-12	19	500	500	7.53	355	73																
12-Jun-12	20	500	485	7.50	333	69	#N/A	2.7	21.2	13	28.2	0.0730	0.0081	0.0042	0.0353	< 0.00002	< 0.00001	0.0227	< 0.000003	9.84	< 0.0005	0.000045
19-Jun-12	21	500	485	7.51	366	71																
26-Jun-12	22	500	485	7.47	322	71	#N/A	2.9	21.9	14	29.7	0.0647	0.0067	0.0038	0.0326	< 0.00002	< 0.00001	0.0214	< 0.000003	10.3	< 0.0005	0.000081
03-Jul-12	23	500	490	7.61	369	74																
10-Jul-12	24	500	485	7.44	318	79	#N/A	3.6	17.9	19	31.1	0.0679	0.0068	0.0035	0.0312	< 0.00002	< 0.00001	0.0205	0.000018	10.8	< 0.0005	0.000066
17-Jul-12	25	500	485	7.46	365	80																
24-Jul-12	26	500	485	7.35	338	83	#N/A	2.4	17.5	19	34.2	0.0696	0.0057	0.0032	0.0351	< 0.00002	< 0.00001	0.0194	0.000016	11.8	< 0.0005	0.000079
31-Jul-12	27	500	480	7.47	363	80																
07-Aug-12	28	500	500	7.53	313	80	#N/A	2.6	15.5	21	35.1	0.0680	0.0057	0.0029	0.0321	< 0.00002	< 0.00001	0.0164	0.000015	12.1	< 0.0005	0.000091
14-Aug-12	29	500	490	7.35	313	88																
21-Aug-12	30	500	495	7.37	297	86	#N/A	2.5	17.1	25	37.0	0.0441	0.0065	0.0028	0.0291	< 0.00002	< 0.00001	0.0168	0.000022	12.7	< 0.0005	0.00007
28-Aug-12	31	500	490	7.25	352	85																
04-Sep-12	32	500	495	7.29	380	71	#N/A	3.4	16.2	16	30.7	0.0975	0.0042	0.0025	0.0295	< 0.00002	< 0.00001	0.0117	0.000016	10.6	< 0.0005	0.000052
11-Sep-12	33	500	500	7.38	375	83																
18-Sep-12	34	500	490	7.33	349	76	#N/A	2.2	21.4	20	31.9	0.0521	0.0048	0.0028	0.0292	< 0.00002	< 0.00001	0.0131	0.000018	10.9	< 0.0005	0.000056
25-Sep-12	35	500	490	7.31	330	92																
02-Oct-12	36	500	490	7.36	373	71	#N/A	2.4	17.7	16	30.8	0.0326	0.0045	0.0023	0.0252	< 0.00002	< 0.00001	0.0115	0.000022	10.5	< 0.0005	0.000160
09-Oct-12	37	500	495	7.32	335	101																
16-Oct-12	38	500	500	7.28	376	65	#N/A	2.5	17.4	17	28.0	0.0316	0.0036	0.0020	0.0247	< 0.00002	< 0.00001	0.0090	0.000019	9.57	< 0.0005	0.000068
23-Oct-12	39	500	490	7.31	335	50																
30-Oct-12	40	500	485	7.36	357	70	#N/A	2.4	21.0	14	32.5	0.0516	0.0046	0.0023	0.0266	< 0.00002	< 0.00001	0.0096	0.000023	11.1	< 0.0005	0.000053
06-Nov-12	41	500	480	7.32	345	105																
13-Nov-12	42	500	485	7.52	370	60	#N/A	4.1	17.8	13	29.0	0.0282	0.0034	0.0020	0.0218	< 0.00002	< 0.00001	0.0083	0.000019	9.86	< 0.0005	0.000078
20-Nov-12	43	500	490	7.31	345	75																
27-Nov-12	44	500	490	7.44	345	67	#N/A	4.4	23.0	15	30.2	0.0537	0.0035	0.0021	0.0314	< 0.00002	< 0.00001	0.0077	0.000129	10.3	< 0.0005	0.000062
04-Dec-12	45	500	470	7.01	340	65																
11-Dec-12	46	500	485	7.50	338	65	#N/A	2.1	22.2	12	29.2	0.0329	0.0040	0.0022	0.0241	< 0.00002	< 0.00001	0.0087	0.000013	9.97	0.0009	0.000055
18-Dec-12	47	500	495	7.54	360	65																

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
25-Dec-12	48	500	470	7.56	372	63	#N/A	3.7	22.4	14	28.2	0.0370	0.0038	0.0022	0.0310	< 0.00002	< 0.00001	0.0089	0.000022	9.44	< 0.0005	0.000135
01-Jan-13	49	500	435	7.32	425	75																
08-Jan-13	50	500	440	7.56	291	59	#N/A	3.0	16.3	13	29.7	0.106	0.0046	0.0022	0.0297	< 0.00002	0.00001	0.0074	0.000019	10.2	< 0.0005	0.000078
15-Jan-13	51	500	435	7.39	410	60																
22-Jan-13	52	500	445	7.46	313	63	#N/A	4.1	21.5	15	24.4	0.0595	0.0040	0.0021	0.0217	< 0.00002	< 0.00001	0.0072	0.000017	8.29	< 0.0005	0.000061
29-Jan-13	53	500	440	7.57	370	56																
05-Feb-13	54	500	460	7.52	365	56	#N/A	3.2	14.5	16	23.2	0.0566	0.0037	0.0020	0.03270	< 0.00002	< 0.00001	0.0055	0.000015	7.83	< 0.0005	0.000159
12-Feb-13	55	500	465	7.56	382	59																
19-Feb-13	56	500	465	7.49	389	57	#N/A	2.9	16.0	18	25.7	0.0346	0.0035	0.0023	0.0258	< 0.00002	< 0.00001	0.0060	0.000021	8.68	< 0.0005	0.000093
26-Feb-13	57	500	465	7.56	388	62																
05-Mar-13	58	500	455	7.56	400	66	#N/A	3.9	16.9	16	28.1	0.0316	0.0037	0.0022	0.0279	< 0.00002	< 0.00001	0.0068	0.000024	9.47	< 0.0005	0.000166
12-Mar-13	59	500	460	7.29	410	70																
19-Mar-13	60	500	455	7.64	348	63	#N/A	6.3	16.1	15	26.3	0.0333	0.0031	0.0019	0.0245	0.00002	0.00002	0.0064	0.000040	8.81	< 0.0005	0.000205
26-Mar-13	61	500	450	7.63	398	62																
02-Apr-13	62	500	460	7.59	363	65	#N/A	4.4	16.4	14	29.7	0.0314	0.0033	0.0019	0.0240	< 0.00002	< 0.00001	0.0071	0.000024	10.0	< 0.0005	0.000206
09-Apr-13	63	500	460	7.56	406	62																
16-Apr-13	64	500	450	7.56	375	66	#N/A	4.9	15.4	17	29.8	0.0932	0.0034	0.0018	0.0241	< 0.00002	< 0.00001	0.0067	0.000025	10.0	< 0.0005	0.000107
23-Apr-13	65	500	440	7.61	384	74																
30-Apr-13	66	500	445	7.60	372	67	#N/A	3.8	15.9	22	30.9	0.0242	0.0031	0.0016	0.0171	< 0.00002	< 0.00001	0.0066	0.000015	10.5	< 0.0005	0.000061
07-May-13	67	500	445	7.61	399	75																
14-May-13	68	500	445	7.61	390	57	#N/A	3.8	12.9	16	25.1	0.0915	0.0024	0.0016	0.0163	< 0.00002	< 0.00001	0.0046	0.000017	8.36	< 0.0005	0.000182
21-May-13	69	500	440	7.60	411	61																
28-May-13	70	500	455	7.64	405	65	#N/A	3.7	14.8	18	29.5	0.0567	0.0031	0.0014	0.0205	< 0.00002	< 0.00001	0.0066	0.000021	9.88	< 0.0005	0.000060
04-Jun-13	71	500	430	7.71	398	68																
11-Jun-13	72	500	455	7.67	394	65	#N/A	7.3	17.1	19												
18-Jun-13	73	500	440	7.39	413	65																
25-Jun-13	74	500	445	7.54	373	64	#N/A	4.8	15.3	18	27.4	0.0259	0.0030	0.0017	0.0190	< 0.00002	< 0.00001	0.0070	0.000018	9.18	< 0.0005	0.000081
02-Jul-13	75	500	440	7.51	390	67																
09-Jul-13	76	500	435	7.54	303	63	#N/A	6.4	17.1	17												
16-Jul-13	77	500	435	7.35	416	64																
23-Jul-13	78	500	445	7.56	395	61	#N/A	5.8	15.9	18	27.3	0.0339	0.0030	0.0014	0.0162	< 0.00002	< 0.00001	0.0070	0.000012	9.23	< 0.0005	0.000047
30-Jul-13	79	500	435	7.34	403	61																
06-Aug-13	80	500	460	7.68	358	65	#N/A	6.2	15.4	16												
13-Aug-13	81	500	445	7.35	403	69																
20-Aug-13	82	500	445	7.37	392	67	#N/A	2.7	12.1	16												
27-Aug-13	83	500	440	7.42	397	60																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0008	< 0.003	0.00020	0.031	0.683	0.0139	< 0.01	0.00235	0.0004	< 0.009	12.5	0.00361	1.28	< 0.00001	20.3	0.365	19.9	0.00043	0.00007	0.0004	0.000718	0.00217	0.007	< 0.00001
31-Jan-12	1	0.0010	< 0.003	0.00005	0.037	1.16	0.0291	< 0.01	0.00424	0.0005	< 0.009	11.1	0.00849	1.27	< 0.00001	19.2	0.592	24.8	0.00047	0.00143	0.0003	0.00205	0.00128	0.002	< 0.00001
07-Feb-12	2	< 0.0005	< 0.003	0.00005	0.025	1.32	0.0421	0.01	0.00304	0.0006	< 0.009	9.55	0.00393	1.14	< 0.00001	12.4	0.675	18.9	0.00039	0.00078	0.0004	0.00148	0.00098	0.001	< 0.00001
14-Feb-12	3	0.0190	0.010	0.00116	0.018	1.23	0.0430	< 0.01	0.00246	0.0005	0.107	8.22	0.00313	1.08	0.00009	7.36	0.667	15.0	0.00045	0.00051	0.0004	0.00127	0.00090	0.006	< 0.00001
21-Feb-12	4	< 0.0005	< 0.003	0.00003	0.013	1.24	0.0540	< 0.01	0.00267	0.0003	< 0.009	7.12	0.00212	1.03	< 0.00001	4.39	0.587	12.1	0.00031	0.00038	0.0002	0.00157	0.00076	< 0.001	< 0.00001
28-Feb-12	5																								
06-Mar-12	6	0.0007	0.006	0.00011	0.008	1.16	0.0470	< 0.01	0.00237	0.0002	< 0.009	5.95	0.00173	1.11	< 0.00001	2.01	0.533	10.3	0.00028	0.00016	0.0004	0.00124	0.00080	0.001	< 0.00001
13-Mar-12	7																								
20-Mar-12	8	< 0.0005	0.009	0.00014	0.006	1.16	0.0546	0.01	0.00218	< 0.0001	< 0.009	5.13	0.00130	0.99	0.00002	1.18	0.480	8.78	0.00021	0.00018	0.0004	0.00112	0.00060	< 0.001	0.00002
27-Mar-12	9																								
03-Apr-12	10	0.0005	0.004	0.00015	0.005	1.06	0.0439	< 0.01	0.00229	0.0002	< 0.009	4.18	0.00111	0.87	0.00002	0.68	0.415	8.03	0.00021	0.00009	0.0004	0.00116	0.00049	0.002	< 0.00001
10-Apr-12	11																								
17-Apr-12	12	< 0.0005	< 0.003	0.00003	0.004	1.07	0.0459	0.02	0.00315	0.0002	< 0.009	3.78	0.00130	0.85	< 0.00001	0.51	0.411	7.74	0.00019	0.00013	0.0002	0.00111	0.00066	0.001	< 0.00001
24-Apr-12	13																								
01-May-12	14	< 0.0005	< 0.003	0.00005	0.003	0.979	0.0437	0.02	0.00287	0.0003	< 0.009	3.25	0.00133	0.75	< 0.00001	0.41	0.358	6.68	0.00017	0.00010	0.0003	0.00102	0.00061	0.001	< 0.00001
08-May-12	15																								
15-May-12	16	< 0.0005	< 0.003	0.00003	0.004	1.10	0.0403	0.01	0.00359	0.0003	< 0.009	3.36	0.00143	0.83	< 0.00001	0.37	0.373	7.09	0.00019	0.00014	0.0005	0.000988	0.00067	0.001	< 0.00001
22-May-12	17																								
29-May-12	18	0.0009	0.011	0.00010	0.004	0.884	0.0364	0.01	0.00223	< 0.0001	< 0.009	3.56	0.00118	1.03	0.00001	0.30	0.362	5.63	0.00019	0.00046	0.0006	0.000883	0.00082	0.001	0.00001
05-Jun-12	19																								
12-Jun-12	20	< 0.0005	0.003	0.00003	0.003	0.884	0.0433	0.01	0.00235	0.0002	< 0.009	2.95	0.00092	0.81	< 0.00001	0.27	0.313	4.90	0.00015	0.00027	0.0003	0.000983	0.00060	< 0.001	< 0.00001
19-Jun-12	21																								
26-Jun-12	22	< 0.0005	< 0.003	0.00003	0.003	0.970	0.0453	0.02	0.00206	< 0.0001	< 0.009	2.81	0.00092	0.82	< 0.00001	0.25	0.318	5.89	0.00015	0.00020	0.0003	0.000952	0.00066	< 0.001	< 0.00001
03-Jul-12	23																								
10-Jul-12	24	< 0.0005	< 0.003	0.00010	0.003	1.01	0.0426	0.02	0.00241	0.0004	< 0.009	2.62	0.00110	0.81	< 0.00001	0.25	0.320	6.50	0.00014	0.00021	0.0003	0.000707	0.00069	0.008	0.00001
17-Jul-12	25																								
24-Jul-12	26	< 0.0005	0.003	0.00002	0.003	1.14	0.0469	0.01	0.00247	0.0001	< 0.009	2.34	0.00118	0.75	< 0.00001	0.23	0.326	7.57	0.00011	0.00011	0.0003	0.000724	0.00057	0.002	< 0.00001
31-Jul-12	27																								
07-Aug-12	28	< 0.0005	0.003	0.00005	0.003	1.18	0.0388	0.03	0.00287	0.0001	< 0.009	2.23	0.00097	0.72	< 0.00001	0.20	0.312	8.27	0.00015	0.00035	0.0002	0.000527	0.00058	0.002	0.00001
14-Aug-12	29																								
21-Aug-12	30	< 0.0005	< 0.003	0.00002	0.003	1.28	0.0503	0.03	0.00301	0.0003	< 0.009	1.99	0.00103	0.71	< 0.00001	0.19	0.319	8.50	0.00013	0.00004	0.0002	0.00071	0.00031	< 0.001	< 0.00001
28-Aug-12	31																								
04-Sep-12	32	0.0008	< 0.003	0.00003	0.002	1.02	0.0432	< 0.01	0.00243	0.0002	< 0.009	1.48	0.00082	0.49	< 0.00001	0.18	0.246	6.15	0.00010	0.00018	0.0003	0.000596	0.00062	0.002	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	< 0.0005	< 0.003	< 0.00002	0.002	1.15	0.0416	0.02	0.00269	< 0.0001	< 0.009	1.65	0.00086	0.60	< 0.00001	0.17	0.277	6.63	0.00010	0.00010	0.0001	0.000668	0.00045	0.001	< 0.00001
25-Sep-12	35																								
02-Oct-12	36	< 0.0005	< 0.003	0.00002	0.002	1.10	0.0454	< 0.01	0.00249	< 0.0001	< 0.009	1.42	0.00068	0.56	< 0.00001	0.13	0.246	6.18	0.00009	0.00005	0.0001	0.000665	0.00031	< 0.001	0.00013
09-Oct-12	37																								
16-Oct-12	38	< 0.0005	< 0.003	< 0.00002	0.002	1.01	0.0445	< 0.01	0.00230	0.0001	< 0.009	1.23	0.00071	0.47	< 0.00001	0.12	0.217	5.32	0.00008	0.00007	0.0001	0.000688	0.00033	0.001	< 0.00001
23-Oct-12	39																								
30-Oct-12	40	< 0.0005	< 0.003	< 0.00002	0.002	1.19	0.0461	< 0.01	0.00268	0.0001	< 0.009	1.38	0.00065	0.69	< 0.00001	0.13	0.257	6.21	0.00008	0.00008	0.0002	0.000618	0.00033	< 0.001	< 0.00001
06-Nov-12	41																								
13-Nov-12	42	< 0.0005	< 0.003	< 0.00002	0.001	1.06	0.0435	0.01	0.00219	0.0001	< 0.009	1.10	0.00056	0.45	< 0.00001	0.11	0.210	5.46	0.00008	0.00004	0.0001	0.000546	0.00028	0.001	< 0.00001
20-Nov-12	43																								
27-Nov-12	44	< 0.0005	0.007	0.00008	0.001	1.08	0.0480	< 0.01	0.00206	< 0.0001	< 0.009	1.10	0.00073	0.51	< 0.00001	0.09	0.221	5.04	0.00006	0.00010	0.0003	0.000632	0.00027	0.002	< 0.00001
04-Dec-12	45																								
11-Dec-12	46	0.0007	< 0.003	0.00017	0.001	1.05	0.0328	< 0.01	0.00205	0.0001	< 0.009	1.06	0.00063	0.47	< 0.00001	0.19	0.217	5.06	0.00008	0.00016	< 0.0001	0.000578	0.00015	< 0.001	< 0.00001
18-Dec-12	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	< 0.0005	< 0.003	0.00002	0.001	1.12	0.0384	< 0.01	0.00237	0.0002	< 0.009	1.000	0.00062	0.32	< 0.00001	0.09	0.216	4.71	0.00007	0.00014	< 0.0001	0.000510	0.00014	0.001	< 0.00001
01-Jan-13	49																								
08-Jan-13	50	0.0009	0.006	0.00011	0.001	1.03	0.0345	< 0.01	0.00178	< 0.0001	< 0.009	1.13	0.00075	0.51	0.00004	0.10	0.204	4.98	0.00007	0.00010	0.0011	0.000406	0.00049	0.002	0.00003
15-Jan-13	51																								
22-Jan-13	52	< 0.0005	0.003	0.00003	0.001	0.896	0.0343	< 0.01	0.00157	0.0002	< 0.009	0.990	0.00081	0.38	0.00001	0.02	0.179	4.54	0.00006	0.00017	0.0003	0.000390	0.00037	0.001	0.00001
29-Jan-13	53																								
05-Feb-13	54	< 0.0005	0.004	0.00010	0.001	0.901	0.0356	< 0.01	0.00166	< 0.0001	< 0.009	0.935	0.00066	0.33	< 0.00001	0.09	0.167	4.39	0.00006	0.00003	0.0003	0.000380	0.00021	0.001	< 0.00001
12-Feb-13	55																								
19-Feb-13	56	< 0.0005	< 0.003	0.00002	0.001	0.969	0.0409	< 0.01	0.00159	0.0001	< 0.009	0.822	0.00067	0.26	< 0.00001	0.09	0.166	4.73	0.00005	0.00003	0.0002	0.000352	0.00019	< 0.001	< 0.00001
26-Feb-13	57																								
05-Mar-13	58	< 0.0005	< 0.003	< 0.00002	0.001	1.08	0.0393	< 0.01	0.00151	0.0002	< 0.009	0.886	0.00070	0.37	< 0.00001	0.10	0.183	5.62	0.00005	< 0.00001	0.0002	0.000338	0.00013	< 0.001	< 0.00001
12-Mar-13	59																								
19-Mar-13	60	0.0011	< 0.003	0.00017	0.001	1.05	0.0323	< 0.01	0.00161	0.0003	< 0.009	0.833	0.00059	0.34	< 0.00001	0.08	0.160	5.20	0.00008	0.00007	0.0001	0.000352	0.00025	0.001	0.00002
26-Mar-13	61																								
02-Apr-13	62	< 0.0005	< 0.003	< 0.00002	0.001	1.15	0.0352	< 0.01	0.00179	0.0004	0.010	0.891	0.00042	0.37	< 0.00001	0.09	0.172	5.72	0.00006	0.00002	0.0001	0.000320	0.00012	< 0.001	0.00010
09-Apr-13	63																								
16-Apr-13	64	< 0.0005	0.015	0.00022	0.001	1.14	0.0317	< 0.01	0.00150	0.0002	0.012	0.913	0.00062	0.52	< 0.00001	0.08	0.165	6.10	0.00006	0.00004	0.0007	0.000298	0.00029	0.002	0.00003
23-Apr-13	65																								
30-Apr-13	66	< 0.0005	< 0.003	< 0.00002	0.001	1.13	0.0306	< 0.01	0.00159	0.0001	< 0.009	0.758	0.00049	0.34	< 0.00001	0.09	0.169	6.10	0.00005	0.00003	0.0001	0.000264	0.00015	< 0.001	< 0.00001
07-May-13	67																								
14-May-13	68	< 0.0005	0.008	0.00009	0.001	1.02	0.0261	< 0.01	0.00158	< 0.0001	< 0.009	0.752	0.00048	0.42	< 0.00001	0.06	0.138	5.16	0.00005	< 0.00001	0.0011	0.000229	0.00025	0.001	< 0.00001
21-May-13	69																								
28-May-13	70	< 0.0005	0.006	0.00008	0.001	1.18	0.0291	< 0.01	0.00174	0.0001	< 0.009	0.808	0.00051	0.33	< 0.00001	0.07	0.160	5.79	0.00005	0.00004	0.0006	0.000251	0.00016	< 0.001	0.00002
04-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	< 0.0005	< 0.003	0.00011	0.001	1.08	0.0259	0.01	0.00161	0.0003	< 0.009	0.722	0.00063	0.31	< 0.00001	0.09	0.152	5.53	0.00004	0.00012	< 0.0001	0.000229	0.00014	0.001	< 0.00001
02-Jul-13	75																								
09-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	< 0.0005	< 0.003	0.00002	0.001	1.05	0.0252	< 0.01	0.00150	< 0.0001	< 0.009	0.655	0.00053	0.33	< 0.00001	0.09	0.142	5.43	0.00004	0.00003	0.0002	0.000220	0.00014	< 0.001	< 0.00001
30-Jul-13	79																								
06-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L
21-Feb-13	0	500	425	8.79	270	382	#N/A	0	72.2	114	5.56	0.529	0.0117	0.155	0.00897	< 0.00002	< 0.00001	0.0190	0.000057	2.05	< 0.0005	0.000297
26-Feb-13	1	500	460	8.22	314	457	#N/A	3.7	47.8	176	12.0	0.414	0.0132	0.0964	0.00602	< 0.00002	< 0.00001	0.0224	0.000004	4.48	< 0.0005	0.000080
5-Mar-13	2	500	475	8.08	339	321	#N/A	3.0	43.4	104	10.2	0.410	0.0155	0.0565	0.00766	< 0.00002	< 0.00001	0.0249	0.000040	3.80	< 0.0005	0.000150
12-Mar-13	3	500	475	8.46	303	275	#N/A	0	35.4	99	9.89	0.253	0.0111	0.0408	0.00434	< 0.00002	< 0.00001	0.0206	< 0.000003	3.67	< 0.0005	0.000017
19-Mar-13	4	500	470	8.02	333	246	#N/A	4.2	35.1	66	9.77	0.213	0.0104	0.0356	0.00295	< 0.00002	< 0.00001	0.0236	0.000023	3.62	< 0.0005	0.000045
26-Mar-13	5	500	450	8.05	350	200																
2-Apr-13	6	500	455	8.13	330	194	#N/A	3.1	28.8	71	12.1	0.293	0.0088	0.0248	0.00544	< 0.00002	< 0.00001	0.0242	0.000048	4.50	< 0.0005	0.000246
9-Apr-13	7	500	450	7.97	368	173																
16-Apr-13	8	500	465	7.81	345	180	#N/A	4.4	22.4	75	23.5	0.148	0.0075	0.0153	0.00506	< 0.00002	< 0.00001	0.0203	0.000058	8.76	< 0.0005	0.000045
23-Apr-13	9	500	485	7.76	362	183																
30-Apr-13	10	500	520	7.64	360	173	#N/A	4.3	20.4	69	42.7	0.0351	0.0055	0.0095	0.00492	< 0.00002	< 0.00001	0.0198	0.000013	16.0	< 0.0005	0.000039
7-May-13	11	500	445	7.78	366	130	#N/A	6.5	18.3	58	35.0	0.0926	0.0052	0.0095	0.00549	< 0.00002	< 0.00001	0.0193	0.000089	13.0	< 0.0005	0.000042
14-May-13	12	500	465	7.63	379	166	#N/A	4.5	17.4	66	46.0	0.0593	0.0054	0.0088	0.00531	< 0.00002	< 0.00001	0.0210	0.000007	17.1	< 0.0005	0.000146
21-May-13	13	500	455	7.58	388	153	#N/A	4.0	15.3	61	49	0.0347	0.0047	0.0078	0.00474	< 0.00002	< 0.00001	0.0186	0.000009	18.3	< 0.0005	0.000028
28-May-13	14	500	460	7.59	397	160	#N/A	4.3	16.2	65	56.5	0.0603	0.0051	0.0075	0.00637	< 0.00002	< 0.00001	0.0223	0.000016	21	< 0.0005	0.000035
4-Jun-13	15	500	455	7.55	402	150	#N/A	5.1	15.8	57	51.7	0.0288	0.004	0.007	0.00485	< 0.00002	< 0.00001	0.021	0.000014	19.2	< 0.0005	0.000088
11-Jun-13	16	500	440	7.61	368	157	#N/A	7.9	17.8	60	60	0.0328	0.0039	0.0061	0.00467	< 0.00002	< 0.00001	0.0207	0.000026	22.3	< 0.0005	0.000031
18-Jun-13	17	500	455	7.4	367	161	#N/A	4.8	14.6	70	60.2	0.031	0.0044	0.0076	0.00538	< 0.00002	< 0.00001	0.0231	0.000038	22.3	< 0.0005	0.000107
25-Jun-13	18	500	460	7.44	377	153	#N/A	4.6	15.5	57	57.2	0.0247	0.0042	0.0081	0.00511	< 0.00002	< 0.00001	0.0204	0.00001	21.3	< 0.0005	0.000095
2-Jul-13	19	500	455	7.33	425.78	153.32	#N/A	6.0	15.2	59	54.7	0.0263	0.0049	0.009	0.00479	< 0.00002	< 0.00001	0.0222	0.000011	20.4	< 0.0005	0.000054
9-Jul-13	20	500	465	7.52	290.03	149.76	#N/A	6.8	17.3	59	60.3	0.04	0.0035	0.0062	0.00557	< 0.00002	< 0.00001	0.0203	0.00013	22.6	< 0.0005	0.000232
16-Jul-13	21	500	455	7.34	391.6	148.7	#N/A	3.2	12.8	59	60.5	0.0197	0.0033	0.0062	0.00449	< 0.00002	< 0.00001	0.0169	0.000088	22.7	< 0.0005	0.000086
23-Jul-13	22	500	455	7.55	409.17	139.76	#N/A	6.31	16.78	53	60.5	0.0206	0.0036	0.0066	0.00471	< 0.00002	< 0.00001	0.0181	0.000027	22.6	< 0.0005	0.000067
30-Jul-13	23	500	455	7.35	392.57	146.12	#N/A	4.34	13.29	60	60.6	0.02	0.0029	0.006	0.00431	< 0.00002	< 0.00001	0.0178	0.00002	22.7	< 0.0005	0.000045
6-Aug-13	24	500	465	7.65	359	156	#N/A	7.1	16.5	59	60.9	0.0424	0.0031	0.0060	0.00516	< 0.00002	< 0.00001	0.0195	0.000015	22.9	< 0.0005	0.000128
13-Aug-13	25	500	465	7.24	391	159	#N/A	3.0	11.8	65	64.6	0.0177	0.0027	0.0051	0.00451	< 0.00002	< 0.00001	0.0159	0.000097	24.3	< 0.0005	0.000114
20-Aug-13	26	500	450	7.38	385	155	#N/A	3.0	13.1	60												
27-Aug-13	27	500	455	7.41	385	133	#N/A	2.74	12.6													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	< 0.0005	< 0.003	0.00010	0.218	0.106	0.0023	< 0.01	0.00214	0.0002	0.016	3.05	0.00533	1.46	< 0.00001	76.4	0.0278	37.1	0.00006	0.00008	0.0013	0.000149	0.00322	0.003	0.00005
26-Feb-13	1	< 0.0005	0.003	0.00021	0.312	0.206	0.0059	< 0.01	0.00280	< 0.0001	< 0.009	2.61	0.0224	1.19	0.00001	75.9	0.0681	56.3	0.00006	< 0.00001	0.0007	0.000305	0.00175	< 0.001	0.00004
5-Mar-13	2	< 0.0005	0.006	0.00029	0.194	0.170	0.0154	< 0.01	0.00237	0.0001	< 0.009	2.08	0.0102	1.04	0.00001	58.8	0.0482	39.9	0.00005	< 0.00001	0.0008	0.000319	0.00115	0.002	0.00006
12-Mar-13	3	< 0.0005	0.006	0.00017	0.134	0.177	0.0062	< 0.01	0.00168	< 0.0001	0.017	2.34	0.00811	1.03	< 0.00001	51.3	0.0517	32.5	0.00004	< 0.00001	0.0005	0.000161	0.00091	< 0.001	0.00004
19-Mar-13	4	< 0.0005	0.003	0.00013	0.118	0.177	0.0065	< 0.01	0.00131	< 0.0001	< 0.009	2.11	0.00614	0.97	< 0.00001	43.6	0.0498	27.5	0.00005	0.00004	0.0004	0.000184	0.00086	0.001	0.00001
26-Mar-13	5																								
2-Apr-13	6	0.0006	0.005	0.00017	0.075	0.206	0.0082	< 0.01	0.00103	0.0005	< 0.009	2.28	0.00531	0.93	< 0.00001	33.2	0.0595	21.6	0.00006	< 0.00001	0.0008	0.000202	0.00079	0.002	0.00004
9-Apr-13	7																								
16-Apr-13	8	< 0.0005	0.004	0.00009	0.050	0.392	0.0249	< 0.01	0.00066	0.0001	< 0.009	3.05	0.00626	0.85	0.00004	25.5	0.118	21.9	0.00006	0.00003	0.0005	0.000195	0.00045	0.003	0.00001
23-Apr-13	9																								
30-Apr-13	10	< 0.0005	< 0.003	< 0.00002	0.033	0.691	0.0499	0.02	0.00064	0.0002	< 0.009	2.99	0.00558	0.62	< 0.00001	14.1	0.192	21.0	0.00006	0.00002	0.0001	0.000310	0.00025	< 0.001	< 0.00001
7-May-13	11	0.0011	0.004	0.00011	0.029	0.619	0.0369	< 0.01	0.00065	< 0.0001	< 0.009	3.49	0.00473	0.65	< 0.00001	12.2	0.176	17.7	0.00007	< 0.00001	0.0003	0.000215	0.00030	0.003	< 0.00001
14-May-13	12	0.0011	< 0.003	0.00004	0.026	0.791	0.0532	0.01	0.00059	< 0.0001	< 0.009	3.75	0.00554	0.65	< 0.00001	10.1	0.217	20.3	0.00008	< 0.00001	0.0002	0.000248	0.00017	< 0.001	< 0.00001
21-May-13	13	0.0007	< 0.003	0.00002	0.02	0.819	0.0601	< 0.01	0.00049	0.0001	< 0.009	3.42	0.00533	0.53	< 0.00001	6.74	0.238	19.7	0.00008	< 0.00001	< 0.0001	0.000214	0.00015	< 0.001	< 0.00001
28-May-13	14	< 0.0005	< 0.003	0.00006	0.022	0.975	0.0702	< 0.01	0.00053	0.0002	< 0.009	3.81	0.00667	0.59	< 0.00001	6.33	0.268	19.9	0.00008	< 0.00001	0.0002	0.000401	0.00018	< 0.001	< 0.00001
4-Jun-13	15	< 0.0005	< 0.003	0.00003	0.016	0.912	0.0651	< 0.01	0.00041	< 0.0001	< 0.009	3.49	0.0053	0.57	< 0.00001	4.36	0.238	17.2	0.00007	0.00005	< 0.0001	0.000238	0.00016	< 0.001	< 0.00001
11-Jun-13	16	0.001	< 0.003	0.00004	0.014	1.05	0.0784	< 0.01	0.00046	0.0002	< 0.009	3.47	0.00598	0.56	< 0.00001	3.73	0.274	21.6	0.00006	0.00064	< 0.0001	0.000414	0.00011	0.001	< 0.00001
18-Jun-13	17	< 0.0005	< 0.003	0.00003	0.015	1.08	0.0806	< 0.01	0.00043	0.0002	< 0.009	3.59	0.00522	0.58	< 0.00001	3.02	0.274	20.2	0.00008	0.00006	< 0.0001	0.000551	0.00015	< 0.001	< 0.00001
25-Jun-13	18	< 0.0005	< 0.003	0.00009	0.012	1.01	0.0826	0.01	0.00042	0.0003	< 0.009	3.26	0.00566	0.2	< 0.00001	2.24	0.263	18	0.00007	0.00009	< 0.0001	0.000358	0.00018	< 0.001	< 0.00001
2-Jul-13	19	< 0.0005	< 0.003	0.00003	0.012	0.946	0.0891	< 0.01	0.00039	0.0003	< 0.009	3.33	0.00512	0.59	< 0.00001	1.82	0.242	17.9	0.00008	< 0.00001	< 0.0001	0.000312	0.00024	< 0.001	< 0.00001
9-Jul-13	20	0.0008	< 0.003	0.00008	0.009	0.959	0.098	< 0.01	0.00033	0.0022	< 0.009	2.91	0.00491	0.6	< 0.00001	1.44	0.253	18.8	0.00007	0.00002	0.0002	0.000309	0.00016	0.006	< 0.00001
16-Jul-13	21	0.0005	0.007	0.00003	0.008	0.931	0.0999	< 0.01	0.00035	0.0008	< 0.009	2.84	0.00502	0.49	< 0.00001	1.24	0.259	18.5	0.00005	< 0.00001	< 0.0001	0.000248	0.00012	0.004	< 0.00001
23-Jul-13	22	< 0.0005	< 0.003	0.00003	0.008	0.982	0.108	< 0.01	0.00035	< 0.0001	< 0.009	2.79	0.00537	0.53	< 0.00001	1.06	0.25	18.5	0.00007	0.00003	< 0.0001	0.000334	0.00012	< 0.001	< 0.00001
30-Jul-13	23	< 0.0005	< 0.003	0.00002	0.008	0.923	0.107	< 0.01	0.0003	0.0002	< 0.009	2.56	0.00431	0.49	< 0.00001	0.8	0.241	17.6	0.00006	< 0.00001	< 0.0001	0.000274	0.00011	< 0.001	< 0.00001
6-Aug-13	24	< 0.0005	< 0.003	0.00009	0.008	0.922	0.1240	< 0.01	0.00033	0.0003	< 0.009	2.58	0.00474	0.56	< 0.00001	0.71	0.244	18.20	0.00007	< 0.00001	< 0.0001	0.000341	0.00017	< 0.001	0.00004
13-Aug-13	25	< 0.0005	< 0.003	0.00003	0.006	0.944	0.122	< 0.01	0.0003	0.0005	0.014	2.31	0.00414	0.49	< 0.00001	0.58	0.255	18.6	0.00006	0.00004	< 0.0001	0.000257	0.00007	0.003	< 0.00001
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
21-Feb-13	0	500	415	7.40	310	1243	#N/A	9.3	13.4	577	163	0.0065	0.0028	0.0139	0.0536	0.00018	< 0.00001	0.0384	0.00434	56.4	< 0.0005	0.0236
26-Feb-13	1	500	485	7.44	344	806	#N/A	5.6	7.3	360	66.1	0.0106	0.0026	0.0123	0.0389	< 0.00002	< 0.00001	0.0217	0.000491	22.4	< 0.0005	0.00275
5-Mar-13	2	500	480	7.02	388	524	#N/A	5.9	2.4	226	74.0	0.0180	0.0028	0.0101	0.0554	0.00016	< 0.00001	0.0298	0.00223	25.4	< 0.0005	0.00428
12-Mar-13	3	500	485	7.09	369	363	#N/A	5.0	3.3	173	73.0	0.0024	0.0017	0.0051	0.0304	0.00005	< 0.00001	0.0233	0.000724	25.9	< 0.0005	0.00326
19-Mar-13	4	500	480	7.10	393	277	#N/A	6.4	3.0	116	63.2	0.0052	0.0018	0.0059	0.0498	0.00015	< 0.00001	0.0301	0.000918	22.4	< 0.0005	0.00407
26-Mar-13	5	500	480	7.07	405	244																
2-Apr-13	6	500	450	6.99	389	236	#N/A	5.6	2.8	100	69.2	0.0079	0.0014	0.0054	0.0284	0.00026	0.00002	0.0302	0.00160	24.2	< 0.0005	0.00648
9-Apr-13	7	500	455	6.49	410	223																
16-Apr-13	8	500	455	6.14	394	212	#N/A	6.2	1.8	93	66.2	0.0179	0.0014	0.0121	0.0309	0.00050	< 0.00001	0.0263	0.00195	23.2	< 0.0005	0.00761
23-Apr-13	9	500	440	6.75	384	261																
30-Apr-13	10	500	450	6.27	372	186	#N/A	6.1	2.5	102	76.9	0.0209	0.0010	0.0066	0.0204	0.00062	< 0.00001	0.0231	0.00288	26.9	< 0.0005	0.0108
7-May-13	11	500	455	6.90	355	181	#N/A	8.2	3.6	94	66.6	0.0225	0.0009	0.0067	0.0176	0.00071	< 0.00001	0.0192	0.00301	23.0	< 0.0005	0.0104
14-May-13	12	500	445	6.21	394	170	#N/A	6.5	1.6	80	55.6	0.0239	0.0013	0.0111	0.0258	0.00088	< 0.00001	0.0202	0.00354	18.2	< 0.0005	0.0125
21-May-13	13	500	445	6.01	403	165	#N/A	5.9	1.5	79	56.8	0.02	0.0009	0.0126	0.0207	0.00075	< 0.00001	0.016	0.00288	19.9	< 0.0005	0.00937
28-May-13	14	500	450	6.03	414	178	#N/A	6.1	1.5	90	68	0.0272	0.0009	0.0127	0.0183	0.00102	< 0.00001	0.0189	0.00358	23.8	< 0.0005	0.0113
4-Jun-13	15	500	450	6.01	438	176	#N/A	6.9	1.7	78	59	0.0298	0.0008	0.0116	0.0154	0.00099	< 0.00001	0.017	0.00359	20.7	< 0.0005	0.0115
11-Jun-13	16	500	430	7.01	346	188	#N/A	8.2	5.1	86	67	0.0327	0.0007	0.0124	0.014	0.00107	< 0.00001	0.016	0.00381	23.5	< 0.0005	0.0118
18-Jun-13	17	500	450	5.81	392	189	#N/A	6.9	0.6	86	66.2	0.0388	0.0008	0.0135	0.0158	0.00137	< 0.00001	0.0173	0.00476	23.1	< 0.0005	0.0139
25-Jun-13	18	500	450	5.31	474	201	#N/A	7.5	0.4	95	68.3	0.0472	0.0007	0.021	0.0154	0.00149	< 0.00001	0.0142	0.00518	23.6	< 0.0005	0.0158
2-Jul-13	19	500	435	5.38	433.1	188.84	#N/A	7.8	0.7	83	59.1	0.0583	0.0008	0.0235	0.0177	0.00213	< 0.00001	0.018	0.0063	19.8	< 0.0005	0.0182
9-Jul-13	20	500	455	5.29	384.27	175.19	#N/A	10.4	1.1	77	60.5	0.0401	0.0006	0.0143	0.0141	0.00166	< 0.00001	0.0138	0.00503	21.3	< 0.0005	0.0137
16-Jul-13	21	500	440	4.99	439.45	201.72	#N/A	6.8	0.1	93	72.2	0.0738	0.0006	0.02	0.0155	0.00219	< 0.00001	0.0129	0.00677	25.4	< 0.0005	0.0179
23-Jul-13	22	500	440	5	477.05	213.92	#N/A	12.23	0.33	115	86	0.13	0.0006	0.0231	0.0137	0.00339	< 0.00001	0.0129	0.00883	30.5	< 0.0005	0.0222
30-Jul-13	23	500	435	4.71	486.32	278.88	#N/A	13.07	<0.1	121	98.4	0.274	0.0005	0.0349	0.0131	0.00534	< 0.00001	0.0124	0.0129	34.5	< 0.0005	0.03
6-Aug-13	24	500	450	4.59	431	315	#N/A	20.1	<0.1	136	103.0	0.3890	0.0006	0.0483	0.01210	0.00734	< 0.00001	0.0114	0.015800	36.0	< 0.0005	0.033900
13-Aug-13	25	500	450	3.91	505	344	6.15	18.3	0.0	152	111	0.479	0.0005	0.0351	0.0124	0.00811	< 0.00001	0.0103	0.0176	39.3	< 0.0005	0.0347
20-Aug-13	26	500	440	3.88	509	373	7.65	22.0	0.0	159												
27-Aug-13	27	500	445	3.86	470	323	7.32	22.6	0.0													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0067	0.230	0.00316	0.620	5.31	1.14	< 0.01	0.00024	0.0163	< 0.009	16.2	0.00331	0.85	0.00001	168	1.48	186	0.00036	0.00001	0.0005	0.000962	0.00005	0.169	< 0.00001
26-Feb-13	1	0.0017	< 0.003	0.00025	0.455	2.48	0.313	< 0.01	0.00054	0.0016	< 0.009	7.08	0.00399	0.73	0.00005	115	0.825	114	0.00017	< 0.00001	0.0007	0.000135	0.00010	0.017	0.00001
5-Mar-13	2	0.0065	0.006	0.00367	0.282	2.57	0.448	< 0.01	0.00024	0.0021	< 0.009	6.55	0.00187	1.12	< 0.00001	70.4	0.926	80.9	0.00014	< 0.00001	0.0003	0.000213	< 0.00003	0.039	< 0.00001
12-Mar-13	3	0.0008	< 0.003	0.00104	0.132	2.06	0.401	< 0.01	0.00012	0.0017	< 0.009	5.45	0.00167	0.92	< 0.00001	40.4	0.881	58.0	0.00010	0.00008	0.0001	0.000064	0.00005	0.022	< 0.00001
19-Mar-13	4	0.0016	< 0.003	0.00190	0.094	1.77	0.377	< 0.01	0.00010	0.0021	< 0.009	4.43	0.00108	1.11	< 0.00001	24.8	0.738	42.9	0.00010	0.00003	< 0.0001	0.000104	0.00006	0.034	< 0.00001
26-Mar-13	5																								
2-Apr-13	6	0.0040	0.012	0.00301	0.060	2.16	0.536	< 0.01	0.00014	0.0053	< 0.009	4.65	0.00084	1.00	0.00003	15.9	0.780	36.9	0.00013	0.00002	0.0001	0.000402	0.00007	0.059	0.00001
9-Apr-13	7																								
16-Apr-13	8	0.0059	0.099	0.00642	0.040	1.99	0.560	< 0.01	0.00006	0.0045	< 0.009	4.81	0.00076	1.02	< 0.00001	7.62	0.754	30.8	0.00010	< 0.00001	< 0.0001	0.000439	< 0.00003	0.086	< 0.00001
23-Apr-13	9																								
30-Apr-13	10	0.0094	0.117	0.00844	0.033	2.37	0.762	< 0.01	0.00002	0.0064	< 0.009	4.35	0.00123	0.94	< 0.00001	5.00	0.807	32.1	0.00009	< 0.00001	< 0.0001	0.000693	< 0.00003	0.131	< 0.00001
7-May-13	11	0.0104	0.141	0.00694	0.028	2.20	0.740	< 0.01	0.00004	0.0061	< 0.009	4.35	0.00120	0.74	< 0.00001	4.23	0.706	28.6	0.00008	< 0.00001	< 0.0001	0.000792	0.00005	0.149	< 0.00001
14-May-13	12	0.0150	0.154	0.00781	0.027	2.48	0.842	< 0.01	< 0.00001	0.0074	< 0.009	4.97	0.00108	0.90	< 0.00001	3.73	0.573	25.0	0.00009	< 0.00001	0.0002	0.000774	0.00004	0.168	< 0.00001
21-May-13	13	0.0124	0.139	0.00764	0.018	1.74	0.609	< 0.01	0.00004	0.0057	< 0.009	4.21	0.00117	0.67	< 0.00001	2.71	0.606	24.9	0.00009	< 0.00001	< 0.0001	0.000732	< 0.00003	0.15	< 0.00001
28-May-13	14	0.015	0.212	0.00774	0.021	2.08	0.757	< 0.01	0.00002	0.0069	< 0.009	4.54	0.00156	0.7	< 0.00001	3.06	0.686	26.9	0.00009	0.00001	< 0.0001	0.000878	< 0.00003	0.186	< 0.00001
4-Jun-13	15	0.0159	0.2	0.00852	0.016	1.8	0.679	< 0.01	0.00002	0.0069	< 0.009	4.12	0.00123	0.66	0.00001	2.31	0.581	23.1	0.00008	< 0.00001	< 0.0001	0.00092	0.00003	0.199	< 0.00001
11-Jun-13	16	0.0173	0.247	0.00841	0.014	2.04	0.795	< 0.01	0.00003	0.0074	< 0.009	4.12	0.00156	0.62	< 0.00001	2.26	0.645	28.9	0.00007	0.00001	< 0.0001	0.00101	< 0.00003	0.217	< 0.00001
18-Jun-13	17	0.0214	0.298	0.00895	0.014	2.06	0.823	< 0.01	0.00002	0.0085	< 0.009	4.2	0.00133	0.68	0.00003	2.15	0.628	27.3	0.00008	0.00002	0.0001	0.00124	< 0.00003	0.27	< 0.00001
25-Jun-13	18	0.0256	0.371	0.00902	0.012	2.26	0.951	0.02	0.00006	0.01	< 0.009	4.39	0.00165	0.27	< 0.00001	1.87	0.651	27.1	0.00008	0.00003	< 0.0001	0.00152	< 0.00003	0.313	< 0.00001
2-Jul-13	19	0.0297	0.461	0.00979	0.012	2.36	1.01	< 0.01	0.00002	0.0112	< 0.009	4.63	0.00163	0.68	0.00001	1.71	0.544	26.3	0.00009	< 0.00001	< 0.0001	0.00187	0.00004	0.368	< 0.00001
9-Jul-13	20	0.0273	0.369	0.00914	0.008	1.78	0.767	< 0.01	0.00001	0.0083	< 0.009	3.59	0.00137	0.75	< 0.00001	1.44	0.546	24.8	0.00007	0.00002	< 0.0001	0.00163	< 0.00003	0.305	< 0.00001
16-Jul-13	21	0.0396	0.451	0.0101	0.007	2.11	0.95	< 0.01	0.00002	0.0112	< 0.009	3.89	0.00147	0.63	0.00002	1.44	0.642	28.7	0.00007	< 0.00001	< 0.0001	0.00248	< 0.00003	0.436	< 0.00001
23-Jul-13	22	0.0605	0.588	0.0125	0.007	2.37	1.12	< 0.01	0.00001	0.0134	< 0.009	3.73	0.00149	0.72	0.00003	1.27	0.682	33.3	0.00008	< 0.00001	< 0.0001	0.00434	< 0.00003	0.591	< 0.00001
30-Jul-13	23	0.0954	0.878	0.0147	0.007	2.96	1.47	0.02	0.00001	0.0184	< 0.009	3.88	0.00131	0.72	0.00002	1.16	0.756	37.9	0.00008	0.00001	< 0.0001	0.00781	< 0.00003	0.808	< 0.00001
6-Aug-13	24	0.1310	1.17	0.01660	0.008	3.200	1.7300	< 0.01	0.00002	0.0229	< 0.009	3.94	0.00121	0.81	0.00003	1.18	0.764	42.10	0.00009	< 0.00001	< 0.0001	0.011200	< 0.00003	1.110	0.00001
13-Aug-13	25	0.161	1.59	0.0159	0.007	3.24	1.71	< 0.01	0.00001	0.0225	< 0.009	3.47	0.00101	0.93	0.00005	1.08	0.799	44.1	0.00008	0.00003	< 0.0001	0.0125	< 0.00003	1.26	0.00001
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
21-Feb-13	0	500	430	7.79	296	295	#N/A	7.1	30.6	102	80.6	0.0458	0.0077	0.0029	0.0226	< 0.00002	< 0.00001	0.0302	0.000033	27.7	< 0.0005	0.000532
26-Feb-13	1	500	470	7.59	329	227	#N/A	5.3	15.9	94	68.1	0.112	0.0057	0.0048	0.0166	< 0.00002	< 0.00001	0.0284	0.000006	23.5	< 0.0005	0.000188
5-Mar-13	2	500	475	7.67	355	158	#N/A	4.2	15.3	56	47.0	0.190	0.0065	0.0043	0.0124	< 0.00002	< 0.00001	0.0304	0.000009	16.1	< 0.0005	0.000123
12-Mar-13	3	500	460	7.55	345	109	#N/A	3.8	14.1	37	35.5	0.111	0.0058	0.0051	0.00960	< 0.00002	< 0.00001	0.0234	0.000010	12.2	< 0.0005	0.000059
19-Mar-13	4	500	455	7.70	341	96	#N/A	5.1	15.0	30	29.0	0.109	0.0055	0.0058	0.00784	< 0.00002	< 0.00001	0.0248	0.000011	9.94	< 0.0005	0.000090
26-Mar-13	5	500	450	7.71	366	77																
2-Apr-13	6	500	455	7.57	354	76	#N/A	4.3	13.3	22	28.1	0.0789	0.0053	0.0054	0.00799	< 0.00002	< 0.00001	0.0233	< 0.000003	9.76	< 0.0005	0.000176
9-Apr-13	7	500	455	7.65	366	65																
16-Apr-13	8	500	455	7.70	343	60	#N/A	4.7	14.5	17	20.9	0.0727	0.0135	0.0061	0.00634	< 0.00002	< 0.00001	0.0212	0.000011	7.23	< 0.0005	0.000054
23-Apr-13	9	500	440	7.75	354	67																
30-Apr-13	10	500	455	7.67	351	58	#N/A	3.5	13.5	18	22.1	0.104	0.0081	0.0046	0.00874	< 0.00002	< 0.00001	0.0180	0.000007	7.73	< 0.0005	0.000061
7-May-13	11	500	450	7.79	360	48	#N/A	6.5	14.2	12	17.7	0.0979	0.0055	0.0039	0.00698	< 0.00002	< 0.00001	0.0154	0.000013	6.13	< 0.0005	0.000062
14-May-13	12	500	445	7.69	359	48	#N/A	4.1	12.6	14	18.5	0.131	0.0092	0.0045	0.00768	< 0.00002	< 0.00001	0.0160	0.000007	6.46	< 0.0005	0.000166
21-May-13	13	500	445	7.70	372	47	#N/A	3.4	11.7	12	16.4	0.085	0.0065	0.0039	0.00631	< 0.00002	< 0.00001	0.0137	0.000005	5.71	< 0.0005	0.000054
28-May-13	14	500	445	7.66	370	49	#N/A	3.8	11.4	13	19.5	0.0945	0.0059	0.0037	0.00761	< 0.00002	< 0.00001	0.0142	0.000011	6.83	< 0.0005	0.000069
4-Jun-13	15	500	450	7.63	387.2	50.48	#N/A	4.56	12.18	15	20.2	0.0709	0.0061	0.004	0.00727	< 0.00002	< 0.00001	0.0157	0.000007	7.01	< 0.0005	0.000125
11-Jun-13	16	500	435	7.75	352.05	46.14	#N/A	6.72	13.72	14	18.5	0.0872	0.0061	0.0037	0.00595	< 0.00002	< 0.00001	0.0135	0.000007	6.45	< 0.0005	0.000044
18-Jun-13	17	500	460	7.45	339.35	45.01	#N/A	4.06	11.84	13	16.6	0.0845	0.0079	0.0056	0.00699	< 0.00002	< 0.00001	0.0149	0.000008	5.74	< 0.0005	0.00011
25-Jun-13	18	500	445	7.54	327.63	40.7	#N/A	4.04	11.42	8	15.4	0.0737	0.008	0.0045	0.0067	< 0.00002	< 0.00001	0.0128	0.000011	5.32	< 0.0005	0.0001
2-Jul-13	19	500	440	7.37	413.08	46.34	#N/A	4.88	10.79	9	16.2	0.0682	0.0064	0.0049	0.00713	< 0.00002	< 0.00001	0.0147	0.000009	5.62	< 0.0005	0.000086
9-Jul-13	20	500	455	7.62	300.78	47.26	#N/A	6.2	12.89	13	18.2	0.0724	0.0046	0.0039	0.00752	< 0.00002	< 0.00001	0.0135	0.000007	6.37	< 0.0005	0.000205
16-Jul-13	21	500	450	7.28	386.71	47.14	#N/A	3.32	8.91	8	17.6	0.061	0.0054	0.004	0.00709	< 0.00002	< 0.00001	0.0127	0.000013	6.09	< 0.0005	0.000095
23-Jul-13	22	500	445	7.6	383.78	43.71	#N/A	5.84	12.08	13	16.3	0.1	0.0045	0.0041	0.00694	< 0.00002	< 0.00001	0.0121	0.000016	5.7	< 0.0005	0.000077
30-Jul-13	23	500	445	7.32	389.16	43.21	#N/A	3.89	9.15	12	16.9	0.0504	0.0048	0.0036	0.00564	< 0.00002	< 0.00001	0.0128	0.00001	5.87	< 0.0005	0.000049
6-Aug-13	24	500	450	7.71	350.09	44.8	#N/A	6.39	11.03	6	16.7	0.0833	0.0049	0.0039	0.00698	0.00004	< 0.00001	0.0129	0.000068	5.82	< 0.0005	0.000163
13-Aug-13	25	500	455	7.31	374	45	#N/A	2.9	8.1	12	17.7	0.0754	0.0045	0.0039	0.00713	< 0.00002	< 0.00001	0.0117	0.000018	6.12	< 0.0005	0.000112
20-Aug-13	26	500	445	7.33	382	44	#N/A	2.9	8.5	11												
27-Aug-13	27	500	450	7.37	375	38	#N/A	2.29	8.33													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0020	< 0.003	0.00012	0.006	2.78	0.218	< 0.01	0.0118	0.0010	0.014	17.3	0.00233	0.93	< 0.00001	11.1	0.452	35.7	0.00030	0.00004	0.0002	0.00302	0.00026	< 0.001	0.00004
26-Feb-13	1	0.0006	< 0.003	0.00013	0.005	2.31	0.118	< 0.01	0.00831	0.0002	< 0.009	11.0	0.00290	1.00	< 0.00001	8.31	0.403	30.9	0.00019	< 0.00001	0.0003	0.00152	0.00034	< 0.001	0.00003
5-Mar-13	2	< 0.0005	0.005	0.00024	0.003	1.65	0.0834	< 0.01	0.00647	0.0002	< 0.009	7.65	0.00172	1.01	< 0.00001	4.23	0.298	18.8	0.00013	0.00005	0.0006	0.00138	0.00044	< 0.001	0.00010
12-Mar-13	3	0.0009	0.004	0.00018	0.002	1.21	0.0583	< 0.01	0.00579	0.0001	0.013	6.32	0.00127	0.98	0.00001	2.39	0.220	12.4	0.00010	0.00003	0.0004	0.00132	0.00043	< 0.001	0.00003
19-Mar-13	4	0.0006	< 0.003	0.00016	0.002	1.01	0.0419	< 0.01	0.00531	< 0.0001	< 0.009	4.84	0.00095	0.91	< 0.00001	1.50	0.178	9.66	0.00009	0.00004	0.0003	0.00131	0.00044	< 0.001	0.00005
26-Mar-13	5																								
2-Apr-13	6	< 0.0005	< 0.003	0.00007	0.002	0.909	0.0450	< 0.01	0.00542	0.0003	0.012	3.94	0.00048	0.79	< 0.00001	0.76	0.171	7.68	0.00007	< 0.00001	< 0.0001	0.00121	0.00037	< 0.001	< 0.00001
9-Apr-13	7																								
16-Apr-13	8	0.0006	< 0.003	0.00012	0.001	0.694	0.0312	< 0.01	0.00497	0.0001	< 0.009	3.65	0.00066	0.92	< 0.00001	0.45	0.127	5.06	0.00006	0.00001	< 0.0001	0.00211	0.00044	< 0.001	< 0.00001
23-Apr-13	9																								
30-Apr-13	10	< 0.0005	0.008	0.00015	< 0.001	0.671	0.0522	< 0.01	0.00501	< 0.0001	< 0.009	2.99	0.00070	0.88	< 0.00001	0.30	0.127	4.95	0.00005	0.00001	0.0005	0.00173	0.00042	< 0.001	0.00009
7-May-13	11	< 0.0005	0.004	0.00022	< 0.001	0.577	0.0360	< 0.01	0.00409	< 0.0001	0.010	2.81	0.00063	0.72	< 0.00001	0.25	0.110	4.42	0.00005	< 0.00001	0.0004	0.00109	0.00041	< 0.001	0.00003
14-May-13	12	< 0.0005	0.005	0.00019	< 0.001	0.580	0.0447	< 0.01	0.00449	< 0.0001	< 0.009	2.71	0.00066	0.92	< 0.00001	0.27	0.108	3.95	0.00005	< 0.00001	0.0005	0.00165	0.00039	< 0.001	0.00009
21-May-13	13	< 0.0005	0.004	0.00019	< 0.001	0.507	0.0406	< 0.01	0.00422	< 0.0001	0.009	2.26	0.00052	0.64	0.00001	0.22	0.0992	3.79	0.00004	< 0.00001	0.0004	0.00114	0.00035	< 0.001	0.00001
28-May-13	14	< 0.0005	0.005	0.00021	< 0.001	0.605	0.0467	0.01	0.00425	0.0001	< 0.009	2.41	0.00063	0.66	< 0.00001	0.22	0.112	4.32	0.00004	0.00001	0.0004	0.00123	0.00031	< 0.001	0.00002
4-Jun-13	15	< 0.0005	0.004	0.00019	< 0.001	0.653	0.0425	< 0.01	0.00452	< 0.0001	< 0.009	2.56	0.00067	0.86	< 0.00001	0.24	0.118	4.47	0.00004	< 0.00001	0.0002	0.0013	0.00031	< 0.001	0.00002
11-Jun-13	16	< 0.0005	< 0.003	0.00017	< 0.001	0.584	0.0412	< 0.01	0.00407	0.0001	< 0.009	2.19	0.00064	0.73	< 0.00001	0.21	0.104	4.41	0.00003	0.00005	0.0003	0.00132	0.00028	< 0.001	0.00003
18-Jun-13	17	< 0.0005	< 0.003	0.00015	< 0.001	0.547	0.039	< 0.01	0.00391	0.0001	< 0.009	2.22	0.00058	0.78	< 0.00001	0.2	0.0996	3.55	0.00004	0.00003	0.0003	0.00136	0.00037	< 0.001	0.00003
25-Jun-13	18	< 0.0005	0.003	0.00028	< 0.001	0.505	0.0414	< 0.01	0.00399	0.0001	0.011	1.92	0.0007	0.33	0.00001	0.19	0.0928	3.11	0.00003	< 0.00001	0.0003	0.00127	0.00029	< 0.001	0.00002
2-Jul-13	19	< 0.0005	0.003	0.00031	< 0.001	0.521	0.0413	< 0.01	0.00444	0.0001	< 0.009	2.07	0.00066	0.68	< 0.00001	0.14	0.0934	3.8	0.00004	< 0.00001	0.0003	0.00102	0.00031	< 0.001	0.00002
9-Jul-13	20	< 0.0005	0.003	0.00033	< 0.001	0.554	0.0444	< 0.01	0.00391	0.0002	< 0.009	1.85	0.00067	0.68	< 0.00001	0.14	0.102	4.33	0.00004	0.00002	0.0005	0.000874	0.00029	< 0.001	0.0001
16-Jul-13	21	0.0005	0.004	0.00026	< 0.001	0.574	0.0429	< 0.01	0.00458	0.0003	< 0.009	1.87	0.00071	0.6	< 0.00001	0.13	0.108	4.01	0.00004	< 0.00001	0.0002	0.000888	0.00025	0.002	0.00002
23-Jul-13	22	< 0.0005	0.004	0.00021	< 0.001	0.51	0.0402	< 0.01	0.00404	0.0001	< 0.009	1.59	0.00066	0.63	< 0.00001	0.13	0.0939	3.79	0.00003	< 0.00001	0.0005	0.000771	0.00029	0.001	0.00002
30-Jul-13	23	< 0.0005	< 0.003	0.00008	< 0.001	0.544	0.0426	< 0.01	0.00424	< 0.0001	0.011	1.6	0.00062	0.57	< 0.00001	0.12	0.0958	3.83	0.00003	< 0.00001	< 0.0001	0.000785	0.0002	< 0.001	< 0.00001
6-Aug-13	24	< 0.0005	< 0.003	0.00041	< 0.001	0.53	0.0432	< 0.01	0.00424	0.0001	< 0.009	1.56	0.00059	0.64	< 0.00001	0.11	0.0943	3.91	0.00004	< 0.00001	0.0004	0.000916	0.00025	0.003	0.00004
13-Aug-13	25	< 0.0005	< 0.003	0.00029	< 0.001	0.581	0.0437	< 0.01	0.00418	0.0002	< 0.009	1.51	0.00061	0.64	0.00001	0.1	0.102	4	0.00003	0.00003	0.0004	0.000787	0.00023	< 0.001	0.00003
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L
21-Feb-13	0	500	435	7.67	302	510	#N/A	7.2	27.8	226	112	0.0240	0.0056	0.0030	0.0526	< 0.00002	< 0.00001	0.0321	0.000079	39.9	< 0.0005	0.00267
26-Feb-13	1	500	465	7.67	331	351	#N/A	5.4	22.7	118	57.4	0.0999	0.0053	0.0043	0.0198	< 0.00002	< 0.00001	0.0326	0.000010	19.6	< 0.0005	0.000251
5-Mar-13	2	500	485	7.66	365	239	#N/A	4.5	21.0	83	47.1	0.132	0.0063	0.0028	0.0117	< 0.00002	< 0.00001	0.0427	0.000032	16.3	< 0.0005	0.000242
12-Mar-13	3	500	455	7.64	344	163	#N/A	3.6	15.8	64	43.0	0.0897	0.0040	0.0023	0.0102	< 0.00002	< 0.00001	0.0267	0.000008	15.3	< 0.0005	0.000076
19-Mar-13	4	500	455	7.66	347	147	#N/A	5.7	17.7	53	41.9	0.0757	0.0037	0.0020	0.00941	< 0.00002	< 0.00001	0.0298	0.000007	15.0	< 0.0005	0.000110
26-Mar-13	5	500	450	7.63	373	128																
2-Apr-13	6	500	445	7.52	354	124	#N/A	4.5	16.1	47	46.5	0.0983	0.0032	0.0019	0.0108	< 0.00002	< 0.00001	0.0242	0.000009	17.0	< 0.0005	0.000378
9-Apr-13	7	500	450	7.53	388	105																
16-Apr-13	8	500	450	7.49	359	107	#N/A	5.0	15.7	43	42.5	0.0589	0.0035	0.0015	0.00945	< 0.00002	< 0.00001	0.0218	0.000018	15.6	< 0.0005	0.000155
23-Apr-13	9	500	440	7.63	359	109																
30-Apr-13	10	500	445	7.53	363	96	#N/A	4.3	16.3	39	39.1	0.0505	0.0033	0.0012	0.0104	< 0.00002	< 0.00001	0.0190	0.000023	14.4	< 0.0005	0.000155
7-May-13	11	500	455	7.62	375	92	#N/A	6.7	15.9	37	39.0	0.0453	0.0022	0.0009	0.00868	< 0.00002	< 0.00001	0.0164	0.000016	14.4	< 0.0005	0.000145
14-May-13	12	500	455	7.54	376	78	#N/A	4.4	16.0	26	32.7	0.0534	0.0035	0.0012	0.00793	< 0.00002	< 0.00001	0.0165	0.000015	12.1	< 0.0005	0.000230
21-May-13	13	500	440	7.55	381	80	#N/A	3.8	14.6	24	31.8	0.051	0.0029	0.0012	0.00857	< 0.00002	< 0.00001	0.0137	0.000021	11.8	< 0.0005	0.000132
28-May-13	14	500	450	7.51	386	86	#N/A	4.0	15.1	31	37.2	0.0436	0.0027	0.0011	0.00941	< 0.00002	< 0.00001	0.0156	0.000023	13.8	< 0.0005	0.000152
4-Jun-13	15	500	445	7.52	400.39	83.95	#N/A	4.74	16.09	26	35.2	0.0525	0.0029	0.0011	0.00923	< 0.00002	< 0.00001	0.0154	0.000015	13	< 0.0005	0.000176
11-Jun-13	16	500	455	7.54	368.16	79.27	#N/A	7.64	17.71	25	33.8	0.0521	0.0024	0.0009	0.00825	< 0.00002	< 0.00001	0.0134	0.000017	12.6	< 0.0005	0.000108
18-Jun-13	17	500	445	7.4	366.21	79.57	#N/A	4.18	14.58	26	32.4	0.0478	0.0027	0.001	0.00891	< 0.00002	< 0.00001	0.0154	0.000015	12	< 0.0005	0.00017
25-Jun-13	18	500	445	7.39	342.77	77.35	#N/A	4.58	15.12	21	31.5	0.0406	0.0025	0.001	0.00842	< 0.00002	< 0.00001	0.0136	0.000017	11.7	< 0.0005	0.00016
2-Jul-13	19	500	450	7.58	365.72	84.81	#N/A	4.79	14.88	26	33.1	0.0644	0.0023	0.0015	0.00952	< 0.00002	< 0.00001	0.0148	0.000023	12.3	< 0.0005	0.000155
9-Jul-13	20	500	460	7.49	311.03	80.79	#N/A	6.63	17.15	25	34	0.0484	0.002	0.0009	0.0092	< 0.00002	< 0.00001	0.0137	0.000021	12.7	< 0.0005	0.000281
16-Jul-13	21	500	445	7.32	386.23	78.33	#N/A	3.27	13.19	20	33.2	0.0384	0.0021	0.001	0.0078	< 0.00002	< 0.00001	0.0128	0.000025	12.4	< 0.0005	0.000173
23-Jul-13	22	500	450	7.49	404.29	72.47	#N/A	6.81	16.85	22	31.7	0.0439	0.0022	0.0011	0.00792	< 0.00002	< 0.00001	0.0127	0.000026	11.8	< 0.0005	0.000157
30-Jul-13	23	500	440	7.35	387.69	72.12	#N/A	4.01	14.02	21	29.8	0.0587	0.0022	0.0009	0.00717	< 0.00002	< 0.00001	0.013	0.000015	11.2	< 0.0005	0.000097
6-Aug-13	24	500	460	7.62	358.39	78.26	#N/A	6.71	16.48	20	31.4	0.0433	0.0017	0.0008	0.0078	< 0.00002	< 0.00001	0.0123	0.00006	11.9	< 0.0005	0.000222
13-Aug-13	25	500	460	7.28	380	82	#N/A	2.9	13.0	24	33.9	0.0362	0.0021	0.0008	0.00802	< 0.00002	< 0.00001	0.0121	0.000026	12.7	< 0.0005	0.000201
20-Aug-13	26	500	455	7.37	383	81	#N/A	3.0	13.5	24												
27-Aug-13	27	500	455	7.42	382	69	#N/A	2.47	13.04													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0022	< 0.003	0.00016	0.157	2.99	0.741	< 0.01	0.00185	0.0020	0.019	14.4	0.00743	0.74	0.00002	43.3	0.718	68.4	0.00023	0.00009	0.0002	0.000778	0.00014	0.002	< 0.00001
26-Feb-13	1	0.0006	< 0.003	0.00015	0.194	2.06	0.216	< 0.01	0.00138	0.0003	< 0.009	7.57	0.0104	0.79	< 0.00001	34.9	0.463	45.2	0.00016	0.00007	0.0002	0.000686	0.00027	< 0.001	< 0.00001
5-Mar-13	2	0.0034	0.031	0.00064	0.107	1.53	0.156	< 0.01	0.00110	0.0003	0.129	6.93	0.00581	0.87	0.00232	20.8	0.422	29.4	0.00013	0.00019	0.0009	0.000956	0.00030	0.001	0.00008
12-Mar-13	3	< 0.0005	0.004	0.00006	0.052	1.16	0.145	< 0.01	0.00069	0.0001	0.011	4.89	0.00332	0.77	< 0.00001	12.0	0.373	21.1	0.00010	0.00012	0.0001	0.000613	0.00028	< 0.001	< 0.00001
19-Mar-13	4	0.0005	< 0.003	0.00010	0.038	1.08	0.143	< 0.01	0.00065	< 0.0001	< 0.009	4.03	0.00191	0.75	< 0.00001	7.25	0.353	17.4	0.00010	0.00011	< 0.0001	0.000640	0.00026	< 0.001	< 0.00001
26-Mar-13	5																								
2-Apr-13	6	< 0.0005	0.004	0.00019	0.018	0.986	0.168	< 0.01	0.00054	0.0003	0.013	3.27	0.00111	0.73	0.00002	3.16	0.384	14.9	0.00009	0.00008	0.0004	0.000619	0.00024	< 0.001	0.00002
9-Apr-13	7																								
16-Apr-13	8	0.0005	< 0.003	0.00019	0.010	0.848	0.187	< 0.01	0.00057	0.0018	0.012	2.79	0.00121	0.68	< 0.00001	1.49	0.332	12.5	0.00007	0.00006	0.0001	0.000672	0.00024	< 0.001	< 0.00001
23-Apr-13	9																								
30-Apr-13	10	< 0.0005	< 0.003	0.00018	0.006	0.763	0.222	< 0.01	0.00050	0.0002	< 0.009	2.45	0.00160	0.61	< 0.00001	0.87	0.294	10.3	0.00007	0.00003	0.0001	0.000782	0.00020	< 0.001	< 0.00001
7-May-13	11	< 0.0005	< 0.003	0.00016	0.005	0.721	0.195	< 0.01	0.00048	0.0002	< 0.009	2.25	0.00154	0.51	< 0.00001	0.67	0.282	11.3	0.00006	< 0.00001	< 0.0001	0.000508	0.00021	< 0.001	< 0.00001
14-May-13	12	< 0.0005	< 0.003	0.00019	0.004	0.623	0.193	< 0.01	0.00048	0.0001	0.010	2.07	0.00149	0.62	< 0.00001	0.58	0.236	7.76	0.00006	< 0.00001	0.0001	0.000769	0.00015	< 0.001	< 0.00001
21-May-13	13	0.0008	< 0.003	0.00022	0.003	0.565	0.194	< 0.01	0.00046	< 0.0001	< 0.009	1.82	0.0012	0.48	< 0.00001	0.43	0.23	8.25	0.00005	0.00003	< 0.0001	0.000634	0.00018	< 0.001	< 0.00001
28-May-13	14	< 0.0005	< 0.003	0.00015	0.004	0.683	0.229	< 0.01	0.0005	0.0002	< 0.009	1.98	0.00152	0.49	< 0.00001	0.45	0.266	8.98	0.00005	0.00004	< 0.0001	0.000775	0.00015	< 0.001	< 0.00001
4-Jun-13	15	< 0.0005	< 0.003	0.00023	0.003	0.641	0.208	< 0.01	0.00039	< 0.0001	< 0.009	1.93	0.00135	0.62	< 0.00001	0.41	0.244	8	0.00005	0.00007	< 0.0001	0.000802	0.00015	< 0.001	< 0.00001
11-Jun-13	16	< 0.0005	< 0.003	0.00017	0.003	0.578	0.2	< 0.01	0.00034	0.0002	< 0.009	1.66	0.00126	0.53	0.00001	0.34	0.23	8.41	0.00004	0.00003	< 0.0001	0.000693	0.00012	< 0.001	< 0.00001
18-Jun-13	17	< 0.0005	< 0.003	0.00028	0.003	0.572	0.184	< 0.01	0.00042	0.0002	< 0.009	1.73	0.00124	0.55	< 0.00001	0.32	0.225	7.61	0.00004	0.00005	< 0.0001	0.000694	0.00016	< 0.001	< 0.00001
25-Jun-13	18	< 0.0005	< 0.003	0.00017	0.002	0.558	0.196	< 0.01	0.00041	0.0002	0.01	1.57	0.00147	0.15	< 0.00001	0.25	0.226	7.48	0.00005	0.00004	< 0.0001	0.000684	0.00015	< 0.001	0.00001
2-Jul-13	19	0.0021	0.006	0.0004	0.003	0.552	0.201	< 0.01	0.00042	0.0002	< 0.009	1.6	0.00148	0.54	< 0.00001	0.21	0.22	8.31	0.00005	0.00004	0.0002	0.000617	0.00022	< 0.001	< 0.00001
9-Jul-13	20	< 0.0005	0.004	0.00035	0.002	0.552	0.214	< 0.01	0.00036	0.0003	< 0.009	1.42	0.0014	0.54	< 0.00001	0.19	0.22	8.26	0.00005	0.00002	0.0002	0.00063	0.00015	< 0.001	< 0.00001
16-Jul-13	21	0.0006	0.004	0.00029	0.002	0.549	0.196	< 0.01	0.00041	0.0004	< 0.009	1.32	0.00135	0.48	< 0.00001	0.2	0.212	7.62	0.00004	0.00003	< 0.0001	0.000575	0.00013	0.002	< 0.00001
23-Jul-13	22	< 0.0005	0.006	0.00028	0.002	0.512	0.199	< 0.01	0.00039	0.0001	< 0.009	1.24	0.0014	0.49	< 0.00001	0.18	0.204	7.29	0.00003	0.00001	0.0002	0.000603	0.00015	0.001	< 0.00001
30-Jul-13	23	< 0.0005	< 0.003	0.00018	0.002	0.478	0.181	< 0.01	0.00038	0.0002	< 0.009	1.2	0.00125	0.51	< 0.00001	0.15	0.184	6.56	0.00004	0.00002	< 0.0001	0.000586	0.00015	< 0.001	< 0.00001
6-Aug-13	24	< 0.0005	< 0.003	0.0002	0.002	0.441	0.218	< 0.01	0.00036	0.0002	< 0.009	1.06	0.00117	0.5	< 0.00001	0.13	0.186	7.15	0.00004	0.00002	< 0.0001	0.00054	0.00012	0.002	< 0.00001
13-Aug-13	25	0.0007	< 0.003	0.00012	0.002	0.533	0.226	< 0.01	0.00041	0.0004	0.01	1.13	0.0014	0.53	< 0.00001	0.13	0.213	7.77	0.00004	0.00007	< 0.0001	0.000571	0.00008	< 0.001	< 0.00001
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
25-Jan-12	1	525	200	7.88	240	54	#N/A	1.5	11.3	14	7.02	5.46	0.0051	0.0004	0.0008	0.00644	< 0.00002	< 0.00001	0.0024	0.000004	1.98	< 0.0005	0.000421
1-Feb-12	2	500	255	7.74	214	89	#N/A	2.3	16.1	26	5.65	12.6	0.0432	0.0013	0.0013	0.0117	< 0.00002	< 0.00001	0.0065	0.000030	4.60	< 0.0005	0.000388
8-Feb-12	3	610	240	8.39	152	129	#N/A	#N/A	33.2	38	5.19	24.4	0.0225	0.0030	0.0020	0.0218	< 0.00002	< 0.00001	0.0095	0.000022	9.00	< 0.0005	0.000361
15-Feb-12	4	780	215	7.51	362	132	#N/A	4.4	29.8	39	5.73	29.1	0.0227	0.0031	0.0024	0.0324	< 0.00002	< 0.00001	0.0105	0.000053	10.8	< 0.0005	0.000347
22-Feb-12	5	310	200	7.89	#N/A	144					5.96												
29-Feb-12	6	465	205	7.68	309	144	#N/A	2.8	36.7	39	6.62	37.1	0.0275	0.0041	0.0027	0.0444	< 0.00002	< 0.00001	0.0124	0.000027	13.9	< 0.0005	0.000319
7-Mar-12	7	495	205	8.13	#N/A	150					5.96												
14-Mar-12	8	445	200	7.54	339	149	#N/A	3.2	36.8	37	5.85	43.1	0.0099	0.0049	0.0029	0.0505	< 0.00002	0.00004	0.0147	0.000029	16.2	< 0.0005	0.000357
21-Mar-12	9	180	70	7.86	#N/A	162					6.02												
28-Mar-12	10	445	210	7.72	355	168	#N/A	2.3	43.7	39	5.55	48.1	0.0436	0.0046	0.0034	0.0538	< 0.00002	< 0.00001	0.0152	0.000069	18.2	< 0.0005	0.000348
4-Apr-12	11	325	75	7.92	#N/A	162					6.20												
11-Apr-12	12	370	185	7.66	323	167	#N/A	3.0	44.8	43	5.52	52.0	0.0324	0.0047	0.0042	0.0552	< 0.00002	0.00002	0.0187	0.000013	19.7	< 0.0005	0.000408
18-Apr-12	13	140	70	7.96	#N/A	191					4.97												
25-Apr-12	14	430	205	7.60	323	186	#N/A	4.3	47.6	47	0.92	60.6	0.0422	0.0055	0.0042	0.0618	< 0.00002	0.00005	0.0178	0.000019	23.0	< 0.0005	0.000440
2-May-12	15	195	50	7.54	#N/A	165					8.42												
9-May-12	16	335	160	7.62	359	183	#N/A	3.7	48.7	32	5.73	60.5	0.0274	0.0052	0.0047	0.0580	< 0.00002	< 0.00001	0.0177	0.000016	23.0	0.0014	0.000443
16-May-12	17	305	190	7.64	#N/A	184					5.88												
23-May-12	18	465	210	7.71	266	186	#N/A	3.1	49.8	33	5.89	60.9	0.0507	0.0051	0.0050	0.0576	< 0.00002	< 0.00001	0.0181	0.000031	23.2	< 0.0005	0.000502
30-May-12	19	130	65	7.58	#N/A	190					5.28												
6-Jun-12	20	425	210	7.56	360	192	#N/A	5.3	51.7	33	5.56	68.9	0.0420	0.0051	0.0088	0.0624	< 0.00002	< 0.00001	0.0233	0.000029	26.3	< 0.0005	0.000499
13-Jun-12	21	140	60	7.53	#N/A	187					5.11												
20-Jun-12	22	435	210	7.67	303	194	#N/A	4.3	53.3	36	5.32	68.7	0.0382	0.0049	0.0070	0.0611	< 0.00002	< 0.00001	0.0205	0.000029	26.3	< 0.0005	0.000505
27-Jun-12	23	125	70	7.53	#N/A	193					5.87												
4-Jul-12	24	410	200	7.71	362	193	#N/A	4.8	53.8	35	5.03	68.1	0.0335	0.0049	0.0073	0.0600	< 0.00002	< 0.00001	0.0194	0.000061	26.1	< 0.0005	0.000461
11-Jul-12	25	150	70	7.55	#N/A	189					7.36												
18-Jul-12	26	370	200	7.76	313	190	#N/A	4.4	54.8	34	6.76	69.8	0.0457	0.0050	0.0073	0.0610	< 0.00002	< 0.00001	0.0204	0.000052	26.8	< 0.0005	0.000485
25-Jul-12	27	175	65	7.55	#N/A	187					6.16												
1-Aug-12	28	390	205	7.63	350	196	#N/A	5.2	55.0	41	6.58	69.4	0.0764	0.0048	0.0075	0.0600	< 0.00002	< 0.00001	0.0237	0.000062	26.6	< 0.0005	0.000443
8-Aug-12	29	175	75	7.54	#N/A	189					6.50												
15-Aug-12	30	400	205	7.66	179	195	#N/A	5.0	52.7	42	7.56	70.5	0.0509	0.0049	0.0076	0.0604	< 0.00002	< 0.00001	0.0206	0.000050	27.0	< 0.0005	0.000514
22-Aug-12	31	115	65	7.53	#N/A	190					5.57												
29-Aug-12	32	370	165	7.57	326	192	#N/A	5.4	54.1	41	6.80	70.3	0.146	0.0047	0.0075	0.0590	< 0.00002	< 0.00001	0.0209	0.000053	27.0	< 0.0005	0.000431
5-Sep-12	33	130	50	7.49	#N/A	189					5.13												
12-Sep-12	34	360	170	7.71	345	202	#N/A	4.6	55.0	45	5.72	72.1	0.0214	0.0040	0.0081	0.0580	< 0.00002	< 0.00001	0.0208	0.000070	27.7	< 0.0005	0.000426
19-Sep-12	35	100	50	7.47	#N/A	193					5.73												
26-Sep-12	36	370	160	7.60	367	197	#N/A	3.4	57.6	47	5.59	72.9	0.0300	0.0056	0.0147	0.0576	< 0.00002	0.00003	0.0220	0.000055	27.9	0.0006	0.000450
3-Oct-12	37	95	50	7.49	#N/A	192					5.55												
10-Oct-12	38	385	185	7.78	213	200	#N/A	7.1	57.6	44	5.70	92.6	0.0313	0.0004	0.0870	0.0850	< 0.00002	< 0.00001	0.0541	0.000006	34.3	0.0011	0.000041
17-Oct-12	39	115	50	7.71	#N/A	199					5.09												
24-Oct-12	40	385	185	7.53	369	192	#N/A	3.8	57.0	52	4.96	69.8	0.116	0.0038	0.0073	0.0538	< 0.00002	< 0.00001	0.0188	0.000049	26.8	< 0.0005	0.000364
31-Oct-12	41	115	50	7.52	#N/A	191					4.96												
7-Nov-12	42	405	195	7.80	314	185	#N/A	6.0	57.7	40	4.21	77.8	0.0131	0.0037	0.0086	0.0561	< 0.00002	< 0.00001	0.0214	0.000027	29.9	< 0.0005	0.000384
14-Nov-12	43	100	50	7.72	#N/A	190					7.35												
21-Nov-12	44	450	195	7.56	415	187	#N/A	5.7	57.9	48	6.93	77.8	0.0231	0.0036	0.0158	0.0590	< 0.00002	< 0.00001	0.0203	0.000039	29.9	< 0.0005	0.000393
28-Nov-12	45	160	70	7.73	#N/A	205					6.80												
5-Dec-12	46	460	200	7.84	348	181	#N/A	8.8	56.6	39	5.79	70.1	0.0115	0.0037	0.0136	0.0523	< 0.00002	< 0.00001	0.0204	0.000026	26.9	< 0.0005	0.000262
12-Dec-12	47	165	90	7.56	#N/A	178					6.92												
19-Dec-12	48	415	190	7.72	341	165	#N/A	4.4	52.7	39	5.19	70.1	0.0233	0.0036	0.0125	0.0516	< 0.00002	0.00001	0.0208	0.000018	26.9	< 0.0005	0.000252

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
26-Dec-12	49	235	70	7.61	#N/A	165					6.25												
2-Jan-13	50	400	180	7.68	351	166	#N/A	6.4	52.4	32	4.97	59.2	0.0221	0.0035	0.0128	0.0488	0.00005	< 0.00001	0.0183	0.000010	22.7	< 0.0005	0.000248
9-Jan-13	51	210	70	7.61	#N/A	195					5.85												
16-Jan-13	52	450	195	7.55	360	157	#N/A	3.6	53.0	40	6.12	65.2	0.0226	0.0039	0.0119	0.0482	< 0.00002	< 0.00001	0.0181	0.000031	25.1	< 0.0005	0.000275
23-Jan-13	53	230	75	7.62	#N/A	156					5.80												
30-Jan-13	54	515	200	7.69	327	155	#N/A	4.0	47.7	35	6.04	64.6	0.0042	0.0026	0.0115	0.0440	< 0.00002	< 0.00001	0.0180	0.000010	24.9	< 0.0005	0.000137
6-Feb-13	55	250	70	7.63	#N/A	185					6.14												
13-Feb-13	56	430	160	7.55	371	145	#N/A	8.2	44.9	39	6.27	56.1	0.0057	0.0025	0.0110	0.0442	< 0.00002	< 0.00001	0.0157	0.000011	21.6	< 0.0005	0.000129
20-Feb-13	57	210	65	7.63	#N/A	148					6.20												
27-Feb-13	58	385	165	7.72	242	149	#N/A	6.9	52.4	38	6.03	60.2	0.0038	0.0026	0.0102	0.0454	< 0.00002	< 0.00001	0.0170	0.000009	23.2	< 0.0005	0.000636
6-Mar-13	59	200	65	7.51	#N/A	151					6.35												
13-Mar-13	60	420	165	7.50	375	148	#N/A	5.5	41.6	33	5.47	62.4	0.0027	0.0021	0.0107	0.0476	< 0.00002	< 0.00001	0.0151	0.000306	24.1	< 0.0005	0.000087
20-Mar-13	61	180	70	7.51	#N/A	155					5.47												
27-Mar-13	62	410	155	7.95	308	154	#N/A	8.2	47.3	30	6.14	60.5	0.0046	0.0019	0.0131	0.0489	< 0.00002	< 0.00001	0.0170	< 0.000003	23.3	< 0.0005	0.000141
3-Apr-13	63	200	75	7.99	#N/A	160					5.49												
10-Apr-13	64	430	165	7.54	405	149	#N/A	6.3	44.7	35	5.85	62.7	0.0038	0.0017	0.0134	0.0458	< 0.00002	0.00001	0.0172	0.000013	24.1	< 0.0005	0.000105
17-Apr-13	65	200	75	7.61	#N/A	160					4.93												
24-Apr-13	66	460	155	7.80	344	155	#N/A	7.5	46.0	37	5.61	61.3	0.0041	0.0016	0.0160	0.0528	< 0.00002	< 0.00001	0.0187	< 0.000003	23.5	< 0.0005	0.000067
1-May-13	67	240	65	7.59	#N/A	146					6.54												
8-May-13	68	510	180	7.49	387	145	#N/A	8.6	45.4	36	6.01	62.2	0.0041	0.0015	0.0141	0.0495	< 0.00002	< 0.00001	0.0199	0.000010	23.8	< 0.0005	0.000105
15-May-13	69	165	65	7.62	#N/A	155					6.45												
22-May-13	70	415	160	7.78	381	144	#N/A	8.0	45.4	34	6.25	58.9	0.0037	0.0017	0.0142	0.0466	< 0.00002	0.00001	0.0186	0.000003	22.6	< 0.0005	0.000122
29-May-13	71	175	75	7.65	#N/A	138					5.73												
5-Jun-13	72	475	175	7.54	440	144	#N/A	8.3	44.8	31	6.40	60.7	0.0030	0.0015	0.0147	0.0496	< 0.00002	< 0.00001	0.0177	0.000017	23.3	< 0.0005	0.000017
12-Jun-13	73																						
19-Jun-13	74																						
26-Jun-13	75																						
3-Jul-13	76	520	175	7.68	387	162	#N/A	6.2	44.9	36	6.83	66.0	0.0061	0.0015	0.0146	0.0525	< 0.00002	< 0.00001	0.0231	0.000006	25.3	< 0.0005	0.000044
10-Jul-13	77																						
17-Jul-13	78																						
24-Jul-13	79																						
31-Jul-13	80	415	165	7.49	471	171	#N/A	6.1	45.6	41	6.60	73.6	0.0051	0.0015	0.0174	0.0526	< 0.00002	< 0.00001	0.0258	0.000014	28.3	< 0.0005	0.000089
7-Aug-13	81																						
14-Aug-13	82																						
21-Aug-13	83																						
28-Aug-13	84	450	215	7.66	421	174	#N/A	3.6	45.1		6.69												

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Jan-12	1	0.0016	< 0.003	< 0.00002	0.010	0.124	0.0380	0.01	0.00023	0.0005	< 0.009	1.25	0.00054	8.15	< 0.00001	4.95	0.0467	5.09	0.00006	0.00344	< 0.0001	0.000052	0.00004	0.002	0.00031
1-Feb-12	2	0.0012	< 0.003	0.00016	0.015	0.262	0.0794	< 0.01	0.00231	0.0003	< 0.009	2.53	0.00150	13.0	0.00004	7.71	0.136	8.62	0.00011	0.00349	0.0003	0.000179	0.00037	0.005	< 0.00001
8-Feb-12	3	0.0006	< 0.003	0.00011	0.018	0.476	0.154	< 0.01	0.00026	0.0001	< 0.009	3.63	0.00134	13.4	< 0.00001	11.0	0.279	11.9	0.00016	0.00307	0.0004	0.000397	0.00024	0.004	< 0.00001
15-Feb-12	4	0.0006	0.014	0.00011	0.016	0.513	0.173	< 0.01	0.00060	0.0004	< 0.009	3.80	0.00131	12.1	< 0.00001	9.36	0.322	11.5	0.00016	0.00267	0.0003	0.000357	0.00031	0.005	< 0.00001
22-Feb-12	5																								
29-Feb-12	6	0.0019	< 0.003	0.00038	0.015	0.599	0.207	< 0.01	0.00036	0.0004	< 0.009	3.89	0.00125	18.3	< 0.00001	8.93	0.395	11.7	0.00016	0.00240	0.0005	0.000495	0.00041	0.004	0.00001
7-Mar-12	7																								
14-Mar-12	8	0.0005	0.003	0.00225	0.013	0.625	0.234	< 0.01	0.00081	0.0002	< 0.009	4.08	0.00138	15.3	< 0.00001	8.41	0.442	12.4	0.00016	0.00282	0.0001	0.000568	0.00017	0.005	0.00002
21-Mar-12	9																								
28-Mar-12	10	0.0017	< 0.003	0.00017	0.014	0.664	0.267	0.01	0.00078	0.0004	< 0.009	4.24	0.00176	8.91	< 0.00001	8.32	0.485	12.8	0.00017	0.00226	0.0002	0.000669	0.00052	0.008	< 0.00001
4-Apr-12	11																								
11-Apr-12	12	0.0011	< 0.003	0.00015	0.013	0.678	0.289	0.02	0.00062	0.0006	< 0.009	4.27	0.00115	11.7	< 0.00001	7.66	0.500	13.8	0.00016	0.00202	0.0003	0.000716	0.00040	0.005	< 0.00001
18-Apr-12	13																								
25-Apr-12	14	0.0017	< 0.003	0.00016	0.014	0.745	0.342	0.02	0.00067	0.0004	< 0.009	4.57	0.00110	11.5	< 0.00001	7.78	0.567	14.3	0.00017	0.00186	0.0003	0.000840	0.00045	0.005	< 0.00001
2-May-12	15																								
9-May-12	16	0.0010	0.004	0.00019	0.013	0.736	0.349	< 0.01	0.00069	0.0004	< 0.009	4.47	0.00116	9.44	< 0.00001	7.02	0.560	14.2	0.00017	0.00187	0.0004	0.000897	0.00033	0.009	< 0.00001
16-May-12	17																								
23-May-12	18	0.0006	< 0.003	0.00013	0.013	0.716	0.357	0.01	0.00090	0.0009	< 0.009	4.29	0.00104	8.62	< 0.00001	5.87	0.555	14.4	0.00018	0.00183	0.0003	0.000997	0.00046	0.005	< 0.00001
30-May-12	19																								
6-Jun-12	20	0.0010	0.005	0.00011	0.015	0.786	0.402	0.01	0.00107	0.0013	< 0.009	4.70	0.00099	6.93	< 0.00001	6.49	0.624	15.7	0.00015	0.00158	0.0003	0.00113	0.00048	0.003	< 0.00001
13-Jun-12	21																								
20-Jun-12	22	0.0006	< 0.003	0.00010	0.015	0.754	0.391	< 0.01	0.00093	0.0006	< 0.009	4.48	0.00120	7.75	< 0.00001	5.83	0.602	14.9	0.00016	0.00205	0.0003	0.00111	0.00038	0.007	< 0.00001
27-Jun-12	23																								
4-Jul-12	24	0.0019	0.004	0.00011	0.014	0.722	0.384	0.01	0.00119	< 0.0001	< 0.009	4.22	0.00091	7.65	< 0.00001	5.33	0.594	14.6	0.00015	0.00198	0.0004	0.00114	0.00054	0.005	< 0.00001
11-Jul-12	25																								
18-Jul-12	26	0.0015	< 0.003	0.00009	0.013	0.726	0.393	0.01	0.00089	0.0003	< 0.009	4.24	0.00099	6.71	< 0.00001	5.15	0.595	14.8	0.00014	0.00159	0.0002	0.00114	0.00048	0.004	0.00001
25-Jul-12	27																								
1-Aug-12	28	0.0021	< 0.003	0.00011	0.014	0.729	0.400	< 0.01	0.00096	0.0004	< 0.009	4.20	0.00084	9.48	< 0.00001	4.79	0.594	15.1	0.00014	0.00263	0.0003	0.00119	0.00076	0.006	< 0.00001
8-Aug-12	29																								
15-Aug-12	30	0.0012	< 0.003	0.00015	0.014	0.729	0.405	< 0.01	0.00102	0.0004	< 0.009	4.12	0.00103	8.58	< 0.00001	4.51	0.595	14.9	0.00014	0.00176	0.0003	0.00121	0.00047	0.005	< 0.00001
22-Aug-12	31																								
29-Aug-12	32	0.0012	0.009	0.00006	0.014	0.712	0.401	< 0.01	0.00116	0.0005	< 0.009	3.68	0.00089	5.85	< 0.00001	4.28	0.588	14.3	0.00014	0.00201	0.0005	0.00129	0.00109	0.008	< 0.00001
5-Sep-12	33																								
12-Sep-12	34	0.0018	< 0.003	0.00004	0.014	0.733	0.408	< 0.01	0.00104	0.0007	< 0.009	3.96	0.00085	6.23	< 0.00001	4.32	0.596	15.3	0.00013	0.00144	0.0003	0.00132	0.00037	0.007	< 0.00001
19-Sep-12	35																								
26-Sep-12	36	0.0009	< 0.003	0.00004	0.015	0.758	0.402	< 0.01	0.0016	0.0007	< 0.009	3.89	0.00074	8.38	< 0.00001	4.13	0.595	15.2	0.00012	0.00226	0.0003	0.00131	0.00034	0.004	0.00001
3-Oct-12	37																								
10-Oct-12	38	0.0008	0.034	0.00010	0.037	1.71	0.456	< 0.01	0.0025	0.0005	< 0.009	8.82	0.00017	11.6	< 0.00001	5.62	1.20	16.9	< 0.00002	0.00064	0.0006	0.00454	0.00036	0.003	0.00002
17-Oct-12	39																								
24-Oct-12	40	0.010	< 0.003	0.00017	0.013	0.689	0.398	0.01	0.00105	0.0004	< 0.009	3.57	0.00070	7.68	0.00006	3.38	0.570	14.0	0.00010	0.00168	0.0005	0.00120	0.00078	0.008	< 0.00001
31-Oct-12	41																								
7-Nov-12	42	0.0012	< 0.003	0.00004	0.014	0.776	0.459	0.01	0.00117	< 0.0001	< 0.009	3.76	0.00057	7.42	0.00002	3.59	0.643	14.8	0.00014	0.00139	0.0002	0.00136	0.00027	0.004	< 0.00001
14-Nov-12	43																								
21-Nov-12	44	0.0015	< 0.003	0.00006	0.015	0.760	0.432	0.01	0.00896	0.0004	< 0.009	3.77	0.00055	5.74	0.00012	3.55	0.615	15.4	0.00013	0.00141	0.0003	0.00238	0.00037	0.004	0.00001
28-Nov-12	45																								
5-Dec-12	46	0.0014	< 0.003	0.00003	0.014	0.675	0.386	< 0.01	0.00101	0.0003	< 0.009	3.49	0.00069	5.19	< 0.00001	2.83	0.552	13.1	0.00011	0.00108	0.0001	0.00127	0.00016	0.003	< 0.00001
12-Dec-12	47																								
19-Dec-12	48	0.0012	< 0.003	0.00005	0.013	0.682	0.374	< 0.01	0.00111	0.0003	< 0.009	3.79	0.00054	4.56	0.00005	3.14	0.554	14.6	0.00011	0.00151	0.0002	0.00127	0.00015	0.003	0.00010

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
26-Dec-12	49																								
2-Jan-13	50	0.0007	0.020	0.00005	0.011	0.596	0.309	< 0.01	0.00174	0.0009	< 0.009	2.92	0.00051	6.04	0.00002	2.58	0.493	12.2	0.00010	0.00135	0.0003	0.00123	0.00038	0.003	< 0.00001
9-Jan-13	51																								
16-Jan-13	52	0.0009	< 0.003	< 0.00002	0.012	0.596	0.288	< 0.01	0.00092	0.0005	< 0.009	3.02	0.00054	6.01	< 0.00001	2.23	0.492	13.6	0.00009	0.00127	0.0003	0.00105	0.00034	0.003	< 0.00001
23-Jan-13	53																								
30-Jan-13	54	< 0.0005	< 0.003	0.00007	0.012	0.611	0.244	< 0.01	0.00138	0.0003	< 0.009	2.96	0.00087	4.26	< 0.00001	2.38	0.507	12.1	0.00009	0.00122	< 0.0001	0.00102	0.00018	0.002	< 0.00001
6-Feb-13	55																								
13-Feb-13	56	0.0014	< 0.003	0.00003	0.010	0.513	0.175	< 0.01	0.00169	0.0002	< 0.009	2.61	0.00051	4.37	< 0.00001	1.84	0.436	10.8	0.00008	0.00114	0.0001	0.000937	0.00009	0.003	< 0.00001
20-Feb-13	57																								
27-Feb-13	58	0.0009	< 0.003	0.00052	0.010	0.518	0.137	< 0.01	0.00090	< 0.0001	< 0.009	2.64	0.00053	3.80	< 0.00001	1.71	0.444	11.2	0.00008	0.00104	< 0.0001	0.000945	0.00010	0.002	< 0.00001
6-Mar-13	59																								
13-Mar-13	60	0.0009	< 0.003	0.00002	0.009	0.560	0.103	< 0.01	0.00082	0.0002	< 0.009	2.87	0.00076	3.79	< 0.00001	1.77	0.460	11.6	0.00008	0.00092	< 0.0001	0.000912	0.00007	0.004	< 0.00001
20-Mar-13	61																								
27-Mar-13	62	0.0014	< 0.003	0.00003	0.010	0.576	0.0697	< 0.01	0.00087	0.0003	< 0.009	2.85	0.00064	3.47	< 0.00001	1.66	0.474	10.6	0.00008	0.00081	< 0.0001	0.00111	0.00012	0.002	< 0.00001
3-Apr-13	63																								
10-Apr-13	64	< 0.0005	< 0.003	0.00010	0.010	0.627	0.0565	< 0.01	0.00101	0.0002	< 0.009	3.10	0.00072	3.47	< 0.00001	1.62	0.523	11.2	0.00007	0.00079	< 0.0001	0.00109	< 0.00003	0.001	< 0.00001
17-Apr-13	65																								
24-Apr-13	66	0.0007	< 0.003	0.00022	0.011	0.665	0.0426	< 0.01	0.00082	0.0006	< 0.009	3.16	0.00104	2.88	0.00001	1.57	0.557	11.6	0.00008	0.00092	< 0.0001	0.00128	0.00007	0.002	< 0.00001
1-May-13	67																								
8-May-13	68	0.0005	< 0.003	0.00002	0.011	0.650	0.0224	< 0.01	0.00276	0.0003	0.010	3.14	0.00035	2.94	< 0.00001	1.48	0.536	11.1	0.00007	0.00105	< 0.0001	0.00124	0.00013	0.002	< 0.00001
15-May-13	69																								
22-May-13	70	< 0.0005	< 0.003	< 0.00002	0.010	0.593	0.0101	< 0.01	0.00076	< 0.0001	0.009	2.74	0.00029	3.01	< 0.00001	1.35	0.493	10.3	0.00007	0.00214	< 0.0001	0.00120	0.00011	0.001	< 0.00001
29-May-13	71																								
5-Jun-13	72	< 0.0005	< 0.003	0.00003	0.010	0.602	0.0071	< 0.01	0.00094	0.0002	< 0.009	2.86	0.00033	3.27	< 0.00001	1.25	0.511	10.0	0.00007	0.00262	< 0.0001	0.00125	0.00008	0.001	< 0.00001
12-Jun-13	73																								
19-Jun-13	74																								
26-Jun-13	75																								
3-Jul-13	76	0.0018	< 0.003	0.00009	0.011	0.668	0.0157	< 0.01	0.00078	0.0004	0.012	3.14	0.00032	2.96	< 0.00001	1.39	0.575	11.7	0.00006	0.00188	< 0.0001	0.00122	0.00011	0.002	< 0.00001
10-Jul-13	77																								
17-Jul-13	78																								
24-Jul-13	79																								
31-Jul-13	80	0.0008	< 0.003	0.00004	0.012	0.733	0.0216	< 0.01	0.00110	0.0003	< 0.009	3.36	0.00059	2.04	< 0.00001	1.25	0.640	13.0	0.00007	0.00164	< 0.0001	0.00160	0.00007	0.001	< 0.00001
7-Aug-13	81																								
14-Aug-13	82																								
21-Aug-13	83																								
28-Aug-13	84																								

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
25-Jan-12	1	525	210	7.56	282	2603	#N/A	11.3	254.1	1408	2.35	658	0.0026	0.0254	0.0108	0.0541	0.00004	< 0.00001	0.102	0.00152	236	0.0012	0.0253
1-Feb-12	2	550	255	7.46	239	2848	#N/A	16.4	281.1	1469	1.07	780	0.0173	0.0286	0.0149	0.0298	0.00004	< 0.00001	0.118	0.000353	282	0.0006	0.0137
8-Feb-12	3	610	220	7.57	235	2481	#N/A	14.8	263.8	1267	1.05	725	0.0136	0.0301	0.0179	0.0277	0.00004	0.00001	0.111	0.000077	262	0.0013	0.00646
15-Feb-12	4	780	220	7.64	306	2203	#N/A	14.9	224.7	1056	1.14	661	0.0122	0.0168	0.0513	0.0287	< 0.00002	< 0.00001	0.105	0.000078	239	0.0006	0.00116
22-Feb-12	5	310	205	7.79	#N/A	1470					1.68												
29-Feb-12	6	465	200	7.73	309	1162	#N/A	9.0	176.4	462	0.63	347	0.0198	0.0051	0.0832	0.0376	< 0.00002	< 0.00001	0.101	< 0.000003	126	0.0009	0.000136
7-Mar-12	7	495	260	7.75	#N/A	890					1.03												
14-Mar-12	8	445	200	7.86	291	753	#N/A	6.2	154.2	259	0.88	221	0.0074	0.0021	0.0815	0.0490	< 0.00002	0.00002	0.0954	0.000003	80.7	< 0.0005	0.000077
21-Mar-12	9	180	70	7.93	#N/A	702					1.17												
28-Mar-12	10	445	205	7.93	292	640	#N/A	5.1	144.8	173	1.76	167	0.0305	0.0028	0.0791	0.0529	< 0.00002	< 0.00001	0.0979	0.000007	60.7	< 0.0005	0.000188
4-Apr-12	11	325	75	7.97	#N/A	558					1.78												
11-Apr-12	12	370	180	7.95	284	504	#N/A	4.3	134.4	136	1.58	138	0.0237	0.0008	0.0958	0.0586	< 0.00002	< 0.00001	0.102	< 0.000003	50.3	< 0.0005	0.000065
18-Apr-12	13	140	75	7.95	#N/A	481					2.32												
25-Apr-12	14	430	205	7.93	285	466	#N/A	5.8	128.9	103	1.01	134	0.0398	0.0008	0.100	0.0638	< 0.00002	0.00002	0.0948	< 0.000003	49.0	< 0.0005	0.000063
2-May-12	15	195	50	7.75	#N/A	384					1.68												
9-May-12	16	335	165	7.95	326	403	#N/A	5.2	120.7	78	1.80	120	0.0188	0.0007	0.103	0.0689	< 0.00002	< 0.00001	0.0927	< 0.000003	43.8	< 0.0005	0.000063
16-May-12	17	305	100	7.92	#N/A	389					0.86												
23-May-12	18	465	205	7.94	259	370	#N/A	4.3	112.2	68	1.78	109	0.0495	0.0009	0.109	0.0684	< 0.00002	< 0.00001	0.0845	< 0.000003	39.8	< 0.0005	0.000059
30-May-12	19	130	70	7.83	#N/A	360					1.39												
6-Jun-12	20	425	200	7.82	328	327	#N/A	5.7	103.4	56	1.11	106	0.0447	0.0010	0.0978	0.0748	< 0.00002	< 0.00001	0.0813	< 0.000003	38.9	< 0.0005	0.000064
13-Jun-12	21	140	60	7.79	#N/A	320					1.87												
20-Jun-12	22	435	215	7.92	278	323	#N/A	6.5	103.7	56	1.28	104	0.0386	0.0008	0.114	0.0838	< 0.00002	< 0.00001	0.0845	< 0.000003	38.0	< 0.0005	0.000076
27-Jun-12	23	125	55	7.83	#N/A	307					1.44												
4-Jul-12	24	410	205	7.87	333	307	#N/A	5.8	100.7	50	2.23	99.6	0.0387	0.0006	0.103	0.0813	< 0.00002	< 0.00001	0.0763	< 0.000003	36.6	< 0.0005	0.000034
11-Jul-12	25	150	55	7.83	#N/A	301					1.70												
18-Jul-12	26	370	205	7.82	304	290	#N/A	5.9	98.3	46	2.04	100	0.0433	0.0005	0.0979	0.0850	< 0.00002	< 0.00001	0.0710	< 0.000003	36.8	0.0005	0.000106
25-Jul-12	27	175	70	7.78	#N/A	283					1.80												
1-Aug-12	28	390	210	7.93	303	285	#N/A	5.8	95.8	53	1.74	95.3	0.0759	0.0005	0.0923	0.0845	< 0.00002	< 0.00001	0.0757	< 0.000003	35.0	< 0.0005	0.000038
8-Aug-12	29	175	65	7.81	#N/A	275					1.25												
15-Aug-12	30	400	200	7.83	184	273	#N/A	6.1	90.5	47	1.82	94.6	0.0441	0.0006	0.0911	0.0894	< 0.00002	< 0.00001	0.0635	< 0.000003	34.8	< 0.0005	0.000073
22-Aug-12	31	115	55	7.75	#N/A	263					1.90												
29-Aug-12	32	370	160	7.83	309	267	#N/A	5.4	90.2	47	1.39	88.8	0.114	0.0005	0.0796	0.0866	< 0.00002	< 0.00001	0.0591	0.000007	32.8	< 0.0005	0.000039
5-Sep-12	33	130	50	7.75	#N/A	272					2.38												
12-Sep-12	34	360	175	7.81	328	275	#N/A	5.7	85.7	53	2.70	97.9	0.0213	0.0005	0.0906	0.0892	< 0.00002	< 0.00001	0.0575	0.000003	36.1	< 0.0005	0.000032
19-Sep-12	35	100	50	7.68	#N/A	267					2.64												
26-Sep-12	36	370	180	7.81	309	263	#N/A	4.5	92.7	46	1.24	95.0	0.0288	0.0006	0.0910	0.0867	< 0.00002	< 0.00001	0.0594	0.000003	35.0	< 0.0005	0.000038
3-Oct-12	37	95	50	7.72	#N/A	264					2.13												
10-Oct-12	38	385	195	7.72	263	257	#N/A	8.0	90.6	47	2.78	71.8	0.0578	0.0036	0.0105	0.0571	< 0.00002	< 0.00001	0.0221	0.000029	27.6	< 0.0005	0.000401
17-Oct-12	39	115	50	7.73	#N/A	260					1.92												
24-Oct-12	40	385	200	7.78	305	256	#N/A	4.3	89.8	54	1.73	91.6	0.0696	0.0003	0.0733	0.0813	< 0.00002	< 0.00001	0.0467	0.000015	34.0	< 0.0005	0.000045
31-Oct-12	41	115	50	7.73	#N/A	263					1.48												
7-Nov-12	42	405	210	7.79	329	247	#N/A	6.8	87.6	42	1.61	102	0.0117	0.0003	0.0782	0.0829	< 0.00002	< 0.00001	0.0511	0.000006	37.8	< 0.0005	0.000055
14-Nov-12	43	100	50	7.93	#N/A	222					1.61												
21-Nov-12	44	450	200	7.79	338	244	#N/A	5.7	87.1	53	2.15	101	0.0232	0.0014	0.0805	0.0892	< 0.00002	< 0.00001	0.0422	0.000003	37.7	< 0.0005	0.000120
28-Nov-12	45	160	75	7.74	#N/A	265					1.18												
5-Dec-12	46	460	200	7.85	337	255	#N/A	10.4	91.0	50	2.64	108	0.0125	0.0006	0.0672	0.0804	< 0.00002	< 0.00001	0.0420	0.000004	40.3	< 0.0005	0.000028
12-Dec-12	47	165	65	7.80	#N/A	252					2.80												
19-Dec-12	48	415	210	7.83	319	233	#N/A	5.4	88.0	50	1.17	108	0.0228	0.0008	0.0614	0.0847	< 0.00002	< 0.00001	0.0490	< 0.000003	40.3	< 0.0005	0.000053

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
26-Dec-12	49	235	75	7.80	#N/A	247					2.35												
2-Jan-13	50	400	200	7.74	326	239	#N/A	7.1	87.1	43	1.13	86.2	0.0281	0.0006	0.0593	0.0798	< 0.00002	< 0.00001	0.0423	< 0.000003	32.0	< 0.0005	0.000160
9-Jan-13	51	210	70	7.72	#N/A	250					1.35												
16-Jan-13	52	450	210	7.80	304	233	#N/A	4.6	91.5	52	1.52	93.8	0.0204	0.0006	0.0630	0.0850	< 0.00002	< 0.00001	0.0457	0.000007	34.9	< 0.0005	0.000174
23-Jan-13	53	230	85	7.77	#N/A	242					1.17												
30-Jan-13	54	515	205	7.79	305	239	#N/A	5.2	85.4	50	1.45	103	0.0071	0.0004	0.0758	0.0816	< 0.00002	< 0.00001	0.0458	0.000003	38.2	< 0.0005	0.000045
6-Feb-13	55	250	70	7.73	#N/A	245					1.25												
13-Feb-13	56	430	160	7.81	333	229	#N/A	9.3	84.4	48	1.66	90.0	0.0144	0.0004	0.0741	0.0930	< 0.00002	< 0.00001	0.0450	< 0.000003	33.5	< 0.0005	0.000101
20-Feb-13	57	210	60	7.79	#N/A	233					1.60												
27-Feb-13	58	385	185	7.76	269	226	#N/A	8.2	88.4	46	1.31	93.3	0.0062	0.0004	0.0832	0.0910	< 0.00002	< 0.00001	0.0443	< 0.000003	34.8	< 0.0005	0.000076
6-Mar-13	59	200	65	7.77	#N/A	233					1.55												
13-Mar-13	60	420	170	7.75	328	217	#N/A	6.8	72.1	47	1.02	91.4	0.0048	0.0003	0.0727	0.0830	< 0.00002	< 0.00001	0.0344	0.000003	34.2	< 0.0005	0.000031
20-Mar-13	61	180	65	7.83	#N/A	235					1.23												
27-Mar-13	62	410	170	7.77	324	215	#N/A	9.0	69.7	43	1.25	88.8	0.0057	0.0003	0.0666	0.0808	< 0.00002	< 0.00001	0.0339	0.000024	33.2	< 0.0005	0.000086
3-Apr-13	63	200	60	7.81	#N/A	230					1.20												
10-Apr-13	64	430	170	7.76	323	207	#N/A	7.5	67.5	47	1.23	87.6	0.0052	0.0003	0.0576	0.0758	< 0.00002	< 0.00001	0.0303	< 0.000003	32.8	< 0.0005	0.000064
17-Apr-13	65	200	65	7.73	#N/A	210					1.14												
24-Apr-13	66	460	175	7.75	309	212	#N/A	8.5	67.6	45	1.10	86.5	0.0055	0.0003	0.0611	0.0871	< 0.00002	< 0.00001	0.0330	< 0.000003	32.4	< 0.0005	0.000037
1-May-13	67	240	65	7.77	#N/A	210					1.21												
8-May-13	68	510	195	7.72	341	203	#N/A	10.5	69.7	50	1.35	88.3	0.0060	0.0004	0.0544	0.0798	< 0.00002	< 0.00001	0.0297	0.000077	33.2	< 0.0005	0.000157
15-May-13	69	165	65	7.73	#N/A	205					1.08												
22-May-13	70	415	170	7.71	307	204	#N/A	10.0	69.9	46	1.21	84.6	0.0061	0.0004	0.0501	0.0785	< 0.00002	< 0.00001	0.0313	0.000004	31.9	< 0.0005	0.000048
29-May-13	71	175	70	7.76	#N/A	204					1.11												
5-Jun-13	72	475	185	7.75	354	209	#N/A	10.5	69.7	47	1.53	88.2	0.0048	0.0003	0.0542	0.0816	< 0.00002	< 0.00001	0.0292	< 0.000003	33.3	< 0.0005	0.000018
12-Jun-13	73																						
19-Jun-13	74																						
26-Jun-13	75																						
3-Jul-13	76	520	210	7.58	382	218	#N/A	8.0	66.8	42	0.81	91.1	0.0121	0.0004	0.0550	0.0848	< 0.00002	< 0.00001	0.0364	< 0.000003	34.5	< 0.0005	0.000031
10-Jul-13	77																						
17-Jul-13	78																						
24-Jul-13	79																						
31-Jul-13	80	415	170	7.70	334	228	#N/A	7.5	66.4	45	1.65	98.4	0.0066	0.0004	0.0559	0.0823	< 0.00002	< 0.00001	0.0375	0.000006	37.4	< 0.0005	0.000090
7-Aug-13	81																						
14-Aug-13	82																						
21-Aug-13	83																						
28-Aug-13	84	450	230	7.79	325	222	#N/A	4.5	63.9		1.34												

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Jan-12	1	0.0071	0.148	0.00142	0.482	16.6	5.85	0.04	0.00251	0.0114	< 0.009	49.8	0.0740	291	0.00022	318	7.03	417	0.00107	0.00131	0.0052	0.0271	0.00027	0.058	0.00006
1-Feb-12	2	0.0040	0.286	0.00250	0.441	18.7	6.47	0.03	0.00365	0.0103	< 0.009	50.3	0.0757	211	0.00014	318	8.92	469	0.00086	0.00154	0.0071	0.0370	0.00064	0.050	0.00006
8-Feb-12	3	0.0026	0.400	0.00267	0.347	17.3	5.06	0.01	0.00412	0.0075	< 0.009	47.4	0.0606	197	0.00002	289	8.08	421	0.00056	0.00092	0.0072	0.0367	0.00071	0.040	0.00006
15-Feb-12	4	0.0047	1.42	0.00014	0.382	15.8	4.35	< 0.01	0.00435	0.0054	< 0.009	43.3	0.0116	125	< 0.00001	233	7.65	344	0.00012	0.00052	0.0039	0.0349	0.00048	0.011	0.00002
22-Feb-12	5																								
29-Feb-12	6	0.0008	1.11	0.00022	0.175	7.78	2.13	< 0.01	0.00403	0.0022	< 0.009	31.5	0.00087	106	< 0.00001	126	3.64	161	< 0.00002	0.00135	0.0027	0.0182	0.00044	0.006	0.00008
7-Mar-12	7																								
14-Mar-12	8	0.0008	0.184	0.00100	0.103	4.64	1.29	< 0.01	0.00318	0.0008	< 0.009	21.5	0.00047	69.2	< 0.00001	67.8	2.43	84.4	< 0.00002	0.00097	0.0007	0.0112	0.00019	0.009	0.00005
21-Mar-12	9																								
28-Mar-12	10	0.0045	0.082	0.00006	0.084	3.74	1.03	0.01	0.00310	0.0009	< 0.009	18.9	0.00061	31.9	< 0.00001	52.8	2.10	58.0	0.00007	0.00091	0.0007	0.0106	0.00059	0.006	< 0.00001
4-Apr-12	11																								
11-Apr-12	12	< 0.0005	0.212	0.00006	0.078	3.06	0.796	0.01	0.00351	0.0009	< 0.009	17.2	0.00042	32.8	< 0.00001	39.3	1.78	44.6	0.00002	0.00058	0.0006	0.00866	0.00031	0.005	0.00001
18-Apr-12	13																								
25-Apr-12	14	0.0008	0.053	0.00007	0.078	2.92	0.796	0.01	0.00384	0.0006	< 0.009	16.4	< 0.00004	29.2	< 0.00001	32.7	1.77	36.8	0.00002	0.00037	0.0016	0.00886	0.00077	0.007	0.00002
2-May-12	15																								
9-May-12	16	< 0.0005	0.032	0.00005	0.074	2.64	0.723	< 0.01	0.00408	0.0005	< 0.009	15.9	0.00028	22.6	< 0.00001	26.2	1.60	30.7	< 0.00002	0.00348	0.0006	0.00811	0.00028	0.003	0.00002
16-May-12	17																								
23-May-12	18	< 0.0005	0.082	0.00005	0.068	2.40	0.668	0.01	0.00413	0.0008	< 0.009	15.2	0.00038	19.7	< 0.00001	20.9	1.51	26.7	< 0.00002	0.00061	0.0006	0.00739	0.00043	0.003	0.00002
30-May-12	19																								
6-Jun-12	20	0.0007	0.094	0.00003	0.062	2.21	0.623	0.01	0.00379	0.0010	< 0.009	12.8	0.00026	13.3	< 0.00001	17.0	1.44	23.9	< 0.00002	0.00039	0.0004	0.00644	0.00046	0.002	< 0.00001
13-Jun-12	21																								
20-Jun-12	22	0.0007	0.035	0.00004	0.062	2.12	0.591	< 0.01	0.00367	0.0008	< 0.009	12.5	0.00024	15.0	< 0.00001	14.7	1.38	21.5	< 0.00002	0.00354	0.0004	0.00571	0.00037	0.004	< 0.00001
27-Jun-12	23																								
4-Jul-12	24	0.0009	0.054	0.00007	0.057	1.99	0.565	0.01	0.00387	< 0.0001	< 0.009	11.8	0.00010	14.2	< 0.00001	12.5	1.36	20.0	< 0.00002	0.00110	0.0004	0.00511	0.00049	0.005	0.00001
11-Jul-12	25																								
18-Jul-12	26	0.0010	0.122	0.00003	0.052	2.01	0.565	< 0.01	0.00347	0.0002	< 0.009	11.5	0.00025	12.4	< 0.00001	11.3	1.36	19.3	< 0.00002	0.00038	0.0003	0.00498	0.00048	0.003	0.00001
25-Jul-12	27																								
1-Aug-12	28	0.0007	0.067	0.00055	0.054	1.91	0.535	0.01	0.00447	0.0003	< 0.009	11.6	0.00015	16.6	< 0.00001	9.52	1.31	18.5	< 0.00002	0.00066	0.0003	0.00480	0.00053	0.002	0.00002
8-Aug-12	29																								
15-Aug-12	30	< 0.0005	0.043	0.00004	0.047	1.87	0.508	< 0.01	0.00328	0.0003	< 0.009	10.9	< 0.00004	14.7	< 0.00001	8.27	1.29	17.4	< 0.00002	0.00046	0.0003	0.00456	0.00046	0.002	0.00002
22-Aug-12	31																								
29-Aug-12	32	0.0008	0.118	0.00003	0.042	1.70	0.457	< 0.01	0.00304	0.0004	< 0.009	8.31	0.00007	9.13	< 0.00001	7.05	1.20	15.6	< 0.00002	0.00110	0.0003	0.00447	0.00092	0.007	0.00004
5-Sep-12	33																								
12-Sep-12	34	< 0.0005	0.038	0.00014	0.042	1.87	0.481	< 0.01	0.00251	0.0006	< 0.009	9.47	0.00013	10.2	< 0.00001	7.13	1.28	18.3	< 0.00002	0.00172	0.0003	0.00460	0.00027	0.002	< 0.00001
19-Sep-12	35																								
26-Sep-12	36	< 0.0005	0.106	< 0.00002	0.041	1.84	0.463	< 0.01	0.0029	0.0005	< 0.009	9.48	0.00015	13.2	< 0.00001	6.40	1.35	17.2	< 0.00002	0.00065	0.0005	0.00475	0.00030	0.004	0.00007
3-Oct-12	37																								
10-Oct-12	38	0.0008	< 0.003	0.00003	0.015	0.721	0.403	< 0.01	0.0011	0.0006	< 0.009	3.92	0.00074	7.65	< 0.00001	3.70	0.587	14.7	0.00013	0.00156	0.0005	0.00137	0.00036	0.004	< 0.00001
17-Oct-12	39																								
24-Oct-12	40	0.0017	0.028	0.00005	0.032	1.64	0.444	0.01	0.00225	0.0004	< 0.009	8.24	0.00010	12.1	< 0.00001	5.07	1.24	16.2	< 0.00002	0.00066	0.0005	0.00405	0.00048	0.003	< 0.00001
31-Oct-12	41																								
7-Nov-12	42	0.0006	0.045	0.00003	0.033	1.81	0.504	0.02	0.00215	0.0003	< 0.009	8.02	0.00013	11.1	0.00002	5.29	1.31	17.6	< 0.00002	0.00060	0.0002	0.00424	0.00025	0.002	0.00001
14-Nov-12	43																								
21-Nov-12	44	< 0.0005	< 0.003	0.00005	0.036	1.77	0.478	0.02	0.00362	0.0003	< 0.009	7.46	0.00016	8.08	0.00008	4.96	1.24	17.5	0.00003	0.00047	0.0002	0.00499	0.00059	0.001	< 0.00001
28-Nov-12	45																								
5-Dec-12	46	0.0010	< 0.003	< 0.00002	0.032	1.86	0.523	< 0.01	0.00198	0.0001	< 0.009	8.53	0.00017	8.72	< 0.00001	4.73	1.33	18.2	< 0.00002	0.00052	0.0002	0.00530	0.00018	0.002	< 0.00001
12-Dec-12	47																								
19-Dec-12	48	0.0006	0.006	0.00002	0.033	1.85	0.490	< 0.01	0.00222	0.0004	< 0.009	9.52	0.00013	7.94	0.00003	5.34	1.34	19.8	< 0.00002	0.00075	0.0003	0.00531	0.00020	0.001	0.00002

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
26-Dec-12	49																								
2-Jan-13	50	< 0.0005	0.012	0.00015	0.027	1.53	0.401	< 0.01	0.00207	0.0004	< 0.009	6.86	0.00011	9.63	< 0.00001	3.99	1.20	15.6	< 0.00002	0.00067	0.0003	0.00460	0.00032	0.003	< 0.00001
9-Jan-13	51																								
16-Jan-13	52	0.0009	0.015	< 0.00002	0.032	1.60	0.407	< 0.01	0.00186	0.0005	< 0.009	7.46	0.00010	9.48	< 0.00001	3.68	1.23	16.9	< 0.00002	0.00056	0.0006	0.00441	0.00038	0.001	0.00002
23-Jan-13	53																								
30-Jan-13	54	< 0.0005	0.010	0.00003	0.033	1.77	0.454	< 0.01	0.00181	0.0003	< 0.009	7.92	0.00142	7.75	< 0.00001	4.28	1.37	16.6	< 0.00002	0.00035	0.0002	0.00433	0.00005	0.003	< 0.00001
6-Feb-13	55																								
13-Feb-13	56	0.0429	0.008	0.00002	0.032	1.54	0.412	< 0.01	0.00218	< 0.0001	< 0.009	7.26	0.00047	8.13	0.00005	3.29	1.13	14.7	< 0.00002	0.00035	0.0001	0.00422	0.00015	0.001	0.00002
20-Feb-13	57																								
27-Feb-13	58	0.0005	0.019	0.00013	0.030	1.55	0.415	< 0.01	0.00178	0.0002	< 0.009	7.16	0.00014	6.46	0.00001	2.88	1.19	15.6	< 0.00002	0.00045	< 0.0001	0.00416	0.00010	0.001	< 0.00001
6-Mar-13	59																								
13-Mar-13	60	< 0.0005	0.043	0.00005	0.024	1.48	0.401	< 0.01	0.00156	0.0002	< 0.009	7.08	0.00017	6.05	< 0.00001	2.55	1.16	16.1	< 0.00002	0.00075	0.0001	0.00329	0.00005	0.001	< 0.00001
20-Mar-13	61																								
27-Mar-13	62	< 0.0005	0.015	0.00003	0.023	1.42	0.364	< 0.01	0.00145	0.0002	< 0.009	6.54	0.00011	5.40	< 0.00001	2.34	1.13	15.1	< 0.00002	0.00039	< 0.0001	0.00308	0.00005	< 0.001	< 0.00001
3-Apr-13	63																								
10-Apr-13	64	< 0.0005	0.015	0.00007	0.020	1.36	0.370	< 0.01	0.00136	0.0002	< 0.009	6.24	0.00007	5.08	< 0.00001	2.05	1.13	14.6	< 0.00002	0.00044	< 0.0001	0.00275	< 0.00003	< 0.001	< 0.00001
17-Apr-13	65																								
24-Apr-13	66	< 0.0005	0.019	0.00007	0.021	1.36	0.369	< 0.01	0.00152	0.0003	< 0.009	6.03	0.00020	4.22	0.00003	2.01	1.12	15.0	< 0.00002	0.00043	0.0001	0.00309	0.00006	0.001	< 0.00001
1-May-13	67																								
8-May-13	68	< 0.0005	0.016	0.00005	0.019	1.28	0.360	< 0.01	0.00190	0.0006	< 0.009	5.73	0.00017	4.24	< 0.00001	1.83	1.07	14.9	< 0.00002	0.00045	0.0001	0.00294	0.00007	0.001	< 0.00001
15-May-13	69																								
22-May-13	70	< 0.0005	0.020	0.00004	0.019	1.19	0.330	< 0.01	0.00124	< 0.0001	< 0.009	4.96	0.00025	4.38	< 0.00001	1.63	0.996	14.5	< 0.00002	0.00045	< 0.0001	0.00296	0.00009	< 0.001	< 0.00001
29-May-13	71																								
5-Jun-13	72	< 0.0005	0.009	0.00003	0.019	1.21	0.340	< 0.01	0.00128	0.0003	< 0.009	5.29	0.00023	4.47	0.00003	1.60	1.03	13.8	< 0.00002	0.00062	< 0.0001	0.00294	0.00003	< 0.001	< 0.00001
12-Jun-13	73																								
19-Jun-13	74																								
26-Jun-13	75																								
3-Jul-13	76	< 0.0005	0.012	0.00022	0.019	1.23	0.348	< 0.01	0.00114	0.0005	< 0.009	5.28	0.00040	4.20	0.00002	1.75	1.05	14.6	< 0.00002	0.00056	< 0.0001	0.00257	0.00006	< 0.001	< 0.00001
10-Jul-13	77																								
17-Jul-13	78																								
24-Jul-13	79																								
31-Jul-13	80	< 0.0005	0.011	0.00004	0.019	1.24	0.367	< 0.01	0.00119	0.0004	< 0.009	5.24	0.00021	3.07	0.00002	1.55	1.08	15.8	< 0.00002	0.00061	0.0001	0.00293	0.00004	0.002	< 0.00001
7-Aug-13	81																								
14-Aug-13	82																								
21-Aug-13	83																								
28-Aug-13	84																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
21-Feb-13	0	500	410	7.89	286	198	#N/A	6.5	38.8	37	46.6	0.0882	0.0066	0.0040	0.0650	< 0.00002	< 0.00001	0.0079	0.000041	15.9	< 0.0005	0.000263
26-Feb-13	1	500	455	7.72	316	170	#N/A	4.8	29.0	30	44.5	0.188	0.0060	0.0069	0.0634	< 0.00002	< 0.00001	0.0080	< 0.000003	14.7	< 0.0005	0.000193
5-Mar-13	2	500	475	7.72	356	118	#N/A	4.9	27.3	26	35.4	0.199	0.0069	0.0072	0.0514	< 0.00002	< 0.00001	0.0079	0.000052	11.4	< 0.0005	0.000162
12-Mar-13	3	500	470	7.74	327	88	#N/A	3.7	21.0	20	29.7	0.142	0.0045	0.0065	0.0475	< 0.00002	< 0.00001	0.0062	< 0.000003	9.53	< 0.0005	0.000056
19-Mar-13	4	500	465	7.78	326	88	#N/A	5.5	26.8	18	28.2	0.143	0.0047	0.0094	0.0353	< 0.00002	< 0.00001	0.0085	0.000015	8.88	< 0.0005	0.000137
26-Mar-13	5	500	445	7.81	350	73																
2-Apr-13	6	500	490	7.76	334	58	#N/A	4.2	23.1	8	22.7	0.179	0.0027	0.0103	0.0321	< 0.00002	< 0.00001	0.0069	0.000019	7.25	< 0.0005	0.000315
9-Apr-13	7	500	455	7.87	352	71																
16-Apr-13	8	500	435	7.78	339	68	#N/A	4.2	21.9	14	27.6	0.119	0.0031	0.0118	0.0290	< 0.00002	< 0.00001	0.0056	0.000011	8.64	< 0.0005	0.000109
23-Apr-13	9	500	445	7.86	345	73																
30-Apr-13	10	500	455	7.80	340	69	#N/A	3.6	22.1	18	29.4	0.101	0.0029	0.0126	0.0205	< 0.00002	< 0.00001	0.0057	0.000006	9.08	< 0.0005	0.000068
7-May-13	11	500	455	7.82	342	64	#N/A	6.2	26.3	16	26.8	0.113	0.0027	0.0114	0.0171	< 0.00002	< 0.00001	0.0046	0.000020	8.06	< 0.0005	0.000118
14-May-13	12	500	425	7.79	350	67	#N/A	4.4	22.1	16	27.7	0.114	0.0043	0.0126	0.0290	< 0.00002	< 0.00001	0.0057	< 0.000003	8.34	< 0.0005	0.000153
21-May-13	13	500	455	7.73	375	54	#N/A	3.5	20.3	11	22.5	0.086	0.0033	0.0113	0.0199	< 0.00002	< 0.00001	0.0056	< 0.000003	6.94	< 0.0005	0.000037
28-May-13	14	500	455	7.86	371	58	#N/A	3.1	21.6	10	25.2	0.169	0.0033	0.0125	0.0346	< 0.00002	< 0.00001	0.006	0.000008	7.73	< 0.0005	0.000089
4-Jun-13	15	500	450	7.74	373.04	64.94	#N/A	4.27	22.03	14	27.9	0.0891	0.0026	0.0113	0.0181	< 0.00002	< 0.00001	0.0061	< 0.000003	8.41	< 0.0005	0.000108
11-Jun-13	16	500	425	7.79	332.03	62.01	#N/A	7.34	22.8	15	26.9	0.096	0.0021	0.0097	0.0168	< 0.00002	< 0.00001	0.0058	0.000015	8.23	< 0.0005	0.0001
18-Jun-13	17	500	450	7.63	363.28	62.62	#N/A	4.2	17.62	13	26.1	0.0915	0.0025	0.0106	0.015	< 0.00002	< 0.00001	0.0061	0.00001	7.83	< 0.0005	0.000152
25-Jun-13	18	500	445	7.66	382.32	58.56	#N/A	3.89	18.23	11	24.6	0.0729	0.0022	0.0093	0.0141	< 0.00002	< 0.00001	0.0057	0.000024	7.42	< 0.0005	0.000143
2-Jul-13	19	500	455	7.45	425.29	61.73	#N/A	4.99	17.55	11	24.7	0.0768	0.0025	0.0104	0.015	< 0.00002	< 0.00001	0.0063	0.000019	7.46	< 0.0005	0.000098
9-Jul-13	20	500	460	7.71	285.64	56.1	#N/A	5.9	22.52	7	24.5	0.0853	0.0021	0.0099	0.0171	< 0.00002	< 0.00001	0.0056	0.000009	7.31	< 0.0005	0.00022
16-Jul-13	21	500	445	7.46	394.04	51.75	#N/A	3.15	16.16	8	22.4	0.0653	0.002	0.0093	0.0132	< 0.00002	< 0.00001	0.0057	0.000026	6.74	< 0.0005	0.000115
23-Jul-13	22	500	460	7.54	367.18	51.61	#N/A	6.19	21.79	10	22.3	0.12	0.0023	0.01	0.0159	< 0.00002	< 0.00001	0.0057	< 0.000003	6.64	< 0.0005	0.000081
30-Jul-13	23	500	450	7.42	371.58	48.48	#N/A	3.84	17.56	8	22.3	0.129	0.002	0.0089	0.0152	< 0.00002	< 0.00001	0.0061	0.000004	6.73	< 0.0005	0.000052
6-Aug-13	24	500	455	7.79	312.01	48.2	#N/A	6.42	22.11	3	20.9	0.0775	0.0019	0.0092	0.0138	0.00003	< 0.00001	0.0068	0.000183	6.19	< 0.0005	0.000199
13-Aug-13	25	500	440	7.21	386	49	#N/A	2.9	16.2	8	22.4	0.0796	0.002	0.0106	0.0144	< 0.00002	< 0.00001	0.0064	0.00005	6.55	< 0.0005	0.000115
20-Aug-13	26	500	460	7.19	373	51	#N/A	2.7	16.5	6												
27-Aug-13	27	500	465	7.15	349	48	#N/A	2.45	17.02													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0008	< 0.003	0.00002	0.016	1.68	0.0208	< 0.01	0.00364	0.0004	< 0.009	13.6	0.00049	0.86	< 0.00001	10.3	0.224	12.6	0.00012	0.00155	< 0.0001	0.00109	0.00055	0.001	0.00001
26-Feb-13	1	< 0.0005	< 0.003	0.00003	0.016	1.86	0.0404	< 0.01	0.00504	0.0001	0.010	7.99	0.00056	0.96	< 0.00001	6.95	0.218	11.8	0.00008	0.00032	0.0003	0.000644	0.00089	< 0.001	< 0.00001
5-Mar-13	2	< 0.0005	0.006	0.00002	0.013	1.69	0.0323	< 0.01	0.00379	0.0001	< 0.009	5.58	0.00044	0.94	< 0.00001	4.27	0.168	9.18	0.00006	0.00019	0.0004	0.000763	0.00082	< 0.001	< 0.00001
12-Mar-13	3	< 0.0005	0.006	< 0.00002	0.009	1.45	0.0386	< 0.01	0.00278	< 0.0001	< 0.009	4.40	0.00042	0.76	< 0.00001	2.74	0.128	7.26	0.00005	0.00015	0.0002	0.000587	0.00070	< 0.001	< 0.00001
19-Mar-13	4	0.0005	< 0.003	0.00003	0.011	1.48	0.0292	< 0.01	0.00214	< 0.0001	< 0.009	3.94	0.00028	0.81	< 0.00001	2.09	0.124	6.48	0.00005	0.00012	< 0.0001	0.000672	0.00083	< 0.001	< 0.00001
26-Mar-13	5																								
2-Apr-13	6	0.0010	0.010	0.00009	0.006	1.12	0.0272	< 0.01	0.00087	0.0010	< 0.009	2.70	0.00005	0.74	0.00002	0.94	0.0944	3.43	0.00005	0.00009	0.0004	0.000468	0.00087	0.001	0.00001
9-Apr-13	7																								
16-Apr-13	8	< 0.0005	0.005	0.00008	0.005	1.46	0.0193	< 0.01	0.00081	0.0001	< 0.009	2.60	< 0.00004	0.70	< 0.00001	0.76	0.110	5.14	0.00003	0.00009	0.0002	0.000523	0.00069	0.001	0.00001
23-Apr-13	9																								
30-Apr-13	10	< 0.0005	< 0.003	< 0.00002	0.005	1.64	0.0149	< 0.01	0.00101	< 0.0001	< 0.009	2.34	0.00013	0.68	< 0.00001	0.58	0.107	5.05	0.00003	0.00006	< 0.0001	0.000588	0.00067	< 0.001	< 0.00001
7-May-13	11	< 0.0005	0.008	0.00007	0.005	1.62	0.0166	< 0.01	0.00101	< 0.0001	< 0.009	2.22	0.00009	0.62	< 0.00001	0.51	0.102	4.82	0.00003	0.00002	0.0002	0.000587	0.00061	0.001	< 0.00001
14-May-13	12	0.0005	< 0.003	< 0.00002	0.004	1.68	0.0132	< 0.01	0.00108	< 0.0001	0.016	2.53	0.00015	0.70	< 0.00001	0.51	0.108	4.67	0.00002	0.00006	< 0.0001	0.000528	0.00060	< 0.001	< 0.00001
21-May-13	13	< 0.0005	< 0.003	< 0.00002	0.004	1.25	0.018	< 0.01	0.00112	< 0.0001	< 0.009	1.94	0.00009	0.56	< 0.00001	0.4	0.0853	3.2	0.00002	0.00003	< 0.0001	0.000395	0.00055	< 0.001	< 0.00001
28-May-13	14	< 0.0005	0.018	0.00007	0.004	1.44	0.0158	< 0.01	0.00111	0.0001	< 0.009	2.14	0.00009	0.67	< 0.00001	0.41	0.0962	3.38	0.00003	0.00005	0.0005	0.000498	0.00071	< 0.001	< 0.00001
4-Jun-13	15	< 0.0005	< 0.003	0.00002	0.004	1.68	0.0191	< 0.01	0.00093	< 0.0001	< 0.009	2.22	0.00008	0.67	< 0.00001	0.42	0.1	4.33	< 0.00002	0.00003	< 0.0001	0.000454	0.00057	< 0.001	< 0.00001
11-Jun-13	16	< 0.0005	< 0.003	0.00006	0.004	1.54	0.0215	0.01	0.00077	0.0001	< 0.009	1.82	0.00014	0.57	< 0.00001	0.36	0.093	4.85	< 0.00002	0.00006	0.0001	0.000426	0.00044	< 0.001	< 0.00001
18-Jun-13	17	< 0.0005	0.004	0.00007	0.004	1.6	0.0216	< 0.01	0.00087	0.0001	< 0.009	1.88	0.00013	0.59	< 0.00001	0.36	0.089	4.39	0.00002	0.00007	< 0.0001	0.000458	0.00049	< 0.001	< 0.00001
25-Jun-13	18	< 0.0005	0.003	0.00014	0.003	1.47	0.0242	0.02	0.00086	0.0002	< 0.009	1.59	0.00008	0.17	< 0.00001	0.29	0.0843	3.98	< 0.00002	0.00022	0.0001	0.000413	0.00042	0.002	< 0.00001
2-Jul-13	19	< 0.0005	< 0.003	0.00005	0.004	1.49	0.0227	< 0.01	0.00097	0.0001	< 0.009	1.64	0.00009	0.53	< 0.00001	0.27	0.0823	4.13	< 0.00002	0.00002	< 0.0001	0.000383	0.00045	0.001	< 0.00001
9-Jul-13	20	< 0.0005	0.01	0.00006	0.003	1.52	0.0221	< 0.01	0.00092	0.0005	< 0.009	1.52	0.00007	0.59	< 0.00001	0.25	0.0798	3.65	< 0.00002	0.00003	0.0003	0.000372	0.0005	< 0.001	< 0.00001
16-Jul-13	21	< 0.0005	0.004	0.00005	0.003	1.35	0.0247	< 0.01	0.00089	0.0004	< 0.009	1.38	0.00007	0.46	< 0.00001	0.23	0.0743	3.04	< 0.00002	< 0.00001	< 0.0001	0.000304	0.00036	0.002	< 0.00001
23-Jul-13	22	< 0.0005	0.011	0.00005	0.003	1.4	0.0204	< 0.01	0.00098	< 0.0001	< 0.009	1.37	0.00005	0.58	< 0.00001	0.21	0.0744	3.02	0.00002	0.00002	0.0003	0.000371	0.00049	< 0.001	< 0.00001
30-Jul-13	23	< 0.0005	0.01	0.00006	0.003	1.34	0.0225	0.01	0.00092	< 0.0001	< 0.009	1.27	0.00007	0.58	< 0.00001	0.2	0.0705	2.66	0.00002	0.00005	0.0004	0.000367	0.00044	0.003	< 0.00001
6-Aug-13	24	0.001	< 0.003	0.0001	0.003	1.32	0.0226	< 0.01	0.00098	0.0002	< 0.009	1.22	0.00005	0.5	< 0.00001	0.2	0.0651	2.51	< 0.00002	0.00003	< 0.0001	0.000437	0.00037	0.009	< 0.00001
13-Aug-13	25	< 0.0005	< 0.003	0.00005	0.003	1.48	0.0227	< 0.01	0.001	0.0002	< 0.009	1.25	0.00006	0.52	< 0.00001	0.2	0.0723	2.6	< 0.00002	0.00005	< 0.0001	0.000317	0.00043	< 0.001	< 0.00001
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
21-Feb-13	0	500	415	7.84	291	826	#N/A	8.0	51.9	325	114	0.0614	0.0107	0.0417	0.0243	< 0.00002	< 0.00001	0.0179	0.000170	42.8	< 0.0005	0.000339
26-Feb-13	1	500	460	7.64	319	719	#N/A	6.0	35.5	257	108	0.119	0.0100	0.0347	0.0174	< 0.00002	< 0.00001	0.0235	0.000047	40.8	< 0.0005	0.000082
5-Mar-13	2	500	490	7.61	359	590	#N/A	4.8	23.3	264	118	0.0834	0.0107	0.0228	0.0142	< 0.00002	< 0.00001	0.0263	0.000118	44.4	< 0.0005	0.000159
12-Mar-13	3	500	475	7.62	323	405	#N/A	4.7	17.1	192	104	0.0945	0.0071	0.0163	0.0143	< 0.00002	< 0.00001	0.0216	0.000215	39.3	< 0.0005	0.000039
19-Mar-13	4	500	485	7.64	329	386	#N/A	6.5	21.6	154	111	0.0823	0.0078	0.0172	0.0112	< 0.00002	< 0.00001	0.0284	0.000382	41.7	< 0.0005	0.000094
26-Mar-13	5	500	460	7.70	365	301																
2-Apr-13	6	500	455	7.57	347	265	#N/A	5.3	16.4	120	97.3	0.0617	0.0066	0.0128	0.0103	< 0.00002	< 0.00001	0.0268	0.000178	36.9	< 0.0005	0.000229
9-Apr-13	7	500	450	7.63	358	208																
16-Apr-13	8	500	450	7.62	344	210	#N/A	6.0	16.6	94	83.6	0.0551	0.0073	0.0116	0.00926	< 0.00002	< 0.00001	0.0237	0.000270	31.7	< 0.0005	0.000059
23-Apr-13	9	500	440	7.64	363	210																
30-Apr-13	10	500	445	7.56	351	179	#N/A	4.4	14.8	79	73.8	0.0361	0.0061	0.0098	0.00577	< 0.00002	< 0.00001	0.0216	0.000179	28.0	< 0.0005	0.000055
7-May-13	11	500	450	7.66	349	167	#N/A	7.0	17.9	80	75.0	0.0375	0.0060	0.0088	0.00495	< 0.00002	< 0.00001	0.0208	0.000066	28.6	< 0.0005	0.000055
14-May-13	12	500	440	7.56	368	155	#N/A	4.9	14.6	70	71.1	0.0656	0.0058	0.0092	0.00742	< 0.00002	< 0.00001	0.0188	0.000092	27.1	< 0.0005	0.000148
21-May-13	13	500	440	7.64	382	142	#N/A	4.4	14.4	58	60	0.0338	0.0061	0.0089	0.00528	< 0.00002	< 0.00001	0.0166	0.000092	22.9	< 0.0005	0.000028
28-May-13	14	500	445	7.57	391	154	#N/A	4.2	14.4	69	69.4	0.0602	0.0073	0.0078	0.00817	< 0.00002	< 0.00001	0.0197	0.000182	26.5	< 0.0005	0.000034
4-Jun-13	15	500	440	7.6	381.83	151.5	#N/A	5.51	14.53	66	64.2	0.0337	0.0069	0.0075	0.00586	< 0.00002	< 0.00001	0.0185	0.000086	24.5	< 0.0005	0.000097
11-Jun-13	16	500	425	7.56	351.07	152.57	#N/A	7.86	16.14	62	68	0.038	0.0065	0.0067	0.00529	< 0.00002	< 0.00001	0.0177	0.000295	26	< 0.0005	0.000036
18-Jun-13	17	500	440	7.48	351.07	151.55	#N/A	4.95	13.35	65	64.1	0.0337	0.0075	0.0072	0.00655	< 0.00002	< 0.00001	0.0185	0.000384	24.5	< 0.0005	0.000118
25-Jun-13	18	500	435	7.5	375	156.77	#N/A	4.95	14	57	63.3	0.0333	0.0074	0.0067	0.0061	< 0.00002	< 0.00001	0.0166	0.00011	24.2	< 0.0005	0.000102
2-Jul-13	19	500	435	7.41	440.42	160.13	#N/A	6.27	13.48	64	62.8	0.026	0.0083	0.0076	0.0058	< 0.00002	< 0.00001	0.0186	0.000109	24	< 0.0005	0.000045
9-Jul-13	20	500	455	7.53	297.85	155.29	#N/A	6.9	15.88	65	67	0.0321	0.0077	0.0065	0.00609	< 0.00002	< 0.00001	0.0185	0.000538	25.7	< 0.0005	0.000364
16-Jul-13	21	500	435	7.5	404.78	136.25	#N/A	3.45	11.26	54	57.7	0.0217	0.0067	0.0063	0.00527	< 0.00002	< 0.00001	0.0154	0.000114	22.1	< 0.0005	0.000116
23-Jul-13	22	500	445	7.52	375.97	131.26	#N/A	6.56	14.78	59	58.9	0.0427	0.0071	0.0068	0.00607	< 0.00002	< 0.00001	0.0162	0.000165	22.7	< 0.0005	0.000043
30-Jul-13	23	500	430	7.47	381.83	129.18	#N/A	4.11	12.19	54	55.9	0.0306	0.0062	0.0065	0.00515	< 0.00002	< 0.00001	0.0164	0.000124	21.5	< 0.0005	0.000037
6-Aug-13	24	500	440	7.56	342	170	#N/A	7.7	16.6	61	70.1	0.0520	0.0075	0.0088	0.00674	< 0.00002	< 0.00001	0.0173	0.000142	27.1	< 0.0005	0.000081
13-Aug-13	25	500	455	7.52	388	152	#N/A	3.2	12.6	57	63.6	0.0424	0.0067	0.0082	0.00711	< 0.00002	< 0.00001	0.0164	0.000742	24.5	< 0.0005	0.000088
20-Aug-13	26	500	435	7.52	365	145	#N/A	3.1	12.6	57												
27-Aug-13	27	500	435	7.26	359	122	#N/A	2.77	11.28													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0005	< 0.003	0.00022	0.260	1.61	0.0567	< 0.01	0.00112	0.0004	0.013	7.62	0.0382	0.92	< 0.00001	117	0.533	108	0.00033	0.00011	0.0002	0.000969	0.00050	0.005	< 0.00001
26-Feb-13	1	< 0.0005	< 0.003	0.00065	0.260	1.51	0.0621	< 0.01	0.00093	0.0001	< 0.009	4.43	0.114	1.00	< 0.00001	83.6	0.521	98.1	0.00026	< 0.00001	0.0005	0.000542	0.00029	< 0.001	0.00001
5-Mar-13	2	< 0.0005	< 0.003	0.00073	0.138	1.78	0.0843	< 0.01	0.00090	0.0002	< 0.009	3.95	0.0706	1.03	0.00002	65.2	0.581	91.3	0.00023	< 0.00001	0.0002	0.000668	0.00018	0.001	0.00002
12-Mar-13	3	< 0.0005	< 0.003	0.00028	0.073	1.52	0.0738	< 0.01	0.00067	0.0002	< 0.009	3.52	0.0344	0.91	< 0.00001	37.8	0.514	60.4	0.00015	0.00005	< 0.0001	0.000471	0.00023	0.005	< 0.00001
19-Mar-13	4	< 0.0005	< 0.003	0.00060	0.056	1.60	0.0781	< 0.01	0.00071	0.0004	< 0.009	3.35	0.0309	1.05	< 0.00001	28.3	0.519	55.8	0.00018	0.00004	< 0.0001	0.000453	0.00020	< 0.001	< 0.00001
26-Mar-13	5																								
2-Apr-13	6	0.0005	< 0.003	0.00042	0.026	1.22	0.0741	< 0.01	0.00069	0.0006	0.009	2.51	0.0224	0.79	< 0.00001	11.8	0.468	37.8	0.00013	< 0.00001	< 0.0001	0.000310	0.00014	< 0.001	< 0.00001
9-Apr-13	7																								
16-Apr-13	8	< 0.0005	< 0.003	0.00034	0.014	1.07	0.0637	< 0.01	0.00067	0.0003	0.010	2.09	0.0216	0.78	< 0.00001	5.21	0.428	28.7	0.00010	0.00001	< 0.0001	0.000698	0.00017	< 0.001	< 0.00001
23-Apr-13	9																								
30-Apr-13	10	< 0.0005	< 0.003	0.00038	0.010	0.910	0.0597	< 0.01	0.00079	0.0002	< 0.009	1.73	0.0196	0.62	< 0.00001	2.53	0.376	23.5	0.00010	< 0.00001	< 0.0001	0.000220	0.00014	< 0.001	< 0.00001
7-May-13	11	< 0.0005	< 0.003	0.00036	0.009	0.910	0.0521	0.01	0.00095	0.0003	< 0.009	1.87	0.0194	0.64	< 0.00001	2.02	0.420	23.8	0.00009	0.00002	< 0.0001	0.000321	0.00014	< 0.001	< 0.00001
14-May-13	12	< 0.0005	< 0.003	0.00045	0.007	0.823	0.0573	< 0.01	0.00099	0.0001	< 0.009	1.66	0.0177	0.69	< 0.00001	1.70	0.369	22.0	0.00007	< 0.00001	0.0003	0.000343	0.00011	< 0.001	< 0.00001
21-May-13	13	< 0.0005	< 0.003	0.0003	0.005	0.7	0.0577	< 0.01	0.00135	< 0.0001	< 0.009	1.34	0.016	0.5	< 0.00001	1.2	0.328	18.7	0.00007	0.00003	< 0.0001	0.000342	0.00013	0.001	< 0.00001
28-May-13	14	< 0.0005	< 0.003	0.00046	0.007	0.806	0.0641	< 0.01	0.00184	0.0002	< 0.009	1.5	0.0181	0.52	< 0.00001	1.16	0.38	19.7	0.00006	< 0.00001	0.0002	0.000245	0.00011	< 0.001	< 0.00001
4-Jun-13	15	< 0.0005	< 0.003	0.00032	0.006	0.718	0.0559	< 0.01	0.00179	0.0001	< 0.009	1.4	0.016	0.51	< 0.00001	0.93	0.346	18.3	0.00007	0.00004	< 0.0001	0.00017	0.0001	< 0.001	< 0.00001
11-Jun-13	16	< 0.0005	< 0.003	0.00038	0.005	0.748	0.0622	< 0.01	0.00176	0.0003	< 0.009	1.34	0.0157	0.5	< 0.00001	0.81	0.372	21.7	0.00005	0.00001	0.0001	0.000242	0.00005	< 0.001	< 0.00001
18-Jun-13	17	< 0.0005	< 0.003	0.00029	0.005	0.714	0.0585	< 0.01	0.00181	0.0002	< 0.009	1.3	0.0152	0.5	< 0.00001	0.71	0.354	19.2	0.00005	0.00011	< 0.0001	0.000338	0.00008	< 0.001	< 0.00001
25-Jun-13	18	0.0006	< 0.003	0.00045	0.005	0.691	0.0636	< 0.01	0.00207	0.0004	0.016	1.2	0.0174	0.1	< 0.00001	0.58	0.364	18.6	0.00005	< 0.00001	< 0.0001	0.00041	0.00009	< 0.001	< 0.00001
2-Jul-13	19	< 0.0005	< 0.003	0.00027	0.006	0.679	0.0595	< 0.01	0.0022	0.0004	< 0.009	1.3	0.0171	0.5	< 0.00001	0.54	0.355	19.8	0.00006	< 0.00001	< 0.0001	0.000136	0.00011	< 0.001	< 0.00001
9-Jul-13	20	0.0013	< 0.003	0.00033	0.005	0.657	0.0652	< 0.01	0.00189	0.0048	< 0.009	1.12	0.016	0.53	< 0.00001	0.44	0.373	20	0.00005	0.00001	0.0001	0.000383	0.00009	< 0.001	< 0.00001
16-Jul-13	21	< 0.0005	0.007	0.00026	0.004	0.591	0.0632	< 0.01	0.00198	0.0008	< 0.009	1.05	0.014	0.4	0.00009	0.41	0.336	16.6	0.00005	0.00005	< 0.0001	0.000434	0.00006	0.004	< 0.00001
23-Jul-13	22	< 0.0005	< 0.003	0.00036	0.004	0.575	0.0578	< 0.01	0.00204	< 0.0001	< 0.009	1.04	0.0148	0.47	< 0.00001	0.35	0.334	17.6	0.00006	< 0.00001	0.0003	0.000532	0.00009	0.002	0.00001
30-Jul-13	23	< 0.0005	< 0.003	0.00027	0.004	0.555	0.0563	0.01	0.00192	0.0002	< 0.009	0.942	0.0136	0.4	< 0.00001	0.32	0.314	15.6	0.00005	0.00002	< 0.0001	0.000727	0.00008	< 0.001	< 0.00001
6-Aug-13	24	0.0005	< 0.003	0.00031	0.005	0.584	0.0629	< 0.01	0.00204	0.0004	< 0.009	1.08	0.01640	0.57	< 0.00001	0.32	0.402	20.50	0.00006	< 0.00001	0.0002	0.000450	0.00013	< 0.001	< 0.00001
13-Aug-13	25	0.001	< 0.003	0.00026	0.004	0.591	0.0603	< 0.01	0.00184	0.0007	< 0.009	0.943	0.0143	0.49	< 0.00001	0.29	0.36	18.1	0.00004	0.00003	0.0001	0.000473	0.00007	< 0.001	< 0.00001
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
21-Feb-13	0	500	415	7.76	261	352	#N/A	3.6	48.3	126	21.9	0.180	0.0227	0.296	0.0178	< 0.00002	< 0.00001	0.0300	< 0.000003	8.06	< 0.0005	0.000209
26-Feb-13	1	500	465	7.74	333	373	#N/A	5.0	33.8	141	32.5	0.231	0.0190	0.234	0.0185	< 0.00002	< 0.00001	0.0312	0.000005	12.0	< 0.0005	0.000130
5-Mar-13	2	500	495	7.68	369	296	#N/A	4.1	27.5	110	33.4	0.210	0.0219	0.150	0.0185	< 0.00002	< 0.00001	0.0378	< 0.000003	12.2	< 0.0005	0.000099
12-Mar-13	3	500	460	7.93	354	218	#N/A	3.1	23.7	81	32.5	0.210	0.0150	0.123	0.0188	< 0.00002	< 0.00001	0.0262	0.000075	12.0	< 0.0005	0.000025
19-Mar-13	4	500	450	7.54	354	188	#N/A	6.0	24.3	60	30.3	0.145	0.0134	0.107	0.0117	< 0.00002	< 0.00001	0.0309	0.000003	11.3	0.0008	0.000050
26-Mar-13	5	500	450	7.92	350	157																
2-Apr-13	6	500	450	7.56	370	146	#N/A	4.5	22.1	52	34.4	0.229	0.0116	0.0697	0.0185	< 0.00002	< 0.00001	0.0308	0.000005	12.7	< 0.0005	0.000245
9-Apr-13	7	500	455	7.75	363	125																
16-Apr-13	8	500	455	7.50	380	136	#N/A	4.9	17.7	53	42.1	0.0813	0.0122	0.0640	0.0144	< 0.00002	< 0.00001	0.0265	0.000007	15.6	< 0.0005	0.000038
23-Apr-13	9	500	455	7.64	362	127																
30-Apr-13	10	500	450	7.49	385	125	#N/A	4.1	17.3	49	46.0	0.0482	0.0113	0.0523	0.0174	< 0.00002	< 0.00001	0.0258	0.000064	17.1	< 0.0005	0.000027
7-May-13	11	500	450	7.42	391	123	#N/A	6.5	16.2	51	48.0	0.0358	0.0077	0.0415	0.0110	< 0.00002	< 0.00001	0.0201	0.000018	17.8	< 0.0005	0.000036
14-May-13	12	500	455	7.54	391	112	#N/A	5.0	21.3	39	44.2	0.0737	0.0166	0.0481	0.0172	< 0.00002	< 0.00001	0.0259	0.000009	16.3	< 0.0005	0.000141
21-May-13	13	500	430	7.55	390	104	#N/A	4.3	18.1	37	40.5	0.0658	0.0135	0.0435	0.0202	< 0.00002	< 0.00001	0.0226	0.000008	15	< 0.0005	0.000023
28-May-13	14	500	450	7.51	387	128	#N/A	4.4	15.8	52	54.4	0.0601	0.0089	0.0386	0.0191	< 0.00002	< 0.00001	0.0213	0.000012	20.2	< 0.0005	0.000027
4-Jun-13	15	500	450	7.52	406.25	123.72	#N/A	4.97	18.05	45	52.9	0.0497	0.0093	0.0374	0.0177	< 0.00002	< 0.00001	0.0236	0.000009	19.5	< 0.0005	0.000083
11-Jun-13	16	500	450	7.48	387.2	121.5	#N/A	7.75	20.94	47	50.2	0.0429	0.0087	0.0323	0.0144	< 0.00002	< 0.00001	0.0217	0.00001	18.5	< 0.0005	0.000023
18-Jun-13	17	500	450	7.46	376.46	126.99	#N/A	4.69	16.08	49	49.6	0.0397	0.0093	0.033	0.0139	< 0.00002	< 0.00001	0.0248	0.000034	18.3	< 0.0005	0.000074
25-Jun-13	18	500	450	7.42	328.61	123.91	#N/A	4.68	17.84	46	51	0.0412	0.0083	0.0319	0.0155	< 0.00002	< 0.00001	0.0206	0.000012	18.8	< 0.0005	0.000067
2-Jul-13	19	500	445	7.36	410.15	130.71	#N/A	5.69	20	46	50.8	0.0477	0.009	0.0345	0.0169	< 0.00002	< 0.00001	0.0241	0.000023	18.8	< 0.0005	0.000049
9-Jul-13	20	500	450	7.42	314.45	128.25	#N/A	6.41	18.5	49	54.6	0.0404	0.0073	0.0301	0.0162	< 0.00002	< 0.00001	0.0203	0.000016	20.3	< 0.0005	0.000184
16-Jul-13	21	500	445	7.56	373.04	124.9	#N/A	3.22	17.22	37	53.5	0.0321	0.0079	0.0302	0.0144	< 0.00002	< 0.00001	0.0175	0.000017	19.9	< 0.0005	0.000022
23-Jul-13	22	500	450	7.46	415.03	113.05	#N/A	6.4	17.2	48	51.2	0.0297	0.0064	0.0281	0.0137	< 0.00002	< 0.00001	0.0174	0.00002	19.1	< 0.0005	0.000037
30-Jul-13	23	500	445	7.42	389.64	120.92	#N/A	4.37	16.32	45	50.3	0.0316	0.0069	0.0269	0.0123	< 0.00002	< 0.00001	0.0177	0.000011	18.8	< 0.0005	0.000049
6-Aug-13	24	500	450	7.62	368.65	125.47	#N/A	7.01	17.9	42	50.1	0.0693	0.0068	0.0284	0.0155	< 0.00002	< 0.00001	0.0176	0.000036	18.7	< 0.0005	0.000104
13-Aug-13	25	500	450	7.35	377	125	#N/A	3.6	14.7	44	52	0.0584	0.0059	0.0256	0.0149	< 0.00002	< 0.00001	0.0167	0.000015	19.4	< 0.0005	0.000074
20-Aug-13	26	500	445	7.39	390	131	#N/A	3.3	14.6	46												
27-Aug-13	27	500	445	7.48	386	112	#N/A	2.49	14.54													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0046	< 0.003	0.00004	0.084	0.428	0.0158	< 0.01	0.00225	0.0002	0.009	3.86	0.0117	1.13	< 0.00001	60.4	0.336	36.0	0.00009	0.00005	0.0004	0.000140	0.00186	< 0.001	0.00001
26-Feb-13	1	< 0.0005	< 0.003	0.00006	0.090	0.606	0.0172	< 0.01	0.00206	0.0001	< 0.009	2.67	0.0298	1.09	0.00001	51.5	0.529	43.5	0.00008	< 0.00001	0.0004	0.000431	0.00140	< 0.001	< 0.00001
5-Mar-13	2	< 0.0005	< 0.003	0.00005	0.066	0.694	0.0365	< 0.01	0.00167	0.0001	< 0.009	2.54	0.0139	1.09	0.00001	42.9	0.604	39.4	0.00006	< 0.00001	0.0005	0.000461	0.00113	< 0.001	0.00001
12-Mar-13	3	< 0.0005	0.004	0.00005	0.039	0.590	0.0236	< 0.01	0.00100	< 0.0001	0.011	2.24	0.0122	1.06	< 0.00001	28.9	0.559	27.9	0.00005	0.00001	0.0006	0.000240	0.00103	< 0.001	< 0.00001
19-Mar-13	4	< 0.0005	< 0.003	< 0.00002	0.035	0.540	0.0200	< 0.01	0.00086	< 0.0001	< 0.009	1.89	0.00895	0.91	< 0.00001	21.5	0.529	21.6	0.00004	0.00002	< 0.0001	0.000295	0.00085	< 0.001	0.00001
26-Mar-13	5																								
2-Apr-13	6	< 0.0005	0.005	0.00006	0.024	0.645	0.0357	< 0.01	0.00089	0.0002	< 0.009	2.01	0.00678	0.94	< 0.00001	14.0	0.600	16.9	0.00005	< 0.00001	0.0009	0.000237	0.00077	< 0.001	0.00002
9-Apr-13	7																								
16-Apr-13	8	< 0.0005	< 0.003	< 0.00002	0.017	0.789	0.0464	< 0.01	0.00079	0.0001	0.011	2.05	0.00775	0.80	< 0.00001	7.28	0.699	15.9	0.00005	< 0.00001	0.0001	0.000230	0.00055	< 0.001	< 0.00001
23-Apr-13	9																								
30-Apr-13	10	0.0005	< 0.003	< 0.00002	0.013	0.818	0.0698	< 0.01	0.00085	0.0001	< 0.009	1.84	0.00765	0.73	< 0.00001	4.03	0.678	14.4	0.00004	< 0.00001	< 0.0001	0.000200	0.00043	< 0.001	< 0.00001
7-May-13	11	< 0.0005	< 0.003	< 0.00002	0.010	0.871	0.0619	< 0.01	0.00055	0.0002	< 0.009	1.86	0.00670	0.58	< 0.00001	3.04	0.729	15.5	0.00004	< 0.00001	< 0.0001	0.000183	0.00037	< 0.001	< 0.00001
14-May-13	12	< 0.0005	< 0.003	< 0.00002	0.011	0.844	0.0662	< 0.01	0.00068	< 0.0001	0.010	1.83	0.00642	0.88	< 0.00001	2.82	0.638	12.4	0.00003	0.00011	0.0002	0.000264	0.00039	< 0.001	< 0.00001
21-May-13	13	< 0.0005	< 0.003	0.00003	0.009	0.741	0.0661	< 0.01	0.00064	< 0.0001	< 0.009	1.66	0.0047	0.64	< 0.00001	1.98	0.591	11.7	0.00004	< 0.00001	0.0001	0.000234	0.00039	< 0.001	< 0.00001
28-May-13	14	< 0.0005	< 0.003	0.00003	0.009	0.951	0.0831	< 0.01	0.00059	0.0002	< 0.009	1.8	0.00633	0.57	< 0.00001	1.81	0.762	15	0.00003	0.00002	0.0002	0.00024	0.00036	< 0.001	< 0.00001
4-Jun-13	15	< 0.0005	< 0.003	0.00005	0.008	1	0.0854	< 0.01	0.00055	< 0.0001	< 0.009	1.9	0.00579	0.73	< 0.00001	1.64	0.727	14	0.00004	0.00019	< 0.0001	0.000242	0.00033	< 0.001	< 0.00001
11-Jun-13	16	< 0.0005	< 0.003	< 0.00002	0.007	0.941	0.0802	< 0.01	0.00049	0.0002	< 0.009	1.65	0.0052	0.62	< 0.00001	1.27	0.703	14.8	0.00002	0.00016	< 0.0001	0.000257	0.00026	< 0.001	< 0.00001
18-Jun-13	17	< 0.0005	< 0.003	< 0.00002	0.007	0.934	0.0819	< 0.01	0.0005	0.0002	< 0.009	1.64	0.00484	0.62	< 0.00001	1.07	0.694	14	0.00003	0.00004	< 0.0001	0.000278	0.00028	< 0.001	< 0.00001
25-Jun-13	18	< 0.0005	< 0.003	0.00004	0.006	0.953	0.0895	0.01	0.00041	0.0002	< 0.009	1.63	0.0057	0.23	< 0.00001	0.92	0.714	13.7	0.00003	0.00001	0.0001	0.00027	0.00028	< 0.001	< 0.00001
2-Jul-13	19	< 0.0005	< 0.003	0.00002	0.007	0.909	0.0915	< 0.01	0.00043	0.0005	< 0.009	1.67	0.00515	0.63	< 0.00001	0.77	0.679	14.6	0.00003	0.00001	< 0.0001	0.000268	0.00035	< 0.001	< 0.00001
9-Jul-13	20	< 0.0005	< 0.003	0.00003	0.006	0.954	0.0979	< 0.01	0.00039	0.0003	< 0.009	1.54	0.00522	0.65	< 0.00001	0.67	0.695	15.1	0.00004	< 0.00001	0.0002	0.000271	0.00025	< 0.001	< 0.00001
16-Jul-13	21	< 0.0005	< 0.003	< 0.00002	0.005	0.937	0.1	< 0.01	0.00033	0.0002	< 0.009	1.41	0.00478	0.56	< 0.00001	0.63	0.696	13.2	0.00002	0.00001	< 0.0001	0.000237	0.00024	< 0.001	< 0.00001
23-Jul-13	22	< 0.0005	< 0.003	< 0.00002	0.005	0.855	0.102	< 0.01	0.00038	< 0.0001	< 0.009	1.33	0.00457	0.54	< 0.00001	0.49	0.649	13.6	0.00002	0.00002	< 0.0001	0.000237	0.00024	< 0.001	< 0.00001
30-Jul-13	23	< 0.0005	< 0.003	< 0.00002	0.005	0.839	0.0929	< 0.01	0.00036	0.0002	< 0.009	1.27	0.0044	0.53	< 0.00001	0.47	0.617	12.9	0.00003	< 0.00001	< 0.0001	0.000274	0.00023	< 0.001	< 0.00001
6-Aug-13	24	< 0.0005	< 0.003	0.00012	0.005	0.81	0.104	< 0.01	0.00037	0.0002	< 0.009	1.3	0.00416	0.64	< 0.00001	0.39	0.619	13.4	0.00003	< 0.00001	0.0002	0.000277	0.00029	< 0.001	0.00002
13-Aug-13	25	< 0.0005	< 0.003	0.00003	0.004	0.842	0.107	< 0.01	0.00035	0.0004	< 0.009	1.24	0.00375	0.59	< 0.00001	0.36	0.62	13.3	0.00003	0.00002	0.0004	0.00023	0.00025	< 0.001	< 0.00001
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
21-Feb-13	0	500	430	6.65	240	629	#N/A	14.3	16.0	330	187	0.0029	0.0032	0.0037	0.0696	0.00047	< 0.00001	0.0057	0.0969	69.6	< 0.0005	0.0149
26-Feb-13	1	500	460	7.13	352	360	#N/A	6.1	7.1	145	102	0.0017	0.0027	0.0036	0.0283	0.00008	< 0.00001	0.0080	0.0218	37.1	< 0.0005	0.00287
5-Mar-13	2	500	470	6.39	393	296	#N/A	6.5	2.0	128	106	0.0188	0.0023	0.0065	0.0292	0.00062	< 0.00001	0.0081	0.0278	39.5	< 0.0005	0.00348
12-Mar-13	3	500	470	6.72	380	205	#N/A	5.8	3.3	93	80.4	0.0013	0.0012	0.0039	0.0164	0.00015	< 0.00001	0.0071	0.0284	30.0	< 0.0005	0.00330
19-Mar-13	4	500	470	6.85	394	184	#N/A	7.3	3.5	75	69.8	0.0025	0.0011	0.0046	0.0140	0.00031	< 0.00001	0.0093	0.0310	26.2	< 0.0005	0.00340
26-Mar-13	5	500	490	6.84	418	190																
2-Apr-13	6	500	455	6.64	414	148	#N/A	7.0	2.9	70	60.1	0.0022	0.0008	0.0028	0.0149	0.00060	< 0.00001	0.0072	0.0353	22.7	< 0.0005	0.00353
9-Apr-13	7	500	465	6.43	423	123																
16-Apr-13	8	500	480	6.50	396	151	#N/A	7.4	2.2	78	61.3	0.0034	0.0007	0.0016	0.0127	0.00085	< 0.00001	0.0074	0.0383	23.2	< 0.0005	0.00322
23-Apr-13	9	500	485	6.51	379	123																
30-Apr-13	10	500	500	6.21	385	141	#N/A	7.1	1.7	74	57.1	0.0132	0.0005	0.0019	0.0127	0.00095	< 0.00001	0.0062	0.0401	21.8	< 0.0005	0.00295
7-May-13	11	500	495	6.52	348	129	#N/A	9.7	3.4	69	55.0	0.0205	0.0004	0.0022	0.0117	0.00118	< 0.00001	0.0047	0.0468	20.9	< 0.0005	0.00308
14-May-13	12	500	445	5.91	424	116	#N/A	8.8	1.2	57	43.3	0.0279	0.0003	0.0036	0.0141	0.00161	< 0.00001	0.0048	0.0505	16.4	< 0.0005	0.00326
21-May-13	13	500	475	5.63	421	125	#N/A	8.4	1.1	57	44.7	0.0234	0.0003	0.0029	0.0122	0.00131	< 0.00001	0.0062	0.058682	17	< 0.0005	0.0038
28-May-13	14	500	455	5.40	456	125	#N/A	9.6	0.9	61	44.6	0.0259	0.0002	0.0034	0.0107	0.00181	< 0.00001	0.006	0.0739	16.8	< 0.0005	0.00422
4-Jun-13	15	500	470	5.52	458.49	133.86	#N/A	12.5	1.42	62	48	0.0317	0.0002	0.0036	0.0105	0.00185	< 0.00001	0.007	0.0843	18	< 0.0005	0.00517
11-Jun-13	16	500	425	5.73	425.78	128.83	#N/A	14.86	2.4	60	45.1	0.0282	< 0.0002	0.0039	0.00926	0.00204	< 0.00001	0.0055	0.0785	16.9	< 0.0005	0.00434
18-Jun-13	17	500	445	5.21	412.1	136.83	#N/A	13.39	0.29	61	45.1	0.0328	< 0.0002	0.005	0.00921	0.00244	< 0.00001	0.0065	0.0946	16.9	< 0.0005	0.00499
25-Jun-13	18	500	445	4.92	484	144	#N/A	13.4	<0.1	58	45.5	0.0374	< 0.0002	0.0039	0.00847	0.00264	< 0.00001	0.0062	0.106	17	< 0.0005	0.00551
2-Jul-13	19	500	440	5.18	420.89	157.93	#N/A	14.49	0.49	64	44.7	0.0511	< 0.0002	0.0055	0.00915	0.00355	< 0.00001	0.0059	0.121	16.6	< 0.0005	0.00596
9-Jul-13	20	500	450	4.92	410.15	152.68	#N/A	17.25	0.23	65	48.7	0.0509	< 0.0002	0.0034	0.00753	0.00318	< 0.00001	0.0059	0.121	18.1	< 0.0005	0.00661
16-Jul-13	21	500	450	4.75	462.4	154.32	#N/A	14.21	<0.1	66	48.2	0.0594	< 0.0002	0.0039	0.00715	0.00338	< 0.00001	0.0056	0.127	17.8	< 0.0005	0.00584
23-Jul-13	22	500	445	5.02	477.05	147.85	#N/A	18.59	0.48	69	47.5	0.0681	< 0.0002	0.0049	0.00676	0.00405	< 0.00001	0.0053	0.138	17.4	< 0.0005	0.00582
30-Jul-13	23	500	435	4.54	478.02	164.74	#N/A	16.38	<0.1	70	50.2	0.0906	< 0.0002	0.0062	0.00663	0.00458	< 0.00001	0.0055	0.146	18.5	< 0.0005	0.00543
6-Aug-13	24	500	455	4.85	413	196	#N/A	21.0	<0.1	79	57.6	0.1070	< 0.0002	0.0043	0.00838	0.005	< 0.00001	0.0064	0.146000	21.5	< 0.0005	0.004850
13-Aug-13	25	500	460	4.37	498	177	1.83	14.7	0.0	75	52.4	0.0938	< 0.0002	0.0032	0.00615	0.00391	< 0.00001	0.0058	0.138	19.4	< 0.0005	0.00423
20-Aug-13	26	500	440	4.34	490	171	2.47	16.2	0.0	70												
27-Aug-13	27	500	440	4.25	472	161	2.55	17.21	0													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0024	0.669	0.00245	0.095	3.25	1.88	< 0.01	0.00023	0.0701	0.019	4.96	0.0267	0.31	< 0.00001	36.8	1.56	95.5	0.00068	0.00003	< 0.0001	0.0662	< 0.00003	0.002	< 0.00001
26-Feb-13	1	0.0010	< 0.003	0.00037	0.060	2.15	0.638	< 0.01	0.00084	0.0122	< 0.009	2.18	0.0314	0.71	0.00006	20.8	0.968	59.5	0.00029	< 0.00001	0.0003	0.00701	0.00008	0.584	< 0.00001
5-Mar-13	2	0.0026	0.030	0.0117	0.039	1.82	0.743	< 0.01	0.00034	0.0138	< 0.009	1.48	0.0231	0.94	0.00030	8.04	1.05	48.5	0.00023	< 0.00001	< 0.0001	0.0173	< 0.00003	0.813	< 0.00001
12-Mar-13	3	0.0009	< 0.003	0.00033	0.019	1.31	0.690	< 0.01	0.00032	0.0140	< 0.009	0.969	0.0187	0.78	< 0.00001	2.73	0.732	30.7	0.00013	0.00006	< 0.0001	0.00471	< 0.00003	0.929	< 0.00001
19-Mar-13	4	0.0020	< 0.003	0.00081	0.015	1.06	0.605	< 0.01	0.00024	0.0158	< 0.009	0.735	0.0149	0.82	< 0.00001	1.65	0.612	26.2	0.00013	0.00009	< 0.0001	0.00725	< 0.00003	1.08	< 0.00001
26-Mar-13	5																								
2-Apr-13	6	0.0043	< 0.003	0.00108	0.008	0.820	0.600	< 0.01	0.00015	0.0182	< 0.009	0.587	0.0114	0.72	< 0.00001	0.83	0.511	21.5	0.00010	< 0.00001	< 0.0001	0.0111	< 0.00003	1.31	< 0.00001
9-Apr-13	7																								
16-Apr-13	8	0.0075	0.064	0.00184	0.005	0.789	0.702	< 0.01	0.00009	0.0167	0.011	0.476	0.0116	0.97	< 0.00001	0.57	0.484	22.6	0.00008	< 0.00001	< 0.0001	0.0157	< 0.00003	1.47	< 0.00001
23-Apr-13	9																								
30-Apr-13	10	0.0118	0.173	0.00330	0.003	0.631	0.656	< 0.01	0.00004	0.0148	< 0.009	0.389	0.0105	0.81	< 0.00001	0.41	0.418	20.7	0.00006	< 0.00001	< 0.0001	0.0157	< 0.00003	1.29	< 0.00001
7-May-13	11	0.0142	0.257	0.00420	0.003	0.667	0.709	< 0.01	0.00005	0.0156	< 0.009	0.409	0.00979	0.76	< 0.00001	0.41	0.406	21.0	0.00006	< 0.00001	< 0.0001	0.0196	0.00003	1.63	< 0.00001
14-May-13	12	0.0227	0.298	0.00569	0.003	0.543	0.574	< 0.01	0.00002	0.0169	< 0.009	0.444	0.00808	0.60	< 0.00001	0.35	0.316	17.0	0.00007	< 0.00001	< 0.0001	0.0308	< 0.00003	1.72	< 0.00001
21-May-13	13	0.0199	0.264	0.00585	0.002	0.57	0.7	< 0.01	0.00004	0.0196	< 0.009	0.416	0.00968	0.67	0.00001	0.4	0.322	18.4	0.00007	< 0.00001	< 0.0001	0.022	< 0.00003	2.11	< 0.00001
28-May-13	14	0.0223	0.295	0.00592	0.003	0.665	0.771	< 0.01	0.00003	0.0233	< 0.009	0.438	0.011	0.54	< 0.00001	0.41	0.309	17.1	0.00007	< 0.00001	< 0.0001	0.0296	< 0.00003	2.5	< 0.00001
4-Jun-13	15	0.0267	0.405	0.00613	0.003	0.721	0.873	< 0.01	0.00001	0.0277	< 0.009	0.448	0.0104	0.7	0.00004	0.43	0.31	18.5	0.00007	0.00001	< 0.0001	0.0312	< 0.00003	3.13	< 0.00001
11-Jun-13	16	0.0288	0.426	0.00484	0.002	0.689	0.81	< 0.01	0.00005	0.026	< 0.009	0.412	0.00987	0.48	< 0.00001	0.4	0.286	19.9	0.00005	0.00005	< 0.0001	0.0361	< 0.00003	2.94	< 0.00001
18-Jun-13	17	0.0355	0.454	0.0053	0.002	0.718	0.807	< 0.01	0.00005	0.0307	< 0.009	0.404	0.0108	0.51	< 0.00001	0.42	0.269	18.8	0.00008	0.00002	< 0.0001	0.0397	< 0.00003	3.39	< 0.00001
25-Jun-13	18	0.0429	0.484	0.00582	0.002	0.773	0.89	< 0.01	0.00005	0.0354	0.017	0.409	0.0135	0.16	0.00002	0.4	0.266	19	0.00007	< 0.00001	< 0.0001	0.0481	< 0.00003	4.02	< 0.00001
2-Jul-13	19	0.0556	0.669	0.00659	0.002	0.786	0.891	< 0.01	0.00009	0.0401	< 0.009	0.461	0.0133	0.49	0.00001	0.34	0.246	20.6	0.00008	< 0.00001	< 0.0001	0.0617	< 0.00003	4.46	< 0.00001
9-Jul-13	20	0.0574	0.51	0.00509	0.002	0.889	0.964	< 0.01	0.00002	0.052	< 0.009	0.372	0.0141	0.59	0.00001	0.38	0.246	21.3	0.00007	0.00002	< 0.0001	0.0531	< 0.00003	4.4	< 0.00001
16-Jul-13	21	0.0603	0.504	0.00509	0.002	0.903	0.957	< 0.01	0.00001	0.0436	< 0.009	0.39	0.0138	0.48	0.00002	0.35	0.244	20.4	0.00006	0.00002	< 0.0001	0.0541	< 0.00003	4.86	< 0.00001
23-Jul-13	22	0.0728	0.629	0.0052	0.002	0.95	0.989	< 0.01	0.00002	0.0428	< 0.009	0.349	0.0141	0.43	0.00003	0.32	0.221	21.5	0.00006	0.00002	< 0.0001	0.0655	< 0.00003	5.21	< 0.00001
30-Jul-13	23	0.0837	0.798	0.00517	0.002	0.967	0.959	< 0.01	0.00002	0.0413	< 0.009	0.33	0.013	0.39	0.00003	0.29	0.223	21.5	0.00007	0.00003	< 0.0001	0.0766	< 0.00003	4.9	< 0.00001
6-Aug-13	24	0.0971	0.951	0.00558	0.002	0.928	0.9150	< 0.01	0.00002	0.0411	< 0.009	0.30	0.01270	0.61	0.00002	0.30	0.252	25.00	0.00007	0.00001	< 0.0001	0.082000	< 0.00003	4.560	< 0.00001
13-Aug-13	25	0.0855	0.64	0.00452	0.002	0.974	0.891	< 0.01	0.00002	0.0346	< 0.009	0.268	0.0121	0.51	0.00004	0.29	0.224	21.8	0.00006	0.00004	< 0.0001	0.0605	< 0.00003	4.78	< 0.00001
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
21-Feb-13	0	500	420	7.51	271	406	#N/A	4.8	30.3	182	170	0.0081	0.0072	0.0017	0.0354	< 0.00002	< 0.00001	0.0135	0.00495	58.8	< 0.0005	0.00373	0.0010
26-Feb-13	1	500	470	7.35	337	241	#N/A	5.4	15.3	102	90.9	0.0440	0.0094	0.0040	0.0306	< 0.00002	< 0.00001	0.0120	0.00111	30.2	< 0.0005	0.000457	0.0006
5-Mar-13	2	500	480	7.45	361	145	#N/A	5.0	15.7	45	54.1	0.0320	0.0105	0.0028	0.0185	< 0.00002	< 0.00001	0.0090	0.000208	18.2	< 0.0005	0.000362	0.0007
12-Mar-13	3	500	465	7.49	357	111	#N/A	3.7	12.8	44	44.7	0.0394	0.0080	0.0024	0.0168	< 0.00002	< 0.00001	0.0078	0.000508	15.2	< 0.0005	0.000132	< 0.0005
19-Mar-13	4	500	460	7.43	354	95	#N/A	5.8	14.5	32	38.3	0.0449	0.0086	0.0028	0.0179	< 0.00002	< 0.00001	0.0083	0.000555	13.0	< 0.0005	0.000153	0.0010
26-Mar-13	5	500	455	7.61	366	75																	
2-Apr-13	6	500	460	7.40	360	73	#N/A	4.4	12.5	21	31.4	0.0660	0.0075	0.0026	0.0146	< 0.00002	< 0.00001	0.0060	0.000563	10.9	< 0.0005	0.000287	< 0.0005
9-Apr-13	7	500	450	7.45	385	71																	
16-Apr-13	8	500	445	7.47	372	64	#N/A	3.8	12.7	19	27.8	0.0334	0.0096	0.0026	0.0133	< 0.00002	< 0.00001	0.0048	0.000309	9.74	< 0.0005	0.000108	< 0.0005
23-Apr-13	9	500	455	7.56	365	73																	
30-Apr-13	10	500	445	7.44	379	58	#N/A	4.1	12.7	18	26.0	0.0329	0.0084	0.0023	0.0127	< 0.00002	< 0.00001	0.0043	0.000440	9.22	< 0.0005	0.000114	< 0.0005
7-May-13	11	500	435	7.54	375	55	#N/A	6.3	12.9	19	23.5	0.0262	0.0065	0.0019	0.00823	< 0.00002	< 0.00001	0.0034	0.000741	8.28	< 0.0005	0.000164	< 0.0005
14-May-13	12	500	440	7.52	388	49	#N/A	4.3	12.7	12	22.4	0.0384	0.0101	0.0025	0.0143	< 0.00002	< 0.00001	0.0038	0.000277	7.96	< 0.0005	0.000177	< 0.0005
21-May-13	13	500	450	7.55	380	53	#N/A	3.3	12.0	15	22.6	0.0317	0.0076	0.0024	0.0145	< 0.00002	< 0.00001	0.0040	0.000189	8.08	< 0.0005	0.000080	< 0.0005
28-May-13	14	500	460	7.58	377	49	#N/A	3.6	12.9	14	23.0	0.0324	0.0105	0.0020	0.0133	< 0.00002	< 0.00001	0.0035	0.000292	8.19	< 0.0005	0.000066	< 0.0005
4-Jun-13	15	500	435	7.52	402	45	#N/A	4.6	13.1	10	19.5	0.0368	0.0092	0.0020	0.0144	< 0.00002	< 0.00001	0.0035	0.000264	6.97	< 0.0005	0.000113	< 0.0005
11-Jun-13	16	500	435	7.59	380	46	#N/A	6.7	14.6	12	19.5	0.0453	0.0068	0.0016	0.0117	< 0.00002	< 0.00001	0.0033	0.000277	6.97	< 0.0005	0.000068	< 0.0005
18-Jun-13	17	500	450	7.38	359	48	#N/A	4.6	12.4	12	19.4	0.0461	0.0076	0.0015	0.0111	< 0.00002	< 0.00001	0.0043	0.000322	6.96	< 0.0005	0.000119	< 0.0005
25-Jun-13	18	500	450	7.40	323	42	#N/A	3.7	12.0	9	17.6	0.0303	0.0067	0.0016	0.0114	< 0.00002	< 0.00001	0.0037	0.000321	6.31	< 0.0005	0.000102	< 0.0005
2-Jul-13	19	500	440	7.29	415	46	#N/A	4.8	11.8	12	18.4	0.0490	0.0071	0.0022	0.0139	< 0.00002	< 0.00001	0.0036	0.000450	6.63	< 0.0005	0.000071	< 0.0005
9-Jul-13	20	500	440	7.47	292	48	#N/A	5.7	13.8	12	20.9	0.0415	0.0057	0.0018	0.0148	< 0.00002	< 0.00001	0.0035	0.000287	7.54	< 0.0005	0.000251	< 0.0005
16-Jul-13	21	500	460	7.31	370	49	#N/A	3.1	10.7	9	21.0	0.0258	0.0065	0.0017	0.0134	< 0.00002	< 0.00001	0.0035	0.000438	7.59	< 0.0005	0.000080	< 0.0005
23-Jul-13	22	500	450	7.47	410	40	#N/A	5.7	12.8	10	17.3	0.0271	0.0059	0.0016	0.0101	< 0.00002	< 0.00001	0.0032	0.000334	6.26	< 0.0005	0.000074	< 0.0005
30-Jul-13	23	500	425	7.27	402	38	#N/A	3.7	10.2	9	17.4	0.0262	0.0067	0.0015	0.0104	< 0.00002	< 0.00001	0.0032	0.000391	6.26	< 0.0005	0.000080	< 0.0005
6-Aug-13	24	500	480	7.60	381	47	#N/A	6.6	13.2	10	19.8	0.0477	0.0053	0.0015	0.0152	< 0.00002	< 0.00001	0.0048	0.000583	7.24	< 0.0005	0.000162	< 0.0005
13-Aug-13	25	500	450	7.20	386	43	#N/A	2.8	10.0	8	19.4	0.0283	0.0060	0.0014	0.0131	< 0.00002	< 0.00001	0.0035	0.000497	7.04	< 0.0005	0.000103	0.0009
20-Aug-13	26	500	445	7.33	393	42	#N/A	2.8	9.7	9													
27-Aug-13	27	500	450	7.35	393	36	#N/A	2.5	9.2														

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	< 0.003	0.00031	0.006	5.72	0.896	< 0.01	0.00431	0.0057	0.031	9.03	0.0246	0.80	0.00030	2.58	0.838	57.8	0.00027	0.00064	< 0.0001	0.00283	0.00003	0.090	< 0.00001
26-Feb-13	1	< 0.003	0.00011	0.004	3.73	0.313	< 0.01	0.00311	0.0006	< 0.009	4.39	0.0289	0.96	0.00002	1.59	0.484	29.9	0.00014	0.00022	0.0002	0.00109	0.00008	0.006	< 0.00001
5-Mar-13	2	< 0.003	0.00005	0.002	2.09	0.185	< 0.01	0.00226	0.0005	< 0.009	2.52	0.0126	0.85	< 0.00001	0.80	0.316	18.1	0.00007	0.00014	< 0.0001	0.000871	0.00010	0.005	< 0.00001
12-Mar-13	3	< 0.003	0.00004	0.002	1.66	0.139	< 0.01	0.00204	0.0002	0.009	1.98	0.00966	0.77	< 0.00001	0.52	0.251	13.1	0.00006	0.00012	< 0.0001	0.000642	0.00014	0.003	< 0.00001
19-Mar-13	4	< 0.003	0.00009	0.002	1.45	0.121	< 0.01	0.00220	< 0.0001	< 0.009	1.63	0.00708	0.80	< 0.00001	0.42	0.206	10.6	0.00005	0.00013	< 0.0001	0.000642	0.00017	0.004	< 0.00001
26-Mar-13	5																							
2-Apr-13	6	< 0.003	0.00015	0.001	1.04	0.110	0.01	0.00200	0.0002	< 0.009	1.13	0.00412	0.70	< 0.00001	0.24	0.160	7.63	0.00003	0.00007	0.0002	0.000500	0.00018	0.004	0.00009
9-Apr-13	7																							
16-Apr-13	8	< 0.003	0.00003	< 0.001	0.836	0.104	< 0.01	0.00184	0.0002	< 0.009	0.877	0.00431	0.65	< 0.00001	0.17	0.142	6.31	0.00003	0.00008	< 0.0001	0.000527	0.00015	0.004	< 0.00001
23-Apr-13	9																							
30-Apr-13	10	< 0.003	0.00007	< 0.001	0.713	0.109	< 0.01	0.00157	0.0001	< 0.009	0.736	0.00498	0.58	< 0.00001	0.14	0.121	5.39	< 0.00002	0.00010	< 0.0001	0.000484	0.00014	0.005	0.00002
7-May-13	11	< 0.003	0.00008	< 0.001	0.696	0.108	< 0.01	0.00120	0.0005	< 0.009	0.701	0.00586	0.49	< 0.00001	0.15	0.112	5.65	< 0.00002	0.00005	< 0.0001	0.000312	0.00015	0.008	< 0.00001
14-May-13	12	< 0.003	0.00006	< 0.001	0.614	0.0987	< 0.01	0.00129	< 0.0001	< 0.009	0.676	0.00392	0.60	< 0.00001	0.13	0.104	4.21	< 0.00002	0.00006	< 0.0001	0.000443	0.00011	0.003	0.00002
21-May-13	13	0.005	0.00006	< 0.001	0.583	0.102	< 0.01	0.00125	< 0.0001	< 0.009	0.599	0.00397	0.48	< 0.00001	0.14	0.105	4.95	< 0.00002	0.00004	< 0.0001	0.000334	0.00011	0.004	< 0.00001
28-May-13	14	< 0.003	0.00007	< 0.001	0.613	0.101	< 0.01	0.00117	0.0001	< 0.009	0.663	0.00508	0.51	< 0.00001	0.15	0.104	4.08	< 0.00002	0.00007	< 0.0001	0.000497	0.00009	0.003	< 0.00001
4-Jun-13	15	< 0.003	0.00012	< 0.001	0.507	0.0855	< 0.01	0.00100	< 0.0001	< 0.009	0.590	0.00378	0.57	< 0.00001	0.31	0.0839	3.18	< 0.00002	0.00004	< 0.0001	0.000442	0.00010	0.003	0.00002
11-Jun-13	16	< 0.003	0.00010	< 0.001	0.504	0.0821	0.02	0.00101	0.0002	< 0.009	0.556	0.00398	0.49	< 0.00001	0.15	0.0856	3.57	< 0.00002	0.00005	< 0.0001	0.000410	0.00009	0.003	0.00005
18-Jun-13	17	< 0.003	0.00011	< 0.001	0.495	0.0785	< 0.01	0.00093	0.0001	< 0.009	0.530	0.00402	0.54	< 0.00001	0.15	0.0861	3.74	< 0.00002	0.00005	< 0.0001	0.000434	0.00010	0.004	0.00004
25-Jun-13	18	< 0.003	0.00011	< 0.001	0.435	0.0815	< 0.01	0.00089	0.0001	0.010	0.458	0.00410	0.12	< 0.00001	0.11	0.0761	3.07	< 0.00002	0.00004	< 0.0001	0.000325	0.00011	0.004	0.00001
2-Jul-13	19	< 0.003	0.00024	< 0.001	0.451	0.0837	< 0.01	0.00094	0.0002	< 0.009	0.535	0.00420	0.50	< 0.00001	0.09	0.0782	3.44	< 0.00002	0.00004	0.0001	0.000370	0.00016	0.005	0.00003
9-Jul-13	20	0.003	0.00022	< 0.001	0.514	0.0924	< 0.01	0.00101	0.0003	< 0.009	0.499	0.00477	0.54	< 0.00001	0.11	0.0868	4.14	< 0.00002	0.00004	< 0.0001	0.000343	0.00011	0.005	0.00009
16-Jul-13	21	< 0.003	0.00010	< 0.001	0.508	0.0912	< 0.01	0.00106	0.0002	< 0.009	0.456	0.00443	0.49	< 0.00001	0.10	0.0840	3.97	< 0.00002	0.00007	< 0.0001	0.000378	0.00009	0.005	< 0.00001
23-Jul-13	22	< 0.003	0.00008	< 0.001	0.400	0.0776	< 0.01	0.00089	< 0.0001	< 0.009	0.383	0.00356	0.43	< 0.00001	0.10	0.0682	3.01	< 0.00002	0.00010	< 0.0001	0.000315	0.00011	0.003	< 0.00001
30-Jul-13	23	< 0.003	0.00008	< 0.001	0.426	0.0795	< 0.01	0.00084	< 0.0001	< 0.009	0.419	0.00384	0.40	< 0.00001	0.09	0.0648	3.01	< 0.00002	0.00003	< 0.0001	0.000363	0.00006	0.004	0.00001
6-Aug-13	24	< 0.003	0.00030	< 0.001	0.411	0.110	< 0.01	0.00078	0.0002	< 0.009	0.398	0.00368	0.53	< 0.00001	0.08	0.0755	3.70	< 0.00002	< 0.00001	< 0.0001	0.000378	0.00010	0.008	0.00014
13-Aug-13	25	< 0.003	0.00012	< 0.001	0.455	0.0882	< 0.01	0.00090	0.0002	< 0.009	0.403	0.00378	0.46	< 0.00001	0.08	0.0730	3.54	< 0.00002	0.00008	< 0.0001	0.000353	0.00004	0.006	< 0.00001
20-Aug-13	26																							
27-Aug-13	27																							

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jan-12	0	500	400	7.74	334	339	#N/A	3.1	41.8	89	64.7	0.0895	0.0086	0.0058	0.0279	< 0.00002	< 0.00001	0.0398	0.000018	21.6	< 0.0005	0.000279
31-Jan-12	1	500	480	7.43	324	317	#N/A	3.3	29.2	105	75.4	0.109	0.0117	0.0096	0.0243	< 0.00002	< 0.00001	0.0534	0.000040	24.9	< 0.0005	0.000382
7-Feb-12	2	500	505	7.46	336	189	#N/A	3.9	28.6	62	58.7	0.105	0.0073	0.0055	0.0174	< 0.00002	< 0.00001	0.0443	0.000039	20.3	< 0.0005	0.000131
14-Feb-12	3	500	460	7.54	395	145	#N/A	4.3	24.4	50	45.5	0.0753	0.0063	0.0054	0.0138	< 0.00002	< 0.00001	0.0379	0.000028	15.6	< 0.0005	0.000085
21-Feb-12	4	500	470	7.45	331	129	#N/A	4.2	26.9	40	43.8	0.0634	0.0066	0.0055	0.0142	< 0.00002	< 0.00001	0.0408	0.000042	15.1	< 0.0005	0.000093
28-Feb-12	5	500	480	7.39	407	108																
6-Mar-12	6	500	460	7.54	368	85	#N/A	4.8	23.5	20	31.2	0.142	0.0049	0.0055	0.0112	< 0.00002	< 0.00001	0.0254	0.000028	11.2	< 0.0005	0.000042
13-Mar-12	7	500	470	7.46	370	93																
20-Mar-12	8	500	490	7.40	316	91	#N/A	3.6	23.0	24	35.8	0.0482	0.0071	0.0047	0.0116	< 0.00002	< 0.00001	0.0248	0.000053	12.8	< 0.0005	0.000078
27-Mar-12	9	500	495	7.39	329	89																
3-Apr-12	10	500	510	7.38	338	79	#N/A	2.6	22.3	21	32.1	0.0700	0.0048	0.0043	0.00982	< 0.00002	< 0.00001	0.0205	0.000107	11.6	< 0.0005	0.000048
10-Apr-12	11	500	500	7.44	319	81																
17-Apr-12	12	500	495	7.44	324	81	#N/A	2.6	21.7	20	32.6	0.0812	0.0044	0.0039	0.00936	< 0.00002	< 0.00001	0.0193	0.000010	11.9	< 0.0005	0.000048
24-Apr-12	13	500	495	7.38	472	78																
1-May-12	14	500	495	7.25	330	81	#N/A	4.7	21.7	23	32.3	0.0958	0.0043	0.0043	0.0109	< 0.00002	< 0.00001	0.0164	0.000017	11.8	< 0.0005	0.000072
8-May-12	15	500	500	7.35	381	77																
15-May-12	16	500	495	7.40	279	83	#N/A	3.0	20.9	19	34.2	0.0705	0.0044	0.0050	0.00959	< 0.00002	< 0.00001	0.0172	0.000005	12.6	< 0.0005	0.000041
22-May-12	17	500	450	7.33	278	77																
29-May-12	18	500	435	7.31	268	75	#N/A	2.9	15.9	15	32.2	0.0700	0.0031	0.0041	0.00786	< 0.00002	< 0.00001	0.0121	< 0.000003	12.0	< 0.0005	0.000031
5-Jun-12	19	500	450	7.30	352	73																
12-Jun-12	20	500	440	7.27	331	65	#N/A	3.2	15.4	15	28.2	0.114	0.0063	0.0040	0.00963	< 0.00002	< 0.00001	0.0117	< 0.000003	10.4	< 0.0005	0.000053
19-Jun-12	21	500	450	7.37	385	69																
26-Jun-12	22	500	445	7.26	364	68	#N/A	3.2	16.2	14	29.1	0.0753	0.0034	0.0048	0.00794	< 0.00002	< 0.00001	0.0112	< 0.000003	10.8	< 0.0005	0.000029
3-Jul-12	23	500	455	7.33	357	70																
10-Jul-12	24	500	445	7.31	320	79	#N/A	3.7	17.5	16	32.0	0.0751	0.0073	0.0067	0.00912	< 0.00002	< 0.00001	0.0117	0.000049	11.9	< 0.0005	0.000058
17-Jul-12	25	500	440	7.36	388	77																
24-Jul-12	26	500	440	7.22	328	77	#N/A	2.6	15.5	16	32.0	0.0921	0.0033	0.0040	0.00931	< 0.00002	< 0.00001	0.0103	0.000036	12.0	< 0.0005	0.000070
31-Jul-12	27	500	450	7.23	364	74																
7-Aug-12	28	500	455	7.32	287	74	#N/A	2.9	14.9	17	33.1	0.0872	0.0034	0.0034	0.00915	< 0.00002	< 0.00001	0.0106	0.000041	12.5	< 0.0005	0.000063
14-Aug-12	29	500	450	7.29	264	78																
21-Aug-12	30	500	450	7.24	208	77	#N/A	2.7	16.1	22	33.1	0.0777	0.0045	0.0029	0.0083	< 0.00002	0.00002	0.0102	0.000056	12.4	< 0.0005	0.00004
28-Aug-12	31	500	445	7.42	320	74																
4-Sep-12	32	500	455	7.20	356	62	#N/A	3.3	12.9	16	26.6	0.125	0.0027	0.0022	0.00650	< 0.00002	< 0.00001	0.0076	0.000040	10.0	< 0.0005	0.000018
11-Sep-12	33	500	445	7.28	391	71																
18-Sep-12	34	500	505	7.26	340	77	#N/A	2.5	17.8	19	32.0	0.0670	0.0091	0.0084	0.00871	< 0.00002	< 0.00001	0.0116	0.000064	12.0	< 0.0005	0.000062
25-Sep-12	35	500	455	7.31	270	79																
2-Oct-12	36	500	460	7.28	337	65	#N/A	2.5	15.3	15	28.0	0.0402	0.0032	0.0030	0.0064	< 0.00002	< 0.00001	0.0081	0.000047	10.6	< 0.0005	0.000090
9-Oct-12	37	500	450	7.33	290	83																
16-Oct-12	38	500	500	7.56	377	69	#N/A	4.4	24.3	16	27.0	0.0460	0.0033	0.0026	0.00635	< 0.00002	< 0.00001	0.0076	0.000074	10.2	< 0.0005	0.000044
23-Oct-12	39	500	465	7.21	285	80																
30-Oct-12	40	500	460	7.26	321	64	#N/A	3.0	16.6	15	29.3	0.0637	0.0032	0.0028	0.00723	< 0.00002	< 0.00001	0.0075	0.000064	11.1	< 0.0005	0.000027
6-Nov-12	41	500	425	7.31	290	85																
13-Nov-12	42	500	445	7.35	321	50	#N/A	4.8	14.0	9	24.0	0.0403	0.0024	0.0020	0.00522	< 0.00002	< 0.00001	0.0058	0.000039	9.14	< 0.0005	0.000031
20-Nov-12	43	500	490	7.43	295	90																
27-Nov-12	44	500	505	7.35	305	64	#N/A	4.2	20.2	15	29.8	0.0399	0.0034	0.0019	0.00650	< 0.00002	< 0.00001	0.0044	0.000060	11.3	< 0.0005	0.000088
4-Dec-12	45	500	485	7.41	305	70																
11-Dec-12	46	500	495	7.27	309	60	#N/A	2.7	15.1	12	27.4	0.0372	0.0039	0.0024	0.00593	< 0.00002	< 0.00001	0.0049	0.000049	10.5	< 0.0005	0.000035
18-Dec-12	47	500	440	7.36	383	60																

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
25-Dec-12	48	500	445	7.42	402	59	#N/A	4.1	15.8	12	26.4	0.0521	0.0029	0.0035	0.00711	< 0.00002	< 0.00001	0.0045	0.000047	10.0	< 0.0005	0.000094
1-Jan-13	49	500	455	7.43	315	75																
8-Jan-13	50	500	460	7.38	263	55	#N/A	3.2	14.6	12	24.5	0.0503	0.0033	0.0022	0.00583	< 0.00002	< 0.00001	0.0037	0.000053	9.37	< 0.0005	0.000036
15-Jan-13	51	500	460	7.42	320	65																
22-Jan-13	52	500	445	7.26	259	59	#N/A	4.1	14.8	14	24.2	0.0648	0.0024	0.0019	0.00669	< 0.00002	< 0.00001	0.0040	0.000056	9.24	< 0.0005	0.000041
29-Jan-13	53	500	460	7.36	453	53																
5-Feb-13	54	500	470	7.36	415	57	#N/A	3.9	12.9	17	24.2	0.0417	0.0027	0.0026	0.00618	< 0.00002	< 0.00001	0.0031	0.000118	9.25	< 0.0005	0.000233
12-Feb-13	55	500	455	7.11	354	59																
19-Feb-13	56	500	480	7.29	488	54	#N/A	3.0	13.7	13	25.6	0.0380	0.0024	0.0022	0.00688	< 0.00002	< 0.00001	0.0026	0.000061	9.17	< 0.0005	0.000055
26-Feb-13	57	500	450	7.37	446	58																
5-Mar-13	58	500	495	7.45	435	68	#N/A	4.7	18.0	18	28.5	0.0399	0.0032	0.0020	0.00747	< 0.00002	< 0.00001	0.0042	0.000071	10.9	< 0.0005	0.000155
12-Mar-13	59	500	455	7.41	340	68																
19-Mar-13	60	500	455	7.57	221	43	#N/A	5.9	21.0	4	17.8	0.0747	0.0025	0.0227	0.0177	0.00014	< 0.00001	0.0027	0.000056	6.69	< 0.0005	0.000308
26-Mar-13	61	500	460	7.59	353	43																
2-Apr-13	62	500	455	7.47	323	41	#N/A	4.6	17.7	5	19.4	0.0586	0.0026	0.0230	0.0184	0.00004	< 0.00001	0.0032	0.000030	7.34	< 0.0005	0.000336
9-Apr-13	63	500	445	7.50	361	45																
16-Apr-13	64	500	460	7.22	312	42	#N/A	4.9	17.2	7	19.0	0.0240	0.0030	0.0216	0.0160	0.00006	< 0.00001	0.0029	0.000035	7.16	< 0.0005	0.000161
23-Apr-13	65	500	460	7.51	344	46																
30-Apr-13	66	500	440	7.23	316	41	#N/A	4.2	17.6	9	19.3	0.0432	0.0027	0.0212	0.0146	0.00002	< 0.00001	0.0031	0.000025	7.33	< 0.0005	0.000080
7-May-13	67	500	430	7.21	420	45																
14-May-13	68	500	455	7.46	331	42	#N/A	4.6	20.5	7	18.8	0.0244	0.0026	0.0208	0.0137	< 0.00002	< 0.00001	0.0032	0.000019	7.14	< 0.0005	0.000183
21-May-13	69	500	465	7.01	410	41																
28-May-13	70	500	450	6.91	347	41	#N/A	4.1	16.3	7	19.0	0.0331	0.0024	0.0177	0.0139	< 0.00002	< 0.00001	0.0025	0.000021	7.21	< 0.0005	0.000061
4-Jun-13	71	500	440	7.50	366	42																
11-Jun-13	72	500	445	7.32	338	41	#N/A	7.4	20.9	7												
18-Jun-13	73	500	480	6.61	419	45																
25-Jun-13	74	500	520	6.98	371	35	#N/A	3.9	14.6	4	15.6	0.0803	0.0034	0.0161	0.0126	0.00005	< 0.00001	0.0075	0.000032	5.90	< 0.0005	0.000169
2-Jul-13	75	500	440	7.44	374	40																
9-Jul-13	76	500	435	7.45	308	40	#N/A	6.3	21.6	5												
16-Jul-13	77	500	430	6.85	426	41																
23-Jul-13	78	500	435	6.89	376	39	#N/A	6.7	16.7	7	17.7	0.0349	0.0026	0.0161	0.0117	< 0.00002	< 0.00001	0.0034	0.000021	6.72	< 0.0005	0.000034
30-Jul-13	79	500	450	6.81	410	38																
6-Aug-13	80	500	450	6.82	341	40	#N/A	6.4	16.3	6												
13-Aug-13	81	500	500	6.88	414	44																
20-Aug-13	82	500	445	6.73	382	41	#N/A	3.3	13.0	4												
27-Aug-13	83	500	445	6.89	370	38																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0053	0.003	0.00005	0.036	2.59	0.0659	< 0.01	0.00826	0.0012	< 0.009	21.4	0.00394	1.16	0.00003	22.9	0.773	39.2	0.00009	0.00006	0.0003	0.00148	0.00124	0.002	0.00002
31-Jan-12	1	0.0036	0.008	0.00030	0.037	3.23	0.0834	0.01	0.00955	0.0011	< 0.009	16.6	0.00425	1.31	0.00002	20.9	0.884	39.5	0.00016	0.00067	0.0008	0.00292	0.00105	0.002	0.00004
7-Feb-12	2	0.0015	0.005	0.00036	0.016	1.94	0.0899	< 0.01	0.00518	0.0008	< 0.009	10.2	0.00168	1.16	0.00001	8.08	0.642	21.5	0.00008	0.00032	0.0006	0.00168	0.00081	0.002	0.00004
14-Feb-12	3	0.0011	< 0.003	0.00012	0.010	1.57	0.0583	< 0.01	0.00490	0.0005	< 0.009	7.04	0.00114	0.95	< 0.00001	4.00	0.497	14.5	0.00006	0.00035	0.0006	0.00193	0.00067	< 0.001	< 0.00001
21-Feb-12	4	0.0009	< 0.003	0.00011	0.007	1.44	0.0804	< 0.01	0.00476	0.0004	< 0.009	6.61	0.00088	0.98	0.00001	2.34	0.463	12.2	0.00006	0.00016	0.0002	0.00219	0.00065	0.001	< 0.00001
28-Feb-12	5																								
6-Mar-12	6	0.0012	0.009	0.00029	0.003	0.815	0.0400	< 0.01	0.00346	0.0003	< 0.009	3.99	0.00066	1.14	0.00001	0.74	0.319	7.15	0.00003	0.00005	0.0004	0.00167	0.00094	0.002	< 0.00001
13-Mar-12	7																								
20-Mar-12	8	0.0007	< 0.003	0.00017	0.003	0.964	0.0768	0.01	0.00404	< 0.0001	< 0.009	3.67	0.00043	0.93	< 0.00001	0.58	0.326	7.67	0.00002	0.00023	0.0001	0.00208	0.00048	0.002	< 0.00001
27-Mar-12	9																								
3-Apr-12	10	0.0006	< 0.003	0.00012	0.002	0.774	0.0638	< 0.01	0.00361	0.0002	< 0.009	2.93	0.00039	0.88	< 0.00001	0.38	0.267	6.82	0.00003	0.00002	< 0.0001	0.00164	0.00045	0.003	< 0.00001
10-Apr-12	11																								
17-Apr-12	12	0.0006	0.024	0.00013	0.002	0.716	0.0536	0.02	0.00410	0.0006	< 0.009	2.60	0.00031	1.02	< 0.00001	0.29	0.256	6.57	0.00003	0.00004	0.0004	0.00153	0.00072	0.002	< 0.00001
24-Apr-12	13																								
1-May-12	14	0.0007	0.010	0.00046	0.002	0.673	0.0409	0.08	0.00398	0.0003	< 0.009	2.49	0.00021	1.01	0.00002	0.26	0.244	6.63	0.00003	0.00009	0.0009	0.00148	0.00077	0.002	0.00001
8-May-12	15																								
15-May-12	16	< 0.0005	0.003	0.00012	0.002	0.656	0.0336	< 0.01	0.00455	0.0002	< 0.009	2.42	0.00031	0.97	< 0.00001	0.23	0.245	6.75	0.00004	0.00001	0.0003	0.00128	0.00067	0.002	< 0.00001
22-May-12	17																								
29-May-12	18	0.0006	< 0.003	0.00008	0.002	0.554	0.0438	0.01	0.00347	< 0.0001	< 0.009	1.91	0.00008	0.76	< 0.00001	0.20	0.221	6.83	0.00002	0.00032	0.0002	0.000823	0.00069	0.002	< 0.00001
5-Jun-12	19																								
12-Jun-12	20	0.0009	0.013	0.00048	0.002	0.509	0.0321	< 0.01	0.00306	0.0001	< 0.009	1.86	0.00025	0.90	0.00004	0.18	0.195	5.58	0.00003	0.00110	0.0006	0.000724	0.00075	0.004	0.00002
19-Jun-12	21																								
26-Jun-12	22	0.0009	< 0.003	0.00010	0.001	0.509	0.0339	< 0.01	0.00376	< 0.0001	< 0.009	1.84	0.00043	0.85	< 0.00001	0.19	0.204	5.86	0.00002	0.00017	0.0002	0.000834	0.00075	0.002	0.00004
3-Jul-12	23																								
10-Jul-12	24	0.0008	< 0.003	0.00009	0.001	0.536	0.0445	0.02	0.00405	0.0002	< 0.009	1.84	0.00067	0.89	0.00001	0.21	0.211	6.63	< 0.00002	0.00071	0.0002	0.000708	0.00063	0.002	< 0.00001
17-Jul-12	25																								
24-Jul-12	26	0.0007	0.004	0.00015	0.001	0.512	0.0383	0.01	0.00371	0.0001	< 0.009	1.70	0.00066	0.79	< 0.00001	0.17	0.202	6.97	0.00003	0.00013	0.0003	0.000575	0.00071	0.002	0.00003
31-Jul-12	27																								
7-Aug-12	28	0.0007	< 0.003	0.00011	0.001	0.481	0.0376	< 0.01	0.00422	< 0.0001	< 0.009	1.63	0.00039	0.80	< 0.00001	0.17	0.193	7.47	< 0.00002	0.00022	0.0003	0.000462	0.00071	0.002	< 0.00001
14-Aug-12	29																								
21-Aug-12	30	0.0007	0.003	0.00009	0.001	0.490	0.0459	< 0.01	0.00464	0.0003	< 0.009	1.44	0.00047	0.91	0.00001	0.17	0.184	7.44	0.00002	0.00019	0.0002	0.00062	0.00058	0.002	< 0.00001
28-Aug-12	31																								
4-Sep-12	32	0.0005	0.003	0.00013	0.001	0.374	0.0342	0.05	0.00340	0.0002	< 0.009	1.14	0.00036	0.53	< 0.00001	0.13	0.139	5.63	< 0.00002	0.00021	0.0003	0.000485	0.00075	0.002	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	< 0.0005	0.005	0.00016	0.001	0.457	0.0475	0.01	0.00486	< 0.0001	< 0.009	1.31	0.00050	1.13	< 0.00001	0.14	0.171	6.77	< 0.00002	0.00148	0.0002	0.000936	0.00062	0.002	< 0.00001
25-Sep-12	35																								
2-Oct-12	36	0.0007	< 0.003	0.00010	0.001	0.388	0.0425	< 0.01	0.00396	< 0.0001	< 0.009	1.12	0.00033	0.69	< 0.00001	0.12	0.142	5.84	< 0.00002	0.00011	0.0002	0.000615	0.00045	0.002	< 0.00001
9-Oct-12	37																								
16-Oct-12	38	0.0006	< 0.003	0.00012	< 0.001	0.360	0.0431	< 0.01	0.00388	0.0001	< 0.009	0.991	0.00042	0.71	< 0.00001	0.09	0.129	5.28	< 0.00002	0.00039	0.0002	0.000870	0.00042	0.002	< 0.00001
23-Oct-12	39																								
30-Oct-12	40	< 0.0005	0.003	0.00011	< 0.001	0.388	0.0477	0.01	0.00422	0.0001	< 0.009	1.06	0.00028	0.71	< 0.00001	0.10	0.138	5.70	< 0.00002	0.00012	0.0007	0.000614	0.00059	0.002	< 0.00001
6-Nov-12	41																								
13-Nov-12	42	< 0.0005	< 0.003	0.00010	< 0.001	0.285	0.0407	0.01	0.00333	< 0.0001	< 0.009	0.867	0.00030	0.51	< 0.00001	0.09	0.105	4.71	< 0.00002	0.00010	0.0002	0.000469	0.00035	0.001	< 0.00001
20-Nov-12	43																								
27-Nov-12	44	< 0.0005	0.004	0.00008	< 0.001	0.359	0.0521	< 0.01	0.00334	0.0001	< 0.009	0.977	0.00045	0.67	0.00001	0.08	0.132	5.19	< 0.00002	0.00015	0.0001	0.000897	0.00033	0.003	< 0.00001
4-Dec-12	45																								
11-Dec-12	46	0.0008	< 0.003	0.00006	< 0.001	0.303	0.0358	< 0.01	0.00392	< 0.0001	< 0.009	0.934	0.00041	0.61	< 0.00001	0.08	0.116	4.65	< 0.00002	0.00008	0.0001	0.000647	0.00049	0.002	< 0.00001
18-Dec-12	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	0.0007	0.011	0.00015	< 0.001	0.322	0.0388	< 0.01	0.00337	0.0001	< 0.009	0.915	0.00049	0.59	< 0.00001	0.07	0.128	7.17	< 0.00002	0.00046	0.0002	0.000460	0.00025	0.002	< 0.00001
1-Jan-13	49																								
8-Jan-13	50	< 0.0005	0.006	0.00011	< 0.001	0.256	0.0331	< 0.01	0.00269	< 0.0001	< 0.009	0.825	0.00041	0.51	0.00001	0.07	0.0965	4.15	< 0.00002	0.00005	0.0004	0.000415	0.00039	0.001	< 0.00001
15-Jan-13	51																								
22-Jan-13	52	< 0.0005	0.008	0.00040	< 0.001	0.262	0.0375	< 0.01	0.00238	0.0002	< 0.009	0.788	0.00042	0.47	< 0.00001	< 0.01	0.102	4.84	< 0.00002	0.00009	0.0004	0.000385	0.00051	0.003	0.00002
29-Jan-13	53																								
5-Feb-13	54	< 0.0005	< 0.003	0.00021	< 0.001	0.275	0.0353	< 0.01	0.00288	< 0.0001	< 0.009	0.843	0.00056	0.51	< 0.00001	0.06	0.108	5.34	< 0.00002	0.00008	0.0002	0.000408	0.00028	0.003	0.00002
12-Feb-13	55																								
19-Feb-13	56	< 0.0005	< 0.003	0.00009	< 0.001	0.656	0.0325	< 0.01	0.00287	< 0.0001	< 0.009	1.46	0.00049	0.47	< 0.00001	2.38	0.0958	5.31	< 0.00002	0.00006	0.0002	0.000357	0.00024	0.001	< 0.00001
26-Feb-13	57																								
5-Mar-13	58	< 0.0005	< 0.003	0.00008	< 0.001	0.306	0.0418	< 0.01	0.00334	0.0001	< 0.009	0.781	0.00056	0.63	< 0.00001	0.07	0.119	5.94	< 0.00002	< 0.00001	0.0003	0.000620	0.00019	0.001	0.00002
12-Mar-13	59																								
19-Mar-13	60	< 0.0005	0.011	0.00013	0.003	0.258	0.0352	< 0.01	0.0237	0.0004	< 0.009	0.745	0.00064	0.38	< 0.00001	0.07	0.149	1.87	< 0.00002	0.00011	0.0004	0.000101	0.00050	< 0.001	0.00003
26-Mar-13	61																								
2-Apr-13	62	0.0006	0.012	0.00007	0.004	0.268	0.0377	< 0.01	0.0275	0.0016	< 0.009	0.769	0.00047	0.38	< 0.00001	0.07	0.158	1.99	< 0.00002	0.00003	0.0005	0.000083	0.00049	< 0.001	0.00005
9-Apr-13	63																								
16-Apr-13	64	0.0017	0.007	0.00007	0.003	0.266	0.0363	< 0.01	0.0266	0.0003	0.016	0.712	0.00050	0.35	< 0.00001	0.08	0.156	2.03	< 0.00002	0.00004	< 0.0001	0.000091	0.00041	0.003	< 0.00001
23-Apr-13	65																								
30-Apr-13	66	0.0008	0.008	< 0.00002	0.003	0.256	0.0373	< 0.01	0.0232	0.0002	< 0.009	0.651	0.00069	0.35	< 0.00001	0.08	0.152	1.88	< 0.00002	0.00004	0.0001	0.000043	0.00040	0.001	< 0.00001
7-May-13	67																								
14-May-13	68	< 0.0005	0.016	< 0.00002	0.003	0.240	0.0343	< 0.01	0.0252	0.0002	< 0.009	0.605	0.00068	0.36	< 0.00001	0.09	0.138	1.89	< 0.00002	0.00007	< 0.0001	0.000067	0.00034	< 0.001	< 0.00001
21-May-13	69																								
28-May-13	70	< 0.0005	0.009	< 0.00002	0.003	0.246	0.0321	< 0.01	0.0217	0.0002	< 0.009	0.628	0.00063	0.27	< 0.00001	0.07	0.146	1.84	< 0.00002	0.00005	< 0.0001	0.000062	0.00032	< 0.001	< 0.00001
4-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	0.0015	0.016	0.00015	0.002	0.208	0.0174	< 0.01	0.0171	0.0004	0.013	0.594	0.00064	0.04	< 0.00001	0.07	0.121	1.31	< 0.00002	0.00010	0.0002	0.000084	0.00040	0.002	< 0.00001
2-Jul-13	75																								
9-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	< 0.0005	0.014	< 0.00002	0.002	0.216	0.0257	< 0.01	0.0155	< 0.0001	< 0.009	0.566	0.00083	0.30	< 0.00001	0.08	0.128	1.61	< 0.00002	0.00003	< 0.0001	0.000058	0.00033	< 0.001	< 0.00001
30-Jul-13	79																								
6-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jan-12	0	500	405	7.83	293	330	#N/A	3.1	43.9	99	29.2	0.134	0.0087	0.0124	0.00959	< 0.00002	< 0.00001	0.0588	0.000012	10.3	< 0.0005	0.000176
31-Jan-12	1	500	460	7.67	284	347	#N/A	2.7	28.6	131	48.7	0.118	0.0083	0.0121	0.0108	< 0.00002	< 0.00001	0.0675	0.000023	17.2	< 0.0005	0.000225
7-Feb-12	2	500	430	7.72	306	222	#N/A	2.9	27.5	84	39.1	0.164	0.0056	0.0112	0.00801	< 0.00002	< 0.00001	0.0616	0.000029	14.0	< 0.0005	0.000175
14-Feb-12	3	500	440	7.76	375	158	#N/A	3.6	23.4	55	31.7	0.121	0.0051	0.0106	0.00680	< 0.00002	< 0.00001	0.0530	0.000038	11.3	< 0.0005	0.000161
21-Feb-12	4	500	470	7.64	331	130	#N/A	4.0	28.5	36	32.4	0.0754	0.0065	0.0102	0.00600	< 0.00002	< 0.00001	0.0616	0.000034	11.5	< 0.0005	0.000169
28-Feb-12	5	500	475	7.63	385	100																
6-Mar-12	6	500	445	7.70	362	100	#N/A	4.3	24.7	26	28.3	0.168	0.0099	0.0109	0.00579	< 0.00002	< 0.00001	0.0477	0.000044	10.0	< 0.0005	0.000184
13-Mar-12	7	500	440	7.61	358	81																
20-Mar-12	8	500	440	7.52	322	89	#N/A	3.1	17.9	25	29.5	0.0900	0.0049	0.0077	0.00502	< 0.00002	< 0.00001	0.0343	0.000035	10.6	< 0.0005	0.000164
27-Mar-12	9	500	470	7.52	329	87																
3-Apr-12	10	500	450	7.49	336	68	#N/A	2.5	20.5	16	24.8	0.0848	0.0043	0.0074	0.00353	< 0.00002	< 0.00001	0.0313	0.000006	9.00	< 0.0005	0.000118
10-Apr-12	11	500	445	7.46	325	81																
17-Apr-12	12	500	440	7.48	332	83	#N/A	2.5	15.8	24	29.7	0.0906	0.0037	0.0063	0.00404	< 0.00002	< 0.00001	0.0319	0.000017	10.8	< 0.0005	0.000193
24-Apr-12	13	500	445	7.59	365	76																
1-May-12	14	500	440	7.55	333	74	#N/A	3.8	16.6	24	28.4	0.0759	0.0034	0.0060	0.00341	< 0.00002	< 0.00001	0.0244	0.000017	10.4	< 0.0005	0.000180
8-May-12	15	500	445	7.47	377	74																
15-May-12	16	500	465	7.46	286	78	#N/A	2.8	16.7	17	29.6	0.0736	0.0036	0.0065	0.00331	< 0.00002	< 0.00001	0.0290	< 0.000003	10.8	< 0.0005	0.000143
22-May-12	17	500	445	7.43	300	65																
29-May-12	18	500	445	7.37	297	80	#N/A	2.7	13.6	20	31.5	0.0781	0.0027	0.0051	0.00322	< 0.00002	< 0.00001	0.0218	0.000034	11.6	< 0.0005	0.000266
5-Jun-12	19	500	440	7.41	344	75																
12-Jun-12	20	500	450	7.43	336	69	#N/A	3.0	14.8	16	29.0	0.0948	0.0026	0.0049	0.00351	< 0.00002	< 0.00001	0.0196	0.000012	10.7	< 0.0005	0.000161
19-Jun-12	21	500	440	7.45	368	69																
26-Jun-12	22	500	440	7.40	321	69	#N/A	3.3	14.5	18	28.5	0.0761	0.0025	0.0050	0.00297	< 0.00002	< 0.00001	0.0195	0.000025	10.5	< 0.0005	0.000212
3-Jul-12	23	500	440	7.60	369	70																
10-Jul-12	24	500	445	7.33	330	80	#N/A	3.9	15.9	20	31.6	0.0674	0.0028	0.0049	0.00280	< 0.00002	< 0.00001	0.0183	0.000051	11.8	< 0.0005	0.000180
17-Jul-12	25	500	445	7.38	377	76																
24-Jul-12	26	500	435	7.21	342	74	#N/A	2.3	13.2	18	29.7	0.0914	0.0024	0.0043	0.00294	< 0.00002	< 0.00001	0.0163	0.000064	11.1	< 0.0005	0.000225
31-Jul-12	27	500	435	7.38	370	74																
7-Aug-12	28	500	450	7.46	312	74	#N/A	2.8	15.3	18	32.2	0.111	0.0024	0.0045	0.00300	< 0.00002	< 0.00001	0.0177	0.000069	12.1	< 0.0005	0.000183
14-Aug-12	29	500	445	7.30	272	74																
21-Aug-12	30	500	445	7.30	248	73	#N/A	2.6	13.7	20	31.0	0.0786	0.0029	0.0041	0.0024	< 0.00002	< 0.00001	0.0160	0.000069	11.6	< 0.0005	0.00020
28-Aug-12	31	500	450	7.37	295	69																
4-Sep-12	32	500	455	7.23	363	59	#N/A	3.4	12.4	16	24.7	0.0959	0.0018	0.0034	0.00203	< 0.00002	< 0.00001	0.0110	0.000064	9.31	< 0.0005	0.000174
11-Sep-12	33	500	450	7.33	387	66																
18-Sep-12	34	500	505	7.27	347	73	#N/A	2.6	16.5	19	29.6	0.0617	0.0031	0.0039	0.00274	< 0.00002	< 0.00001	0.0151	0.000096	11.1	< 0.0005	0.000233
25-Sep-12	35	500	445	7.41	340	79																
2-Oct-12	36	500	460	7.25	349	57	#N/A	2.8	14.1	11	24.0	0.0419	0.0020	0.0041	0.0019	< 0.00002	< 0.00001	0.0113	0.000073	9.08	< 0.0005	0.000276
9-Oct-12	37	500	465	7.44	375	83																
16-Oct-12	38	500	500	7.25	383	65	#N/A	2.3	17.1	17	27.0	0.0482	0.0021	0.0042	0.00233	< 0.00002	< 0.00001	0.0107	0.000089	10.2	< 0.0005	0.000185
23-Oct-12	39	500	465	7.40	355	80																
30-Oct-12	40	500	450	7.29	331	60	#N/A	2.8	15.8	15	25.4	0.0637	0.0019	0.0039	0.00184	< 0.00002	< 0.00001	0.0099	0.000081	9.61	< 0.0005	0.000181
6-Nov-12	41	500	435	7.45	340	85																
13-Nov-12	42	500	440	7.51	342	56	#N/A	4.1	12.7	14	26.0	0.0448	0.0012	0.0033	0.00214	< 0.00002	< 0.00001	0.0068	0.000090	9.90	< 0.0005	0.000277
20-Nov-12	43	500	490	7.41	345	110																
27-Nov-12	44	500	505	7.32	324	63	#N/A	4.5	16.0	14	28.7	0.0387	0.0019	0.0028	0.00194	< 0.00002	< 0.00001	0.0072	0.000095	10.9	< 0.0005	0.000181
4-Dec-12	45	500	465	7.44	320	95																
11-Dec-12	46	500	485	7.35	325	52	#N/A	2.2	13.2	8	23.3	0.0375	0.0024	0.0030	0.00153	< 0.00002	< 0.00001	0.0074	0.000085	8.93	< 0.0005	0.000153
18-Dec-12	47	500	475	7.50	371	55																

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
25-Dec-12	48	500	440	7.58	369	46	#N/A	3.8	16.7	8	20.8	0.0602	0.0028	0.0044	0.00179	< 0.00002	< 0.00001	0.0083	0.000071	7.90	< 0.0005	0.000227
1-Jan-13	49	500	455	7.53	325	100																
8-Jan-13	50	500	460	7.54	262	51	#N/A	3.1	13.9	12	22.5	0.0569	0.0021	0.0029	0.00165	< 0.00002	< 0.00001	0.0065	0.000077	8.64	< 0.0005	0.000199
15-Jan-13	51	500	450	7.51	320	80																
22-Jan-13	52	500	455	7.41	272	58	#N/A	4.1	14.6	16	22.9	0.0597	0.0016	0.0029	0.00207	< 0.00002	< 0.00001	0.0065	0.000099	8.77	< 0.0005	0.000260
29-Jan-13	53	500	470	7.45	385	53																
5-Feb-13	54	500	465	7.49	374	54	#N/A	3.5	12.5	16	21.7	0.0395	0.0017	0.0034	0.00162	< 0.00002	< 0.00001	0.0058	0.000091	8.30	< 0.0005	0.000318
12-Feb-13	55	500	455	7.54	367	54																
19-Feb-13	56	500	470	7.41	390	53	#N/A	3.2	13.8	17	21.9	0.0407	0.0015	0.0035	0.00218	< 0.00002	< 0.00001	0.0052	0.000127	8.40	< 0.0005	0.000260
26-Feb-13	57	500	450	7.48	396	53																
5-Mar-13	58	500	510	7.59	394	61	#N/A	4.7	16.3	14	24.6	0.0314	0.0019	0.0029	0.00190	< 0.00002	< 0.00001	0.0067	0.000105	9.42	< 0.0005	0.000353
12-Mar-13	59	500	455	7.57	350	65																
19-Mar-13	60	500	455	7.59	328	60	#N/A	6.4	13.4	16	23.6	0.0366	0.0013	0.0027	0.00187	< 0.00002	< 0.00001	0.0053	0.000122	9.08	< 0.0005	0.000344
26-Mar-13	61	500	455	7.58	392	57																
2-Apr-13	62	500	465	7.52	373	55	#N/A	4.9	12.8	14	24.6	0.0404	0.0011	0.0026	0.0018	< 0.00002	< 0.00001	0.0054	0.000113	9.47	< 0.0005	0.000498
9-Apr-13	63	500	445	7.50	405	55																
16-Apr-13	64	500	445	7.51	378	63	#N/A	4.9	13.8	17	27.7	0.0326	0.0020	0.0025	0.00190	< 0.00002	< 0.00001	0.0058	0.000156	10.7	< 0.0005	0.000499
23-Apr-13	65	500	455	7.55	388	56																
30-Apr-13	66	500	450	7.48	390	63	#N/A	4.0	12.4	21	27.7	0.0323	0.0012	0.0021	0.00188	< 0.00002	< 0.00001	0.0055	0.000153	10.7	< 0.0005	0.000541
7-May-13	67	500	430	7.51	405	64																
14-May-13	68	500	445	7.51	401	58	#N/A	4.5	13.0	16	24.5	0.0806	0.0018	0.0025	0.00226	< 0.00002	< 0.00001	0.0057	0.000152	9.42	< 0.0005	0.000704
21-May-13	69	500	455	7.49	415	69																
28-May-13	70	500	455	7.53	403	65	#N/A	3.7	12.6	20	31.2	0.0292	0.0013	0.0019	0.00223	< 0.00002	< 0.00001	0.0058	0.000154	12.1	< 0.0005	0.000538
4-Jun-13	71	500	435	7.50	424	64																
11-Jun-13	72	500	440	7.57	398	68	#N/A	7.8	14.1	23												
18-Jun-13	73	500	440	7.31	421	69																
25-Jun-13	74	500	440	7.42	366	63	#N/A	4.3	13.1	19	26.0	0.0286	0.0014	0.0021	0.00164	< 0.00002	< 0.00001	0.0068	0.000153	10.0	< 0.0005	0.000649
2-Jul-13	75	500	445	7.44	406	69																
9-Jul-13	76	500	445	7.48	319	67	#N/A	6.3	14.3	19												
16-Jul-13	77	500	440	7.31	409	67																
23-Jul-13	78	500	440	7.55	411	64	#N/A	5.9	14.2	21	27.7	0.0564	0.0011	0.0016	0.00185	< 0.00002	< 0.00001	0.0055	0.000180	10.7	< 0.0005	0.000655
30-Jul-13	79	500	455	7.32	404	66																
6-Aug-13	80	500	440	7.59	379	71	#N/A	7.4	14.1	21												
13-Aug-13	81	500	445	7.26	408	72																
20-Aug-13	82	500	455	7.35	403	65	#N/A	2.9	10.3	16												
27-Aug-13	83	500	445	7.38	403	63																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0015	0.004	0.00012	0.099	0.851	0.0328	< 0.01	0.00163	0.0012	< 0.009	16.0	0.00586	1.29	0.00001	41.3	0.354	37.2	0.00009	0.00003	0.0004	0.000210	0.00200	0.006	0.00001
31-Jan-12	1	0.0006	0.004	0.00012	0.118	1.41	0.0745	0.01	0.00199	0.0008	< 0.009	13.1	0.00704	1.16	< 0.00001	37.9	0.667	41.6	0.00010	0.00109	0.0004	0.000398	0.00124	0.002	0.00002
7-Feb-12	2	0.0007	0.010	0.00033	0.076	1.04	0.0520	< 0.01	0.00115	0.0007	< 0.009	10.4	0.00333	1.18	0.00001	21.2	0.538	25.3	0.00009	0.00070	0.0007	0.000247	0.00134	0.001	0.00003
14-Feb-12	3	< 0.0005	0.008	0.00026	0.050	0.858	0.0564	< 0.01	0.00092	0.0005	< 0.009	7.28	0.00177	1.04	0.00001	12.4	0.425	15.8	0.00007	0.00056	0.0006	0.000240	0.00122	0.002	0.00003
21-Feb-12	4	< 0.0005	< 0.003	0.00012	0.040	0.899	0.0871	0.01	0.00117	0.0004	< 0.009	7.24	0.00143	1.10	< 0.00001	7.73	0.391	12.1	0.00006	0.00032	0.0002	0.000357	0.00094	< 0.001	< 0.00001
28-Feb-12	5																								
6-Mar-12	6	0.0010	0.023	0.00039	0.023	0.794	0.0526	< 0.01	0.00114	0.0003	< 0.009	6.89	0.00149	1.49	0.00001	3.34	0.342	8.83	0.00006	0.00032	0.0006	0.000444	0.00130	0.003	0.00002
13-Mar-12	7																								
20-Mar-12	8	< 0.0005	0.017	0.00034	0.019	0.711	0.0780	< 0.01	0.00085	0.0001	< 0.009	5.42	0.00161	1.05	< 0.00001	1.78	0.330	7.82	0.00004	0.00015	0.0003	0.000237	0.00089	< 0.001	0.00001
27-Mar-12	9																								
3-Apr-12	10	0.0006	< 0.003	0.00012	0.014	0.558	0.0646	< 0.01	0.00083	0.0002	< 0.009	4.29	0.00118	0.92	< 0.00001	1.04	0.249	5.71	0.00003	0.00015	< 0.0001	0.000219	0.00077	0.002	< 0.00001
10-Apr-12	11																								
17-Apr-12	12	< 0.0005	0.003	0.00017	0.013	0.655	0.0799	0.03	0.00091	0.0003	< 0.009	4.03	0.00159	0.89	< 0.00001	0.74	0.294	7.49	0.00005	0.00011	0.0003	0.000179	0.00097	0.002	< 0.00001
24-Apr-12	13																								
1-May-12	14	0.0006	0.005	0.00018	0.010	0.600	0.0827	0.04	0.00087	0.0003	< 0.009	3.59	0.00126	0.89	< 0.00001	0.59	0.264	6.46	0.00004	0.00012	0.0005	0.000170	0.00094	0.001	0.00007
8-May-12	15																								
15-May-12	16	< 0.0005	0.004	0.00011	0.010	0.607	0.0792	0.01	0.00119	0.0004	< 0.009	3.35	0.00140	0.98	< 0.00001	0.50	0.264	6.65	0.00004	0.00005	0.0002	0.000150	0.00102	0.002	< 0.00001
22-May-12	17																								
29-May-12	18	0.0007	0.004	0.00014	0.009	0.598	0.0966	< 0.01	0.00090	0.0002	< 0.009	2.87	0.00125	0.80	0.00001	0.38	0.271	7.80	0.00003	0.00043	0.0002	0.000135	0.00084	0.002	< 0.00001
5-Jun-12	19																								
12-Jun-12	20	0.0006	0.010	0.00017	0.008	0.553	0.0947	< 0.01	0.00081	0.0003	< 0.009	2.61	0.00109	0.86	0.00001	0.34	0.232	6.26	0.00003	0.00019	0.0003	0.000120	0.00098	0.003	< 0.00001
19-Jun-12	21																								
26-Jun-12	22	0.0052	0.004	0.00016	0.007	0.529	0.0980	0.02	0.00093	0.0001	< 0.009	2.42	0.00117	0.82	< 0.00001	0.33	0.228	6.61	0.00003	0.00035	0.0002	0.000124	0.00092	0.004	0.00001
3-Jul-12	23																								
10-Jul-12	24	< 0.0005	< 0.003	0.00007	0.007	0.546	0.103	0.01	0.00104	0.0002	< 0.009	2.27	0.00116	0.83	< 0.00001	0.36	0.240	7.31	< 0.00002	0.00021	0.0002	0.000104	0.00088	0.002	< 0.00001
17-Jul-12	25																								
24-Jul-12	26	0.0010	0.008	0.00013	0.007	0.503	0.0978	0.01	0.00109	0.0002	< 0.009	2.14	0.00096	0.78	< 0.00001	0.28	0.219	7.13	< 0.00002	0.00008	0.0002	0.000097	0.00081	0.002	< 0.00001
31-Jul-12	27																								
7-Aug-12	28	0.0026	0.004	0.00019	0.007	0.502	0.0936	< 0.01	0.00127	0.0001	< 0.009	2.08	0.00062	0.83	< 0.00001	0.27	0.217	7.53	0.00003	0.00069	0.0003	0.000083	0.00095	0.007	< 0.00001
14-Aug-12	29																								
21-Aug-12	30	0.0007	0.006	0.00008	0.007	0.464	0.106	< 0.01	0.00135	0.0004	< 0.009	1.79	0.00062	0.81	< 0.00001	0.25	0.203	7.24	0.00002	0.00024	0.0003	0.00011	0.00081	0.002	< 0.00001
28-Aug-12	31																								
4-Sep-12	32	0.0007	0.004	0.00010	0.006	0.351	0.0874	0.01	0.00111	0.0002	< 0.009	1.37	0.00044	0.52	< 0.00001	0.19	0.152	5.48	< 0.00002	0.00010	0.0005	0.000076	0.00089	0.003	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	< 0.0005	0.005	0.00010	0.007	0.447	0.117	< 0.01	0.00141	< 0.0001	< 0.009	1.69	0.00054	0.91	< 0.00001	0.22	0.190	6.66	< 0.00002	0.00018	0.0001	0.000155	0.00067	0.003	< 0.00001
25-Sep-12	35																								
2-Oct-12	36	< 0.0005	< 0.003	0.00010	0.005	0.337	0.0937	0.01	0.00114	0.0001	< 0.009	1.32	0.00037	0.67	< 0.00001	0.16	0.143	5.24	< 0.00002	0.00006	0.0002	0.000088	0.00054	0.002	< 0.00001
9-Oct-12	37																								
16-Oct-12	38	0.0005	< 0.003	0.00008	0.005	0.364	0.115	< 0.01	0.00106	0.0002	< 0.009	1.29	0.00044	0.71	< 0.00001	0.16	0.155	5.39	< 0.00002	0.00027	0.0002	0.000143	0.00059	0.003	< 0.00001
23-Oct-12	39																								
30-Oct-12	40	< 0.0005	0.005	0.00011	0.005	0.333	0.105	0.01	0.00108	0.0002	< 0.009	1.27	0.00033	0.67	0.00003	0.15	0.143	4.91	< 0.00002	0.00009	0.0002	0.000102	0.00061	0.001	< 0.00001
6-Nov-12	41																								
13-Nov-12	42	0.0005	< 0.003	0.00010	0.003	0.320	0.104	0.02	0.00081	0.0004	< 0.009	1.18	0.00061	0.51	< 0.00001	0.13	0.140	5.96	< 0.00002	0.00008	0.0010	0.000064	0.00070	0.002	< 0.00001
20-Nov-12	43																								
27-Nov-12	44	0.0007	0.005	0.00006	0.004	0.334	0.137	0.02	0.00088	0.0001	< 0.009	1.17	0.00060	0.70	< 0.00001	0.13	0.148	5.50	< 0.00002	0.00014	< 0.0001	0.000137	0.00045	0.003	< 0.00001
4-Dec-12	45																								
11-Dec-12	46	< 0.0005	< 0.003	0.00006	0.004	0.250	0.0901	< 0.01	0.00095	< 0.0001	< 0.009	1.06	0.00047	0.55	0.00002	0.11	0.116	4.07	< 0.00002	0.00008	< 0.0001	0.000086	0.00048	0.002	< 0.00001
18-Dec-12	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	0.0006	0.007	0.00012	0.004	0.255	0.0783	< 0.01	0.00079	0.0001	< 0.009	1.18	0.00048	0.55	0.00004	0.11	0.121	3.44	< 0.00002	0.00012	0.0001	0.000090	0.00042	0.002	< 0.00001
1-Jan-13	49																								
8-Jan-13	50	0.0006	0.004	0.00011	0.004	0.225	0.0822	< 0.01	0.00060	0.0001	< 0.009	1.08	0.00060	0.55	0.00002	0.12	0.108	4.10	< 0.00002	0.00008	0.0003	0.000065	0.00055	0.002	< 0.00001
15-Jan-13	51																								
22-Jan-13	52	0.0060	0.011	0.00017	0.004	0.251	0.0975	< 0.01	0.00063	0.0005	< 0.009	1.11	0.00077	0.53	0.00001	0.04	0.117	4.90	< 0.00002	0.00009	0.0004	0.000077	0.00055	0.003	< 0.00001
29-Jan-13	53																								
5-Feb-13	54	< 0.0005	< 0.003	0.00009	0.004	0.235	0.102	< 0.01	0.00077	0.0001	< 0.009	1.06	0.00072	0.52	< 0.00001	0.12	0.114	4.84	< 0.00002	0.00003	0.0001	0.000069	0.00038	0.001	< 0.00001
12-Feb-13	55																								
19-Feb-13	56	< 0.0005	0.005	0.00008	0.004	0.234	0.103	0.01	0.00082	0.0002	< 0.009	0.935	0.00055	0.41	< 0.00001	0.12	0.102	4.59	< 0.00002	0.00005	0.0002	0.000066	0.00039	0.002	< 0.00001
26-Feb-13	57																								
5-Mar-13	58	0.0014	0.004	0.00010	0.004	0.252	0.117	< 0.01	0.00098	0.0003	< 0.009	1.01	0.00053	0.67	< 0.00001	0.12	0.120	5.28	< 0.00002	0.00023	0.0002	0.000090	0.00031	0.003	< 0.00001
12-Mar-13	59																								
19-Mar-13	60	0.0008	< 0.003	0.00011	0.004	0.236	0.110	< 0.01	0.00075	0.0004	< 0.009	0.950	0.00069	0.56	< 0.00001	0.10	0.108	5.37	< 0.00002	0.00007	< 0.0001	0.000064	0.00032	0.002	< 0.00001
26-Mar-13	61																								
2-Apr-13	62	0.0007	0.006	0.00008	0.004	0.228	0.109	< 0.01	0.00073	0.0010	< 0.009	0.934	0.00057	0.50	< 0.00001	0.10	0.104	5.25	< 0.00002	0.00001	0.0002	0.000046	0.00028	0.002	< 0.00001
9-Apr-13	63																								
16-Apr-13	64	0.0008	0.008	0.00016	0.004	0.266	0.125	< 0.01	0.00073	0.0004	< 0.009	1.13	0.00068	0.64	< 0.00001	0.11	0.123	6.28	< 0.00002	0.00006	0.0001	0.000078	0.00028	0.003	< 0.00001
23-Apr-13	65																								
30-Apr-13	66	0.0006	0.005	0.00012	0.003	0.247	0.134	< 0.01	0.00062	0.0004	< 0.009	0.971	0.00096	0.54	< 0.00001	0.10	0.110	6.24	< 0.00002	0.00004	0.0002	0.000039	0.00026	0.003	< 0.00001
7-May-13	67																								
14-May-13	68	0.0010	0.016	0.00038	0.004	0.228	0.117	< 0.01	0.00059	0.0005	< 0.009	1.11	0.00077	0.70	0.00001	0.10	0.100	5.22	< 0.00002	0.00003	0.0007	0.000093	0.00040	0.004	0.00005
21-May-13	69																								
28-May-13	70	0.0006	0.005	0.00011	0.005	0.271	0.148	< 0.01	0.00061	0.0005	< 0.009	1.15	0.00081	0.52	< 0.00001	0.12	0.122	6.88	< 0.00002	0.00006	0.0001	0.000062	0.00020	0.002	0.00001
4-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	0.0008	0.004	0.00016	0.004	0.235	0.133	< 0.01	0.00053	0.0004	< 0.009	1.07	0.00096	0.52	< 0.00001	0.10	0.106	6.00	< 0.00002	0.00005	0.0001	0.000069	0.00023	0.003	< 0.00001
2-Jul-13	75																								
9-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	0.0008	0.015	0.00025	0.004	0.229	0.143	< 0.01	0.00039	0.0006	< 0.009	1.03	0.00083	0.53	< 0.00001	0.10	0.101	6.48	< 0.00002	0.00002	0.0005	0.000070	0.00024	0.003	0.00004
30-Jul-13	79																								
6-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L	Cu mg/L
24-Jan-12	0	500	430	7.68	321	460	#N/A	3.4	54.4	138	33.7	0.105	0.0162	0.0307	0.0237	< 0.00002	< 0.00001	0.0227	0.000010	11.7	< 0.0005	0.000106	0.0007
31-Jan-12	1	500	470	7.63	292	370	#N/A	3.0	29.6	124	26.4	0.130	0.0159	0.0729	0.0133	< 0.00002	< 0.00001	0.0223	0.000017	8.98	< 0.0005	0.000057	0.0009
7-Feb-12	2	500	475	7.52	324	262	#N/A	3.1	26.5	110	36.5	0.178	0.0133	0.0708	0.0125	< 0.00002	< 0.00001	0.0298	0.000030	12.8	< 0.0005	0.000120	0.0007
14-Feb-12	3	500	470	7.60	373	185	#N/A	3.2	23.9	56	26.1	0.115	0.0101	0.0799	0.0101	< 0.00002	< 0.00001	0.0171	0.000017	9.05	< 0.0005	0.000044	< 0.0005
21-Feb-12	4	500	470	7.45	348	150	#N/A	4.0	24.0	48	26.8	0.0739	0.0105	0.0745	0.00981	< 0.00002	< 0.00001	0.0172	0.000024	9.20	< 0.0005	0.000057	< 0.0005
28-Feb-12	5	500	460	7.44	392	118																	
6-Mar-12	6	500	450	7.46	370	124	#N/A	4.4	17.4	39	30.9	0.111	0.0076	0.0536	0.0126	< 0.00002	< 0.00001	0.0114	0.000021	10.6	< 0.0005	0.000069	< 0.0005
13-Mar-12	7	500	445	7.34	369	119																	
20-Mar-12	8	500	445	7.29	346	132	#N/A	3.5	15.6	48	41.2	0.0562	0.0076	0.0503	0.0144	< 0.00002	< 0.00001	0.0107	0.000038	14.2	< 0.0005	0.000114	< 0.0005
27-Mar-12	9	500	470	7.25	356	127																	
3-Apr-12	10	500	455	7.23	361	109	#N/A	2.6	13.5	38	38.0	0.0540	0.0062	0.0524	0.0110	< 0.00002	< 0.00001	0.0092	0.000020	13.2	< 0.0005	0.000088	0.0007
10-Apr-12	11	500	485	7.29	346	107																	
17-Apr-12	12	500	470	7.28	354	103	#N/A	2.9	12.3	36	35.7	0.0707	0.0060	0.0538	0.0105	< 0.00002	< 0.00001	0.0095	0.000028	12.3	< 0.0005	0.000120	< 0.0005
24-Apr-12	13	500	460	7.30	386	95																	
1-May-12	14	500	455	7.28	356	100	#N/A	4.1	12.7	41	36.3	0.0798	0.0061	0.0514	0.0117	< 0.00002	< 0.00001	0.0081	0.000022	12.5	< 0.0005	0.000127	< 0.0005
8-May-12	15	500	455	7.20	398	98																	
15-May-12	16	500	460	7.23	321	97	#N/A	3.0	10.6	30	34.9	0.0329	0.0061	0.0607	0.00902	< 0.00002	< 0.00001	0.0087	0.000018	11.9	< 0.0005	0.000116	< 0.0005
22-May-12	17	500	455	7.26	336	89																	
29-May-12	18	500	465	7.21	333	87	#N/A	2.7	10.6	26	33.3	0.0397	0.0057	0.0649	0.00756	< 0.00002	< 0.00001	0.0078	0.000049	11.3	< 0.0005	0.000152	< 0.0005
5-Jun-12	19	500	465	7.15	374	81																	
12-Jun-12	20	500	465	7.19	357	75	#N/A	3.1	10.1	24	29.9	0.0434	0.0059	0.0640	0.00844	< 0.00002	< 0.00001	0.0070	0.000045	10.1	< 0.0005	0.000147	< 0.0005
19-Jun-12	21	500	465	7.21	385	76																	
26-Jun-12	22	500	465	7.18	345	76	#N/A	3.2	11.4	24	30.9	0.0401	0.0058	0.0646	0.00802	< 0.00002	< 0.00001	0.0073	0.000040	10.6	< 0.0005	0.000150	< 0.0005
3-Jul-12	23	500	475	7.41	385	73																	
10-Jul-12	24	500	465	7.10	347	85	#N/A	3.5	9.5	29	31.3	0.0370	0.0060	0.0607	0.00887	< 0.00002	< 0.00001	0.0063	0.000096	10.6	< 0.0005	0.000164	< 0.0005
17-Jul-12	25	500	460	7.20	383	83																	
24-Jul-12	26	500	475	7.04	352	86	#N/A	2.1	9.0	22	32.7	0.0490	0.0059	0.0642	0.00966	< 0.00002	< 0.00001	0.0064	0.000093	11.1	< 0.0005	0.000208	< 0.0005
31-Jul-12	27	500	465	7.18	384	80																	
7-Aug-12	28	500	480	7.21	329	78	#N/A	2.5	8.4	23	32.7	0.0583	0.0054	0.0590	0.00841	< 0.00002	< 0.00001	0.0058	0.000096	11.1	< 0.0005	0.000168	< 0.0005
14-Aug-12	29	500	500	7.12	317	98																	
21-Aug-12	30	500	475	7.08	302	84	#N/A	2.7	9.8	26	35.3	0.0401	0.0066	0.0608	0.0081	< 0.00002	< 0.00001	0.0060	0.000130	12.1	< 0.0005	0.00021	< 0.0005
28-Aug-12	31	500	470	7.08	334	78																	
4-Sep-12	32	500	480	6.91	387	66	#N/A	3.1	7.6	19	26.6	0.0737	0.0040	0.0485	0.00659	< 0.00002	< 0.00001	0.0042	0.000108	9.08	< 0.0005	0.000154	0.0021
11-Sep-12	33	500	470	7.12	398	78																	
18-Sep-12	34	500	470	7.01	367	76	#N/A	2.5	9.9	28	29.8	0.0346	0.0051	0.0585	0.00747	< 0.00002	< 0.00001	0.0047	0.000116	10.1	< 0.0005	0.000176	< 0.0005
25-Sep-12	35	500	470	7.15	390	93																	
2-Oct-12	36	500	475	6.99	379	70	#N/A	2.8	8.8	21	28.7	0.0192	0.0047	0.0537	0.0069	< 0.00002	< 0.00001	0.0047	0.000131	9.75	< 0.0005	0.000282	< 0.0005
9-Oct-12	37	500	480	7.19	395	101																	
16-Oct-12	38	500	490	6.92	380	64	#N/A	2.1	8.3	21	26.2	0.0235	0.0040	0.0497	0.00637	< 0.00002	< 0.00001	0.0036	0.000124	8.92	< 0.0005	0.000188	0.0007
23-Oct-12	39	500	470	7.16	395	95																	
30-Oct-12	40	500	470	7.06	359	69	#N/A	2.9	10.8	23	30.8	0.0358	0.0048	0.0488	0.00725	< 0.00002	< 0.00001	0.0042	0.000149	10.5	< 0.0005	0.000194	< 0.0005
6-Nov-12	41	500	455	7.17	390	105																	
13-Nov-12	42	500	465	7.24	374	63	#N/A	4.5	8.3	23	29.2	0.0447	0.0037	0.0477	0.00832	< 0.00002	< 0.00001	0.0036	0.000144	10.1	< 0.0005	0.000258	< 0.0005
20-Nov-12	43	500	495	7.19	395	110																	
27-Nov-12	44	500	500	7.19	352	69	#N/A	4.2	11.1	22	29.4	0.0328	0.0043	0.0439	0.00781	< 0.00002	< 0.00001	0.0038	0.000464	10.1	< 0.0005	0.000254	< 0.0005
4-Dec-12	45	500	450	7.21	385	90																	
11-Dec-12	46	500	470	7.13	348	63	#N/A	2.5	9.1	17	29.2	0.0271	0.0061	0.0528	0.00786	< 0.00002	0.00003	0.0045	0.000134	10.2	< 0.0005	0.000185	0.0009
18-Dec-12	47	500	475	7.29	380	58																	

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/L	mg/L	CaCO3 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
25-Dec-12	48	500	460	7.39	380	61	#N/A	4.2	10.1	18	26.3	0.0184	0.0047	0.0553	0.00752	< 0.00002	< 0.00001	0.0040	0.000127	8.90	< 0.0005	0.000265	< 0.0005
1-Jan-13	49	500	460	7.34	380	95																	
8-Jan-13	50	500	460	7.43	291	57	#N/A	3.2	10.4	17	25.6	0.0765	0.0104	0.0569	0.00925	< 0.00002	< 0.00001	0.0042	0.000156	8.86	< 0.0005	0.000248	< 0.0005
15-Jan-13	51	500	465	7.31	375	65																	
22-Jan-13	52	500	465	7.20	318	75	#N/A	4.5	9.5	24	29.8	0.0252	0.0047	0.0748	0.0102	< 0.00002	< 0.00001	0.0053	0.000213	10.3	< 0.0005	0.000435	< 0.0005
29-Jan-13	53	500	445	7.25	390	68																	
5-Feb-13	54	500	460	7.19	386	82	#N/A	4.2	7.0	32	31.3	0.0233	0.0037	0.0825	0.0106	< 0.00002	< 0.00001	0.0023	0.000242	10.8	< 0.0005	0.000623	< 0.0005
12-Feb-13	55	500	455	7.40	388	72																	
19-Feb-13	56	500	465	7.21	403	74	#N/A	3.1	7.9	29	30.3	0.0158	0.0036	0.0892	0.00888	< 0.00002	< 0.00001	0.0034	0.000216	10.4	< 0.0005	0.000422	< 0.0005
26-Feb-13	57	500	450	7.29	408	69																	
5-Mar-13	58	500	445	7.41	407	80	#N/A	4.6	9.9	28	32.0	0.0162	0.0050	0.0718	0.0106	< 0.00002	< 0.00001	0.0042	0.000272	11.0	< 0.0005	0.000619	< 0.0005
12-Mar-13	59	500	465	7.37	385	85																	
19-Mar-13	60	500	470	7.39	358	81	#N/A	6.7	9.6	28	30.8	0.0462	0.0033	0.0885	0.0101	< 0.00002	< 0.00001	0.0041	0.000224	10.6	< 0.0005	0.000521	0.0005
26-Mar-13	61	500	455	7.44	400	68																	
2-Apr-13	62	500	445	7.32	379	79	#N/A	4.5	9.6	30	34.5	0.0294	0.0041	0.0742	0.00984	< 0.00002	< 0.00001	0.0050	0.000291	11.9	< 0.0005	0.000821	< 0.0005
9-Apr-13	63	500	455	7.31	416	81																	
16-Apr-13	64	500	450	7.42	372	73	#N/A	5.0	9.6	28	30.4	0.0409	0.0059	0.0859	0.00951	< 0.00002	< 0.00001	0.0042	0.000252	10.5	< 0.0005	0.000579	< 0.0005
23-Apr-13	65	500	450	7.42	391	82																	
30-Apr-13	66	500	455	7.31	396	74	#N/A	4.5	8.6	31	32.9	0.0386	0.0037	0.0760	0.00945	< 0.00002	< 0.00001	0.0048	0.000292	11.4	< 0.0005	0.000750	< 0.0005
7-May-13	67	500	455	7.33	480	75																	
14-May-13	68	500	455	7.28	415	59	#N/A	4.6	6.7	24	24.1	0.0330	0.0033	0.0669	0.00730	0.00002	< 0.00001	0.0037	0.000247	8.33	< 0.0005	0.000705	< 0.0005
21-May-13	69	500	455	7.27	422	75																	
28-May-13	70	500	465	7.35	409	78	#N/A	3.9	7.8	32	34.9	0.0057	0.0036	0.0765	0.00863	< 0.00002	< 0.00001	0.0053	0.000334	12.1	< 0.0005	0.000824	< 0.0005
4-Jun-13	71	500	455	7.38	425	80																	
11-Jun-13	72	500	465	7.46	400	74	#N/A	6.7	10.2	27													
18-Jun-13	73	500	450	7.19	414	79																	
25-Jun-13	74	500	450	7.14	389	79	#N/A	4.1	6.2	33	32.8	0.0048	0.0028	0.0851	0.00827	< 0.00002	< 0.00001	0.0054	0.000308	11.3	< 0.0005	0.000906	< 0.0005
2-Jul-13	75	500	450	7.30	405	79																	
9-Jul-13	76	500	465	7.27	337	79	#N/A	6.0	9.3	32													
16-Jul-13	77	500	455	7.14	416	77																	
23-Jul-13	78	500	450	7.30	420	72	#N/A	6.2	9.0	28	31.9	0.0217	0.0031	0.0799	0.00799	< 0.00002	< 0.00001	0.0057	0.000311	11.0	< 0.0005	0.000857	< 0.0005
30-Jul-13	79	500	440	7.05	420	71																	
6-Aug-13	80	500	450	7.45	379	81	#N/A	6.4	8.2	28													
13-Aug-13	81	500	455	7.01	427	84																	
20-Aug-13	82	500	495	7.05	409	79	#N/A	3.0	5.6	26													
27-Aug-13	83	500	450	7.05	423	76																	

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.004	0.00016	0.086	1.07	0.0693	< 0.01	0.00808	0.0007	< 0.009	8.17	0.0433	1.10	0.00001	71.0	0.629	56.8	0.00013	0.00003	0.0004	0.000795	0.00078	0.001	0.00003
31-Jan-12	1	0.006	0.00017	0.087	0.977	0.0289	< 0.01	0.00889	0.0005	< 0.009	5.09	0.0620	0.99	0.00002	56.6	0.537	60.0	0.00010	0.00090	0.0004	0.000702	0.00071	0.001	0.00002
7-Feb-12	2	0.010	0.00073	0.054	1.12	0.0551	< 0.01	0.00829	0.0007	< 0.009	4.51	0.0299	0.96	0.00001	37.2	0.567	32.8	0.00010	0.00035	0.0005	0.000639	0.00064	0.009	0.00005
14-Feb-12	3	< 0.003	0.00014	0.032	0.857	0.0281	< 0.01	0.00593	0.0003	< 0.009	3.19	0.0218	0.85	< 0.00001	22.5	0.487	19.9	0.00008	0.00020	0.0002	0.000486	0.00055	0.002	0.00001
21-Feb-12	4	< 0.003	0.00017	0.024	0.925	0.0418	0.01	0.00563	0.0003	< 0.009	3.37	0.01611	0.77	< 0.00001	16.2	0.473	15.6	0.00008	0.00015	0.0002	0.000486	0.00041	0.001	< 0.00001
28-Feb-12	5																							
6-Mar-12	6	0.020	0.00107	0.013	1.06	0.0419	< 0.01	0.00361	0.0002	< 0.009	3.46	0.0147	1.05	< 0.00001	8.36	0.530	13.3	0.00008	0.00002	0.0003	0.000371	0.00039	0.003	0.00001
13-Mar-12	7																							
20-Mar-12	8	0.008	0.00047	0.010	1.38	0.0842	< 0.01	0.00325	0.0002	< 0.009	3.48	0.01835	0.72	< 0.00001	5.33	0.668	14.6	0.00008	0.00017	0.0001	0.000319	0.00019	0.002	0.00002
27-Mar-12	9																							
3-Apr-12	10	< 0.003	0.00012	0.007	1.25	0.0779	< 0.01	0.00258	0.0003	< 0.009	2.86	0.0116	0.54	< 0.00001	3.17	0.558	12.7	0.00007	0.00006	< 0.0001	0.000240	0.00013	0.002	0.00002
10-Apr-12	11																							
17-Apr-12	12	0.004	0.00042	0.006	1.19	0.0859	0.01	0.00291	0.0004	< 0.009	2.44	0.00987	0.59	< 0.00001	2.04	0.502	11.0	0.00008	0.00007	0.0002	0.000221	0.00029	0.003	0.00002
24-Apr-12	13																							
1-May-12	14	0.008	0.00057	0.005	1.25	0.0953	0.01	0.00323	0.0003	< 0.009	2.60	0.00866	0.64	< 0.00001	1.57	0.496	10.8	0.00009	0.00006	0.0010	0.000177	0.00054	0.003	0.00003
8-May-12	15																							
15-May-12	16	< 0.003	0.00012	0.004	1.24	0.0793	< 0.01	0.00353	0.0003	< 0.009	2.36	0.0104	0.48	< 0.00001	1.25	0.471	10.2	0.00008	0.00002	< 0.0001	0.000138	0.00024	0.003	0.00001
22-May-12	17																							
29-May-12	18	< 0.003	0.00012	0.003	1.21	0.0856	< 0.01	0.00366	0.0002	< 0.009	1.99	0.00771	0.45	< 0.00001	0.84	0.424	9.57	0.00007	0.00013	< 0.0001	0.000134	0.00029	0.004	< 0.00001
5-Jun-12	19																							
12-Jun-12	20	< 0.003	0.00024	0.003	1.10	0.0773	< 0.01	0.00342	0.0003	< 0.009	1.85	0.00626	0.44	< 0.00001	0.66	0.374	7.96	0.00007	0.00004	0.0001	0.000117	0.00024	0.005	< 0.00001
19-Jun-12	21																							
26-Jun-12	22	< 0.003	0.00018	0.002	1.10	0.0868	0.01	0.00340	0.0002	< 0.009	1.75	0.00676	0.47	< 0.00001	0.57	0.386	8.47	0.00006	0.00008	< 0.0001	0.000127	0.00034	0.009	0.00003
3-Jul-12	23																							
10-Jul-12	24	< 0.003	0.00019	0.002	1.18	0.0865	0.02	0.00431	0.0003	< 0.009	1.72	0.00671	0.44	< 0.00001	0.48	0.382	8.96	0.00006	0.00012	0.0001	0.000090	0.00031	0.005	< 0.00001
17-Jul-12	25																							
24-Jul-12	26	< 0.003	0.00018	0.002	1.21	0.0918	0.02	0.00439	0.0003	< 0.009	1.55	0.00734	0.41	< 0.00001	0.43	0.381	9.48	0.00005	0.00008	0.0001	0.000096	0.00032	0.006	< 0.00001
31-Jul-12	27																							
7-Aug-12	28	< 0.003	0.00024	0.002	1.18	0.0835	< 0.01	0.00446	0.0001	< 0.009	1.53	0.00642	0.40	< 0.00001	0.32	0.356	9.66	0.00006	0.00016	0.0001	0.000070	0.00037	0.005	< 0.00001
14-Aug-12	29																							
21-Aug-12	30	0.003	0.00017	0.002	1.27	0.103	< 0.01	0.00493	0.0005	< 0.009	1.40	0.00634	0.42	< 0.00001	0.29	0.374	9.90	0.00006	0.00014	0.0001	0.00010	0.00024	0.008	< 0.00001
28-Aug-12	31																							
4-Sep-12	32	0.003	0.00026	0.001	0.952	0.0761	0.04	0.00367	0.0003	< 0.009	1.02	0.00475	0.26	< 0.00001	0.21	0.270	7.37	0.00005	0.00038	0.0002	0.000065	0.00051	0.008	0.00003
11-Sep-12	33																							
18-Sep-12	34	< 0.003	0.00020	0.001	1.10	0.0868	0.03	0.00424	< 0.0001	< 0.009	1.20	0.00535	0.36	< 0.00001	0.24	0.313	8.29	0.00004	0.00016	< 0.0001	0.000081	0.00021	0.007	< 0.00001
25-Sep-12	35																							
2-Oct-12	36	< 0.003	0.00021	< 0.001	1.05	0.0853	0.01	0.00403	0.0002	< 0.009	1.04	0.00534	0.35	< 0.00001	0.18	0.286	7.96	0.00005	0.00004	< 0.0001	0.000081	0.00014	0.008	< 0.00001
9-Oct-12	37																							
16-Oct-12	38	< 0.003	0.00024	< 0.001	0.969	0.0822	< 0.01	0.00365	0.0003	< 0.009	0.927	0.00531	0.30	< 0.00001	0.17	0.256	7.16	0.00004	0.00019	< 0.0001	0.000075	0.00021	0.009	< 0.00001
23-Oct-12	39																							
30-Oct-12	40	0.003	0.00021	< 0.001	1.11	0.0993	0.01	0.00414	0.0003	< 0.009	1.07	0.00418	0.38	< 0.00001	0.17	0.302	8.04	0.00003	0.00009	0.0002	0.000088	0.00021	0.009	< 0.00001
6-Nov-12	41																							
13-Nov-12	42	0.005	0.00097	< 0.001	0.953	0.0836	0.01	0.00291	0.0003	< 0.009	0.870	0.00497	0.33	0.00002	0.13	0.263	8.17	0.00005	0.00005	0.0002	0.000067	0.00019	0.014	0.00001
20-Nov-12	43																							
27-Nov-12	44	0.006	0.00054	< 0.001	1.02	0.102	< 0.01	0.00380	0.0003	< 0.009	0.866	0.00507	0.35	< 0.00001	0.14	0.272	7.28	0.00003	0.00007	< 0.0001	0.000112	0.00013	0.012	0.00001
4-Dec-12	45																							
11-Dec-12	46	< 0.003	0.00016	< 0.001	0.938	0.0774	< 0.01	0.00377	0.0001	< 0.009	1.03	0.00675	0.32	0.00001	0.19	0.250	6.88	0.00004	0.00033	0.0002	0.000082	0.00036	0.008	< 0.00001
18-Dec-12	47																							

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	< 0.003	0.00022	< 0.001	0.989	0.0738	< 0.01	0.00370	0.0003	0.020	0.930	0.00546	0.24	< 0.00001	0.12	0.252	8.03	0.00004	0.00012	< 0.0001	0.000074	< 0.00003	0.008	< 0.00001
1-Jan-13	49																							
8-Jan-13	50	0.006	0.00072	< 0.001	0.841	0.0716	< 0.01	0.00324	0.0002	0.015	1.06	0.00807	0.41	0.00001	0.18	0.216	5.70	0.00004	0.00008	0.0005	0.000125	0.00030	0.010	0.00003
15-Jan-13	51																							
22-Jan-13	52	0.004	0.00023	< 0.001	0.990	0.0953	< 0.01	0.00248	0.0007	< 0.009	0.967	0.0142	0.30	< 0.00001	0.07	0.253	8.53	0.00004	0.00009	0.0001	0.000079	0.00021	0.013	< 0.00001
29-Jan-13	53																							
5-Feb-13	54	0.006	0.00066	< 0.001	1.07	0.106	< 0.01	0.00229	0.0005	< 0.009	0.958	0.0188	0.24	< 0.00001	0.15	0.267	9.84	0.00004	0.00002	0.0001	0.000061	0.00006	0.016	< 0.00001
12-Feb-13	55																							
19-Feb-13	56	< 0.003	0.00020	< 0.001	1.06	0.0924	< 0.01	0.00268	0.0005	< 0.009	0.825	0.0190	0.17	< 0.00001	0.13	0.229	8.71	0.00003	0.00003	< 0.0001	0.000053	0.00009	0.011	0.00004
26-Feb-13	57																							
5-Mar-13	58	< 0.003	0.00032	< 0.001	1.12	0.108	< 0.01	0.00264	0.0006	< 0.009	0.979	0.0125	0.32	< 0.00001	0.15	0.256	9.48	0.00004	< 0.00001	0.0001	0.000071	< 0.00003	0.013	0.00002
12-Mar-13	59																							
19-Mar-13	60	0.009	0.00091	< 0.001	1.04	0.0930	< 0.01	0.00245	0.0006	< 0.009	0.848	0.0128	0.34	< 0.00001	0.10	0.222	9.21	0.00005	0.00005	0.0001	0.000057	0.00013	0.014	0.00002
26-Mar-13	61																							
2-Apr-13	62	0.007	0.00044	< 0.001	1.16	0.123	< 0.01	0.00282	0.0011	0.010	0.930	0.0121	0.36	< 0.00001	0.14	0.248	9.34	0.00005	0.00002	0.0001	0.000062	0.00006	0.018	0.00002
9-Apr-13	63																							
16-Apr-13	64	0.012	0.00103	< 0.001	1.03	0.0968	< 0.01	0.00272	0.0007	0.010	0.877	0.0123	0.38	< 0.00001	0.14	0.210	8.46	0.00004	0.00004	0.0002	0.000079	0.00013	0.016	0.00001
23-Apr-13	65																							
30-Apr-13	66	0.007	0.00060	< 0.001	1.06	0.121	< 0.01	0.00243	0.0008	< 0.009	0.820	0.0103	0.37	< 0.00001	0.11	0.215	8.97	0.00004	0.00002	0.0003	0.000032	0.00011	0.018	< 0.00001
7-May-13	67																							
14-May-13	68	0.011	0.00053	< 0.001	0.794	0.0849	< 0.01	0.00188	0.0006	< 0.009	0.694	0.00915	0.32	< 0.00001	0.10	0.153	6.93	0.00003	< 0.00001	0.0002	0.000069	0.00007	0.017	0.00004
21-May-13	69																							
28-May-13	70	< 0.003	0.00013	< 0.001	1.13	0.130	< 0.01	0.00205	0.0009	< 0.009	0.843	0.0118	0.29	< 0.00001	0.12	0.222	9.63	0.00004	0.00004	< 0.0001	0.000051	< 0.00003	0.020	< 0.00001
4-Jun-13	71																							
11-Jun-13	72																							
18-Jun-13	73																							
25-Jun-13	74	< 0.003	0.00035	< 0.001	1.12	0.118	< 0.01	0.00217	0.0006	0.009	0.753	0.0129	< 0.01	< 0.00001	0.11	0.207	9.70	0.00003	0.00004	< 0.0001	0.000045	0.00005	0.021	< 0.00001
2-Jul-13	75																							
9-Jul-13	76																							
16-Jul-13	77																							
23-Jul-13	78	0.005	0.00038	< 0.001	1.06	0.113	< 0.01	0.00205	0.0009	< 0.009	0.727	0.0114	0.32	< 0.00001	0.10	0.187	9.35	0.00003	0.00003	< 0.0001	0.000048	0.00007	0.020	0.00001
30-Jul-13	79																							
6-Aug-13	80																							
13-Aug-13	81																							
20-Aug-13	82																							
27-Aug-13	83																							

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jan-12	0	500	420	8.21	292	199	#N/A	2.1	59.1	41	11.7	0.223	0.0455	0.0339	0.00828	< 0.00002	< 0.00001	0.0337	< 0.000003	3.80	0.0005	0.000037
31-Jan-12	1	500	485	7.89	274	189	#N/A	2.3	44.5	54	17.7	0.197	0.0384	0.0368	0.0116	< 0.00002	< 0.00001	0.0349	< 0.000003	5.80	< 0.0005	0.000078
7-Feb-12	2	500	445	7.81	311	162	#N/A	2.6	35.0	52	22.6	0.195	0.0187	0.0219	0.00932	< 0.00002	< 0.00001	0.0297	0.000005	7.32	< 0.0005	0.000091
14-Feb-12	3	500	460	7.78	359	139	#N/A	3.2	29.1	42	23.8	0.120	0.0162	0.0205	0.00879	< 0.00002	< 0.00001	0.0272	0.000005	7.66	< 0.0005	0.000072
21-Feb-12	4	500	455	7.67	338	116	#N/A	3.9	30.4	30	24.2	0.0973	0.0145	0.0168	0.00875	< 0.00002	< 0.00001	0.0271	0.000003	7.80	< 0.0005	0.000058
28-Feb-12	5	500	465	7.71	380	98																
6-Mar-12	6	500	435	7.70	357	92	#N/A	4.6	26.8	21	23.2	0.113	0.0101	0.0128	0.00853	< 0.00002	< 0.00001	0.0216	0.000008	7.46	< 0.0005	0.000071
13-Mar-12	7	500	440	7.65	354	84																
20-Mar-12	8	500	435	7.60	324	80	#N/A	3.0	23.2	19	25.2	0.107	0.0094	0.0115	0.0106	< 0.00002	< 0.00001	0.0199	0.000010	8.14	< 0.0005	0.000114
27-Mar-12	9	500	460	7.58	331	78																
3-Apr-12	10	500	445	7.55	347	67	#N/A	2.4	21.9	14	23.7	0.0905	0.0091	0.0108	0.00901	< 0.00002	< 0.00001	0.0180	< 0.000003	7.65	< 0.0005	0.000054
10-Apr-12	11	500	440	7.56	329	67																
17-Apr-12	12	500	450	7.58	337	70	#N/A	2.3	21.0	15	23.9	0.146	0.0093	0.0101	0.0108	< 0.00002	< 0.00001	0.0200	< 0.000003	7.69	< 0.0005	0.000107
24-Apr-12	13	500	440	7.68	360	63																
1-May-12	14	500	455	7.64	339	62	#N/A	3.5	18.2	15	24.1	0.0821	0.0072	0.0087	0.00797	< 0.00002	< 0.00001	0.0150	< 0.000003	7.87	< 0.0005	0.000072
8-May-12	15	500	455	7.51	383	60																
15-May-12	16	500	451	7.52	302	61	#N/A	2.6	17.6	10	22.5	0.0613	0.0077	0.0091	0.00875	< 0.00002	< 0.00001	0.0163	< 0.000003	7.28	< 0.0005	0.000067
22-May-12	17	500	460	7.46	328	59																
29-May-12	18	500	465	7.46	320	59	#N/A	2.5	17.0	10	23.4	0.0665	0.0065	0.0082	0.00810	< 0.00002	< 0.00001	0.0144	< 0.000003	7.59	< 0.0005	0.000078
5-Jun-12	19	500	465	7.39	368	60																
12-Jun-12	20	500	470	7.48	345	57	#N/A	2.9	16.9	12	23.6	0.0725	0.0065	0.0081	0.00921	< 0.00002	< 0.00001	0.0126	< 0.000003	7.65	< 0.0005	0.000080
19-Jun-12	21	500	455	7.50	370	56																
26-Jun-12	22	500	460	7.42	333	54	#N/A	3.0	16.9	10	22.6	0.0575	0.0054	0.0078	0.00802	< 0.00002	< 0.00001	0.0126	< 0.000003	7.39	< 0.0005	0.000082
3-Jul-12	23	500	475	7.57	377	54																
10-Jul-12	24	500	470	7.39	330	61	#N/A	3.2	16.3	12	23.5	0.0568	0.0057	0.0070	0.00945	< 0.00002	< 0.00001	0.0120	0.000008	7.68	< 0.0005	0.000088
17-Jul-12	25	500	470	7.44	370	61																
24-Jul-12	26	500	455	7.29	341	60	#N/A	2.2	15.6	9	24.1	0.0751	0.0048	0.0072	0.0113	< 0.00002	< 0.00001	0.0106	0.000009	7.91	< 0.0005	0.000085
31-Jul-12	27	500	480	7.47	367	58																
7-Aug-12	28	500	480	7.49	315	55	#N/A	2.5	14.9	11	23.8	0.0904	0.0044	0.0068	0.00825	< 0.00002	< 0.00001	0.0136	< 0.000003	7.83	< 0.0005	0.000081
14-Aug-12	29	500	470	7.32	311	62																
21-Aug-12	30	500	475	7.32	296	62	#N/A	2.6	14.9	13	25.8	0.0632	0.0051	0.0059	0.0080	< 0.00002	< 0.00001	0.0107	0.000013	8.34	0.0005	0.00009
28-Aug-12	31	500	475	7.34	328	56																
4-Sep-12	32	500	480	7.22	378	48	#N/A	3.1	13.7	10	19.7	0.0711	0.0032	0.0052	0.00674	< 0.00002	< 0.00001	0.0077	0.000006	6.40	< 0.0005	0.000073
11-Sep-12	33	500	475	7.42	378	59																
18-Sep-12	34	500	465	7.31	350	57	#N/A	2.1	16.7	14	23.3	0.0532	0.0040	0.0066	0.00744	< 0.00002	< 0.00001	0.0090	0.000007	7.46	< 0.0005	0.000061
25-Sep-12	35	500	475	7.31	410	63																
2-Oct-12	36	500	480	7.30	372	52	#N/A	2.5	15.3	9	21.9	0.0317	0.0036	0.0054	0.0069	< 0.00002	< 0.00001	0.0086	0.000006	6.96	< 0.0005	0.000155
9-Oct-12	37	500	480	7.17	420	67																
16-Oct-12	38	500	480	7.24	375	49	#N/A	2.5	15.1	10	20.4	0.0360	0.0030	0.0052	0.00661	< 0.00002	< 0.00001	0.0068	0.000008	6.46	< 0.0005	0.000067
23-Oct-12	39	500	480	7.32	415	65																
30-Oct-12	40	500	470	7.31	351	54	#N/A	2.8	17.2	11	24.3	0.0618	0.0036	0.0054	0.00783	< 0.00002	< 0.00001	0.0071	0.000012	7.74	< 0.0005	0.000058
6-Nov-12	41	500	455	7.31	420	70																
13-Nov-12	42	500	460	7.53	364	48	#N/A	4.3	15.8	8	22.2	0.0323	0.0027	0.0056	0.00683	< 0.00002	< 0.00001	0.0059	0.000014	7.14	< 0.0005	0.000066
20-Nov-12	43	500	490	7.32	435	105																
27-Nov-12	44	500	490	7.43	342	58	#N/A	4.1	21.1	10	26.8	0.0285	0.0034	0.0051	0.00734	< 0.00002	< 0.00001	0.0063	0.000013	8.54	< 0.0005	0.000083
4-Dec-12	45	500	465	7.33	430	95																
11-Dec-12	46	500	470	7.43	334	51	#N/A	2.3	15.8	5	22.3	0.0196	0.0032	0.0051	0.00681	< 0.00002	< 0.00001	0.0073	0.000014	7.12	< 0.0005	0.000071
18-Dec-12	47	500	485	7.46	369	53																

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
25-Dec-12	48	500	455	7.61	370	52	#N/A	3.6	17.0	10	23.9	0.0326	0.0033	0.0058	0.00747	< 0.00002	< 0.00001	0.0068	0.000015	7.43	< 0.0005	0.000120
1-Jan-13	49	500	440	7.31	435	90																
8-Jan-13	50	500	455	7.59	289	48	#N/A	2.9	16.0	9	24.8	0.105	0.0039	0.0052	0.00898	< 0.00002	< 0.00001	0.0055	0.000017	8.14	< 0.0005	0.000087
15-Jan-13	51	500	445	7.32	420	85																
22-Jan-13	52	500	465	7.49	307	54	#N/A	4.1	17.1	10	21.3	0.0439	0.0029	0.0048	0.00756	< 0.00002	< 0.00001	0.0052	0.000016	6.81	< 0.0005	0.000061
29-Jan-13	53	500	455	7.48	380	52																
5-Feb-13	54	500	460	7.54	364	55	#N/A	3.5	13.1	15	22.9	0.0444	0.0026	0.0044	0.00834	< 0.00002	< 0.00001	0.0037	0.000015	7.14	< 0.0005	0.000181
12-Feb-13	55	500	460	7.59	376	56																
19-Feb-13	56	500	460	7.45	388	55	#N/A	2.8	14.5	14	24.2	0.0309	0.0024	0.0049	0.00756	< 0.00002	< 0.00001	0.0044	0.000013	7.59	< 0.0005	0.000099
26-Feb-13	57	500	470	7.51	391	62																
5-Mar-13	58	500	445	7.60	392	63	#N/A	4.8	16.1	15	26.3	0.0503	0.0029	0.0046	0.00896	< 0.00002	< 0.00001	0.0053	0.000014	8.31	< 0.0005	0.000187
12-Mar-13	59	500	465	7.41	370	75																
19-Mar-13	60	500	455	7.58	346	60	#N/A	6.1	15.3	14	24.5	0.0287	0.0024	0.0043	0.00724	< 0.00002	< 0.00001	0.0053	0.000017	7.68	< 0.0005	0.000071
26-Mar-13	61	500	445	7.59	397	59																
2-Apr-13	62	500	445	7.57	365	59	#N/A	4.3	14.0	13	26.5	0.0842	0.0024	0.0049	0.00843	< 0.00002	< 0.00001	0.0061	0.000005	8.35	< 0.0005	0.000280
9-Apr-13	63	500	455	7.57	393	61																
16-Apr-13	64	500	445	7.63	365	59	#N/A	4.4	14.5	16	25.6	0.0294	0.0027	0.0051	0.00714	< 0.00002	< 0.00001	0.0052	0.000015	8.09	< 0.0005	0.000083
23-Apr-13	65	500	440	7.66	375	63																
30-Apr-13	66	500	455	7.57	374	58	#N/A	4.2	14.3	17	26.1	0.0301	0.0024	0.0046	0.00676	< 0.00002	< 0.00001	0.0059	0.000010	8.25	< 0.0005	0.000064
7-May-13	67	500	445	7.61	475	60																
14-May-13	68	500	440	7.61	391	50	#N/A	3.8	13.4	14	21.8	0.0295	0.0032	0.0050	0.00522	< 0.00002	< 0.00001	0.0045	0.000006	6.67	< 0.0005	0.000164
21-May-13	69	500	450	7.60	397	53																
28-May-13	70	500	455	7.62	398	52	#N/A	3.5	14.5	12	23.7	0.0364	0.0026	0.0038	0.00621	< 0.00002	< 0.00001	0.0058	0.000013	7.53	< 0.0005	0.000054
4-Jun-13	71	500	440	7.59	408	51																
11-Jun-13	72	500	450	7.67	388	53	#N/A	6.9	17.6	12												
18-Jun-13	73	500	440	7.51	404	50																
25-Jun-13	74	500	435	7.51	386	50	#N/A	4.3	13.6	9	22.2	0.0593	0.0025	0.0041	0.00654	< 0.00002	< 0.00001	0.0064	0.000017	6.93	< 0.0005	0.000109
2-Jul-13	75	500	440	7.54	390	51																
9-Jul-13	76	500	450	7.56	328	53	#N/A	6.4	17.0	14												
16-Jul-13	77	500	440	7.32	409	52																
23-Jul-13	78	500	440	7.55	399	50	#N/A	6.3	15.0	12	21.5	0.0366	0.0022	0.0037	0.00520	< 0.00002	< 0.00001	0.0059	0.000006	6.67	< 0.0005	0.000053
30-Jul-13	79	500	430	7.38	398	49																
6-Aug-13	80	500	460	7.70	362	51	#N/A	6.4	15.2	7												
13-Aug-13	81	500	445	7.29	407	47																
20-Aug-13	82	500	440	7.45	388	48	#N/A	2.7	11.8	8												
27-Aug-13	83	500	435	7.49	392	43																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0006	0.005	< 0.00002	0.039	0.535	0.0055	0.01	0.00106	0.0004	< 0.009	8.47	0.00105	1.60	< 0.00001	29.3	0.207	16.0	0.00011	0.00004	0.0004	0.000155	0.00378	0.001	0.00002
31-Jan-12	1	< 0.0005	0.010	0.00004	0.040	0.792	0.0262	0.01	0.00176	0.0003	< 0.009	6.35	0.00180	1.65	0.00012	25.3	0.301	19.1	0.00011	0.00070	0.0005	0.000559	0.00259	< 0.001	0.00002
7-Feb-12	2	< 0.0005	0.006	0.00004	0.029	1.04	0.0292	< 0.01	0.00099	0.0004	< 0.009	5.69	0.00087	1.22	0.00010	20.5	0.396	15.3	0.00010	0.00043	0.0005	0.000452	0.00175	0.001	0.00006
14-Feb-12	3	< 0.0005	< 0.003	< 0.00002	0.023	1.12	0.0373	< 0.01	0.00085	0.0004	< 0.009	4.70	0.00056	1.02	0.00003	14.5	0.428	12.3	0.00009	0.00038	0.0003	0.000538	0.00142	0.001	< 0.00001
21-Feb-12	4	< 0.0005	< 0.003	< 0.00002	0.018	1.14	0.0482	< 0.01	0.00082	0.0003	< 0.009	4.81	0.00052	0.95	0.00004	9.80	0.418	9.73	0.00009	0.00027	0.0001	0.000542	0.00110	< 0.001	< 0.00001
28-Feb-12	5																								
6-Mar-12	6	0.0005	0.009	0.00002	0.010	1.12	0.0370	< 0.01	0.00070	0.0003	< 0.009	4.24	0.00027	1.04	0.00010	5.21	0.408	7.23	0.00007	0.00012	0.0002	0.000373	0.00113	0.001	< 0.00001
13-Mar-12	7																								
20-Mar-12	8	< 0.0005	0.008	0.00003	0.008	1.20	0.0550	0.01	0.00073	0.0001	< 0.009	4.02	0.00037	0.99	0.00010	3.01	0.427	6.00	0.00006	0.00021	0.0002	0.000307	0.00098	< 0.001	0.00002
27-Mar-12	9																								
3-Apr-12	10	< 0.0005	< 0.003	< 0.00002	0.006	1.12	0.0389	< 0.01	0.00054	0.0002	< 0.009	3.71	0.00013	0.81	0.00004	1.85	0.396	5.13	0.00006	0.00008	< 0.0001	0.000287	0.00079	0.002	< 0.00001
10-Apr-12	11																								
17-Apr-12	12	< 0.0005	0.005	0.00004	0.005	1.13	0.0520	0.03	0.00068	0.0003	< 0.009	3.54	0.00030	0.91	0.00009	1.19	0.394	4.77	0.00006	0.00010	0.0005	0.000314	0.00107	0.001	0.00001
24-Apr-12	13																								
1-May-12	14	< 0.0005	< 0.003	0.00003	0.004	1.07	0.0517	0.07	0.00064	0.0002	< 0.009	3.00	0.00005	0.67	0.00005	0.84	0.362	4.23	0.00006	0.00009	0.0002	0.000260	0.00093	0.001	0.00001
8-May-12	15																								
15-May-12	16	< 0.0005	< 0.003	< 0.00002	0.004	1.05	0.0539	0.01	0.00074	0.0002	< 0.009	2.86	< 0.00004	0.71	0.00007	0.63	0.346	4.04	0.00006	0.00010	0.0001	0.000289	0.00089	0.002	< 0.00001
22-May-12	17																								
29-May-12	18	< 0.0005	< 0.003	< 0.00002	0.003	1.07	0.0618	< 0.01	0.00077	< 0.0001	< 0.009	2.45	< 0.00004	0.62	0.00009	0.45	0.339	4.22	0.00005	0.00016	0.0004	0.000308	0.00080	0.001	< 0.00001
5-Jun-12	19																								
12-Jun-12	20	< 0.0005	0.004	< 0.00002	0.003	1.08	0.0605	< 0.01	0.00073	0.0002	< 0.009	2.44	0.00013	0.68	0.00010	0.38	0.338	3.91	0.00004	0.00004	0.0001	0.000280	0.00084	< 0.001	0.00001
19-Jun-12	21																								
26-Jun-12	22	< 0.0005	< 0.003	< 0.00002	0.002	1.01	0.0575	0.02	0.00065	< 0.0001	< 0.009	2.17	< 0.00004	0.58	0.00007	0.34	0.324	4.06	0.00004	0.00017	0.0002	0.000270	0.00079	0.002	< 0.00001
3-Jul-12	23																								
10-Jul-12	24	< 0.0005	< 0.003	< 0.00002	0.002	1.06	0.0566	0.01	0.00070	0.0002	< 0.009	2.15	0.00011	0.61	0.00008	0.29	0.334	4.33	0.00004	0.00017	0.0002	0.000249	0.00070	0.001	0.00002
17-Jul-12	25																								
24-Jul-12	26	0.0008	< 0.003	< 0.00002	0.002	1.06	0.0507	0.01	0.00063	0.0002	< 0.009	1.96	0.00024	0.59	0.00007	0.26	0.332	4.56	0.00003	0.00008	0.0002	0.000203	0.00075	0.001	< 0.00001
31-Jul-12	27																								
7-Aug-12	28	0.0006	< 0.003	0.00004	0.002	1.04	0.0460	< 0.01	0.00075	< 0.0001	< 0.009	1.87	0.00010	0.55	0.00007	0.22	0.310	4.62	0.00004	0.00028	0.0002	0.000193	0.00072	0.002	< 0.00001
14-Aug-12	29																								
21-Aug-12	30	< 0.0005	0.024	< 0.00002	0.002	1.20	0.0513	< 0.01	0.00090	0.0005	< 0.009	1.75	0.00011	0.54	0.00007	0.23	0.339	5.24	0.00004	0.00019	0.0003	0.00025	0.00062	0.001	< 0.00001
28-Aug-12	31																								
4-Sep-12	32	< 0.0005	< 0.003	< 0.00002	0.002	0.896	0.0397	0.01	0.00062	0.0003	< 0.009	1.31	0.00010	0.34	0.00008	0.15	0.245	3.48	0.00003	0.00010	0.0001	0.000208	0.00063	< 0.001	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	< 0.0005	< 0.003	< 0.00002	0.002	1.12	0.0426	< 0.01	0.00071	< 0.0001	< 0.009	1.60	0.00011	0.51	0.00007	0.18	0.295	4.12	0.00003	0.00012	< 0.0001	0.000222	0.00055	0.001	< 0.00001
25-Sep-12	35																								
2-Oct-12	36	< 0.0005	< 0.003	0.00003	0.001	1.09	0.0391	< 0.01	0.00072	< 0.0001	< 0.009	1.38	0.00019	0.46	0.00006	0.13	0.270	3.92	0.00003	0.00006	0.0001	0.000255	0.00039	< 0.001	< 0.00001
9-Oct-12	37																								
16-Oct-12	38	< 0.0005	< 0.003	< 0.00002	0.001	1.04	0.0353	0.01	0.00055	0.0001	< 0.009	1.24	0.00006	0.39	0.00006	0.12	0.247	3.50	0.00003	0.00023	< 0.0001	0.000245	0.00044	< 0.001	< 0.00001
23-Oct-12	39																								
30-Oct-12	40	< 0.0005	< 0.003	< 0.00002	0.001	1.21	0.0410	0.01	0.00063	0.0001	< 0.009	1.39	0.00006	0.48	0.00004	0.13	0.299	4.14	0.00002	0.00014	0.0002	0.000232	0.00053	< 0.001	< 0.00001
6-Nov-12	41																								
13-Nov-12	42	< 0.0005	< 0.003	< 0.00002	< 0.001	1.07	0.0414	0.02	0.00052	< 0.0001	< 0.009	1.11	0.00006	0.39	0.00009	0.11	0.248	3.88	0.00003	0.00008	0.0003	0.000181	0.00037	< 0.001	< 0.00001
20-Nov-12	43																								
27-Nov-12	44	< 0.0005	< 0.003	< 0.00002	0.001	1.34	0.0317	< 0.01	0.00057	< 0.0001	< 0.009	1.24	0.00010	0.47	0.00006	0.11	0.304	4.26	< 0.00002	0.00023	< 0.0001	0.000324	0.00031	0.002	< 0.00001
4-Dec-12	45																								
11-Dec-12	46	0.0006	< 0.003	0.00013	0.001	1.09	0.0330	< 0.01	0.00151	0.0001	< 0.009	1.07	0.00007	0.92	0.00001	0.15	0.244	3.81	0.00002	0.00005	< 0.0001	0.000202	0.00020	< 0.001	< 0.00001
18-Dec-12	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	< 0.0005	< 0.003	< 0.00002	< 0.001	1.30	0.0336	< 0.01	0.00059	0.0001	< 0.009	1.13	0.00007	0.31	0.00007	0.09	0.282	5.85	< 0.00002	0.00013	< 0.0001	0.000186	0.00022	< 0.001	< 0.00001
1-Jan-13	49																								
8-Jan-13	50	< 0.0005	0.005	0.00003	< 0.001	1.08	0.0417	< 0.01	0.00046	< 0.0001	< 0.009	1.20	0.00011	0.44	0.00012	0.10	0.249	3.65	0.00003	0.00006	0.0006	0.000156	0.00051	0.001	0.00002
15-Jan-13	51																								
22-Jan-13	52	< 0.0005	< 0.003	< 0.00002	< 0.001	1.05	0.0364	< 0.01	0.00035	0.0002	0.013	0.969	0.00009	0.31	0.00006	0.01	0.220	3.77	0.00002	0.00006	0.0001	0.000160	0.00036	< 0.001	< 0.00001
29-Jan-13	53																								
5-Feb-13	54	< 0.0005	0.004	< 0.00002	< 0.001	1.22	0.0361	< 0.01	0.00037	< 0.0001	< 0.009	1.01	0.00010	0.26	0.00008	0.08	0.240	4.76	0.00002	0.00003	0.0001	0.000159	0.00023	< 0.001	< 0.00001
12-Feb-13	55																								
19-Feb-13	56	< 0.0005	< 0.003	< 0.00002	< 0.001	1.28	0.0325	< 0.01	0.00043	0.0001	< 0.009	0.912	0.00012	0.18	0.00003	0.09	0.234	4.94	< 0.00002	0.00004	< 0.0001	0.000151	0.00025	< 0.001	< 0.00001
26-Feb-13	57																								
5-Mar-13	58	< 0.0005	0.003	< 0.00002	< 0.001	1.34	0.0318	< 0.01	0.00044	0.0002	< 0.009	1.01	0.00009	0.35	0.00006	0.10	0.265	5.47	0.00003	0.00001	0.0002	0.000168	0.00021	< 0.001	< 0.00001
12-Mar-13	59																								
19-Mar-13	60	< 0.0005	< 0.003	0.00002	< 0.001	1.30	0.0320	< 0.01	0.00040	0.0001	< 0.009	0.903	0.00009	0.32	0.00003	0.08	0.224	4.97	0.00003	0.00007	< 0.0001	0.000141	0.00022	< 0.001	< 0.00001
26-Mar-13	61																								
2-Apr-13	62	< 0.0005	0.006	< 0.00002	< 0.001	1.36	0.0294	< 0.01	0.00046	0.0006	0.010	0.962	< 0.00004	0.39	0.00007	0.08	0.241	5.26	0.00002	0.00001	0.0004	0.000127	0.00024	< 0.001	0.00004
9-Apr-13	63																								
16-Apr-13	64	< 0.0005	< 0.003	0.00004	< 0.001	1.31	0.0295	< 0.01	0.00048	0.0002	0.016	0.861	< 0.00004	0.33	0.00002	0.08	0.219	5.18	0.00002	0.00005	< 0.0001	0.000136	0.00022	< 0.001	< 0.00001
23-Apr-13	65																								
30-Apr-13	66	< 0.0005	< 0.003	< 0.00002	< 0.001	1.32	0.0317	0.03	0.00042	0.0001	< 0.009	0.821	0.00004	0.32	0.00002	0.07	0.214	4.96	< 0.00002	0.00004	0.0001	0.000092	0.00021	< 0.001	< 0.00001
7-May-13	67																								
14-May-13	68	< 0.0005	< 0.003	< 0.00002	< 0.001	1.25	0.0211	< 0.01	0.00047	0.0001	< 0.009	0.795	0.00008	0.32	0.00003	0.10	0.174	4.15	< 0.00002	< 0.00001	< 0.0001	0.000122	0.00016	< 0.001	< 0.00001
21-May-13	69																								
28-May-13	70	< 0.0005	0.004	< 0.00002	< 0.001	1.20	0.0338	< 0.01	0.00040	0.0001	< 0.009	0.858	0.00010	0.29	0.00003	0.09	0.185	4.10	< 0.00002	0.00003	< 0.0001	0.000104	0.00016	< 0.001	0.00001
4-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	0.0007	0.003	0.00029	< 0.001	1.19	0.0303	< 0.01	0.00034	0.0003	< 0.009	0.842	0.00013	< 0.01	0.00006	0.08	0.172	3.93	0.00002	0.00007	0.0002	0.000096	0.00021	0.001	< 0.00001
2-Jul-13	75																								
9-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	< 0.0005	< 0.003	< 0.00002	< 0.001	1.18	0.0234	< 0.01	0.00028	0.0001	< 0.009	0.743	0.00008	0.29	0.00003	0.07	0.158	3.95	< 0.00002	0.00001	< 0.0001	0.000097	0.00018	< 0.001	< 0.00001
30-Jul-13	79																								
6-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jan-12	0	500	425	8.20	293	186	#N/A	2.1	52.9	40	11.2	0.234	0.0228	0.0244	0.00608	< 0.00002	< 0.00001	0.0303	0.000003	3.90	< 0.0005	0.000045
31-Jan-12	1	500	480	7.91	268	187	#N/A	2.4	42.5	47	15.3	0.177	0.0436	0.0393	0.00780	< 0.00002	< 0.00001	0.0345	< 0.000003	5.35	< 0.0005	0.000067
7-Feb-12	2	500	460	7.90	303	129	#N/A	2.9	38.5	34	16.3	0.157	0.0277	0.0404	0.00602	< 0.00002	< 0.00001	0.0304	< 0.000003	5.70	< 0.0005	0.000059
14-Feb-12	3	500	485	7.81	355	110	#N/A	3.5	33.3	25	19.6	0.117	0.0256	0.0419	0.00977	< 0.00002	< 0.00001	0.0272	0.000003	6.82	< 0.0005	0.000090
21-Feb-12	4	500	465	7.71	335	94	#N/A	3.6	30.8	19	21.9	0.101	0.0191	0.0383	0.0105	< 0.00002	< 0.00001	0.0232	0.000007	7.65	< 0.0005	0.000101
28-Feb-12	5	500	520	7.74	373	79																
6-Mar-12	6	500	450	7.74	351	70	#N/A	4.2	26.3	12	22.6	0.186	0.0100	0.0277	0.0110	< 0.00002	< 0.00001	0.0134	0.000004	7.96	< 0.0005	0.000133
13-Mar-12	7	500	440	7.61	354	73																
20-Mar-12	8	500	470	7.55	331	80	#N/A	3.0	22.8	20	29.8	0.0859	0.0105	0.0227	0.0124	< 0.00002	< 0.00001	0.0131	0.000011	10.6	< 0.0005	0.000220
27-Mar-12	9	500	465	7.54	332	75																
3-Apr-12	10	500	500	7.50	351	67	#N/A	2.3	21.8	14	26.9	0.117	0.0086	0.0200	0.0112	< 0.00002	< 0.00001	0.0108	< 0.000003	9.63	< 0.0005	0.000219
10-Apr-12	11	500	470	7.52	331	66																
17-Apr-12	12	500	450	7.56	341	68	#N/A	2.4	20.8	16	27.1	0.169	0.0085	0.0205	0.00986	< 0.00002	< 0.00001	0.0127	< 0.000003	9.66	< 0.0005	0.000145
24-Apr-12	13	500	440	7.72	358	75																
1-May-12	14	500	485	7.56	343	78	#N/A	4.1	20.2	23	31.5	0.0698	0.0091	0.0185	0.00874	< 0.00002	< 0.00001	0.0107	< 0.000003	11.2	< 0.0005	0.000173
8-May-12	15	500	480	7.53	380	74																
15-May-12	16	500	485	7.53	307	71	#N/A	2.7	21.3	11	29.5	0.0675	0.0105	0.0199	0.00863	< 0.00002	< 0.00001	0.0133	< 0.000003	10.5	< 0.0005	0.000129
22-May-12	17	500	480	7.51	328	67																
29-May-12	18	500	490	7.48	326	65	#N/A	2.5	17.8	11	28.3	0.107	0.0093	0.0174	0.00904	< 0.00002	< 0.00001	0.0109	< 0.000003	10.1	< 0.0005	0.000224
5-Jun-12	19	500	495	7.44	367	64																
12-Jun-12	20	500	485	7.46	344	59	#N/A	2.8	17.1	14	26.8	0.0812	0.0085	0.0161	0.00864	< 0.00002	< 0.00001	0.0090	< 0.000003	9.61	< 0.0005	0.000155
19-Jun-12	21	500	490	7.48	374	60																
26-Jun-12	22	500	485	7.45	336	61	#N/A	3.0	17.8	13	27.6	0.0571	0.0084	0.0162	0.00848	< 0.00002	< 0.00001	0.0088	< 0.000003	9.95	< 0.0005	0.000184
3-Jul-12	23	500	500	7.58	380	63																
10-Jul-12	24	500	500	7.39	334	65	#N/A	3.4	17.5	13	26.9	0.0627	0.0083	0.0138	0.00836	< 0.00002	< 0.00001	0.0078	0.000004	9.71	< 0.0005	0.000199
17-Jul-12	25	500	480	7.43	372	63																
24-Jul-12	26	500	500	7.32	346	68	#N/A	2.2	16.4	12	28.9	0.0774	0.0084	0.0136	0.00908	< 0.00002	< 0.00001	0.0080	0.000012	10.4	< 0.0005	0.000270
31-Jul-12	27	500	465	7.36	376	59																
7-Aug-12	28	500	515	7.48	323	62	#N/A	2.6	15.6	12	28.6	0.0711	0.0082	0.0125	0.00835	< 0.00002	< 0.00001	0.0087	0.000004	10.4	< 0.0005	0.000222
14-Aug-12	29	500	490	7.31	318	65																
21-Aug-12	30	500	495	7.31	302	65	#N/A	2.5	15.5	14	29.1	0.0581	0.0093	0.0117	0.0082	< 0.00002	< 0.00001	0.0067	0.000017	10.6	< 0.0005	0.00034
28-Aug-12	31	500	505	7.35	336	62																
4-Sep-12	32	500	500	7.22	378	52	#N/A	3.2	13.2	12	23.5	0.0859	0.0056	0.0089	0.00657	< 0.00002	< 0.00001	0.0045	0.000012	8.59	< 0.0005	0.000258
11-Sep-12	33	500	500	7.38	384	61																
18-Sep-12	34	500	485	7.24	363	58	#N/A	2.1	15.4	14	24.5	0.0504	0.0064	0.0109	0.00698	< 0.00002	< 0.00001	0.0051	0.000012	8.91	< 0.0005	0.000289
25-Sep-12	35	500	495	7.33	390	67																
2-Oct-12	36	500	505	7.28	373	55	#N/A	2.5	15.2	11	23.9	0.0291	0.0066	0.0094	0.0065	< 0.00002	< 0.00001	0.0047	0.000008	8.71	< 0.0005	0.000389
9-Oct-12	37	500	500	7.39	395	73																
16-Oct-12	38	500	500	7.19	377	51	#N/A	2.6	14.8	11	21.7	0.0367	0.0050	0.0092	0.00574	< 0.00002	< 0.00001	0.0037	0.000009	7.96	< 0.0005	0.000260
23-Oct-12	39	500	490	7.29	405	75																
30-Oct-12	40	500	480	7.29	352	54	#N/A	2.8	15.9	12	24.9	0.0530	0.0060	0.0092	0.00636	< 0.00002	< 0.00001	0.0041	0.000019	9.14	< 0.0005	0.000322
6-Nov-12	41	500	490	7.32	410	80																
13-Nov-12	42	500	515	7.53	365	49	#N/A	4.3	15.7	9	24.1	0.0274	0.0055	0.0073	0.00620	< 0.00002	< 0.00001	0.0039	0.000014	8.86	< 0.0005	0.000318
20-Nov-12	43	500	495	7.31	420	120																
27-Nov-12	44	500	485	7.33	353	49	#N/A	4.1	14.8	10	22.6	0.0332	0.0048	0.0079	0.00543	< 0.00002	< 0.00001	0.0034	0.000015	8.34	< 0.0005	0.000286
4-Dec-12	45	500	465	7.31	425	105																
11-Dec-12	46	500	465	7.34	344	48	#N/A	2.4	13.9	7	22.2	0.0402	0.0047	0.0093	0.00559	< 0.00002	< 0.00001	0.0037	0.000013	8.25	< 0.0005	0.000288
18-Dec-12	47	500	470	7.47	372	57																

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
25-Dec-12	48	500	460	7.58	372	49	#N/A	3.7	16.9	9	22.1	0.0493	0.0088	0.0104	0.00599	< 0.00002	< 0.00001	0.0045	0.000015	8.11	< 0.0005	0.000361
1-Jan-13	49	500	460	7.34	430	110																
8-Jan-13	50	500	465	7.55	290	48	#N/A	3.3	15.2	11	23.2	0.0932	0.0074	0.0079	0.00625	< 0.00002	< 0.00001	0.0038	0.000021	8.68	< 0.0005	0.000342
15-Jan-13	51	500	455	7.29	415	85																
22-Jan-13	52	500	470	7.52	308	60	#N/A	3.6	17.5	14	24.4	0.0649	0.0055	0.0074	0.00665	< 0.00002	< 0.00001	0.0037	0.000015	9.09	< 0.0005	0.000295
29-Jan-13	53	500	460	7.48	374	55																
5-Feb-13	54	500	460	7.51	364	55	#N/A	4.0	12.6	15	22.8	0.0407	0.0045	0.0068	0.00596	< 0.00002	< 0.00001	0.0024	0.000131	8.44	< 0.0005	0.000498
12-Feb-13	55	500	465	7.61	379	60																
19-Feb-13	56	500	465	7.43	387	61	#N/A	2.9	13.7	18	25.6	0.0702	0.0039	0.0077	0.00712	< 0.00002	< 0.00001	0.0032	0.000026	9.52	< 0.0005	0.000609
26-Feb-13	57	500	460	7.51	396	60																
5-Mar-13	58	500	460	7.58	400	62	#N/A	4.8	15.8	13	25.9	0.0423	0.0048	0.0066	0.00654	< 0.00002	< 0.00001	0.0040	0.000022	9.62	< 0.0005	0.000660
12-Mar-13	59	500	455	7.56	420	70																
19-Mar-13	60	500	465	7.55	357	66	#N/A	6.1	14.5	16	26.7	0.0318	0.0037	0.0074	0.00577	< 0.00002	< 0.00001	0.0035	0.000014	9.95	< 0.0005	0.000443
26-Mar-13	61	500	450	7.57	399	56																
2-Apr-13	62	500	460	7.51	371	60	#N/A	4.3	14.5	16	28.3	0.0347	0.0042	0.0059	0.00589	< 0.00002	< 0.00001	0.0039	0.000014	10.6	< 0.0005	0.000689
9-Apr-13	63	500	455	7.53	401	60																
16-Apr-13	64	500	460	7.55	369	61	#N/A	4.5	14.2	17	27.5	0.0607	0.0043	0.0057	0.00667	< 0.00002	< 0.00001	0.0040	0.000027	10.3	< 0.0005	0.000748
23-Apr-13	65	500	440	7.59	382	64																
30-Apr-13	66	500	455	7.53	379	63	#N/A	4.1	13.9	22	28.9	0.0579	0.0035	0.0049	0.00611	< 0.00002	< 0.00001	0.0042	0.000023	10.8	< 0.0005	0.000703
7-May-13	67	500	460	7.53	423	63																
14-May-13	68	500	460	7.55	396	50	#N/A	4.4	11.0	15	21.3	0.0282	0.0033	0.0041	0.00423	< 0.00002	< 0.00001	0.0028	0.000011	8.00	< 0.0005	0.000504
21-May-13	69	500	460	7.53	394	60																
28-May-13	70	500	460	7.58	401	60	#N/A	3.6	13.9	18	26.5	0.0326	0.0045	0.0045	0.00525	< 0.00002	< 0.00001	0.0047	0.000022	9.95	< 0.0005	0.000534
4-Jun-13	71	500	460	7.56	415	56																
11-Jun-13	72	500	470	7.62	394	59	#N/A	7.2	15.9	17												
18-Jun-13	73	500	465	7.31	403	63																
25-Jun-13	74	500	460	7.35	404	63	#N/A	4.4	12.9	17	27.2	0.0475	0.0031	0.0045	0.00581	< 0.00002	< 0.00001	0.0052	0.000031	10.3	< 0.0005	0.000764
2-Jul-13	75	500	465	7.50	401	63																
9-Jul-13	76	500	465	7.47	342	67	#N/A	6.4	15.3	20												
16-Jul-13	77	500	465	7.26	409	64																
23-Jul-13	78	500	460	7.47	417	59	#N/A	6.4	14.6	18	26.1	0.0265	0.0033	0.0047	0.00451	< 0.00002	< 0.00001	0.0050	0.000024	9.89	< 0.0005	0.000625
30-Jul-13	79	500	470	7.32	402	65																
6-Aug-13	80	500	485	7.60	376	68	#N/A	6.7	14.5	16												
13-Aug-13	81	500	485	7.23	406	64																
20-Aug-13	82	500	465	7.33	398	60	#N/A	2.8	10.8	14												
27-Aug-13	83	500	455	7.36	404	57																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0010	0.005	0.00005	0.051	0.357	0.0043	0.01	0.00846	0.0005	< 0.009	6.14	0.00122	1.69	0.00004	27.7	0.111	14.8	0.00010	0.00004	0.0006	0.000573	0.00285	0.001	0.00007
31-Jan-12	1	0.0005	0.006	0.00005	0.055	0.484	0.0221	0.01	0.0150	0.0005	< 0.009	4.67	0.00206	1.36	0.00016	26.5	0.154	18.9	0.00011	0.00098	0.0006	0.00209	0.00176	< 0.001	0.00003
7-Feb-12	2	< 0.0005	< 0.003	0.00003	0.034	0.491	0.0257	< 0.01	0.00721	0.0004	< 0.009	4.17	0.00068	1.18	0.00017	18.1	0.158	10.6	0.00008	0.00046	0.0003	0.00161	0.00133	0.001	< 0.00001
14-Feb-12	3	< 0.0005	< 0.003	0.00004	0.025	0.620	0.0355	< 0.01	0.00604	0.0003	< 0.009	3.69	0.00051	1.13	0.00010	12.2	0.205	8.08	0.00010	0.00036	0.0004	0.00186	0.00121	0.003	0.00003
21-Feb-12	4	< 0.0005	< 0.003	0.00003	0.018	0.684	0.0451	0.01	0.00489	0.0003	< 0.009	3.94	0.00031	1.05	0.00009	7.18	0.227	6.38	0.00009	0.00022	0.0002	0.00130	0.00095	< 0.001	< 0.00001
28-Feb-12	5																								
6-Mar-12	6	0.0009	0.010	0.00012	0.009	0.652	0.0420	< 0.01	0.00263	0.0004	< 0.009	3.26	0.00035	1.13	0.00010	2.57	0.220	4.74	0.00007	0.00010	0.0004	0.000611	0.00100	0.002	0.00001
13-Mar-12	7																								
20-Mar-12	8	< 0.0005	0.008	0.00010	0.007	0.820	0.0711	< 0.01	0.00278	0.0002	< 0.009	3.06	0.00039	0.92	0.00005	1.54	0.277	6.08	0.00006	0.00022	0.0002	0.000746	0.00062	< 0.001	0.00002
27-Mar-12	9																								
3-Apr-12	10	< 0.0005	0.010	0.00012	0.005	0.698	0.0644	0.01	0.00251	0.0003	< 0.009	2.36	0.00017	0.80	0.00005	0.82	0.231	5.21	0.00006	0.00012	0.0003	0.000564	0.00060	0.002	0.00003
10-Apr-12	11																								
17-Apr-12	12	0.0006	0.008	0.00016	0.004	0.724	0.0569	0.02	0.00284	0.0003	< 0.009	2.29	0.00031	0.88	0.00002	0.62	0.227	4.89	0.00006	0.00007	0.0006	0.000532	0.00077	0.001	0.00003
24-Apr-12	13																								
1-May-12	14	< 0.0005	< 0.003	0.00002	0.004	0.868	0.0669	0.03	0.00337	0.0003	< 0.009	2.06	0.00020	0.70	0.00002	0.54	0.265	6.44	0.00005	0.00010	0.0002	0.000677	0.00058	0.001	< 0.00001
8-May-12	15																								
15-May-12	16	< 0.0005	< 0.003	< 0.00002	0.004	0.801	0.0611	< 0.01	0.00365	0.0002	< 0.009	1.89	0.00034	0.74	0.00001	0.42	0.246	5.40	0.00005	0.00009	0.0002	0.000760	0.00059	0.001	< 0.00001
22-May-12	17																								
29-May-12	18	< 0.0005	0.011	0.00009	0.003	0.749	0.0687	0.01	0.00352	0.0002	< 0.009	1.58	< 0.00004	0.79	0.00004	0.28	0.224	4.93	0.00005	0.00016	0.0005	0.000770	0.00060	0.001	0.00003
5-Jun-12	19																								
12-Jun-12	20	< 0.0005	0.005	0.00003	0.003	0.669	0.0625	0.02	0.00296	0.0002	< 0.009	1.35	0.00008	0.66	0.00003	0.26	0.203	4.26	0.00004	0.00003	0.0002	0.000598	0.00058	< 0.001	0.00001
19-Jun-12	21																								
26-Jun-12	22	< 0.0005	< 0.003	< 0.00002	0.002	0.681	0.0674	0.01	0.00322	0.0001	< 0.009	1.26	< 0.00004	0.66	0.00002	0.24	0.209	4.65	0.00003	0.00005	0.0002	0.000644	0.00059	< 0.001	0.00001
3-Jul-12	23																								
10-Jul-12	24	< 0.0005	< 0.003	< 0.00002	0.002	0.640	0.0632	0.02	0.00339	0.0002	< 0.009	1.15	0.00026	0.63	0.00002	0.22	0.196	4.82	0.00003	0.00017	0.0002	0.000453	0.00052	0.001	< 0.00001
17-Jul-12	25																								
24-Jul-12	26	0.0005	< 0.003	< 0.00002	0.002	0.698	0.0692	0.01	0.00378	0.0002	< 0.009	1.08	0.00031	0.62	0.00002	0.20	0.208	5.50	0.00003	0.00010	0.0002	0.000506	0.00056	0.001	< 0.00001
31-Jul-12	27																								
7-Aug-12	28	< 0.0005	< 0.003	0.00004	0.002	0.649	0.0602	< 0.01	0.00411	0.0002	< 0.009	1.03	< 0.00004	0.62	0.00002	0.19	0.194	5.76	0.00003	0.00028	0.0002	0.000387	0.00052	0.003	0.00001
14-Aug-12	29																								
21-Aug-12	30	< 0.0005	< 0.003	0.00003	0.002	0.656	0.0717	0.03	0.00420	0.0004	< 0.009	0.905	0.00015	0.57	0.00001	0.16	0.195	5.81	0.00003	0.00014	0.0002	0.00045	0.00046	0.002	< 0.00001
28-Aug-12	31																								
4-Sep-12	32	< 0.0005	< 0.003	< 0.00002	0.002	0.506	0.0594	< 0.01	0.00307	0.0003	< 0.009	0.681	0.00016	0.38	0.00001	0.14	0.147	4.40	0.00002	0.00012	0.0002	0.000356	0.00054	0.002	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	< 0.0005	< 0.003	0.00002	0.002	0.552	0.0609	0.02	0.00324	0.0002	< 0.009	0.778	0.00020	0.46	< 0.00001	0.15	0.160	4.65	< 0.00002	0.00011	< 0.0001	0.000348	0.00037	0.002	< 0.00001
25-Sep-12	35																								
2-Oct-12	36	< 0.0005	< 0.003	0.00002	0.002	0.523	0.0580	< 0.01	0.00321	0.0002	< 0.009	0.664	0.00008	0.45	0.00001	0.11	0.147	4.54	0.00002	0.00003	< 0.0001	0.000400	0.00026	0.001	< 0.00001
9-Oct-12	37																								
16-Oct-12	38	< 0.0005	< 0.003	< 0.00002	0.001	0.448	0.0594	< 0.01	0.00274	0.0003	< 0.009	0.570	0.00013	0.37	0.00001	0.10	0.126	3.86	< 0.00002	0.00011	0.0001	0.000297	0.00032	0.001	< 0.00001
23-Oct-12	39																								
30-Oct-12	40	< 0.0005	< 0.003	0.00002	0.001	0.512	0.0677	0.01	0.00307	0.0003	< 0.009	0.656	0.00011	0.45	< 0.00001	0.10	0.147	4.45	< 0.00002	0.00004	< 0.0001	0.000299	0.00033	0.001	< 0.00001
6-Nov-12	41																								
13-Nov-12	42	< 0.0005	< 0.003	0.00002	0.001	0.481	0.0653	0.01	0.00292	0.0002	< 0.009	0.541	0.00011	0.40	0.00002	0.10	0.133	4.36	< 0.00002	0.00002	0.0001	0.000361	0.00030	0.001	< 0.00001
20-Nov-12	43																								
27-Nov-12	44	< 0.0005	0.004	0.00004	< 0.001	0.435	0.0623	< 0.01	0.00236	0.0002	< 0.009	0.508	0.00013	0.37	0.00001	0.10	0.121	3.71	< 0.00002	0.00007	< 0.0001	0.000277	0.00022	0.002	< 0.00001
4-Dec-12	45																								
11-Dec-12	46	0.0009	0.004	0.00023	0.001	0.394	0.0604	< 0.01	0.00218	< 0.0001	< 0.009	0.534	0.00014	0.65	0.00001	0.14	0.117	3.99	< 0.00002	0.00015	< 0.0001	0.000207	0.00015	0.001	0.00001
18-Dec-12	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	< 0.0005	0.004	0.00005	0.001	0.443	0.0590	< 0.01	0.00234	0.0003	< 0.009	0.669	0.00024	0.35	0.00003	0.10	0.133	4.14	< 0.00002	0.00008	< 0.0001	0.000280	0.00015	0.001	< 0.00001
1-Jan-13	49																								
8-Jan-13	50	0.0005	0.008	0.00011	0.001	0.366	0.0652	< 0.01	0.00153	0.0001	< 0.009	0.662	0.00025	0.43	0.00003	0.10	0.111	3.67	0.00002	0.00008	0.0005	0.000240	0.00038	0.001	0.00001
15-Jan-13	51																								
22-Jan-13	52	< 0.0005	0.006	0.00005	0.002	0.421	0.0697	< 0.01	0.00152	0.0005	< 0.009	0.686	0.00033	0.37	0.00002	0.03	0.124	4.68	< 0.00002	0.00023	0.0002	0.000280	0.00035	0.001	< 0.00001
29-Jan-13	53																								
5-Feb-13	54	< 0.0005	0.003	0.00005	0.001	0.412	0.0702	< 0.01	0.00142	0.0003	< 0.009	0.649	0.00039	0.30	< 0.00001	0.11	0.116	4.94	< 0.00002	0.00002	< 0.0001	0.000268	0.00017	< 0.001	< 0.00001
12-Feb-13	55																								
19-Feb-13	56	< 0.0005	0.007	0.00012	0.002	0.444	0.0801	< 0.01	0.00135	0.0005	< 0.009	0.572	0.00038	0.25	0.00002	0.09	0.123	5.53	< 0.00002	0.00003	0.0004	0.000240	0.00024	0.001	0.00010
26-Feb-13	57																								
5-Mar-13	58	< 0.0005	0.005	0.00008	0.001	0.451	0.0796	< 0.01	0.00128	0.0005	< 0.009	0.650	0.00035	0.39	0.00002	0.11	0.126	5.66	< 0.00002	< 0.00001	0.0002	0.000265	0.00012	0.002	< 0.00001
12-Mar-13	59																								
19-Mar-13	60	0.0007	< 0.003	0.00004	0.001	0.452	0.0804	< 0.01	0.00149	0.0003	< 0.009	0.575	0.00032	0.35	< 0.00001	0.09	0.118	5.95	< 0.00002	0.00006	< 0.0001	0.000235	0.00014	< 0.001	< 0.00001
26-Mar-13	61																								
2-Apr-13	62	< 0.0005	< 0.003	0.00006	0.001	0.461	0.0897	< 0.01	0.00131	0.0006	< 0.009	0.639	0.00010	0.37	< 0.00001	0.11	0.124	5.62	< 0.00002	0.00001	< 0.0001	0.000292	0.00010	< 0.001	0.00001
9-Apr-13	63																								
16-Apr-13	64	< 0.0005	0.012	0.00019	0.001	0.440	0.0872	< 0.01	0.00122	0.0006	0.013	0.631	< 0.00004	0.45	< 0.00001	0.09	0.117	5.73	< 0.00002	0.00003	0.0004	0.000293	0.00021	0.002	< 0.00001
23-Apr-13	65																								
30-Apr-13	66	< 0.0005	0.008	0.00009	0.001	0.443	0.0924	< 0.01	0.00128	0.0006	< 0.009	0.580	0.00020	0.41	< 0.00001	0.08	0.118	6.04	< 0.00002	< 0.00001	0.0004	0.000237	0.00020	0.001	0.00003
7-May-13	67																								
14-May-13	68	< 0.0005	< 0.003	0.00002	0.001	0.326	0.0717	< 0.01	0.00109	0.0002	< 0.009	0.490	0.00022	0.28	< 0.00001	0.08	0.0882	4.52	< 0.00002	< 0.00001	< 0.0001	0.000262	0.00007	< 0.001	< 0.00001
21-May-13	69																								
28-May-13	70	< 0.0005	0.007	0.00005	0.001	0.394	0.0848	< 0.01	0.00133	0.0004	< 0.009	0.573	0.00031	0.32	0.00001	0.09	0.107	5.11	< 0.00002	0.00003	< 0.0001	0.000294	0.00010	< 0.001	< 0.00001
4-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	< 0.0005	0.007	0.00038	0.001	0.381	0.0987	< 0.01	0.00103	0.0002	< 0.009	0.542	0.00030	0.03	0.00002	0.08	0.111	6.00	< 0.00002	0.00003	0.0002	0.000242	0.00015	0.002	0.00002
2-Jul-13	75																								
9-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	< 0.0005	< 0.003	0.00003	0.001	0.350	0.0878	< 0.01	0.00097	0.0005	< 0.009	0.480	0.00028	0.34	< 0.00001	0.10	0.0999	5.62	< 0.00002	< 0.00001	< 0.0001	0.000201	0.00012	0.001	< 0.00001
30-Jul-13	79																								
6-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jan-12	0	500	400	8.21	295	205	#N/A	2.1	58.1	47	9.35	0.280	0.0214	0.0383	0.0106	< 0.00002	< 0.00001	0.0232	0.000034	3.25	< 0.0005	0.000034
31-Jan-12	1	500	475	8.21	260	234	#N/A	1.7	57.6	61	10.0	0.229	0.0449	0.0528	0.0109	< 0.00002	< 0.00001	0.0239	0.000008	3.44	< 0.0005	0.000054
7-Feb-12	2	500	455	8.10	299	180	#N/A	2.5	46.2	51	28.0	0.629	0.0256	0.0480	0.0420	0.00013	0.00005	0.0217	0.000038	10.4	0.0007	0.000767
14-Feb-12	3	500	445	8.03	343	144	#N/A	2.7	37.9	37	11.0	0.171	0.0212	0.0349	0.0100	< 0.00002	< 0.00001	0.0175	0.000012	3.84	< 0.0005	0.000058
21-Feb-12	4	500	470	7.83	332	121	#N/A	3.3	37.4	26	13.4	0.0897	0.0213	0.0282	0.00895	< 0.00002	< 0.00001	0.0176	0.000005	4.67	< 0.0005	0.000034
28-Feb-12	5	500	470	7.85	368	98																
6-Mar-12	6	500	440	7.72	357	87	#N/A	3.9	27.5	18	16.3	0.118	0.0117	0.0201	0.0115	< 0.00002	< 0.00001	0.0121	0.000010	5.70	< 0.0005	0.000067
13-Mar-12	7	500	490	7.65	356	80																
20-Mar-12	8	500	465	7.58	329	77	#N/A	2.8	24.8	17	21.9	0.0736	0.0105	0.0149	0.0140	< 0.00002	< 0.00001	0.0106	0.000022	7.72	< 0.0005	0.000085
27-Mar-12	9	500	460	7.56	339	73																
3-Apr-12	10	500	470	7.54	351	66	#N/A	2.3	22.2	14	22.0	0.0780	0.0104	0.0131	0.0142	< 0.00002	< 0.00001	0.0102	< 0.000003	7.68	< 0.0005	0.000038
10-Apr-12	11	500	490	7.56	333	70																
17-Apr-12	12	500	475	7.55	344	69	#N/A	2.7	22.7	15	24.0	0.0665	0.0110	0.0117	0.0157	< 0.00002	< 0.00001	0.0108	< 0.000003	8.36	< 0.0005	0.000073
24-Apr-12	13	500	455	7.70	359	67																
1-May-12	14	500	425	7.56	347	66	#N/A	3.4	21.0	18	25.3	0.113	0.0078	0.0123	0.0166	< 0.00002	< 0.00001	0.0078	< 0.000003	8.94	< 0.0005	0.000091
8-May-12	15	500	475	7.53	376	66																
15-May-12	16	500	450	7.54	307	69	#N/A	2.5	20.3	11	25.7	0.0442	0.0084	0.0121	0.0143	< 0.00002	< 0.00001	0.0085	< 0.000003	9.07	< 0.0005	0.000075
22-May-12	17	500	455	7.48	332	65																
29-May-12	18	500	425	7.47	327	66	#N/A	2.3	16.3	14	26.2	0.0933	0.0070	0.0113	0.0135	< 0.00002	< 0.00001	0.0072	< 0.000003	9.25	< 0.0005	0.000090
5-Jun-12	19	500	460	7.41	367	65																
12-Jun-12	20	500	450	7.44	345	62	#N/A	2.8	16.8	14	24.9	0.0563	0.0071	0.0102	0.0121	< 0.00002	< 0.00001	0.0067	< 0.000003	8.82	< 0.0005	0.000079
19-Jun-12	21	500	490	7.48	367	64																
26-Jun-12	22	500	450	7.42	333	63	#N/A	2.9	16.1	14	25.8	0.0445	0.0068	0.0095	0.0112	< 0.00002	< 0.00001	0.0063	< 0.000003	9.17	< 0.0005	0.000098
3-Jul-12	23	500	440	7.69	375	68																
10-Jul-12	24	500	445	7.42	329	74	#N/A	3.3	20.2	16	28.4	0.0702	0.0069	0.0097	0.0130	< 0.00002	< 0.00001	0.0063	0.000018	10.1	< 0.0005	0.000062
17-Jul-12	25	500	440	7.43	371	69																
24-Jul-12	26	500	445	7.31	341	69	#N/A	2.1	15.6	12	27.7	0.0647	0.0067	0.0094	0.0109	< 0.00002	< 0.00001	0.0061	0.000021	9.89	< 0.0005	0.000128
31-Jul-12	27	500	485	7.48	349	63																
7-Aug-12	28	500	495	7.57	322	67	#N/A	2.3	17.8	15	28.8	0.0750	0.0085	0.0108	0.0118	< 0.00002	< 0.00001	0.0069	0.000013	10.3	< 0.0005	0.000065
14-Aug-12	29	500	490	7.51	321	77																
21-Aug-12	30	500	480	7.36	303	70	#N/A	2.5	16.4	16	29.4	0.0664	0.0090	0.0089	0.0120	< 0.00002	< 0.00001	0.0062	0.000036	10.6	< 0.0005	0.00011
28-Aug-12	31	500	485	7.45	338	70																
4-Sep-12	32	500	495	7.30	379	61	#N/A	3.2	16.0	13	27.5	0.0780	0.0066	0.0079	0.0112	< 0.00002	< 0.00001	0.0047	0.000019	9.98	< 0.0005	0.000087
11-Sep-12	33	500	485	7.41	377	68																
18-Sep-12	34	500	490	7.34	356	65	#N/A	2.2	17.7	15	26.4	0.0475	0.0070	0.0092	0.0118	< 0.00002	< 0.00001	0.0052	0.000028	9.53	< 0.0005	0.000085
25-Sep-12	35	500	480	7.51	380	73																
2-Oct-12	36	500	480	7.33	377	61	#N/A	2.4	17.7	12	25.4	0.0290	0.0064	0.0082	0.0103	< 0.00002	< 0.00001	0.0045	0.000029	9.25	< 0.0005	0.000187
9-Oct-12	37	500	490	7.56	390	74																
16-Oct-12	38	500	490	7.28	367	59	#N/A	2.4	16.8	14	24.3	0.0318	0.0055	0.0080	0.0100	< 0.00002	< 0.00001	0.0036	0.000022	8.87	< 0.0005	0.000096
23-Oct-12	39	500	485	7.56	385	75																
30-Oct-12	40	500	475	7.36	353	62	#N/A	2.5	18.2	13	27.8	0.0473	0.0062	0.0080	0.0109	< 0.00002	< 0.00001	0.0040	0.000037	10.2	< 0.0005	0.000097
6-Nov-12	41	500	480	7.57	380	85																
13-Nov-12	42	500	490	7.51	368	53	#N/A	4.0	17.0	9	24.9	0.0521	0.0047	0.0078	0.0102	< 0.00002	< 0.00001	0.0035	0.000029	9.18	< 0.0005	0.000129
20-Nov-12	43	500	495	7.63	390	125																
27-Nov-12	44	500	495	7.42	349	57	#N/A	4.1	17.2	13	25.6	0.0282	0.0052	0.0068	0.00866	< 0.00002	< 0.00001	0.0035	0.000024	9.39	< 0.0005	0.000090
4-Dec-12	45	500	470	7.61	395	110																
11-Dec-12	46	500	500	7.44	341	53	#N/A	2.3	16.4	7	24.2	0.0231	0.0052	0.0072	0.00874	< 0.00002	< 0.00001	0.0044	0.000024	8.96	< 0.0005	0.000084
18-Dec-12	47	500	475	7.48	366	54																

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
25-Dec-12	48	500	470	7.58	369	53	#N/A	4.0	21.0	11	25.4	0.0283	0.0052	0.0088	0.00841	< 0.00002	< 0.00001	0.0040	0.000028	9.31	< 0.0005	0.000143
1-Jan-13	49	500	440	7.61	425	120																
8-Jan-13	50	500	440	7.49	291	52	#N/A	3.5	16.2	11	25.9	0.103	0.0058	0.0079	0.0101	< 0.00002	< 0.00001	0.0034	0.000030	9.64	< 0.0005	0.000101
15-Jan-13	51	500	440	7.58	425	90																
22-Jan-13	52	500	455	7.55	307	62	#N/A	4.1	21.6	14	24.9	0.105	0.0042	0.0072	0.0104	< 0.00002	< 0.00001	0.0032	0.000025	9.23	< 0.0005	0.000095
29-Jan-13	53	500	460	7.51	376	51																
5-Feb-13	54	500	460	7.53	364	52	#N/A	3.9	13.6	14	21.7	0.0364	0.0040	0.0067	0.00777	< 0.00002	< 0.00001	0.0023	0.000021	8.01	< 0.0005	0.000170
12-Feb-13	55	500	455	7.63	376	56																
19-Feb-13	56	500	465	7.49	380	54	#N/A	2.7	15.6	14	22.8	0.0609	0.0044	0.0076	0.00874	< 0.00002	< 0.00001	0.0035	0.000027	8.44	< 0.0005	0.000120
26-Feb-13	57	500	465	7.56	389	56																
5-Mar-13	58	500	455	7.60	400	56	#N/A	4.4	20.0	10	23.6	0.0338	0.0047	0.0080	0.00801	< 0.00002	< 0.00001	0.0035	0.000029	8.77	< 0.0005	0.000184
12-Mar-13	59	500	455	7.61	430	65																
19-Mar-13	60	500	455	7.56	357	54	#N/A	6.1	14.6	9	22.4	0.0218	0.0036	0.0066	0.00626	< 0.00002	< 0.00001	0.0035	0.000015	8.34	< 0.0005	0.000067
26-Mar-13	61	500	465	7.59	399	54																
2-Apr-13	62	500	440	7.54	364	54	#N/A	4.4	14.9	11	25.3	0.0960	0.0038	0.0071	0.00871	< 0.00002	< 0.00001	0.0038	0.000023	9.44	< 0.0005	0.000197
9-Apr-13	63	500	455	7.58	392	52																
16-Apr-13	64	500	445	7.62	364	53	#N/A	4.3	14.9	14	24.2	0.0231	0.0041	0.0072	0.00666	< 0.00002	< 0.00001	0.0038	0.000022	9.04	< 0.0005	0.000066
23-Apr-13	65	500	440	7.63	379	61																
30-Apr-13	66	500	450	7.59	373	55	#N/A	3.8	13.8	16	25.2	0.0697	0.0037	0.0068	0.00811	< 0.00002	< 0.00001	0.0040	0.000024	9.43	< 0.0005	0.000102
7-May-13	67	500	445	7.63	419	56																
14-May-13	68	500	455	7.58	387	50	#N/A	4.5	12.8	14	21.7	0.0870	0.0033	0.0061	0.00765	< 0.00002	< 0.00001	0.0027	0.000021	8.13	< 0.0005	0.000202
21-May-13	69	500	435	7.56	357	60																
28-May-13	70	500	450	7.59	400	62	#N/A	4.0	13.8	18	28.7	0.0202	0.0038	0.0056	0.00678	< 0.00002	< 0.00001	0.0047	0.000023	10.8	< 0.0005	0.000080
4-Jun-13	71	500	435	7.55	411	60																
11-Jun-13	72	500	445	7.64	392	62	#N/A	7.6	16.7	18												
18-Jun-13	73	500	450	7.05	417	62																
25-Jun-13	74	500	450	7.47	400	58	#N/A	4.2	13.8	15	24.7	0.0524	0.0035	0.0059	0.00735	< 0.00002	< 0.00001	0.0059	0.000035	9.29	< 0.0005	0.000135
2-Jul-13	75	500	450	7.47	390	63																
9-Jul-13	76	500	445	7.57	331	64	#N/A	6.3	16.6	16												
16-Jul-13	77	500	445	7.30	409	63																
23-Jul-13	78	500	445	7.49	410	59	#N/A	6.0	15.1	19	26.0	0.0246	0.0034	0.0057	0.00607	< 0.00002	< 0.00001	0.0054	0.000031	9.79	< 0.0005	0.000094
30-Jul-13	79	500	435	7.34	400	57																
6-Aug-13	80	500	450	7.61	368	64	#N/A	7.0	14.5	14												
13-Aug-13	81	500	455	7.27	400	60																
20-Aug-13	82	500	435	7.37	385	58	#N/A	2.8	11.0	12												
27-Aug-13	83	500	440	7.42	391	61																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0006	0.018	0.00021	0.068	0.300	0.0065	< 0.01	0.06818	0.0003	< 0.009	4.92	0.00232	2.16	< 0.00001	33.1	0.155	17.6	0.00008	0.00011	0.0011	0.000698	0.00371	0.001	0.00010
31-Jan-12	1	0.0007	0.030	0.00055	0.086	0.349	0.0138	0.01	0.0837	0.0003	< 0.009	4.68	0.00448	2.21	0.00004	39.8	0.184	23.4	0.00008	0.00138	0.0006	0.00303	0.00219	0.001	0.00004
7-Feb-12	2	0.0034	0.545	0.0131	0.061	0.501	0.279	0.02	0.0414	0.0018	0.095	4.27	0.00196	1.83	0.00054	30.3	0.214	15.7	0.00014	0.00111	0.0020	0.00293	0.00222	0.009	0.00009
14-Feb-12	3	0.0006	0.013	0.00049	0.044	0.340	0.0274	< 0.01	0.0317	0.0002	< 0.009	3.24	0.00137	1.21	0.00003	21.6	0.188	10.9	0.00007	0.00075	0.0007	0.00248	0.00139	0.002	0.00004
21-Feb-12	4	< 0.0005	< 0.003	0.00016	0.036	0.428	0.0371	0.01	0.0311	0.0002	< 0.009	3.80	0.00087	1.09	0.00003	17.3	0.237	8.81	0.00006	0.00063	0.0002	0.00245	0.00100	0.002	< 0.00001
28-Feb-12	5																								
6-Mar-12	6	0.0006	0.012	0.00036	0.019	0.496	0.0544	< 0.01	0.0144	0.0002	< 0.009	3.69	0.00062	1.22	0.00005	8.31	0.269	6.09	0.00007	0.00023	0.0004	0.00125	0.00091	0.001	< 0.00001
13-Mar-12	7																								
20-Mar-12	8	< 0.0005	0.007	0.00028	0.014	0.629	0.0967	0.01	0.0110	< 0.0001	< 0.009	3.48	0.00045	0.95	0.00003	4.26	0.349	5.19	0.00006	0.00029	0.0002	0.00101	0.00056	< 0.001	0.00003
27-Mar-12	9																								
3-Apr-12	10	0.0006	< 0.003	0.00009	0.009	0.696	0.0734	< 0.01	0.0162	0.0002	< 0.009	3.21	0.00019	0.78	0.00002	2.33	0.371	4.77	0.00005	0.00012	0.0001	0.00106	0.00043	0.002	< 0.00001
10-Apr-12	11																								
17-Apr-12	12	< 0.0005	0.006	0.00010	0.007	0.760	0.0832	0.01	0.0204	0.0003	< 0.009	2.94	0.00037	0.78	0.00002	1.44	0.423	4.63	0.00005	0.00047	0.0004	0.00124	0.00053	0.003	0.00002
24-Apr-12	13																								
1-May-12	14	0.0007	0.021	0.00048	0.006	0.731	0.0793	0.02	0.0128	0.0003	< 0.009	3.06	0.00021	0.98	0.00003	1.12	0.416	4.82	0.00006	0.00012	0.0006	0.000617	0.00066	0.002	0.00003
8-May-12	15																								
15-May-12	16	< 0.0005	< 0.003	0.00007	0.006	0.743	0.0986	0.01	0.0136	0.0002	< 0.009	2.83	0.00046	0.73	< 0.00001	0.92	0.418	4.98	0.00005	0.00023	< 0.0001	0.000595	0.00046	0.002	< 0.00001
22-May-12	17																								
29-May-12	18	0.0007	0.010	0.00022	0.005	0.749	0.0917	0.01	0.0141	0.0001	< 0.009	2.59	0.00029	0.74	0.00002	0.65	0.419	5.33	0.00005	0.00024	0.0003	0.000474	0.00052	0.002	0.00004
5-Jun-12	19																								
12-Jun-12	20	< 0.0005	0.004	0.00010	0.004	0.696	0.0971	< 0.01	0.0111	0.0002	< 0.009	2.19	0.00028	0.63	0.00001	0.53	0.376	4.52	0.00004	0.00013	0.0002	0.000458	0.00043	< 0.001	< 0.00001
19-Jun-12	21																								
26-Jun-12	22	0.0008	< 0.003	0.00006	0.004	0.705	0.106	0.01	0.0123	< 0.0001	< 0.009	2.05	0.00021	0.61	< 0.00001	0.44	0.380	4.99	0.00004	0.00011	0.0001	0.000453	0.00049	0.001	< 0.00001
3-Jul-12	23																								
10-Jul-12	24	0.0005	< 0.003	0.00005	0.004	0.788	0.0794	0.03	0.0123	0.0002	< 0.009	2.09	0.00058	0.65	< 0.00001	0.45	0.424	5.90	0.00004	0.00016	0.0002	0.000367	0.00051	0.001	< 0.00001
17-Jul-12	25																								
24-Jul-12	26	< 0.0005	0.003	0.00013	0.003	0.731	0.102	0.01	0.0125	0.0002	< 0.009	1.76	0.00043	0.57	< 0.00001	0.35	0.381	5.66	0.00003	0.00020	0.0002	0.000369	0.00047	0.005	0.00002
31-Jul-12	27																								
7-Aug-12	28	< 0.0005	< 0.003	0.00004	0.003	0.741	0.0615	< 0.01	0.0161	< 0.0001	< 0.009	1.90	0.00043	0.66	< 0.00001	0.37	0.411	5.98	0.00004	0.00098	0.0003	0.000447	0.00050	0.001	< 0.00001
14-Aug-12	29																								
21-Aug-12	30	< 0.0005	0.004	0.00009	0.003	0.723	0.101	< 0.01	0.01623	0.0003	< 0.009	1.60	0.00028	0.60	< 0.00001	0.29	0.406	6.02	0.00004	0.00025	0.0002	0.00058	0.00047	0.002	< 0.00001
28-Aug-12	31																								
4-Sep-12	32	< 0.0005	< 0.003	0.00004	0.003	0.628	0.100	0.04	0.0133	0.0001	< 0.009	1.34	0.00032	0.47	< 0.00001	0.22	0.350	5.00	0.00003	0.00012	0.0001	0.000582	0.00047	0.001	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	0.0018	< 0.003	0.00009	0.003	0.630	0.0947	< 0.01	0.0145	< 0.0001	< 0.009	1.37	0.00035	0.54	< 0.00001	0.23	0.353	5.00	0.00002	0.00021	< 0.0001	0.000573	0.00034	0.002	< 0.00001
25-Sep-12	35																								
2-Oct-12	36	< 0.0005	< 0.003	0.00005	0.002	0.565	0.0923	< 0.01	0.0128	< 0.0001	< 0.009	1.16	0.00023	0.51	0.00001	0.15	0.311	4.76	0.00002	0.00007	0.0001	0.000564	0.00025	0.001	< 0.00001
9-Oct-12	37																								
16-Oct-12	38	< 0.0005	< 0.003	0.00010	0.002	0.532	0.0849	< 0.01	0.0123	0.0002	< 0.009	1.04	0.00027	0.44	< 0.00001	0.15	0.290	4.37	< 0.00002	0.00010	0.0001	0.000545	0.00029	0.002	< 0.00001
23-Oct-12	39																								
30-Oct-12	40	< 0.0005	< 0.003	0.00006	0.002	0.589	0.101	0.01	0.0135	0.0002	< 0.009	1.14	0.00021	0.53	< 0.00001	0.15	0.332	4.86	< 0.00002	0.00010	0.0001	0.000492	0.00031	0.001	< 0.00001
6-Nov-12	41																								
13-Nov-12	42	< 0.0005	0.004	0.00022	0.001	0.490	0.0912	0.01	0.0111	0.0001	< 0.009	0.925	0.00019	0.47	0.00002	0.12	0.268	4.47	0.00003	0.00005	0.0003	0.000421	0.00031	0.002	0.00003
20-Nov-12	43																								
27-Nov-12	44	< 0.0005	< 0.003	0.00005	0.001	0.514	0.0794	< 0.01	0.0104	0.0001	< 0.009	0.903	0.00028	0.43	< 0.00001	0.12	0.280	4.21	< 0.00002	0.00010	< 0.0001	0.000551	0.00020	0.001	< 0.00001
4-Dec-12	45																								
11-Dec-12	46	0.0009	< 0.003	0.00021	0.001	0.455	0.0664	< 0.01	0.0108	0.0001	< 0.009	0.840	0.00024	0.53	< 0.00001	0.15	0.254	4.09	< 0.00002	0.00006	< 0.0001	0.000439	0.00012	0.001	< 0.00001
18-Dec-12	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	< 0.0005	< 0.003	0.00005	0.001	0.524	0.0600	< 0.01	0.0123	0.0001	0.014	0.901	0.00024	0.33	0.00001	0.10	0.277	4.45	< 0.00002	0.00008	< 0.0001	0.000357	0.00010	0.001	< 0.00001
1-Jan-13	49																								
8-Jan-13	50	0.0008	0.008	0.00029	0.001	0.443	0.0479	< 0.01	0.00849	< 0.0001	< 0.009	0.909	0.00038	0.44	0.00002	0.10	0.236	4.06	0.00003	0.00009	0.0008	0.000276	0.00043	0.002	0.00009
15-Jan-13	51																								
22-Jan-13	52	< 0.0005	0.013	0.00024	0.001	0.444	0.0502	< 0.01	0.00766	0.0003	< 0.009	0.828	0.00053	0.41	0.00002	0.02	0.233	4.51	0.00003	0.00010	0.0006	0.000289	0.00044	0.002	0.00008
29-Jan-13	53																								
5-Feb-13	54	< 0.0005	0.006	0.00017	0.001	0.403	0.0358	0.01	0.00863	< 0.0001	< 0.009	0.770	0.00038	0.29	< 0.00001	0.09	0.210	4.14	< 0.00002	0.00003	0.0001	0.000292	0.00015	< 0.001	0.00002
12-Feb-13	55																								
19-Feb-13	56	0.0006	0.006	0.00018	0.001	0.417	0.0428	< 0.01	0.00932	0.0002	< 0.009	0.704	0.00024	0.27	< 0.00001	0.08	0.206	4.16	< 0.00002	0.00004	0.0003	0.000278	0.00020	0.001	0.00006
26-Feb-13	57																								
5-Mar-13	58	< 0.0005	< 0.003	0.00007	0.001	0.423	0.0369	< 0.01	0.00818	0.0002	< 0.009	0.762	0.00034	0.37	< 0.00001	0.11	0.213	4.33	0.00002	0.00003	0.0002	0.000245	0.00012	< 0.001	0.00003
12-Mar-13	59																								
19-Mar-13	60	0.0006	< 0.003	0.00006	0.001	0.384	0.0345	< 0.01	0.00832	0.0001	< 0.009	0.658	0.00030	0.33	< 0.00001	0.09	0.182	4.08	< 0.00002	0.00003	< 0.0001	0.000226	0.00013	< 0.001	< 0.00001
26-Mar-13	61																								
2-Apr-13	62	< 0.0005	0.010	0.00021	0.001	0.420	0.0418	< 0.01	0.00872	0.0003	0.011	0.768	0.00014	0.47	< 0.00001	0.09	0.204	4.52	0.00002	0.00001	0.0006	0.000223	0.00020	0.001	0.00009
9-Apr-13	63																								
16-Apr-13	64	< 0.0005	< 0.003	0.00005	0.001	0.383	0.0396	< 0.01	0.00797	0.0002	0.010	0.638	0.00009	0.35	0.00002	0.11	0.189	4.52	< 0.00002	0.00003	< 0.0001	0.000198	0.00013	< 0.001	0.00002
23-Apr-13	65																								
30-Apr-13	66	< 0.0005	0.008	0.00018	0.001	0.402	0.0448	< 0.01	0.00855	0.0002	< 0.009	0.672	0.00034	0.42	< 0.00001	0.07	0.189	4.68	< 0.00002	0.00002	0.0005	0.000178	0.00022	0.002	0.00007
7-May-13	67																								
14-May-13	68	0.0010	0.008	0.00021	< 0.001	0.352	0.0610	< 0.01	0.00703	< 0.0001	< 0.009	0.674	0.00029	0.41	< 0.00001	0.07	0.162	4.20	< 0.00002	0.00001	0.0005	0.000215	0.00020	0.001	0.00010
21-May-13	69																								
28-May-13	70	< 0.0005	< 0.003	0.00004	0.001	0.432	0.0466	< 0.01	0.00769	0.0002	< 0.009	0.724	0.00043	0.30	< 0.00001	0.10	0.209	5.64	< 0.00002	0.00003	< 0.0001	0.000197	0.00009	< 0.001	< 0.00001
4-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	0.0006	0.006	0.00049	0.001	0.358	0.0505	< 0.01	0.00692	< 0.0001	< 0.009	0.684	0.00042	0.04	0.00001	0.08	0.183	5.00	< 0.00002	0.00006	0.0002	0.000223	0.00015	0.002	0.00003
2-Jul-13	75																								
9-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	< 0.0005	< 0.003	0.00005	0.001	0.374	0.0532	< 0.01	0.00667	0.0002	< 0.009	0.652	0.00040	0.34	< 0.00001	0.08	0.174	5.52	< 0.00002	0.00003	< 0.0001	0.000227	0.00010	< 0.001	< 0.00001
30-Jul-13	79																								
6-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jan-12	0	500	420	7.53	324	176	#N/A	3.1	29.6	55	59.6	0.0692	0.0160	0.127	0.0272	< 0.00002	< 0.00001	0.0146	0.000013	20.6	< 0.0005	0.000409
31-Jan-12	1	500	495	7.48	288	166	#N/A	2.9	22.7	56	60.8	0.0980	0.0216	0.220	0.0257	< 0.00002	< 0.00001	0.0161	0.000004	21.3	< 0.0005	0.000403
7-Feb-12	2	500	460	7.58	319	110	#N/A	3.1	21.5	36	41.4	0.0860	0.0185	0.235	0.0145	< 0.00002	< 0.00001	0.0150	< 0.000003	14.5	< 0.0005	0.000220
14-Feb-12	3	500	470	7.63	356	100	#N/A	3.7	17.9	31	38.5	0.0968	0.0182	0.236	0.0169	< 0.00002	< 0.00001	0.0142	0.000006	13.6	< 0.0005	0.000207
21-Feb-12	4	500	470	7.51	346	93	#N/A	4.0	22.2	28	37.0	0.0517	0.0189	0.218	0.0121	< 0.00002	< 0.00001	0.0146	< 0.000003	13.0	< 0.0005	0.000237
28-Feb-12	5	500	475	7.52	380	76																
6-Mar-12	6	500	445	7.57	364	81	#N/A	4.2	16.1	22	32.6	0.0878	0.0124	0.164	0.0129	< 0.00002	< 0.00001	0.0099	< 0.000003	11.6	< 0.0005	0.000233
13-Mar-12	7	500	450	7.46	361	84																
20-Mar-12	8	500	440	7.44	330	82	#N/A	3.3	15.7	25	33.5	0.0716	0.0140	0.131	0.0137	< 0.00002	< 0.00001	0.0102	0.000005	11.9	< 0.0005	0.000305
27-Mar-12	9	500	450	7.31	336	93																
3-Apr-12	10	500	450	7.28	358	83	#N/A	2.7	12.4	29	34.8	0.0459	0.0101	0.100	0.0104	< 0.00002	< 0.00001	0.0081	< 0.000003	12.5	< 0.0005	0.000730
10-Apr-12	11	500	445	7.31	333	87																
17-Apr-12	12	500	500	7.37	344	94	#N/A	2.8	13.2	34	37.5	0.0632	0.0122	0.0837	0.0123	< 0.00002	< 0.00001	0.0110	< 0.000003	13.4	< 0.0005	0.000922
24-Apr-12	13	500	455	7.36	366	78																
1-May-12	14	500	455	7.42	349	83	#N/A	4.1	11.5	34	32.6	0.0373	0.0082	0.0657	0.00938	< 0.00002	< 0.00001	0.0068	< 0.000003	11.8	< 0.0005	0.00130
8-May-12	15	500	460	7.30	380	84																
15-May-12	16	500	450	7.29	311	92	#N/A	2.8	9.8	28	37.1	0.0308	0.0081	0.0598	0.00988	< 0.00002	< 0.00001	0.0080	< 0.000003	13.4	< 0.0005	0.00156
22-May-12	17	500	440	7.21	339	81																
29-May-12	18	500	435	7.26	330	83	#N/A	2.7	10.0	24	33.5	0.0801	0.0112	0.0574	0.0112	0.00004	< 0.00001	0.0081	< 0.000003	12.1	< 0.0005	0.00148
5-Jun-12	19	500	450	7.16	373	80																
12-Jun-12	20	500	450	7.23	347	93	#N/A	2.9	10.3	29	39.3	0.0322	0.0088	0.0406	0.0103	0.00003	< 0.00001	0.0071	< 0.000003	14.2	< 0.0005	0.00186
19-Jun-12	21	500	485	7.21	370	95																
26-Jun-12	22	500	475	7.20	331	92	#N/A	3.3	10.1	32	39.0	0.0301	0.0073	0.0404	0.00972	0.00003	< 0.00001	0.0066	< 0.000003	14.2	< 0.0005	0.00186
3-Jul-12	23	500	490	7.39	389	96																
10-Jul-12	24	500	490	7.08	339	110	#N/A	3.4	9.0	39	44.7	0.0261	0.0078	0.0328	0.0100	0.00004	< 0.00001	0.0065	0.000007	16.4	< 0.0005	0.00208
17-Jul-12	25	500	485	7.14	377	113																
24-Jul-12	26	500	485	7.13	340	114	#N/A	2.5	7.9	37	46.4	0.0355	0.0077	0.0311	0.0110	0.00005	< 0.00001	0.0060	0.000011	17.1	< 0.0005	0.00230
31-Jul-12	27	500	485	7.14	363	109																
7-Aug-12	28	500	505	7.19	332	111	#N/A	2.8	8.0	42	48.3	0.0440	0.0076	0.0287	0.0108	0.00006	< 0.00001	0.0050	0.000011	17.9	< 0.0005	0.00216
14-Aug-12	29	500	485	7.04	327	120																
21-Aug-12	30	500	490	7.00	308	118	#N/A	2.7	7.4	47	50.8	0.0329	0.0088	0.0257	0.0097	0.00010	< 0.00001	0.0054	0.000018	18.8	< 0.0005	0.00272
28-Aug-12	31	500	500	6.96	348	110																
4-Sep-12	32	500	495	6.92	386	93	#N/A	3.4	6.9	34	40.5	0.0555	0.0061	0.0211	0.00823	0.00008	< 0.00001	0.0037	0.000032	15.1	< 0.0005	0.00168
11-Sep-12	33	500	495	7.06	386	112																
18-Sep-12	34	500	500	6.90	364	105	#N/A	2.7	7.8	44	44.1	0.0231	0.0061	0.0211	0.00854	0.00012	< 0.00001	0.0043	0.000013	16.4	< 0.0005	0.00206
25-Sep-12	35	500	495	7.19	405	120																
2-Oct-12	36	500	495	6.92	382	99	#N/A	2.6	7.5	37	41.5	0.0109	0.0059	0.0184	0.0073	0.00011	< 0.00001	0.0038	0.000012	15.5	< 0.0005	0.00217
9-Oct-12	37	500	500	7.27	410	133																
16-Oct-12	38	500	500	6.91	384	94	#N/A	2.2	6.9	38	38.3	0.0109	0.0051	0.0156	0.00693	0.00010	< 0.00001	0.0030	0.000024	14.4	< 0.0005	0.00212
23-Oct-12	39	500	162	6.99	410	130																
30-Oct-12	40	500	162	6.95	360	96	#N/A	2.9	7.9	37	43.0	0.0251	0.0058	0.0143	0.00748	0.00013	< 0.00001	0.0035	0.000026	16.2	< 0.0005	0.00238
6-Nov-12	41	500	495	6.91	420	140																
13-Nov-12	42	500	500	7.17	371	80	#N/A	4.3	7.5	30	35.4	0.0078	0.0046	0.0130	0.00639	0.00010	< 0.00001	0.0029	0.000017	13.3	< 0.0005	0.00195
20-Nov-12	43	500	505	6.91	425	95																
27-Nov-12	44	500	495	7.36	354	94	#N/A	4.3	13.1	31	33.8	0.0104	0.0044	0.0115	0.00719	0.00008	< 0.00001	0.0030	0.000704	12.7	< 0.0005	0.00222
4-Dec-12	45	500	480	6.99	420	105																
11-Dec-12	46	500	465	7.00	350	72	#N/A	2.2	5.0	25	30.4	0.0057	0.0040	0.0114	0.00650	0.00010	< 0.00001	0.0030	0.000019	11.4	< 0.0005	0.00228
18-Dec-12	47	500	470	7.14	385	74																

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
25-Dec-12	48	500	450	7.35	380	83	#N/A	4.2	6.5	33	34.3	0.0057	0.0043	0.0092	0.00793	0.00016	< 0.00001	0.0034	0.000026	12.8	< 0.0005	0.00374
1-Jan-13	49	500	450	6.98	360	65																
8-Jan-13	50	500	455	7.32	290	59	#N/A	3.5	6.1	18	27.4	0.0157	0.0091	0.0148	0.00560	0.00012	< 0.00001	0.0034	0.000017	10.3	< 0.0005	0.00225
15-Jan-13	51	500	455	7.19	360	45																
22-Jan-13	52	500	455	7.24	320	65	#N/A	4.2	5.9	26	25.4	0.0165	0.0046	0.0097	0.00583	0.00017	< 0.00001	0.0031	0.000021	9.56	< 0.0005	0.00281
29-Jan-13	53	500	450	7.12	397	85																
5-Feb-13	54	500	470	7.21	384	86	#N/A	4.2	5.0	35	32.5	0.0044	0.0037	0.0078	0.00701	0.00017	0.00002	0.0022	0.000047	12.3	< 0.0005	0.00368
12-Feb-13	55	500	450	7.32	394	92																
19-Feb-13	56	500	465	7.11	393	92	#N/A	3.4	4.7	39	37.7	0.0105	0.0032	0.0049	0.00831	0.00024	< 0.00001	0.0029	0.000038	14.2	< 0.0005	0.00446
26-Feb-13	57	500	460	7.19	411	97																
5-Mar-13	58	500	450	7.38	407	101	#N/A	4.8	5.6	43	39.5	0.0019	0.0034	0.0047	0.00827	0.00028	< 0.00001	0.0029	0.000035	14.9	< 0.0005	0.00466
12-Mar-13	59	500	465	7.39	365	70																
19-Mar-13	60	500	455	7.41	364	104	#N/A	6.7	5.0	39	40.1	0.0006	0.0027	0.0031	0.00875	0.00036	< 0.00001	0.0032	0.000041	15.1	< 0.0005	0.00514
26-Mar-13	61	500	455	7.33	410	94																
2-Apr-13	62	500	445	7.25	379	118	#N/A	5.4	5.1	50	51.9	0.0021	0.0030	0.0041	0.00874	0.00035	< 0.00001	0.0034	0.000039	19.8	< 0.0005	0.00537
9-Apr-13	63	500	455	7.24	403	100																
16-Apr-13	64	500	450	7.29	385	105	#N/A	5.2	4.3	51	46.1	0.0017	0.0032	0.0027	0.00803	0.00043	< 0.00001	0.0035	0.000045	17.5	< 0.0005	0.00536
23-Apr-13	65	500	445	7.36	393	105																
30-Apr-13	66	500	445	7.17	376	104	#N/A	4.6	3.5	48	43.6	0.0008	0.0024	0.0015	0.00804	0.00056	< 0.00001	0.0038	0.000042	16.5	< 0.0005	0.00661
7-May-13	67	500	450	7.27	420	115																
14-May-13	68	500	450	7.14	381	80	#N/A	5.3	2.7	36	33.4	0.0119	0.0022	0.0043	0.00608	0.00051	< 0.00001	0.0024	0.000033	12.6	< 0.0005	0.00469
21-May-13	69	500	445	7.15	413	101																
28-May-13	70	500	450	7.29	410	119	#N/A	5.2	3.5	56	51.5	0.0011	0.0023	0.0016	0.00880	0.00058	< 0.00001	0.0040	0.000042	19.6	< 0.0005	0.00649
4-Jun-13	71	500	440	7.27	424	102																
11-Jun-13	72	500	450	7.35	374	113	#N/A	7.8	4.7	53												
18-Jun-13	73	500	445	7.39	427	109																
25-Jun-13	74	500	450	6.93	430	105	#N/A	4.8	2.5	48	41.7	0.0017	0.0017	0.0014	0.00763	0.00063	< 0.00001	0.0050	0.000049	15.7	< 0.0005	0.00669
2-Jul-13	75	500	445	7.02	388	112																
9-Jul-13	76	500	490	7.24	313	126	#N/A	6.6	5.6	57												
16-Jul-13	77	500	445	6.93	421	105																
23-Jul-13	78	500	450	7.12	412	101	#N/A	6.4	4.6	50	44.1	0.0011	0.0016	0.0011	0.00685	0.00059	< 0.00001	0.0050	0.000049	16.7	< 0.0005	0.00659
30-Jul-13	79	500	450	6.91	399	99																
6-Aug-13	80	500	455	7.31	358	101	#N/A	7.2	4.0	42												
13-Aug-13	81	500	445	6.81	388	111																
20-Aug-13	82	500	445	6.47	335	118	#N/A	3.1	1.8	47												
27-Aug-13	83	500	450	6.36	335	108																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0009	< 0.003	0.00010	0.006	1.97	0.0904	0.01	0.00888	0.0151	< 0.009	8.40	0.00239	1.28	< 0.00001	2.78	0.377	19.4	0.00026	0.00004	0.0003	0.000450	0.00160	0.002	< 0.00001
31-Jan-12	1	< 0.0005	0.004	0.00004	0.005	1.85	0.103	< 0.01	0.0124	0.0107	< 0.009	5.28	0.00256	1.38	< 0.00001	2.10	0.381	20.1	0.00019	0.00120	0.0005	0.000532	0.00163	< 0.001	0.00005
7-Feb-12	2	< 0.0005	< 0.003	0.00007	0.003	1.25	0.0628	< 0.01	0.00871	0.0057	< 0.009	3.97	0.00168	1.08	< 0.00001	1.27	0.254	11.1	0.00014	0.00058	0.0005	0.000406	0.00167	< 0.001	< 0.00001
14-Feb-12	3	< 0.0005	< 0.003	< 0.00002	0.003	1.11	0.0607	< 0.01	0.00795	0.0039	< 0.009	3.10	0.00140	1.12	< 0.00001	0.82	0.234	9.15	0.00013	0.00055	0.0003	0.000465	0.00153	0.002	0.00002
21-Feb-12	4	< 0.0005	< 0.003	< 0.00002	0.002	1.07	0.0720	0.01	0.00803	0.0050	< 0.009	3.14	0.00086	1.06	< 0.00001	0.62	0.221	8.54	0.00012	0.00032	0.0001	0.000497	0.00122	< 0.001	< 0.00001
28-Feb-12	5																								
6-Mar-12	6	0.0007	0.006	0.00005	0.001	0.874	0.0594	< 0.01	0.00524	0.0046	< 0.009	2.63	0.00099	1.10	< 0.00001	0.35	0.190	7.67	0.00011	0.00013	0.0003	0.000352	0.00125	0.001	< 0.00001
13-Mar-12	7																								
20-Mar-12	8	< 0.0005	< 0.003	0.00003	0.001	0.881	0.0803	0.01	0.00433	0.0061	< 0.009	2.44	0.00104	0.95	< 0.00001	0.27	0.190	7.70	0.00007	0.00026	0.0002	0.000317	0.00088	< 0.001	< 0.00001
27-Mar-12	9																								
3-Apr-12	10	< 0.0005	< 0.003	< 0.00002	< 0.001	0.847	0.0905	< 0.01	0.00322	0.0133	< 0.009	2.02	0.00101	0.74	< 0.00001	0.25	0.191	9.15	0.00009	0.00016	< 0.0001	0.000216	0.00056	0.001	0.00003
10-Apr-12	11																								
17-Apr-12	12	< 0.0005	0.014	0.00004	< 0.001	0.974	0.118	0.01	0.00480	0.0161	< 0.009	1.91	0.00088	0.90	< 0.00001	0.17	0.201	9.65	0.00011	0.00008	0.0002	0.000327	0.00069	0.001	< 0.00001
24-Apr-12	13																								
1-May-12	14	0.0006	< 0.003	0.00006	< 0.001	0.784	0.105	0.06	0.00321	0.0202	< 0.009	1.65	0.00052	0.66	< 0.00001	0.18	0.175	8.83	0.00009	0.00012	0.0002	0.000137	0.00064	0.001	0.00002
8-May-12	15																								
15-May-12	16	< 0.0005	< 0.003	0.00002	< 0.001	0.876	0.122	0.01	0.00357	0.0231	< 0.009	1.74	0.00082	0.71	< 0.00001	0.20	0.194	10.1	0.00010	0.00008	0.0001	0.000111	0.00052	0.001	0.00002
22-May-12	17																								
29-May-12	18	0.0007	0.008	0.00007	< 0.001	0.817	0.125	< 0.01	0.00325	0.0223	< 0.009	1.73	0.00082	0.83	< 0.00001	0.14	0.174	9.09	0.00010	0.00027	0.0004	0.000178	0.00063	0.001	0.00004
5-Jun-12	19																								
12-Jun-12	20	0.0007	< 0.003	< 0.00002	< 0.001	0.940	0.161	0.01	0.00274	0.0265	< 0.009	1.59	0.00111	0.71	< 0.00001	0.14	0.200	10.8	0.00008	0.00032	< 0.0001	0.000142	0.00041	0.001	< 0.00001
19-Jun-12	21																								
26-Jun-12	22	< 0.0005	< 0.003	< 0.00002	< 0.001	0.885	0.165	0.01	0.00287	0.0264	< 0.009	1.46	0.00069	0.72	< 0.00001	0.13	0.193	11.2	0.00008	0.00026	< 0.0001	0.000124	0.00046	0.001	0.00001
3-Jul-12	23																								
10-Jul-12	24	< 0.0005	< 0.003	< 0.00002	< 0.001	0.938	0.184	< 0.01	0.00404	0.0289	< 0.009	1.41	0.00081	0.71	< 0.00001	0.12	0.215	13.1	0.00008	0.00025	0.0001	0.000105	0.00038	0.002	0.00011
17-Jul-12	25																								
24-Jul-12	26	< 0.0005	< 0.003	< 0.00002	< 0.001	0.918	0.188	0.01	0.00569	0.0324	< 0.009	1.23	0.00076	0.66	< 0.00001	0.11	0.212	14.1	0.00006	0.00017	< 0.0001	0.000087	0.00042	0.002	< 0.00001
31-Jul-12	27																								
7-Aug-12	28	0.0006	< 0.003	< 0.00002	< 0.001	0.888	0.184	< 0.01	0.00654	0.0328	< 0.009	1.21	0.00063	0.63	< 0.00001	0.11	0.215	15.1	0.00008	0.00024	< 0.0001	0.000070	0.00036	0.002	< 0.00001
14-Aug-12	29																								
21-Aug-12	30	0.0006	< 0.003	0.00002	< 0.001	0.907	0.195	< 0.01	0.00698	0.0429	< 0.009	1.10	0.00076	0.64	< 0.00001	0.12	0.219	15.7	0.00008	0.00021	0.0001	0.00010	0.00034	0.002	< 0.00001
28-Aug-12	31																								
4-Sep-12	32	0.0006	< 0.003	< 0.00002	< 0.001	0.661	0.141	< 0.01	0.00562	0.0280	< 0.009	0.812	0.00062	0.46	< 0.00001	0.09	0.170	12.1	0.00006	0.00012	0.0001	0.000093	0.00057	0.002	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	< 0.0005	< 0.003	< 0.00002	< 0.001	0.741	0.159	< 0.01	0.00572	0.0366	< 0.009	0.938	0.00075	0.54	< 0.00001	0.09	0.188	13.4	0.00006	0.00016	< 0.0001	0.000100	0.00026	0.002	< 0.00001
25-Sep-12	35																								
2-Oct-12	36	< 0.0005	< 0.003	< 0.00002	< 0.001	0.656	0.145	0.01	0.00572	0.0349	< 0.009	0.785	0.00056	0.51	< 0.00001	0.06	0.168	12.7	0.00006	0.00006	< 0.0001	0.000098	0.00016	0.001	< 0.00001
9-Oct-12	37																								
16-Oct-12	38	0.0009	< 0.003	0.00005	< 0.001	0.595	0.146	< 0.01	0.00516	0.0317	< 0.009	0.709	0.00064	0.44	< 0.00001	0.06	0.153	11.9	0.00006	0.00013	< 0.0001	0.000092	0.00020	0.002	< 0.00001
23-Oct-12	39																								
30-Oct-12	40	0.0009	< 0.003	< 0.00002	< 0.001	0.650	0.168	< 0.01	0.00555	0.0359	< 0.009	0.783	0.00056	0.54	< 0.00001	0.08	0.173	13.1	0.00005	0.00008	< 0.0001	0.000095	0.00022	0.002	< 0.00001
6-Nov-12	41																								
13-Nov-12	42	< 0.0005	< 0.003	0.00002	< 0.001	0.504	0.124	0.01	0.00444	0.0288	< 0.009	0.592	0.00047	0.41	< 0.00001	0.05	0.134	10.7	0.00005	0.00004	< 0.0001	0.000075	0.00016	0.002	< 0.00001
20-Nov-12	43																								
27-Nov-12	44	0.0007	< 0.003	< 0.00002	< 0.001	0.491	0.137	< 0.01	0.00381	0.0324	< 0.009	0.569	0.00062	0.37	< 0.00001	0.06	0.127	9.67	0.00004	0.00008	< 0.0001	0.000062	0.00014	0.007	< 0.00001
4-Dec-12	45																								
11-Dec-12	46	0.0009	< 0.003	0.00018	< 0.001	0.438	0.143	< 0.01	0.00286	0.0319	< 0.009	0.543	0.00054	0.44	< 0.00001	0.15	0.115	9.30	0.00005	0.00015	< 0.0001	0.000042	0.00004	0.002	< 0.00001
18-Dec-12	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	< 0.0005	0.004	< 0.00002	< 0.001	0.558	0.176	< 0.01	0.00305	0.0459	0.015	0.650	0.00092	0.31	< 0.00001	0.05	0.149	10.3	0.00005	0.00010	< 0.0001	0.000053	< 0.00003	0.002	< 0.00001
1-Jan-13	49																								
8-Jan-13	50	0.0005	< 0.003	< 0.00002	< 0.001	0.391	0.134	< 0.01	0.00234	0.0285	< 0.009	0.735	0.00090	0.51	< 0.00001	0.09	0.101	7.05	0.00005	0.00009	< 0.0001	0.000067	0.00024	0.001	< 0.00001
15-Jan-13	51																								
22-Jan-13	52	< 0.0005	< 0.003	0.00002	< 0.001	0.374	0.140	< 0.01	0.00139	0.0338	< 0.009	0.679	0.00107	0.34	< 0.00001	< 0.01	0.102	7.79	0.00005	0.00016	< 0.0001	0.000062	0.00020	0.002	< 0.00001
29-Jan-13	53																								
5-Feb-13	54	0.0009	< 0.003	0.00103	< 0.001	0.468	0.181	< 0.01	0.00173	0.0424	< 0.009	0.656	0.00118	0.31	< 0.00001	0.07	0.131	11.0	0.00008	0.00008	< 0.0001	0.000102	0.00006	0.004	< 0.00001
12-Feb-13	55																								
19-Feb-13	56	0.0007	< 0.003	0.00002	< 0.001	0.567	0.241	< 0.01	0.00178	0.0574	< 0.009	0.638	0.00129	0.26	< 0.00001	0.06	0.139	12.1	0.00005	0.00004	< 0.0001	0.000058	0.00006	0.003	< 0.00001
26-Feb-13	57																								
5-Mar-13	58	0.0010	< 0.003	< 0.00002	< 0.001	0.579	0.244	< 0.01	0.00189	0.0551	< 0.009	0.667	0.00114	0.37	< 0.00001	0.08	0.152	13.2	0.00005	0.00003	< 0.0001	0.000069	< 0.00003	0.003	< 0.00001
12-Mar-13	59																								
19-Mar-13	60	0.0014	< 0.003	0.00003	< 0.001	0.574	0.263	< 0.01	0.00199	0.0589	< 0.009	0.671	0.00098	0.37	< 0.00001	0.05	0.144	13.5	0.00006	0.00006	< 0.0001	0.000075	0.00003	0.003	< 0.00001
26-Mar-13	61																								
2-Apr-13	62	0.0011	< 0.003	0.00002	< 0.001	0.620	0.286	< 0.01	0.00290	0.0660	< 0.009	0.689	0.00079	0.40	< 0.00001	0.06	0.180	16.7	0.00006	0.00004	< 0.0001	0.000085	< 0.00003	0.002	< 0.00001
9-Apr-13	63																								
16-Apr-13	64	0.0015	0.010	0.00005	< 0.001	0.598	0.292	< 0.01	0.00223	0.0626	< 0.009	0.671	0.00066	0.39	< 0.00001	0.06	0.161	15.4	0.00006	0.00007	< 0.0001	0.000096	0.00004	0.003	< 0.00001
23-Apr-13	65																								
30-Apr-13	66	0.0026	0.059	0.00005	< 0.001	0.591	0.336	< 0.01	0.00128	0.0731	< 0.009	0.616	0.00118	0.35	< 0.00001	0.05	0.149	14.4	0.00006	0.00005	< 0.0001	0.000075	< 0.00003	0.003	< 0.00001
7-May-13	67																								
14-May-13	68	0.0036	0.113	0.00026	< 0.001	0.445	0.243	< 0.01	0.00102	0.0513	< 0.009	0.569	0.00083	0.32	< 0.00001	0.05	0.111	11.3	0.00005	0.00004	< 0.0001	0.000137	0.00005	0.002	< 0.00001
21-May-13	69																								
28-May-13	70	0.0021	0.075	0.00006	< 0.001	0.640	0.389	< 0.01	0.00080	0.0708	< 0.009	0.691	0.00133	0.34	< 0.00001	0.06	0.172	16.7	0.00006	0.00007	< 0.0001	0.000118	< 0.00003	0.003	< 0.00001
4-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	0.0041	0.165	0.00038	< 0.001	0.589	0.398	0.01	0.00048	0.0713	0.009	0.646	0.00143	0.02	< 0.00001	0.05	0.145	14.3	0.00006	0.00007	< 0.0001	0.000142	< 0.00003	0.004	< 0.00001
2-Jul-13	75																								
9-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	0.0035	0.132	0.00009	< 0.001	0.580	0.415	< 0.01	0.00051	0.0688	< 0.009	0.591	0.00130	0.37	< 0.00001	0.04	0.146	15.5	0.00005	0.00005	< 0.0001	0.000113	< 0.00003	0.003	< 0.00001
30-Jul-13	79																								
6-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L	Cu mg/L
24-Jan-12	0	500	390	7.31	336	497	#N/A	4.4	27.9	210	187	0.0190	0.0119	0.0053	0.0356	< 0.00002	< 0.00001	0.0303	0.00307	59.4	< 0.0005	0.00837	0.0015
31-Jan-12	1	500	460	6.87	296	381	#N/A	3.9	3.3	166	138	0.0201	0.0084	0.0082	0.0183	0.00003	< 0.00001	0.0176	0.000820	43.3	< 0.0005	0.00293	0.0035
7-Feb-12	2	500	470	7.29	335	325	#N/A	3.5	7.8	153	131	0.0147	0.0064	0.0057	0.0117	< 0.00002	< 0.00001	0.0186	0.000630	41.0	< 0.0005	0.00227	0.0006
14-Feb-12	3	500	470	7.46	370	311	#N/A	4.6	11.4	131	121	0.0162	0.0063	0.0076	0.0142	< 0.00002	< 0.00001	0.0174	0.000452	37.8	< 0.0005	0.00142	0.0007
21-Feb-12	4	500	475	7.30	355	222	#N/A	4.4	9.7	91	86.2	0.0113	0.0063	0.0070	0.0104	< 0.00002	< 0.00001	0.0159	0.000364	26.7	< 0.0005	0.00112	< 0.0005
28-Feb-12	5	500	500	7.24	393	176																	
6-Mar-12	6	500	445	7.44	369	179	#N/A	4.7	7.7	79	67.6	0.0194	0.0049	0.0042	0.00928	< 0.00002	< 0.00001	0.0130	0.000324	21.4	< 0.0005	0.000860	0.0008
13-Mar-12	7	500	505	7.17	368	152																	
20-Mar-12	8	500	475	7.23	337	133	#N/A	3.4	6.8	54	50.4	0.0067	0.0055	0.0040	0.00698	< 0.00002	< 0.00001	0.0118	0.000247	15.9	< 0.0005	0.000685	0.0006
27-Mar-12	9	500	430	7.01	349	126																	
3-Apr-12	10	500	480	7.03	360	104	#N/A	2.8	5.8	42	40.7	0.0447	0.0049	0.0041	0.00678	< 0.00002	< 0.00001	0.0109	0.000198	12.6	< 0.0005	0.000638	0.0006
10-Apr-12	11	500	450	6.94	342	112																	
17-Apr-12	12	500	440	7.13	345	114	#N/A	3.0	5.5	47	42.1	0.0311	0.0047	0.0038	0.00660	< 0.00002	< 0.00001	0.0115	0.000219	12.9	< 0.0005	0.000660	< 0.0005
24-Apr-12	13	500	450	7.08	378	102																	
1-May-12	14	500	455	7.35	352	107	#N/A	4.1	5.9	46	41.3	0.0313	0.0048	0.0038	0.00553	< 0.00002	< 0.00001	0.0113	0.000239	12.5	< 0.0005	0.000636	0.0012
8-May-12	15	500	495	7.14	383	104																	
15-May-12	16	500	470	7.12	310	104	#N/A	2.8	5.2	36	40.7	0.0173	0.0050	0.0041	0.00632	< 0.00002	< 0.00001	0.0115	0.000221	12.1	< 0.0005	0.000672	0.0008
22-May-12	17	500	480	7.08	335	95																	
29-May-12	18	500	480	7.08	329	106	#N/A	2.9	5.3	40	41.5	0.0300	0.0046	0.0036	0.00595	< 0.00002	< 0.00001	0.0101	0.000285	12.2	< 0.0005	0.000691	0.0010
5-Jun-12	19	500	475	7.05	367	99																	
12-Jun-12	20	500	480	7.16	343	93	#N/A	3.0	5.7	32	37.1	0.0256	0.0046	0.0033	0.00525	< 0.00002	< 0.00001	0.0090	0.000269	10.8	< 0.0005	0.000674	< 0.0005
19-Jun-12	21	500	485	7.00	377	95																	
26-Jun-12	22	500	480	7.10	329	90	#N/A	3.1	6.0	32	36.5	0.0261	0.0044	0.0035	0.00466	< 0.00002	< 0.00001	0.0083	0.000263	10.6	< 0.0005	0.000658	0.0012
3-Jul-12	23	500	495	7.47	372	99																	
10-Jul-12	24	500	485	7.05	325	99	#N/A	3.6	5.5	36	37.8	0.0221	0.0049	0.0033	0.00540	< 0.00002	< 0.00001	0.0083	0.000356	11.0	< 0.0005	0.000794	< 0.0005
17-Jul-12	25	500	480	7.01	377	102																	
24-Jul-12	26	500	480	6.81	344	103	#N/A	2.5	5.2	37	40.5	0.0375	0.0044	0.0034	0.00555	< 0.00002	< 0.00001	0.0083	0.000457	11.7	< 0.0005	0.00105	0.0007
31-Jul-12	27	500	495	6.95	369	95																	
7-Aug-12	28	500	500	7.07	325	97	#N/A	2.7	5.1	38	41.1	0.0465	0.0045	0.0032	0.00713	0.00003	< 0.00001	0.0083	0.000771	11.9	< 0.0005	0.00211	< 0.0005
14-Aug-12	29	500	485	6.87	322	101																	
21-Aug-12	30	500	490	6.86	301	100	#N/A	2.7	4.9	41	41.0	0.0310	0.0048	0.0019	0.0073	0.00011	< 0.00001	0.0079	0.000685	11.9	< 0.0005	0.00180	0.0006
28-Aug-12	31	500	490	6.76	342	89																	
4-Sep-12	32	500	490	6.77	382	77	#N/A	3.8	4.1	28	30.9	0.0342	0.0032	0.0020	0.00585	0.00009	< 0.00001	0.0059	0.000671	8.90	< 0.0005	0.00126	0.0009
11-Sep-12	33	500	490	6.93	389	92																	
18-Sep-12	34	500	485	6.70	358	81	#N/A	2.6	4.4	32	31.1	0.0202	0.0033	0.0021	0.00544	0.00007	< 0.00001	0.0060	0.000640	8.82	< 0.0005	0.00115	< 0.0005
25-Sep-12	35	500	490	6.81	330	92																	
2-Oct-12	36	500	490	6.74	371	78	#N/A	2.8	4.1	31	31.0	0.0089	0.0033	0.0021	0.0056	0.00007	< 0.00001	0.0058	0.000644	8.84	< 0.0005	0.00128	0.0013
9-Oct-12	37	500	500	6.91	415	123																	
16-Oct-12	38	500	490	6.60	414	74	#N/A	3.0	3.5	29	28.9	0.0091	0.0029	0.0016	0.00457	0.00004	< 0.00001	0.0049	0.000597	8.18	< 0.0005	0.00114	0.0046
23-Oct-12	39	500	485	6.91	335	95																	
30-Oct-12	40	500	490	6.80	357	74	#N/A	2.7	4.7	28	31.5	0.0330	0.0028	0.0018	0.00459	0.00004	< 0.00001	0.0052	0.000544	8.94	< 0.0005	0.00107	< 0.0005
6-Nov-12	41	500	485	6.92	340	100																	
13-Nov-12	42	500	490	7.26	374	66	#N/A	4.0	4.3	25	28.5	0.0067	0.0019	0.0013	0.00396	0.00003	< 0.00001	0.0044	0.000551	8.08	< 0.0005	0.00107	0.0005
20-Nov-12	43	500	495	6.93	350	70																	
27-Nov-12	44	500	490	7.22	342	72	#N/A	4.5	5.2	28	29.4	0.0093	0.0017	0.0016	0.00381	0.00002	< 0.00001	0.0041	0.000468	8.32	< 0.0005	0.000893	< 0.0005
4-Dec-12	45	500	480	6.91	355	60																	
11-Dec-12	46	500	500	6.97	345	66	#N/A	2.3	4.2	22	26.2	0.0051	0.0020	0.0014	0.00293	0.00002	< 0.00001	0.0045	0.000367	7.44	< 0.0005	0.000724	0.0007
18-Dec-12	47	500	470	7.26	371	68																	

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L	Cu mg/L
25-Dec-12	48	500	450	7.42	377	73	#N/A	4.0	4.7	30	28.7	0.0075	0.0022	0.0019	0.00358	< 0.00002	< 0.00001	0.0044	0.000479	8.01	< 0.0005	0.00110	< 0.0005
1-Jan-13	49	500	435	7.01	345	70																	
8-Jan-13	50	500	435	7.25	302	76	#N/A	3.5	3.6	30	32.6	0.0275	0.0027	0.0016	0.00369	0.00003	0.00001	0.0039	0.000569	9.67	< 0.0005	0.00124	0.0008
15-Jan-13	51	500	430	7.12	340	55																	
22-Jan-13	52	500	445	7.19	316	84	#N/A	4.6	4.1	35	32.5	0.0141	0.0021	0.0019	0.00434	0.00003	< 0.00001	0.0042	0.000642	9.40	< 0.0005	0.00158	< 0.0005
29-Jan-13	53	500	450	7.12	398	76																	
5-Feb-13	54	500	460	7.31	379	78	#N/A	4.0	3.5	36	29.7	0.0168	0.0019	0.0014	0.00390	0.00003	< 0.00001	0.0030	0.000536	8.13	< 0.0005	0.00119	< 0.0005
12-Feb-13	55	500	465	7.40	375	84																	
19-Feb-13	56	500	465	7.23	384	82	#N/A	3.5	3.3	35	32.5	0.0036	0.0017	0.0019	0.00393	0.00003	< 0.00001	0.0037	0.000543	8.99	< 0.0005	0.00109	< 0.0005
26-Feb-13	57	500	470	7.25	399	85																	
5-Mar-13	58	500	455	7.49	391	89	#N/A	4.6	4.2	35	35.2	0.0038	0.0021	0.0022	0.00403	0.00004	< 0.00001	0.0040	0.000655	9.77	< 0.0005	0.00116	< 0.0005
12-Mar-13	59	500	460	7.31	350	90																	
19-Mar-13	60	500	445	7.55	344	85	#N/A	6.8	4.4	34	32.5	0.0365	0.0019	0.0021	0.00457	0.00020	0.00008	0.0049	0.000627	9.00	0.0007	0.00192	0.0052
26-Mar-13	61	500	460	7.55	389	80																	
2-Apr-13	62	500	445	7.35	375	80	#N/A	5.2	4.5	30	34.3	0.0038	0.0019	0.0015	0.00388	0.00005	< 0.00001	0.0046	0.000584	9.56	< 0.0005	0.00108	< 0.0005
9-Apr-13	63	500	460	7.34	409	79																	
16-Apr-13	64	500	460	7.55	368	59	#N/A	4.9	4.0	25	24.0	0.0428	0.0022	0.0017	0.00323	0.00005	< 0.00001	0.0045	0.000483	6.80	< 0.0005	0.000750	0.0006
23-Apr-13	65	500	440	7.54	382	83																	
30-Apr-13	66	500	450	7.45	377	81	#N/A	4.1	3.7	37	34.1	0.0023	0.0016	0.0014	0.00358	0.00007	< 0.00001	0.0046	0.000689	9.56	< 0.0005	0.00112	0.0006
7-May-13	67	500	440	7.47	418	85																	
14-May-13	68	500	425	7.34	407	75	#N/A	4.7	2.9	31	30.1	0.0042	0.0017	0.0020	0.00346	0.00009	< 0.00001	0.0032	0.000792	8.31	< 0.0005	0.00131	0.0014
21-May-13	69	500	440	7.42	419	84																	
28-May-13	70	500	445	7.47	409	88	#N/A	4.2	3.3	42	37.4	0.0022	0.0018	0.0017	0.00399	0.00009	< 0.00001	0.0053	0.000909	10.3	< 0.0005	0.00127	0.0006
4-Jun-13	71	500	445	7.39	422	88																	
11-Jun-13	72	500	445	7.54	374	91	#N/A	6.7	5.1	40													
18-Jun-13	73	500	445	7.21	419	90																	
25-Jun-13	74	500	440	7.20	401	86	#N/A	4.1	2.7	39	35.2	0.0014	0.0016	0.0018	0.00399	0.00013	< 0.00001	0.0057	0.000992	9.56	< 0.0005	0.00159	0.0017
2-Jul-13	75	500	440	7.41	351	91																	
9-Jul-13	76	500	435	7.38	303	94	#N/A	6.5	4.5	45													
16-Jul-13	77	500	435	7.01	438	92																	
23-Jul-13	78	500	440	7.35	392	87	#N/A	6.1	4.6	41	37.4	0.0016	0.0015	0.0019	0.00396	0.00016	< 0.00001	0.0054	0.00118	10.2	< 0.0005	0.00186	0.0015
30-Jul-13	79	500	430	7.01	425	91																	
6-Aug-13	80	500	455	7.52	347	98	#N/A	6.8	4.4	42													
13-Aug-13	81	500	440	6.93	410	98																	
20-Aug-13	82	500	435	6.93	370	103	#N/A	3.1	1.7	43													
27-Aug-13	83	500	440	6.45	393	95																	

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	< 0.003	0.00012	0.034	9.40	0.729	0.01	0.00096	0.0260	< 0.009	19.0	0.00649	1.38	< 0.00001	11.0	1.75	71.2	0.00113	0.00003	0.0002	0.000379	0.00040	0.035	< 0.00001
31-Jan-12	1	0.007	0.00045	0.014	7.27	0.392	< 0.01	0.00124	0.0090	< 0.009	11.3	0.00730	1.05	0.00009	7.22	1.24	59.2	0.00056	0.00105	0.0002	0.000126	0.00040	0.009	< 0.00001
7-Feb-12	2	< 0.003	0.00006	0.010	7.04	0.410	< 0.01	0.00069	0.0073	< 0.009	9.69	0.00457	1.04	< 0.00001	4.83	1.13	47.4	0.00040	0.00066	0.0002	0.000069	0.00030	0.006	0.00001
14-Feb-12	3	< 0.003	< 0.00002	0.009	6.55	0.358	< 0.01	0.00061	0.0043	< 0.009	8.61	0.00443	1.12	< 0.00001	3.58	1.10	41.0	0.00039	0.00042	0.0002	0.000160	0.00035	0.003	< 0.00001
21-Feb-12	4	< 0.003	0.00002	0.006	4.76	0.248	0.01	0.00066	0.0030	< 0.009	7.08	0.00259	0.99	< 0.00001	2.12	0.784	30.3	0.00028	0.00032	< 0.0001	0.000106	0.00023	0.003	< 0.00001
28-Feb-12	5																							
6-Mar-12	6	< 0.003	< 0.00002	0.005	3.42	0.166	< 0.01	0.00073	0.0024	< 0.009	5.24	0.00189	0.91	< 0.00001	1.07	0.613	24.3	0.00022	0.00013	< 0.0001	0.000080	0.00025	0.004	< 0.00001
13-Mar-12	7																							
20-Mar-12	8	< 0.003	0.00007	0.004	2.58	0.139	< 0.01	0.00080	0.0016	< 0.009	3.95	0.00121	0.84	< 0.00001	0.58	0.444	16.8	0.00013	0.00023	< 0.0001	0.000076	0.00013	0.003	< 0.00001
27-Mar-12	9																							
3-Apr-12	10	< 0.003	0.00004	0.003	2.27	0.118	< 0.01	0.00064	0.0017	< 0.009	3.38	0.00103	0.77	< 0.00001	0.37	0.348	13.9	0.00013	0.00016	0.0001	0.000060	0.00011	0.004	0.00005
10-Apr-12	11																							
17-Apr-12	12	< 0.003	0.00004	0.003	2.39	0.125	0.02	0.00082	0.0018	< 0.009	3.29	0.00087	0.72	< 0.00001	0.28	0.357	14.3	0.00012	0.00014	0.0001	0.000056	0.00023	0.004	0.00002
24-Apr-12	13																							
1-May-12	14	< 0.003	0.00011	0.003	2.43	0.133	0.04	0.00069	0.0019	< 0.009	3.05	0.00055	0.66	< 0.00001	0.27	0.337	13.5	0.00011	0.00014	0.0001	0.000055	0.00029	0.005	< 0.00001
8-May-12	15																							
15-May-12	16	< 0.003	0.00005	0.004	2.53	0.156	< 0.01	0.00068	0.0019	< 0.009	2.97	0.00081	0.72	< 0.00001	0.24	0.320	12.9	0.00012	0.00016	< 0.0001	0.000044	0.00021	0.004	< 0.00001
22-May-12	17																							
29-May-12	18	< 0.003	< 0.00002	0.003	2.68	0.181	< 0.01	0.00075	0.0017	< 0.009	2.66	0.00058	0.64	< 0.00001	0.17	0.315	13.6	0.00012	0.00038	< 0.0001	0.000067	0.00023	0.006	0.00002
5-Jun-12	19																							
12-Jun-12	20	< 0.003	< 0.00002	0.003	2.42	0.171	< 0.01	0.00080	0.0018	< 0.009	2.40	0.00061	0.61	< 0.00001	0.15	0.276	11.3	0.00009	0.00024	< 0.0001	0.000055	0.00026	0.004	< 0.00001
19-Jun-12	21																							
26-Jun-12	22	< 0.003	< 0.00002	0.003	2.44	0.175	0.01	0.00071	0.0017	< 0.009	2.29	0.00055	0.64	< 0.00001	0.15	0.270	11.8	0.00009	0.00016	< 0.0001	0.000064	0.00030	0.005	< 0.00001
3-Jul-12	23																							
10-Jul-12	24	< 0.003	< 0.00002	0.003	2.52	0.187	0.01	0.00077	0.0020	0.009	2.30	0.00062	0.68	< 0.00001	0.16	0.276	12.0	0.00009	0.00020	0.0001	0.000044	0.00025	0.006	< 0.00001
17-Jul-12	25																							
24-Jul-12	26	< 0.003	< 0.00002	0.003	2.75	0.220	0.01	0.00073	0.0024	< 0.009	2.10	0.00080	0.63	< 0.00001	0.14	0.286	13.4	0.00008	0.00015	0.0001	0.000043	0.00042	0.007	< 0.00001
31-Jul-12	27																							
7-Aug-12	28	< 0.003	0.00002	0.004	2.76	0.235	0.06	0.00076	0.0041	< 0.009	2.12	0.00082	0.68	< 0.00001	0.14	0.285	13.6	0.00010	0.00016	< 0.0001	0.000054	0.00026	0.015	< 0.00001
14-Aug-12	29																							
21-Aug-12	30	< 0.003	0.00002	0.003	2.77	0.224	< 0.01	0.00081	0.0041	< 0.009	1.87	0.00073	0.64	< 0.00001	0.12	0.273	13.4	0.00010	0.00018	0.0002	0.00010	0.00022	0.016	< 0.00001
28-Aug-12	31																							
4-Sep-12	32	< 0.003	< 0.00002	0.003	2.10	0.177	< 0.01	0.00061	0.0033	< 0.009	1.40	0.00057	0.46	< 0.00001	0.09	0.198	9.82	0.00007	0.00008	< 0.0001	0.000074	0.00026	0.015	< 0.00001
11-Sep-12	33																							
18-Sep-12	34	< 0.003	< 0.00002	0.003	2.20	0.182	0.01	0.00068	0.0033	< 0.009	1.45	0.00065	0.51	< 0.00001	0.10	0.201	9.96	0.00006	0.00010	0.0013	0.000072	0.00052	0.013	< 0.00001
25-Sep-12	35																							
2-Oct-12	36	< 0.003	0.00007	0.002	2.17	0.179	< 0.01	0.00072	0.0031	< 0.009	1.35	0.00056	0.52	< 0.00001	0.07	0.195	10.3	0.00007	0.00006	< 0.0001	0.000082	0.00012	0.012	< 0.00001
9-Oct-12	37																							
16-Oct-12	38	< 0.003	0.00004	0.002	2.04	0.177	< 0.01	0.00049	0.0030	< 0.009	1.21	0.00053	0.46	< 0.00001	0.08	0.176	9.56	0.00006	0.00010	< 0.0001	0.000062	0.00015	0.011	< 0.00001
23-Oct-12	39																							
30-Oct-12	40	< 0.003	0.00002	0.002	2.23	0.175	< 0.01	0.00046	0.0029	< 0.009	1.32	0.00046	0.54	< 0.00001	0.07	0.193	10.1	0.00005	0.00009	< 0.0001	0.000065	0.00025	0.010	< 0.00001
6-Nov-12	41																							
13-Nov-12	42	< 0.003	0.00002	0.002	2.01	0.119	0.01	0.00035	0.0030	< 0.009	1.09	0.00043	0.42	< 0.00001	0.07	0.165	9.19	0.00006	0.00004	< 0.0001	0.000054	0.00011	0.011	< 0.00001
20-Nov-12	43																							
27-Nov-12	44	< 0.003	< 0.00002	0.002	2.09	0.0866	< 0.01	0.00028	0.0026	< 0.009	1.10	0.00063	0.42	< 0.00001	0.07	0.167	8.92	0.00004	0.00008	< 0.0001	0.000057	0.00010	0.013	< 0.00001
4-Dec-12	45																							
11-Dec-12	46	< 0.003	0.00016	0.001	1.86	0.0617	< 0.01	0.00023	0.0020	< 0.009	0.968	0.00055	0.39	< 0.00001	0.10	0.150	8.24	0.00005	0.00017	< 0.0001	0.000045	0.00007	0.008	< 0.00001
18-Dec-12	47																							

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	< 0.003	< 0.00002	0.002	2.10	0.0716	< 0.01	0.00031	0.0035	< 0.009	1.01	0.00061	0.28	< 0.00001	0.06	0.176	8.69	0.00005	0.00011	< 0.0001	0.000030	< 0.00003	0.012	< 0.00001
1-Jan-13	49																							
8-Jan-13	50	< 0.003	0.00004	0.001	2.05	0.0871	< 0.01	0.00019	0.0038	< 0.009	1.13	0.00070	0.41	0.00002	0.07	0.175	9.35	0.00005	0.00015	0.0001	0.000037	0.00017	0.014	0.00001
15-Jan-13	51																							
22-Jan-13	52	< 0.003	0.00006	0.002	2.20	0.114	< 0.01	0.00019	0.0050	< 0.009	1.11	0.00116	0.36	< 0.00001	< 0.01	0.187	10.7	0.00005	0.00010	< 0.0001	0.000030	0.00016	0.018	< 0.00001
29-Jan-13	53																							
5-Feb-13	54	< 0.003	0.00004	0.002	2.29	0.0838	< 0.01	0.00022	0.0038	< 0.009	1.04	0.00081	0.31	< 0.00001	0.06	0.172	10.3	0.00005	0.00007	< 0.0001	0.000029	0.00005	0.010	< 0.00001
12-Feb-13	55																							
19-Feb-13	56	< 0.003	< 0.00002	0.002	2.45	0.0743	< 0.01	0.00022	0.0041	< 0.009	0.942	0.00090	0.23	< 0.00001	0.06	0.175	10.5	0.00004	0.00003	< 0.0001	0.000025	0.00006	0.013	< 0.00001
26-Feb-13	57																							
5-Mar-13	58	< 0.003	< 0.00002	0.002	2.62	0.0690	< 0.01	0.00020	0.0041	< 0.009	1.01	0.00083	0.36	< 0.00001	0.07	0.194	11.7	0.00004	< 0.00001	< 0.0001	0.000024	< 0.00003	0.012	< 0.00001
12-Mar-13	59																							
19-Mar-13	60	< 0.003	0.00097	0.002	2.44	0.0556	< 0.01	0.00081	0.0054	< 0.009	0.964	0.00075	0.37	0.00003	0.06	0.168	11.0	0.00016	0.00016	0.0005	0.000159	0.00070	0.014	0.00008
26-Mar-13	61																							
2-Apr-13	62	< 0.003	0.00003	0.002	2.54	0.0588	< 0.01	0.00020	0.0041	< 0.009	0.977	0.00063	0.38	< 0.00001	0.07	0.172	10.9	0.00004	0.00006	< 0.0001	0.000033	< 0.00003	0.013	< 0.00001
9-Apr-13	63																							
16-Apr-13	64	0.003	0.00006	0.001	1.70	0.0406	< 0.01	0.00020	0.0032	0.010	0.837	0.00034	0.42	< 0.00001	0.05	0.121	7.90	0.00004	0.00005	0.0002	0.000026	0.00011	0.013	0.00002
23-Apr-13	65																							
30-Apr-13	66	< 0.003	< 0.00002	0.001	2.49	0.0698	< 0.01	0.00014	0.0047	< 0.009	0.845	0.00091	0.33	< 0.00001	0.06	0.163	10.9	0.00003	0.00003	< 0.0001	< 0.000001	< 0.00003	0.017	< 0.00001
7-May-13	67																							
14-May-13	68	0.039	< 0.00002	0.001	2.27	0.0694	< 0.01	0.00016	0.0045	0.012	0.857	0.00072	0.36	< 0.00001	0.06	0.141	10.1	0.00003	0.00003	< 0.0001	0.000037	0.00004	0.020	< 0.00001
21-May-13	69																							
28-May-13	70	0.006	0.00003	0.002	2.82	0.0894	< 0.01	0.00013	0.0053	< 0.009	0.999	0.00099	0.35	< 0.00001	0.07	0.180	11.8	0.00004	0.00005	< 0.0001	0.000030	< 0.00003	0.019	< 0.00001
4-Jun-13	71																							
11-Jun-13	72																							
18-Jun-13	73																							
25-Jun-13	74	0.005	0.00017	0.001	2.74	0.111	< 0.01	0.00011	0.0060	< 0.009	0.965	0.00112	0.05	< 0.00001	0.06	0.172	11.7	0.00004	0.00005	< 0.0001	0.000039	< 0.00003	0.026	< 0.00001
2-Jul-13	75																							
9-Jul-13	76																							
16-Jul-13	77																							
23-Jul-13	78	0.009	0.00003	0.002	2.90	0.139	< 0.01	0.00011	0.0073	< 0.009	0.921	0.00119	0.39	< 0.00001	0.06	0.173	12.6	0.00004	0.00002	< 0.0001	0.000046	< 0.00003	0.028	< 0.00001
30-Jul-13	79																							
6-Aug-13	80																							
13-Aug-13	81																							
20-Aug-13	82																							
27-Aug-13	83																							

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jan-12	0	500	400	7.65	322	167	#N/A	3.0	40.1	36	28.5	0.142	0.0498	0.0117	0.00897	< 0.00002	< 0.00001	0.0370	0.000004	8.64	0.0005	0.000078
31-Jan-12	1	500	450	7.64	283	145	#N/A	2.5	27.8	39	30.0	0.126	0.0483	0.0073	0.0113	< 0.00002	< 0.00001	0.0363	0.000017	8.66	< 0.0005	0.000096
7-Feb-12	2	500	450	7.65	321	115	#N/A	2.8	21.3	37	26.9	0.126	0.0367	0.0058	0.00959	< 0.00002	< 0.00001	0.0364	0.000020	7.66	< 0.0005	0.000117
14-Feb-12	3	500	450	7.73	358	92	#N/A	3.1	20.9	28	23.9	0.128	0.0379	0.0071	0.00960	< 0.00002	< 0.00001	0.0371	0.000017	6.66	< 0.0005	0.000107
21-Feb-12	4	500	455	7.62	331	78	#N/A	3.9	21.0	18	21.7	0.0691	0.0365	0.0055	0.00775	< 0.00002	< 0.00001	0.0344	0.000007	5.91	< 0.0005	0.000047
28-Feb-12	5	500	450	7.56	380	64																
6-Mar-12	6	500	430	7.69	364	60	#N/A	4.2	15.8	13	18.7	0.109	0.0267	0.0047	0.00726	< 0.00002	< 0.00001	0.0288	0.000020	4.95	< 0.0005	0.000078
13-Mar-12	7	500	460	7.51	366	57																
20-Mar-12	8	500	475	7.47	331	57	#N/A	3.1	14.9	13	20.2	0.0584	0.0273	0.0031	0.00774	< 0.00002	< 0.00001	0.0253	0.000029	5.49	< 0.0005	0.000130
27-Mar-12	9	500	465	7.39	338	57																
3-Apr-12	10	500	510	7.43	355	59	#N/A	2.4	16.7	15	22.4	0.0784	0.0237	0.0048	0.00699	< 0.00002	< 0.00001	0.0211	< 0.000003	6.25	< 0.0005	0.000073
10-Apr-12	11	500	465	7.38	334	53																
17-Apr-12	12	500	465	7.45	341	54	#N/A	2.4	12.8	14	19.4	0.103	0.0223	0.0034	0.00752	< 0.00002	< 0.00001	0.0215	< 0.000003	5.28	< 0.0005	0.000084
24-Apr-12	13	500	445	7.50	366	49																
1-May-12	14	500	440	7.54	347	47	#N/A	3.6	12.2	12	17.7	0.101	0.0187	0.0034	0.00719	< 0.00002	< 0.00001	0.0147	< 0.000003	4.86	< 0.0005	0.000094
8-May-12	15	500	445	7.45	380	46																
15-May-12	16	500	455	7.42	313	49	#N/A	2.6	11.8	10	18.6	0.0537	0.0189	0.0034	0.00580	< 0.00002	< 0.00001	0.0167	< 0.000003	5.00	< 0.0005	0.000068
22-May-12	17	500	465	7.36	335	47																
29-May-12	18	500	455	7.32	332	47	#N/A	2.5	10.4	10	18.8	0.0947	0.0165	0.0027	0.00700	< 0.00002	< 0.00001	0.0148	< 0.000003	5.06	< 0.0005	0.000133
5-Jun-12	19	500	470	7.31	360	46																
12-Jun-12	20	500	475	7.39	338	44	#N/A	2.8	10.8	10	19.3	0.0500	0.0172	0.0025	0.00559	< 0.00002	< 0.00001	0.0131	< 0.000003	5.29	< 0.0005	0.000085
19-Jun-12	21	500	465	7.33	366	45																
26-Jun-12	22	500	465	7.33	330	45	#N/A	2.8	11.8	8	18.5	0.0550	0.0155	0.0026	0.00529	< 0.00002	< 0.00001	0.0121	< 0.000003	4.99	< 0.0005	0.000093
3-Jul-12	23	500	465	7.61	376	42																
10-Jul-12	24	500	465	7.25	322	45	#N/A	3.2	11.1	11	19.5	0.178	0.0154	0.0027	0.00512	< 0.00002	< 0.00001	0.0273	0.000020	5.46	< 0.0005	0.000095
17-Jul-12	25	500	470	7.31	370	44																
24-Jul-12	26	500	470	7.14	344	42	#N/A	2.3	10.0	7	17.2	0.0666	0.0155	0.0030	0.00503	< 0.00002	< 0.00001	0.0114	0.000021	4.64	< 0.0005	0.000101
31-Jul-12	27	500	455	7.31	366	44																
7-Aug-12	28	500	485	7.43	322	44	#N/A	2.6	11.9	9	19.1	0.136	0.0153	0.0043	0.00691	< 0.00002	< 0.00001	0.0105	0.000022	5.19	< 0.0005	0.000114
14-Aug-12	29	500	475	7.29	320	49																
21-Aug-12	30	500	475	7.24	309	48	#N/A	2.5	11.9	10	20.3	0.0568	0.0180	0.0024	0.0047	< 0.00002	< 0.00001	0.0102	0.000038	5.55	< 0.0005	0.00012
28-Aug-12	31	500	475	7.16	336	46																
4-Sep-12	32	500	490	7.13	378	38	#N/A	3.2	10.1	9	16.1	0.0830	0.0115	0.0019	0.00418	< 0.00002	< 0.00001	0.0074	0.000028	4.39	< 0.0005	0.000099
11-Sep-12	33	500	465	7.28	380	42																
18-Sep-12	34	500	440	7.13	357	39	#N/A	2.2	10.5	8	15.7	0.0599	0.0118	0.0027	0.00422	< 0.00002	< 0.00001	0.0075	0.000017	4.20	< 0.0005	0.000095
25-Sep-12	35	500	455	7.33	365	49																
2-Oct-12	36	500	450	7.14	369	33	#N/A	2.4	9.6	5	14.2	0.0479	0.0110	0.0020	0.0045	< 0.00002	< 0.00001	0.0070	0.000029	3.69	< 0.0005	0.000216
9-Oct-12	37	500	460	7.33	370	50																
16-Oct-12	38	500	475	7.12	386	33	#N/A	2.3	10.7	8	13.9	0.0930	0.0096	0.0028	0.00475	< 0.00002	< 0.00001	0.0060	0.000028	3.56	< 0.0005	0.000100
23-Oct-12	39	500	445	7.32	365	40																
30-Oct-12	40	500	445	7.22	348	34	#N/A	2.5	11.9	7	15.4	0.0684	0.0112	0.0022	0.00404	< 0.00002	< 0.00001	0.0064	0.000038	3.95	< 0.0005	0.000093
6-Nov-12	41	500	435	6.81	430	50																
13-Nov-12	42	500	440	7.59	360	26	#N/A	3.7	9.9	5	12.3	0.0904	0.0098	0.0020	0.00540	< 0.00002	< 0.00001	0.0053	0.000024	3.07	< 0.0005	0.000162
20-Nov-12	43	500	490	6.83	450	80																
27-Nov-12	44	500	490	7.41	347	32	#N/A	3.9	14.1	6	15.7	0.0563	0.0103	0.0019	0.00451	< 0.00002	< 0.00001	0.0049	0.000031	4.21	< 0.0005	0.000112
4-Dec-12	45	500	485	6.89	420	70																
11-Dec-12	46	500	510	7.38	340	28	#N/A	2.2	12.4	<2	13.7	0.0189	0.0103	0.0017	0.00473	< 0.00002	< 0.00001	0.0061	0.000019	3.75	< 0.0005	0.000081
18-Dec-12	47	500	485	7.50	369	28																

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
25-Dec-12	48	500	515	7.64	372	18	#N/A	3.2	9.5	3	9.35	0.0300	0.0072	0.0023	0.00249	< 0.00002	< 0.00001	0.0051	0.000014	2.48	< 0.0005	0.000124
1-Jan-13	49	500	470	6.91	430	180																
8-Jan-13	50	500	460	7.54	286	23	#N/A	2.9	8.7	4	11.0	0.0359	0.0096	0.0018	0.00292	< 0.00002	< 0.00001	0.0042	0.000027	2.90	< 0.0005	0.000093
15-Jan-13	51	500	465	7.01	415	120																
22-Jan-13	52	500	485	7.56	291	25	#N/A	3.6	10.1	5	10.8	0.0429	0.0071	0.0011	0.00329	< 0.00002	< 0.00001	0.0038	0.000016	2.83	< 0.0005	0.000163
29-Jan-13	53	500	490	7.44	377	25																
5-Feb-13	54	500	485	7.48	372	26	#N/A	3.3	9.7	7	11.6	0.0267	0.0086	0.0018	0.00338	< 0.00002	< 0.00001	0.0029	0.000178	2.96	< 0.0005	0.000116
12-Feb-13	55	500	465	7.58	381	26																
19-Feb-13	56	500	495	7.45	379	25	#N/A	2.8	11.0	6	11.0	0.0261	0.0074	0.0025	0.00317	< 0.00002	< 0.00001	0.0039	0.000024	2.83	< 0.0005	0.000132
26-Feb-13	57	500	480	7.47	399	26																
5-Mar-13	58	500	465	7.62	392	26	#N/A	3.8	11.2	5	11.9	0.0918	0.0078	0.0028	0.00470	< 0.00002	< 0.00001	0.0042	0.000050	3.02	< 0.0005	0.000198
12-Mar-13	59	500	465	7.12	420	35																
19-Mar-13	60	500	490	7.66	359	27	#N/A	5.3	11.4	5	11.5	0.0221	0.0063	0.0020	0.00319	< 0.00002	< 0.00001	0.0041	0.000030	2.93	< 0.0005	0.000115
26-Mar-13	61	500	500	7.61	405	27																
2-Apr-13	62	500	475	7.60	370	25	#N/A	3.8	10.0	5	11.6	0.0889	0.0057	0.0019	0.00430	< 0.00002	< 0.00001	0.0044	0.000026	2.98	< 0.0005	0.000213
9-Apr-13	63	500	460	7.51	401	25																
16-Apr-13	64	500	465	7.60	370	24	#N/A	4.4	9.9	5	11.2	0.0255	0.0071	0.0018	0.00271	< 0.00002	< 0.00001	0.0042	0.000016	2.82	< 0.0005	0.000064
23-Apr-13	65	500	465	7.72	381	29																
30-Apr-13	66	500	450	7.56	379	26	#N/A	3.4	10.3	8	12.1	0.0938	0.0061	0.0019	0.00480	< 0.00002	< 0.00001	0.0042	0.000014	2.96	< 0.0005	0.000087
7-May-13	67	500	475	7.53	433	30																
14-May-13	68	500	460	7.58	399	24	#N/A	3.7	10.1	5	10.6	0.0285	0.0089	0.0021	0.00266	< 0.00002	< 0.00001	0.0044	0.000019	2.72	< 0.0005	0.000197
21-May-13	69	500	450	7.57	416	25																
28-May-13	70	500	515	7.58	406	28	#N/A	3.6	11.5	4	13.0	0.0328	0.0082	0.0014	0.00329	< 0.00002	< 0.00001	0.0050	0.000018	3.37	< 0.0005	0.000053
4-Jun-13	71	500	455	7.60	419	25																
11-Jun-13	72	500	475	7.69	405	26	#N/A	6.2	12.7	6												
18-Jun-13	73	500	485	7.21	413	25																
25-Jun-13	74	500	480	7.47	375	24	#N/A	3.6	9.7	5	10.9	0.0222	0.0063	0.0015	0.00266	< 0.00002	< 0.00001	0.0052	0.000020	2.70	< 0.0005	0.000084
2-Jul-13	75	500	465	7.49	405	25																
9-Jul-13	76	500	475	7.59	287	24	#N/A	5.6	11.4	4												
16-Jul-13	77	500	470	7.24	407	25																
23-Jul-13	78	500	465	7.54	413	24	#N/A	5.8	11.1	6	10.8	0.0375	0.0058	0.0017	0.00265	< 0.00002	< 0.00001	0.0049	0.000019	2.63	< 0.0005	0.000056
30-Jul-13	79	500	475	7.29	411	23																
6-Aug-13	80	500	480	7.72	375	25	#N/A	5.7	11.2	3												
13-Aug-13	81	500	475	7.31	395	23																
20-Aug-13	82	500	470	7.33	396	22	#N/A	2.5	7.4	2												
27-Aug-13	83	500	465	7.31	407	21																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0009	0.004	0.00007	0.015	1.69	0.0201	0.01	0.0103	0.0006	< 0.009	12.6	0.00077	1.35	< 0.00001	12.7	0.459	14.6	0.00013	0.00015	0.0007	0.00188	0.00164	0.004	0.00005
31-Jan-12	1	< 0.0005	0.003	0.00009	0.015	2.02	0.0373	< 0.01	0.0126	0.0003	< 0.009	9.37	0.00123	1.26	< 0.00001	9.66	0.527	17.1	0.00010	0.00175	0.0004	0.00336	0.00094	< 0.001	0.00006
7-Feb-12	2	< 0.0005	0.007	0.00031	0.010	1.90	0.0240	< 0.01	0.00804	0.0004	< 0.009	7.60	0.00070	1.08	< 0.00001	6.08	0.514	11.4	0.00008	0.00113	0.0005	0.00252	0.00088	0.001	0.00009
14-Feb-12	3	< 0.0005	0.005	0.00030	0.008	1.78	0.0231	< 0.01	0.00799	0.0003	< 0.009	6.01	0.00059	1.08	< 0.00001	3.60	0.441	8.12	0.00008	0.00072	0.0005	0.00259	0.00091	0.001	0.00010
21-Feb-12	4	< 0.0005	< 0.003	0.00006	0.005	1.68	0.0252	< 0.01	0.00858	0.0002	< 0.009	5.42	0.00054	0.95	< 0.00001	2.09	0.379	6.22	0.00006	0.00053	0.0002	0.00255	0.00059	0.001	< 0.00001
28-Feb-12	5																								
6-Mar-12	6	0.0007	0.010	0.00055	0.003	1.55	0.0201	< 0.01	0.00693	0.0002	< 0.009	4.38	0.00012	1.10	< 0.00001	1.05	0.319	4.77	0.00005	0.00026	0.0002	0.00190	0.00065	0.003	0.00004
13-Mar-12	7																								
20-Mar-12	8	< 0.0005	0.008	0.00026	0.002	1.58	0.0348	< 0.01	0.00775	< 0.0001	< 0.009	3.22	0.00019	0.87	< 0.00001	0.60	0.313	4.03	0.00005	0.00031	0.0004	0.00179	0.00031	0.002	0.00008
27-Mar-12	9																								
3-Apr-12	10	0.0005	< 0.003	0.00013	0.002	1.66	0.0387	< 0.01	0.00806	0.0002	< 0.009	2.90	< 0.00004	0.84	< 0.00001	0.43	0.322	4.45	0.00004	0.00017	< 0.0001	0.00143	0.00033	0.002	< 0.00001
10-Apr-12	11																								
17-Apr-12	12	0.0005	0.005	0.00031	0.001	1.50	0.0305	0.01	0.00888	0.0002	< 0.009	2.47	0.00008	0.84	< 0.00001	0.32	0.288	4.08	0.00003	0.00011	0.0004	0.00124	0.00045	0.002	0.00008
24-Apr-12	13																								
1-May-12	14	< 0.0005	0.012	0.00043	0.001	1.36	0.0258	0.02	0.00564	0.0002	< 0.009	2.35	< 0.00004	0.89	< 0.00001	0.30	0.277	3.65	0.00004	0.00012	0.0004	0.000825	0.00047	0.002	0.00006
8-May-12	15																								
15-May-12	16	< 0.0005	< 0.003	0.00004	0.001	1.47	0.0284	0.01	0.00576	0.0002	< 0.009	2.10	< 0.00004	0.69	< 0.00001	0.31	0.264	3.72	0.00003	0.00034	0.0001	0.000695	0.00036	0.002	< 0.00001
22-May-12	17																								
29-May-12	18	< 0.0005	0.010	0.00039	0.001	1.51	0.0309	0.01	0.00606	< 0.0001	< 0.009	1.82	< 0.00004	0.74	< 0.00001	0.19	0.252	4.04	0.00004	0.00015	0.0004	0.000618	0.00037	0.002	0.00007
5-Jun-12	19																								
12-Jun-12	20	< 0.0005	0.004	0.00008	< 0.001	1.48	0.0317	< 0.01	0.00643	0.0002	< 0.009	1.57	< 0.00004	0.63	< 0.00001	0.20	0.244	3.69	0.00003	0.00007	0.0002	0.000734	0.00031	0.002	< 0.00001
19-Jun-12	21																								
26-Jun-12	22	< 0.0005	< 0.003	0.00006	< 0.001	1.46	0.0289	0.01	0.00638	< 0.0001	< 0.009	1.40	0.00054	0.60	< 0.00001	0.19	0.232	3.69	0.00003	0.00002	0.0002	0.000634	0.00042	0.001	< 0.00001
3-Jul-12	23																								
10-Jul-12	24	< 0.0005	< 0.003	0.00017	< 0.001	1.41	0.0283	0.02	0.00711	0.0002	< 0.009	1.29	0.00012	0.59	< 0.00001	0.18	0.216	3.41	< 0.00002	0.00011	0.0002	0.000538	0.00037	0.009	< 0.00001
17-Jul-12	25																								
24-Jul-12	26	0.0008	< 0.003	0.00005	< 0.001	1.35	0.0265	0.01	0.00734	< 0.0001	< 0.009	1.15	0.00017	0.54	< 0.00001	0.15	0.205	3.30	< 0.00002	0.00004	0.0002	0.000493	0.00041	0.002	< 0.00001
31-Jul-12	27																								
7-Aug-12	28	< 0.0005	0.013	0.00066	< 0.001	1.50	0.0201	< 0.01	0.00852	< 0.0001	< 0.009	1.34	0.00006	0.75	< 0.00001	0.15	0.223	3.82	0.00003	0.00020	0.0005	0.000362	0.00057	0.004	0.00006
14-Aug-12	29																								
21-Aug-12	30	< 0.0005	< 0.003	0.00006	< 0.001	1.58	0.0347	0.02	0.00851	0.0002	< 0.009	1.08	0.00006	0.59	< 0.00001	0.15	0.229	4.00	0.00002	0.00032	0.0002	0.00056	0.00032	0.002	< 0.00001
28-Aug-12	31																								
4-Sep-12	32	< 0.0005	< 0.003	0.00005	< 0.001	1.25	0.0276	0.08	0.00621	0.0001	< 0.009	0.818	< 0.00004	0.40	< 0.00001	0.12	0.179	3.09	< 0.00002	0.00014	0.0002	0.000452	0.00048	0.003	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	< 0.0005	0.003	0.00005	< 0.001	1.26	0.0243	< 0.01	0.00581	< 0.0001	< 0.009	0.889	0.00013	0.50	< 0.00001	0.17	0.182	2.97	< 0.00002	0.00019	0.0002	0.000359	0.00033	0.002	< 0.00001
25-Sep-12	35																								
2-Oct-12	36	< 0.0005	0.004	0.00030	< 0.001	1.22	0.0242	0.01	0.00476	< 0.0001	< 0.009	0.853	< 0.00004	0.60	< 0.00001	0.10	0.150	2.57	< 0.00002	0.00004	0.0002	0.000349	0.00025	0.002	0.00003
9-Oct-12	37																								
16-Oct-12	38	< 0.0005	0.005	0.00044	< 0.001	1.22	0.0230	< 0.01	0.00458	0.0002	< 0.009	0.790	0.00005	0.49	< 0.00001	0.10	0.139	2.15	< 0.00002	0.00025	0.0006	0.000344	0.00039	0.003	0.00009
23-Oct-12	39																								
30-Oct-12	40	< 0.0005	0.003	0.00012	< 0.001	1.36	0.0278	< 0.01	0.00520	0.0004	< 0.009	0.816	0.00005	0.53	< 0.00001	0.11	0.154	2.32	< 0.00002	0.00008	0.0010	0.000350	0.00055	0.002	0.00004
6-Nov-12	41																								
13-Nov-12	42	< 0.0005	0.008	0.00058	< 0.001	1.12	0.0223	0.01	0.00486	0.0001	< 0.009	0.706	0.00007	0.51	< 0.00001	0.09	0.118	1.99	< 0.00002	0.00004	0.0005	0.000282	0.00028	0.003	0.00005
20-Nov-12	43																								
27-Nov-12	44	< 0.0005	0.008	0.00028	< 0.001	1.25	0.0315	< 0.01	0.00481	< 0.0001	< 0.009	0.684	0.00006	0.46	< 0.00001	0.08	0.156	1.67	< 0.00002	0.00006	0.0002	0.000704	0.00019	0.003	0.00002
4-Dec-12	45																								
11-Dec-12	46	0.0005	< 0.003	0.00018	< 0.001	1.05	0.0278	< 0.01	0.00445	< 0.0001	0.013	0.570	0.00004	0.40	< 0.00001	0.10	0.133	1.63	< 0.00002	0.00011	< 0.0001	0.000515	0.00004	0.002	< 0.00001
18-Dec-12	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	< 0.0005	< 0.003	0.00005	< 0.001	0.764	0.0187	< 0.01	0.00251	< 0.0001	< 0.009	0.476	0.00005	0.26	< 0.00001	0.06	0.0940	0.97	< 0.00002	0.00009	< 0.0001	0.000202	0.00006	0.002	< 0.00001
1-Jan-13	49																								
8-Jan-13	50	< 0.0005	< 0.003	0.00005	< 0.001	0.921	0.0213	< 0.01	0.00325	< 0.0001	< 0.009	0.534	< 0.00004	0.36	0.00001	0.09	0.0968	1.40	< 0.00002	0.00010	0.0001	0.000196	0.00024	0.002	0.00001
15-Jan-13	51																								
22-Jan-13	52	< 0.0005	< 0.003	0.00009	< 0.001	0.904	0.0255	< 0.01	0.00318	0.0002	< 0.009	0.503	0.00006	0.31	< 0.00001	< 0.01	0.0948	1.51	0.00002	0.00010	0.0002	0.000529	0.00022	0.002	0.00003
29-Jan-13	53																								
5-Feb-13	54	< 0.0005	< 0.003	0.00006	< 0.001	1.02	0.0279	0.02	0.00384	< 0.0001	< 0.009	0.497	0.00005	0.30	< 0.00001	0.07	0.105	1.35	< 0.00002	0.00003	< 0.0001	0.000299	0.00009	0.002	< 0.00001
12-Feb-13	55																								
19-Feb-13	56	< 0.0005	< 0.003	0.00006	< 0.001	0.954	0.0234	< 0.01	0.00421	0.0001	< 0.009	0.438	0.00005	0.19	< 0.00001	0.05	0.0940	1.41	< 0.00002	0.00003	< 0.0001	0.000284	0.00012	0.001	0.00007
26-Feb-13	57																								
5-Mar-13	58	< 0.0005	0.008	0.00027	< 0.001	1.06	0.0255	< 0.01	0.00346	0.0001	< 0.009	0.499	0.00007	0.39	< 0.00001	0.07	0.103	1.51	< 0.00002	0.00005	0.0004	0.000217	0.00017	0.003	0.00013
12-Mar-13	59																								
19-Mar-13	60	< 0.0005	< 0.003	0.00007	< 0.001	1.02	0.0250	< 0.01	0.00347	< 0.0001	< 0.009	0.430	0.00006	0.31	< 0.00001	0.06	0.0924	1.43	< 0.00002	0.00005	< 0.0001	0.000214	0.00009	0.002	< 0.00001
26-Mar-13	61																								
2-Apr-13	62	< 0.0005	0.006	0.00021	< 0.001	1.01	0.0223	< 0.01	0.00368	0.0004	0.010	0.475	< 0.00004	0.39	< 0.00001	0.06	0.0906	1.51	< 0.00002	0.00002	0.0004	0.000193	0.00014	0.002	0.00009
9-Apr-13	63																								
16-Apr-13	64	< 0.0005	< 0.003	0.00005	< 0.001	1.00	0.0217	< 0.01	0.00325	0.0002	< 0.009	0.408	< 0.00004	0.33	< 0.00001	0.07	0.0857	1.38	< 0.00002	0.00005	< 0.0001	0.000186	0.00013	0.001	< 0.00001
23-Apr-13	65																								
30-Apr-13	66	< 0.0005	0.011	0.00047	< 0.001	1.15	0.0200	< 0.01	0.00346	0.0002	< 0.009	0.461	< 0.00004	0.44	< 0.00001	0.06	0.0871	1.53	< 0.00002	0.00002	0.0006	0.000152	0.00021	0.002	0.00011
7-May-13	67																								
14-May-13	68	< 0.0005	< 0.003	0.00004	< 0.001	0.938	0.0212	0.01	0.00345	< 0.0001	< 0.009	0.414	0.00006	0.37	< 0.00001	0.07	0.0776	1.19	< 0.00002	0.00002	< 0.0001	0.000185	0.00007	0.001	< 0.00001
21-May-13	69																								
28-May-13	70	< 0.0005	< 0.003	0.00010	< 0.001	1.11	0.0219	< 0.01	0.00400	< 0.0001	< 0.009	0.432	< 0.00004	0.31	< 0.00001	0.06	0.0985	1.33	< 0.00002	0.00005	0.0002	0.000323	0.00009	< 0.001	0.00003
4-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	< 0.0005	< 0.003	0.00012	< 0.001	1.01	0.0232	< 0.01	0.00297	0.0001	< 0.009	0.386	0.00007	0.30	< 0.00001	0.06	0.0810	1.40	< 0.00002	0.00005	< 0.0001	0.000172	0.00008	0.001	0.00002
2-Jul-13	75																								
9-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	< 0.0005	< 0.003	0.00007	< 0.001	1.02	0.0208	< 0.01	0.00276	< 0.0001	< 0.009	0.369	0.00005	0.32	< 0.00001	0.07	0.0749	1.51	< 0.00002	0.00003	0.0001	0.000151	0.00010	0.001	< 0.00001
30-Jul-13	79																								
6-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L	Cu mg/L
24-Jan-12	0	500	435	7.50	332	811	#N/A	6.3	74.4	353	340	0.0197	0.0050	0.0061	0.0366	0.00009	< 0.00001	0.0123	0.000322	133	< 0.0005	0.280	0.0013
31-Jan-12	1	500	465	7.31	299	507	#N/A	3.2	20.2	216	218	0.0230	0.0047	0.0045	0.0174	< 0.00002	< 0.00001	0.0131	0.000033	85.6	< 0.0005	0.0287	0.0007
7-Feb-12	2	500	445	7.36	339	399	#N/A	4.4	28.3	166	191	0.0153	0.0034	0.0032	0.0161	0.00006	< 0.00001	0.0119	0.000095	75.3	< 0.0005	0.0706	0.0007
14-Feb-12	3	500	430	7.45	375	348	#N/A	4.7	25.6	141	162	0.0111	0.0030	0.0040	0.0170	0.00003	< 0.00001	0.0093	0.000084	64.0	< 0.0005	0.0561	0.0008
21-Feb-12	4	500	440	7.24	368	283	#N/A	3.8	16.7	119	129	0.0148	0.0031	0.0059	0.0131	0.00002	< 0.00001	0.0075	0.000032	51.1	< 0.0005	0.0208	< 0.0005
28-Feb-12	5	500	520	7.26	401	297																	
6-Mar-12	6	500	435	7.30	371	257	#N/A	5.5	13.3	107	115	0.0110	0.0026	0.0041	0.0101	0.00002	< 0.00001	0.0062	0.000051	45.8	< 0.0005	0.0203	0.0006
13-Mar-12	7	500	445	7.18	375	247																	
20-Mar-12	8	500	450	7.16	354	251	#N/A	4.2	11.1	102	112	0.0037	0.0027	0.0050	0.00801	0.00004	< 0.00001	0.0051	0.000054	44.5	< 0.0005	0.0196	0.0007
27-Mar-12	9	500	450	7.10	365	237																	
3-Apr-12	10	500	435	7.12	371	243	#N/A	2.9	11.8	112	112	0.0238	0.0024	0.0044	0.00814	< 0.00002	< 0.00001	0.0044	0.000019	44.6	< 0.0005	0.0164	< 0.0005
10-Apr-12	11	500	445	7.08	359	255																	
17-Apr-12	12	500	470	7.12	368	266	#N/A	2.8	10.3	122	121	0.0135	0.0027	0.0039	0.00687	0.00003	< 0.00001	0.0054	0.000020	48.3	< 0.0005	0.0171	0.0006
24-Apr-12	13	500	450	7.11	390	268																	
1-May-12	14	500	450	7.10	372	268	#N/A	5.0	9.9	120	121	0.0196	0.0020	0.0033	0.00840	0.00008	< 0.00001	0.0039	0.000087	48.2	< 0.0005	0.0399	0.0012
8-May-12	15	500	440	7.05	400	265																	
15-May-12	16	500	450	7.08	337	247	#N/A	3.5	9.7	94	112	0.0118	0.0018	0.0022	0.00736	0.00005	< 0.00001	0.0045	0.000029	44.8	< 0.0005	0.0216	< 0.0005
22-May-12	17	500	435	7.07	356	243																	
29-May-12	18	500	445	7.00	354	239	#N/A	3.2	7.3	95	105	0.0145	0.0016	0.0015	0.00587	0.00008	< 0.00001	0.0039	0.000053	41.8	< 0.0005	0.0238	0.0011
5-Jun-12	19	500	450	6.94	385	249																	
12-Jun-12	20	500	440	6.98	366	248	#N/A	3.7	8.3	102	114	0.0185	0.0014	0.0016	0.00781	0.00010	< 0.00001	0.0035	0.000084	45.5	< 0.0005	0.0396	0.0037
19-Jun-12	21	500	450	6.97	395	267																	
26-Jun-12	22	500	445	7.00	353	282	#N/A	4.1	9.6	107	135	0.0196	0.0014	0.0021	0.00724	0.00008	< 0.00001	0.0033	0.000089	53.9	< 0.0005	0.0366	0.0020
3-Jul-12	23	500	445	7.16	397	332																	
10-Jul-12	24	500	455	6.91	346	377	#N/A	4.2	8.7	171	184	0.0163	0.0018	0.0019	0.00694	0.00005	< 0.00001	0.0040	0.000082	73.5	< 0.0005	0.0253	0.0014
17-Jul-12	25	500	455	7.04	381	259																	
24-Jul-12	26	500	445	6.83	366	273	#N/A	2.7	7.7	111	124	0.0275	0.0016	0.0014	0.00775	0.00006	< 0.00001	0.0038	0.000098	49.3	< 0.0005	0.0267	0.0015
31-Jul-12	27	500	435	6.98	385	226																	
7-Aug-12	28	500	435	6.76	353	249	#N/A	3.3	4.9	102	110	0.0402	0.0008	0.0010	0.00990	0.00020	< 0.00001	0.0034	0.000202	44.9	< 0.0005	0.0471	0.0008
14-Aug-12	29	500	430	7.36	335	478																	
21-Aug-12	30	500	440	6.79	333	258	#N/A	3.6	7.2	114	116	0.0331	0.0010	0.0008	0.0073	0.00009	< 0.00001	0.0032	0.000139	46.4	< 0.0005	0.0433	0.0005
28-Aug-12	31	500	450	6.59	314	274																	
4-Sep-12	32	500	450	6.46	397	247	#N/A	4.3	3.0	104	113	0.0349	0.0007	0.0007	0.00644	0.00016	< 0.00001	0.0024	0.000167	45.0	< 0.0005	0.0348	0.0019
11-Sep-12	33	500	445	6.79	402	305																	
18-Sep-12	34	500	450	6.71	390	250	#N/A	3.2	6.6	110	113	0.0181	0.0010	0.0009	0.00541	0.00006	< 0.00001	0.0029	0.000083	45.1	< 0.0005	0.0197	< 0.0005
25-Sep-12	35	500	465	6.90	360	480																	
2-Oct-12	36	500	465	6.77	396	208	#N/A	3.1	6.3	75	88.4	0.0068	0.0010	0.0009	0.0047	0.00003	< 0.00001	0.0027	0.000053	35.2	< 0.0005	0.0129	0.0007
9-Oct-12	37	500	455	6.99	375	490																	
16-Oct-12	38	500	455	6.72	400	186	#N/A	2.3	6.3	71	78.9	0.0076	0.0007	0.0006	0.00475	0.00003	< 0.00001	0.0021	0.000054	31.5	< 0.0005	0.0110	0.0039
23-Oct-12	39	500	450	6.82	420	210																	
30-Oct-12	40	500	445	6.84	374	200	#N/A	3.6	7.6	83	92.0	0.0250	0.0010	0.0008	0.00520	0.00003	< 0.00001	0.0027	0.000059	36.7	< 0.0005	0.0125	0.0006
6-Nov-12	41	500	430	7.51	390	45																	
13-Nov-12	42	500	440	6.82	391	226	#N/A	5.3	3.4	96	105	0.0050	0.0005	0.0005	0.00678	0.00012	< 0.00001	0.0026	0.000149	41.8	< 0.0005	0.0364	0.0005
20-Nov-12	43	500	495	7.53	410	85																	
27-Nov-12	44	500	495	6.95	378	212	#N/A	4.8	8.6	92	98.2	0.0105	0.0009	0.0005	0.00462	< 0.00002	< 0.00001	0.0018	0.000056	39.1	< 0.0005	0.0116	< 0.0005
4-Dec-12	45	500	480	7.53	420	170																	
11-Dec-12	46	500	520	7.04	362	200	#N/A	2.5	8.5	82	85.8	0.0038	0.0011	0.0007	0.00608	< 0.00002	< 0.00001	0.0032	0.000042	34.2	< 0.0005	0.00774	0.0014
18-Dec-12	47	500	495	7.13	379	184																	

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L	Cu mg/L
25-Dec-12	48	500	505	7.42	379	120	#N/A	3.8	13.2	44	49.1	0.0037	0.0008	0.0006	0.00369	< 0.00002	< 0.00001	0.0017	0.000037	19.6	< 0.0005	0.00505	< 0.0005
1-Jan-13	49	500	470	7.51	430	135																	
8-Jan-13	50	500	490	7.17	280	183	#N/A	4.0	7.7	83	88.4	0.0048	0.0014	0.0008	0.00547	0.00002	< 0.00001	0.0017	0.000040	35.3	< 0.0005	0.00770	< 0.0005
15-Jan-13	51	500	450	7.51	425	115																	
22-Jan-13	52	500	465	7.15	331	173	#N/A	5.0	8.7	70	72.0	0.0129	0.0012	0.0009	0.00640	0.00002	< 0.00001	0.0017	0.000066	28.7	< 0.0005	0.00774	< 0.0005
29-Jan-13	53	500	500	7.10	397	171																	
5-Feb-13	54	500	505	7.13	386	174	#N/A	4.4	7.6	72	70.8	0.0015	0.0012	0.0006	0.00635	< 0.00002	< 0.00001	0.0003	0.000044	28.2	< 0.0005	0.00739	< 0.0005
12-Feb-13	55	500	485	7.25	407	171																	
19-Feb-13	56	500	515	7.11	406	160	#N/A	3.6	8.3	72	71.7	0.0009	0.0012	0.0010	0.00680	0.00003	< 0.00001	0.0021	0.000051	28.6	< 0.0005	0.00752	0.0012
26-Feb-13	57	500	490	7.17	413	158																	
5-Mar-13	58	500	490	7.26	417	159	#N/A	5.1	10.2	59	69.1	0.0010	0.0013	0.0010	0.00772	0.00002	< 0.00001	0.0017	0.000110	27.6	< 0.0005	0.00713	0.0006
12-Mar-13	59	500	485	7.53	430	160																	
19-Mar-13	60	500	500	7.34	380	154	#N/A	5.6	9.8	63	67.3	0.0002	0.0010	0.0005	0.00807	0.00004	< 0.00001	0.0016	0.000049	26.8	< 0.0005	0.00745	0.0008
26-Mar-13	61	500	500	7.29	405	144																	
2-Apr-13	62	500	485	7.20	385	145	#N/A	5.2	8.0	60	66.7	0.0017	0.0009	0.0006	0.00764	0.00003	< 0.00001	0.0021	0.000077	26.6	< 0.0005	0.00811	0.0007
9-Apr-13	63	500	445	7.24	404	145																	
16-Apr-13	64	500	520	7.23	388	165	#N/A	5.5	9.9	68	75.3	0.0012	0.0011	0.0006	0.00803	0.00003	< 0.00001	0.0039	0.000042	30.0	< 0.0005	0.00762	0.0006
23-Apr-13	65	500	470	7.31	391	153																	
30-Apr-13	66	500	450	7.23	394	139	#N/A	4.8	6.8	65	62.3	0.0008	0.0008	0.0004	0.00630	0.00003	< 0.00001	0.0023	0.000067	24.9	< 0.0005	0.00932	0.0007
7-May-13	67	500	485	7.21	427	140																	
14-May-13	68	500	455	7.12	403	148	#N/A	5.4	6.5	68	66.5	0.0010	0.0007	0.0007	0.00790	0.00006	< 0.00001	0.0027	0.000111	26.5	< 0.0005	0.0193	0.0010
21-May-13	69	500	455	7.15	423	156																	
28-May-13	70	500	475	7.24	419	156	#N/A	5.0	6.8	73	74.0	0.0010	0.0008	0.0005	0.00664	0.00004	< 0.00001	0.0024	0.000061	29.5	< 0.0005	0.0102	< 0.0005
4-Jun-13	71	500	460	7.25	431	159																	
11-Jun-13	72	500	465	7.33	388	153	#N/A	8.2	8.2	61													
18-Jun-13	73	500	480	7.39	440	158																	
25-Jun-13	74	500	470	7.11	401	147	#N/A	4.8	6.1	64	61.6	0.0003	0.0008	0.0004	0.00575	0.00003	< 0.00001	0.0026	0.000060	24.6	< 0.0005	0.00838	0.0010
2-Jul-13	75	500	460	7.14	420	149																	
9-Jul-13	76	500	460	7.07	325	147	#N/A	7.0	6.5	60													
16-Jul-13	77	500	465	6.90	421	157																	
23-Jul-13	78	500	450	7.16	422	136	#N/A	7.1	6.5	64	61.3	0.0006	0.0007	0.0005	0.00550	0.00005	< 0.00001	0.0029	0.000079	24.5	< 0.0005	0.00954	0.0006
30-Jul-13	79	500	470	6.96	417	144																	
6-Aug-13	80	500	440	7.33	374	150	#N/A	7.5	5.9	57													
13-Aug-13	81	500	445	6.79	418	151																	
20-Aug-13	82	500	425	6.69	412	154	#N/A	3.6	2.6	68													
27-Aug-13	83	500	465	6.90	426	148																	

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	< 0.003	0.00005	0.027	1.53	3.97	0.04	0.0133	0.167	< 0.009	5.45	0.00179	0.56	0.00002	22.3	1.39	118	0.00267	0.00003	0.0003	0.0568	0.00031	0.017	< 0.00001
31-Jan-12	1	< 0.003	< 0.00002	0.014	1.04	1.16	0.01	0.0133	0.0130	< 0.009	2.13	0.00381	0.62	0.00001	12.6	0.919	91.4	0.00077	0.00067	0.0002	0.00602	0.00018	0.002	< 0.00001
7-Feb-12	2	< 0.003	< 0.00002	0.008	0.660	1.82	0.01	0.00932	0.0353	< 0.009	1.31	0.00186	0.65	0.00002	3.78	0.839	66.2	0.00094	0.00096	0.0001	0.00961	0.00016	0.004	< 0.00001
14-Feb-12	3	< 0.003	< 0.00002	0.004	0.439	1.57	0.01	0.00840	0.0258	< 0.009	0.730	0.00222	0.63	0.00001	1.55	0.663	50.4	0.00070	0.00089	0.0001	0.00860	0.00012	0.003	< 0.00001
21-Feb-12	4	< 0.003	< 0.00002	0.003	0.313	0.938	0.01	0.00891	0.0093	< 0.009	0.414	0.00196	0.50	< 0.00001	0.86	0.489	41.9	0.00032	0.00039	< 0.0001	0.00336	0.00010	0.001	< 0.00001
28-Feb-12	5																							
6-Mar-12	6	< 0.003	< 0.00002	0.002	0.200	0.863	< 0.01	0.00679	0.0094	< 0.009	0.271	0.00120	0.49	< 0.00001	0.34	0.422	36.8	0.00023	0.00020	0.0001	0.00274	0.00012	0.003	< 0.00001
13-Mar-12	7																							
20-Mar-12	8	< 0.003	< 0.00002	0.001	0.161	0.858	0.01	0.00632	0.0080	< 0.009	0.215	0.00098	0.46	< 0.00001	0.26	0.390	34.7	0.00013	0.00035	< 0.0001	0.00236	< 0.00003	0.003	< 0.00001
27-Mar-12	9																							
3-Apr-12	10	< 0.003	< 0.00002	< 0.001	0.146	0.829	< 0.01	0.00724	0.0072	< 0.009	0.174	0.00094	0.41	< 0.00001	0.22	0.368	35.8	0.00013	0.00017	0.0005	0.00218	0.00012	0.003	< 0.00001
10-Apr-12	11																							
17-Apr-12	12	< 0.003	< 0.00002	< 0.001	0.129	0.940	0.03	0.00708	0.0079	< 0.009	0.145	0.00094	0.51	< 0.00001	0.17	0.395	38.0	0.00011	0.00025	0.0002	0.00265	0.00016	0.003	< 0.00001
24-Apr-12	13																							
1-May-12	14	0.003	< 0.00002	< 0.001	0.133	1.41	0.05	0.00378	0.0170	< 0.009	0.185	0.00078	0.46	< 0.00001	0.22	0.396	38.0	0.00015	0.00016	< 0.0001	0.00220	0.00019	0.005	< 0.00001
8-May-12	15																							
15-May-12	16	< 0.003	< 0.00002	< 0.001	0.149	1.10	0.01	0.00436	0.0090	< 0.009	0.158	0.00122	0.45	< 0.00001	0.21	0.351	34.6	0.00011	0.00015	< 0.0001	0.00181	0.00012	0.004	< 0.00001
22-May-12	17																							
29-May-12	18	< 0.003	< 0.00002	< 0.001	0.120	1.07	< 0.01	0.00331	0.0108	< 0.009	0.132	0.00072	0.41	< 0.00001	0.14	0.332	33.8	0.00010	0.00016	< 0.0001	0.00164	0.00013	0.004	< 0.00001
5-Jun-12	19																							
12-Jun-12	20	< 0.003	< 0.00002	< 0.001	0.134	1.47	0.01	0.00164	0.0179	< 0.009	0.134	0.00079	0.42	< 0.00001	0.17	0.365	35.2	0.00010	0.00007	< 0.0001	0.00191	0.00014	0.006	< 0.00001
19-Jun-12	21																							
26-Jun-12	22	< 0.003	0.00003	< 0.001	0.144	1.60	0.02	0.00188	0.0157	< 0.009	0.138	0.00098	0.47	< 0.00001	0.18	0.418	43.4	0.00010	0.00009	< 0.0001	0.00206	0.00025	0.008	< 0.00001
3-Jul-12	23																							
10-Jul-12	24	< 0.003	< 0.00002	< 0.001	0.158	1.36	0.04	0.00358	0.0114	< 0.009	0.135	0.00139	0.52	< 0.00001	0.18	0.537	58.1	0.00009	0.00018	< 0.0001	0.00203	0.00016	0.004	< 0.00001
17-Jul-12	25																							
24-Jul-12	26	< 0.003	< 0.00002	< 0.001	0.132	1.36	0.01	0.00233	0.0116	< 0.009	0.117	0.00109	0.49	< 0.00001	0.15	0.377	40.3	0.00008	0.00009	< 0.0001	0.00180	0.00025	0.004	< 0.00001
31-Jul-12	27																							
7-Aug-12	28	0.147	0.00005	< 0.001	0.137	1.84	< 0.01	0.00028	0.0237	< 0.009	0.134	0.00083	0.45	< 0.00001	0.18	0.363	38.3	0.00012	0.00040	< 0.0001	0.00224	0.00024	0.008	< 0.00001
14-Aug-12	29																							
21-Aug-12	30	0.029	< 0.00002	< 0.001	0.133	1.77	0.01	0.00041	0.0216	< 0.009	0.104	0.00087	0.46	< 0.00001	0.14	0.354	38.6	0.00010	0.00024	0.0001	0.00151	0.00025	0.005	0.00006
28-Aug-12	31																							
4-Sep-12	32	0.198	0.00007	< 0.001	0.121	1.40	0.04	0.00016	0.0160	< 0.009	0.085	0.00074	0.34	< 0.00001	0.14	0.335	37.8	0.00008	0.00010	0.0002	0.00199	0.00037	0.006	< 0.00001
11-Sep-12	33																							
18-Sep-12	34	< 0.003	< 0.00002	< 0.001	0.148	1.17	< 0.01	0.00088	0.0098	< 0.009	0.080	0.00113	0.38	< 0.00001	0.13	0.349	37.5	0.00005	0.00013	< 0.0001	0.00131	0.00018	0.003	< 0.00001
25-Sep-12	35																							
2-Oct-12	36	< 0.003	< 0.00002	< 0.001	0.112	0.769	< 0.01	0.00162	0.0059	< 0.009	0.061	0.00074	0.35	< 0.00001	0.08	0.266	29.6	0.00005	0.00006	< 0.0001	0.00122	0.00011	0.002	< 0.00001
9-Oct-12	37																							
16-Oct-12	38	< 0.003	< 0.00002	< 0.001	0.093	0.681	0.01	0.00168	0.0058	< 0.009	0.052	0.00073	0.25	< 0.00001	0.07	0.236	26.3	0.00004	0.00016	< 0.0001	0.00104	0.00014	0.003	< 0.00001
23-Oct-12	39																							
30-Oct-12	40	< 0.003	< 0.00002	< 0.001	0.096	0.841	0.01	0.00175	0.0068	< 0.009	0.061	0.00051	0.38	< 0.00001	0.08	0.284	30.2	0.00003	0.00011	0.0002	0.00119	0.00023	0.002	< 0.00001
6-Nov-12	41																							
13-Nov-12	42	0.232	< 0.00002	< 0.001	0.103	1.44	0.01	0.00012	0.0172	< 0.009	0.063	0.00064	0.39	< 0.00001	0.09	0.319	36.1	0.00006	0.00007	< 0.0001	0.00194	0.00010	0.006	< 0.00001
20-Nov-12	43																							
27-Nov-12	44	< 0.003	< 0.00002	< 0.001	0.106	0.865	< 0.01	0.00168	0.0056	< 0.009	0.042	0.00083	0.32	< 0.00001	0.08	0.277	30.9	0.00003	0.00006	< 0.0001	0.00140	0.00007	0.004	< 0.00001
4-Dec-12	45																							
11-Dec-12	46	0.008	0.00029	< 0.001	0.085	0.594	< 0.01	0.00219	0.0035	< 0.009	0.042	0.00069	0.35	< 0.00001	0.14	0.250	27.2	0.00003	0.00054	0.0002	0.00147	0.00004	0.004	< 0.00001
18-Dec-12	47																							

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	< 0.003	< 0.00002	< 0.001	0.038	0.329	< 0.01	0.00149	0.0028	< 0.009	0.027	0.00026	0.16	< 0.00001	0.03	0.163	15.2	< 0.00002	0.00018	< 0.0001	0.000772	< 0.00003	0.002	< 0.00001
1-Jan-13	49																							
8-Jan-13	50	< 0.003	< 0.00002	< 0.001	0.062	0.525	< 0.01	0.00206	0.0038	0.010	0.042	0.00064	0.31	< 0.00001	0.05	0.239	24.7	0.00004	0.00004	< 0.0001	0.00110	0.00010	0.002	< 0.00001
15-Jan-13	51																							
22-Jan-13	52	< 0.003	0.00003	< 0.001	0.080	0.567	< 0.01	0.00199	0.0049	< 0.009	0.056	0.00052	0.28	< 0.00001	< 0.01	0.218	23.1	< 0.00002	0.00011	< 0.0001	0.00106	0.00015	0.004	< 0.00001
29-Jan-13	53																							
5-Feb-13	54	< 0.003	< 0.00002	< 0.001	0.057	0.554	< 0.01	0.00228	0.0040	< 0.009	0.030	0.00054	0.27	< 0.00001	0.05	0.223	24.1	0.00003	0.00002	< 0.0001	0.00116	< 0.00003	0.002	< 0.00001
12-Feb-13	55																							
19-Feb-13	56	< 0.003	< 0.00002	< 0.001	0.071	0.561	< 0.01	0.00244	0.0044	< 0.009	0.030	0.00058	0.19	< 0.00001	0.05	0.214	22.2	0.00003	0.00004	< 0.0001	0.00121	0.00004	0.002	< 0.00001
26-Feb-13	57																							
5-Mar-13	58	< 0.003	< 0.00002	< 0.001	0.069	0.548	< 0.01	0.00239	0.0039	< 0.009	0.040	0.00056	0.34	< 0.00001	0.05	0.217	22.4	0.00003	0.00005	< 0.0001	0.00104	< 0.00003	0.002	< 0.00001
12-Mar-13	59																							
19-Mar-13	60	< 0.003	< 0.00002	< 0.001	0.065	0.541	< 0.01	0.00224	0.0041	< 0.009	0.034	0.00043	0.32	< 0.00001	0.05	0.203	21.4	0.00004	0.00004	< 0.0001	0.00115	< 0.00003	0.002	< 0.00001
26-Mar-13	61																							
2-Apr-13	62	< 0.003	< 0.00002	< 0.001	0.062	0.550	0.01	0.00203	0.0050	< 0.009	0.037	0.00019	0.30	< 0.00001	0.05	0.200	20.4	0.00004	< 0.00001	< 0.0001	0.000976	< 0.00003	0.002	< 0.00001
9-Apr-13	63																							
16-Apr-13	64	< 0.003	< 0.00002	< 0.001	0.076	0.578	< 0.01	0.00203	0.0043	0.010	0.037	0.00031	0.33	< 0.00001	0.06	0.226	23.4	0.00003	0.00008	< 0.0001	0.00114	< 0.00003	0.002	< 0.00001
23-Apr-13	65																							
30-Apr-13	66	0.005	< 0.00002	< 0.001	0.058	0.547	< 0.01	0.00132	0.0054	< 0.009	0.030	0.00035	0.27	< 0.00001	0.05	0.185	19.2	0.00003	< 0.00001	< 0.0001	0.000869	< 0.00003	0.002	< 0.00001
7-May-13	67																							
14-May-13	68	< 0.003	< 0.00002	< 0.001	0.062	1.06	< 0.01	0.00031	0.0104	< 0.009	0.051	0.00036	0.53	< 0.00001	0.06	0.200	22.3	0.00005	< 0.00001	< 0.0001	0.000941	0.00003	0.004	< 0.00001
21-May-13	69																							
28-May-13	70	< 0.003	< 0.00002	< 0.001	0.070	0.714	< 0.01	0.00128	0.0057	< 0.009	0.046	0.00045	0.33	< 0.00001	0.06	0.219	22.7	0.00004	0.00003	< 0.0001	0.000898	< 0.00003	0.002	< 0.00001
4-Jun-13	71																							
11-Jun-13	72																							
18-Jun-13	73																							
25-Jun-13	74	< 0.003	0.00008	< 0.001	0.060	0.524	0.01	0.00108	0.0045	< 0.009	0.040	0.00046	0.28	< 0.00001	0.05	0.190	19.5	0.00003	0.00005	< 0.0001	0.000874	< 0.00003	0.004	< 0.00001
2-Jul-13	75																							
9-Jul-13	76																							
16-Jul-13	77																							
23-Jul-13	78	< 0.003	< 0.00002	< 0.001	0.058	0.530	< 0.01	0.00053	0.0056	< 0.009	0.027	0.00041	0.27	< 0.00001	0.05	0.187	20.3	0.00003	< 0.00001	< 0.0001	0.000801	< 0.00003	0.003	< 0.00001
30-Jul-13	79																							
6-Aug-13	80																							
13-Aug-13	81																							
20-Aug-13	82																							
27-Aug-13	83																							

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L
21-Feb-13	0	500	435	7.65	345	279	#N/A	6.6	31.0	90	72.5	0.0583	0.0042	0.0039	0.0322	< 0.00002	< 0.00001	0.0134	0.000006	24.4	< 0.0005	0.000229
26-Feb-13	1	500	455	7.62	362	202	#N/A	4.9	28.2	56	54.8	0.117	0.0049	0.0060	0.0270	< 0.00002	< 0.00001	0.0165	0.000006	19.1	< 0.0005	0.000049
5-Mar-13	2	500	465	7.78	362	107	#N/A	4.5	24.3	31	28.5	0.140	0.0053	0.0044	0.0192	< 0.00002	< 0.00001	0.0148	0.000004	9.71	< 0.0005	0.000152
12-Mar-13	3	500	460	7.82	320	92	#N/A	3.6	17.6	24	27.2	0.0709	0.0033	0.0032	0.0104	< 0.00002	< 0.00001	0.0124	0.000008	9.40	< 0.0005	0.000021
19-Mar-13	4	500	465	7.56	342	94	#N/A	5.7	24.0	24	27.3	0.0918	0.0038	0.0039	0.0119	< 0.00002	< 0.00001	0.0156	0.000010	9.34	< 0.0005	0.000047
26-Mar-13	5	500	465	7.81	354	84																
2-Apr-13	6	500	445	7.68	339	79	#N/A	4.6	17.3	21	27.6	0.0671	0.0033	0.0027	0.0108	< 0.00002	< 0.00001	0.0124	0.000012	9.58	< 0.0005	0.000221
9-Apr-13	7	500	460	7.80	354	73																
16-Apr-13	8	500	455	7.78	335	71	#N/A	4.0	18.3	19	25.5	0.0891	0.0033	0.0021	0.0127	< 0.00002	< 0.00001	0.0106	0.000013	8.86	< 0.0005	0.000028
23-Apr-13	9	500	450	7.84	344	95																
30-Apr-13	10	500	460	7.76	337	65	#N/A	3.8	16.4	18	23.8	0.174	0.0025	0.0016	0.0138	< 0.00002	< 0.00001	0.0093	0.000020	8.31	< 0.0005	0.000028
7-May-13	11	500	450	7.79	330	60	#N/A	6.4	18.6	17	22.6	0.0725	0.0023	0.0017	0.00891	< 0.00002	0.00001	0.0083	0.000025	7.81	< 0.0005	0.000038
14-May-13	12	500	445	7.84	352	68	#N/A	4.3	17.0	18	25.5	0.190	0.0030	0.0020	0.0141	< 0.00002	< 0.00001	0.0097	0.000016	8.91	< 0.0005	0.000148
21-May-13	13	500	450	7.77	361	63	#N/A	3.4	15.9	16	21.5	0.0858	0.0028	0.0015	0.0106	< 0.00002	< 0.00001	0.0083	0.000016	7.48	< 0.0005	0.000027
28-May-13	14	500	450	7.81	372	63	#N/A	3.2	17.5	15	23.5	0.145	0.0029	0.0016	0.0131	< 0.00002	< 0.00001	0.009	0.000017	8.22	< 0.0005	0.000031
4-Jun-13	15	500	445	7.73	378	60	#N/A	4.14	17.68	15	22.1	0.06	0.0025	0.0015	0.0088	< 0.00002	< 0.00001	0.0094	0.000	7.74	< 0.0005	0.0001
11-Jun-13	16	500	435	7.81	345	60	#N/A	6.5	20.3	14	21.3	0.0736	0.0025	0.0030	0.00878	< 0.00002	< 0.00001	0.0087	0.000011	7.5	< 0.0005	0.000023
18-Jun-13	17	500	450	7.73	339	58	#N/A	4.04	15.11	14	20.3	0.11	0.0025	0.0106	0.0095	< 0.00002	< 0.00001	0.0095	0.000	7.09	< 0.0005	0.0001
25-Jun-13	18	500	445	7.7	368	54	#N/A	3.6	15.7	13	19.8	0.1050	0.0022	0.0014	0.01090	< 0.00002	< 0.00001	0.0090	0.000013	6.9	< 0.0005	0.000064
2-Jul-13	19	500	445	7.81	351	74	#N/A	4.7	20.5	12	19.7	0.06	0.0025	0.0015	0.0089	< 0.00002	< 0.00001	0.0095	0.000	6.87	< 0.0005	0.0004
9-Jul-13	20	500	450	7.73	307	56	#N/A	5.6	17.1	10	21.0	0.064	0.0021	0.0012	0.01020	< 0.00002	< 0.00001	0.0088	0.000068	7.4	< 0.0005	0.000060
16-Jul-13	21	500	450	7.53	387	58	#N/A	2.95	13.17	12	21.1	0.03	0.002	0.0020	0.0080	< 0.00002	< 0.00001	0.0090	0.000	7.45	< 0.0005	0.0000
23-Jul-13	22	500	445	7.68	371	57	#N/A	5.6	16.9	14	21.3	0.1190	0.0020	0.0013	0.01120	< 0.00002	< 0.00001	0.0078	0.000022	7.5	< 0.0005	0.000033
30-Jul-13	23	500	445	7.47	374	55	#N/A	3.9	13.8	14	20.9	0.172	0.0018	0.0018	0.012	< 0.00002	< 0.00001	0.0094	0.000022	7.39	< 0.0005	< 0.000002
6-Aug-13	24	500	445	7.8	332	57	#N/A	6.1	17.4	10	21.1	0.0909	0.0019	0.0014	0.00967	< 0.00002	< 0.00001	0.0088	0.000021	7.5	< 0.0005	0.000057
13-Aug-13	25	500	455	7.45	373	53	#N/A	3.0	13.5	9	20.7	0.142	0.002	0.0013	0.0116	< 0.00002	< 0.00001	0.0094	0.000024	7.36	< 0.0005	0.000044
20-Aug-13	26	500	445	7.58	371	53	#N/A	2.2	12.9	10												
27-Aug-13	27	500	445	7.64	368	46	#N/A	2.22	12.91													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0016	0.004	0.00014	0.012	2.78	0.0567	< 0.01	0.00526	0.0002	0.014	15.9	0.00195	1.21	0.00004	10.9	1.04	31.2	0.00020	0.00237	< 0.0001	0.000281	0.00049	< 0.001	0.00002
26-Feb-13	1	0.0005	< 0.003	0.00033	0.013	1.74	0.0539	< 0.01	0.00337	0.0001	< 0.009	9.52	0.00261	1.23	0.00002	7.38	0.743	22.4	0.00015	0.00065	0.0002	0.000424	0.00053	< 0.001	< 0.00001
5-Mar-13	2	0.0008	< 0.003	0.00035	0.008	1.04	0.0424	< 0.01	0.00372	0.0001	< 0.009	6.84	0.00161	1.16	< 0.00001	4.14	0.390	10.0	0.00010	0.00036	0.0005	0.000426	0.00041	< 0.001	< 0.00001
12-Mar-13	3	< 0.0005	< 0.003	0.00020	0.006	0.913	0.0407	< 0.01	0.00247	< 0.0001	0.010	6.22	0.00120	1.40	< 0.00001	2.92	0.354	8.84	0.00008	0.00039	< 0.0001	0.000320	0.00037	< 0.001	< 0.00001
19-Mar-13	4	0.0005	< 0.003	0.00023	0.006	0.980	0.0361	< 0.01	0.00241	0.0002	< 0.009	6.07	0.00082	1.21	< 0.00001	2.28	0.361	8.29	0.00010	0.00030	< 0.0001	0.000382	0.00040	< 0.001	< 0.00001
26-Mar-13	5																								
2-Apr-13	6	0.0006	< 0.003	0.00047	0.004	0.894	0.0457	< 0.01	0.00207	0.0004	< 0.009	5.30	0.00038	0.98	< 0.00001	1.41	0.340	7.32	0.00008	0.00020	< 0.0001	0.000328	0.00031	< 0.001	< 0.00001
9-Apr-13	7																								
16-Apr-13	8	< 0.0005	< 0.003	0.00035	0.003	0.812	0.0398	< 0.01	0.00152	< 0.0001	0.012	4.58	0.00049	1.02	< 0.00001	0.81	0.318	6.05	0.00007	0.00017	0.0002	0.000307	0.00032	< 0.001	< 0.00001
23-Apr-13	9																								
30-Apr-13	10	< 0.0005	0.009	0.00065	0.002	0.745	0.0471	< 0.01	0.00140	< 0.0001	< 0.009	3.82	0.00045	0.98	< 0.00001	0.51	0.273	5.30	0.00007	0.00011	0.0010	0.000273	0.00039	< 0.001	0.00002
7-May-13	11	< 0.0005	0.004	0.00052	0.002	0.757	0.0440	< 0.01	0.00125	< 0.0001	< 0.009	3.95	0.00042	0.80	0.00001	0.49	0.285	5.46	0.00006	0.00007	0.0003	0.000272	0.00027	< 0.001	< 0.00001
14-May-13	12	< 0.0005	0.006	0.00066	0.002	0.798	0.0390	< 0.01	0.00155	< 0.0001	< 0.009	4.55	0.00059	1.10	< 0.00001	0.48	0.303	5.97	0.00007	0.00010	0.0009	0.000286	0.00035	0.001	0.00001
21-May-13	13	0.0015	0.006	0.00043	0.001	0.686	0.0368	< 0.01	0.00161	< 0.0001	0.013	3.93	0.00045	0.77	< 0.00001	0.39	0.258	4.94	0.00006	0.0001	0.0003	0.00028	0.00023	< 0.001	< 0.00001
28-May-13	14	< 0.0005	0.008	0.00057	0.002	0.722	0.0364	< 0.01	0.00149	< 0.0001	< 0.009	4.13	0.00062	0.82	< 0.00001	0.39	0.277	4.73	0.00006	0.00011	0.0007	0.000293	0.00031	< 0.001	0.00001
4-Jun-13	15	< 0.0005	< 0.003	0.00023	0.001	0.68	0.035	< 0.01	0.00140	0.0001	< 0.009	4.010	0.0005	0.82	< 0.00001	0.39	0.2530	4.3	0.00005	0.00010	0.0001	0.000265	0.00023	< 0.001	0.00001
11-Jun-13	16	< 0.0005	< 0.003	0.00022	0.001	0.646	0.0364	< 0.01	0.00138	0.0001	< 0.009	3.54	0.00058	0.75	< 0.00001	0.38	0.245	4.69	0.00003	0.00019	0.0002	0.00024	0.00017	< 0.001	< 0.00001
18-Jun-13	17	0.0	0.00	0.00028	0.001	0.63	0.031	< 0.01	0.00183	< 0.0001	< 0.009	3.660	0.0005	0.88	< 0.00001	0.36	0.2340	4.1	0.00004	0.00036	0.0003	0.000371	0.00056	< 0.001	0.00001
25-Jun-13	18	< 0.0005	0.004	0.00043	0.001	0.616	0.0380	< 0.01	0.00151	0.0001	0.017	3.38	0.00062	0.38	< 0.00001	0.28	0.230	3.74	0.00005	0.00010	0.0005	0.000249	0.00026	< 0.001	< 0.00001
2-Jul-13	19	0.0	0.02	0.00020	0.001	0.61	0.035	< 0.01	0.00277	0.0002	< 0.009	3.490	0.001	0.73	< 0.00001	0.29	0.2240	4.2	0.00005	0.00024	0.0001	0.000230	0.00024	< 0.001	< 0.00001
9-Jul-13	20	0.0009	0.004	0.00049	0.001	0.615	0.0391	< 0.01	0.00120	0.0006	< 0.009	3.10	0.00051	0.68	< 0.00001	0.25	0.231	4.19	0.00005	0.00008	0.0003	0.000229	0.00026	< 0.001	< 0.00001
16-Jul-13	21	< 0.0005	0.06	0.00023	0.001	0.60	0.043	0.01	0.00106	0.0001	< 0.009	2.990	0.0005	0.55	< 0.00001	0.25	0.2380	4.5	0.00004	0.00009	< 0.0001	0.000219	0.00019	< 0.001	< 0.00001
23-Jul-13	22	< 0.0005	0.005	0.00045	< 0.001	0.621	0.0426	< 0.01	0.00122	< 0.0001	< 0.009	2.99	0.00050	0.71	< 0.00001	0.21	0.235	4.62	0.00005	0.00006	0.0008	0.000192	0.00025	< 0.001	< 0.00001
30-Jul-13	23	< 0.0005	0.005	0.00051	0.001	0.593	0.0425	< 0.01	0.00121	< 0.0001	< 0.009	2.79	0.00047	0.74	< 0.00001	0.19	0.223	4.13	0.00005	0.0001	0.0007	0.000559	0.00028	< 0.001	< 0.00001
6-Aug-13	24	0.0006	< 0.003	0.00034	0.001	0.579	0.0411	< 0.01	0.00122	0.0001	< 0.009	2.80	0.00049	0.69	0.00002	0.19	0.228	4.08	0.00005	0.00006	0.0003	0.000205	0.00023	< 0.001	< 0.00001
13-Aug-13	25	0.0007	< 0.003	0.00051	< 0.001	0.566	0.0403	< 0.01	0.0011	0.0002	< 0.009	2.62	0.00046	0.75	< 0.00001	0.18	0.221	3.54	0.00004	0.00011	0.0006	0.000214	0.00022	0.001	< 0.00001
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
21-Feb-13	0	500	420	8.41	296	528	#N/A	0	60.6	180	7.43	0.229	0.0050	0.0278	0.0644	< 0.00002	< 0.00001	0.0235	0.000009	2.67	< 0.0005	0.000349
26-Feb-13	1	500	460	8.51	299	368	#N/A	0	65.6	101	5.99	0.504	0.0079	0.0498	0.0534	< 0.00002	< 0.00001	0.0305	< 0.000003	2.19	< 0.0005	0.000141
5-Mar-13	2	500	495	8.80	313	237	#N/A	0	65.0	53	3.25	0.460	0.0118	0.0590	0.0188	< 0.00002	< 0.00001	0.0318	0.000006	1.20	< 0.0005	0.000176
12-Mar-13	3	500	450	9.01	298	196	#N/A	0	55.0	44	3.04	0.304	0.0074	0.0612	0.0147	< 0.00002	< 0.00001	0.0248	0.000007	1.12	< 0.0005	0.000087
19-Mar-13	4	500	440	8.59	326	190	#N/A	0	57.4	38	2.36	0.273	0.0070	0.0684	0.00828	< 0.00002	< 0.00001	0.0258	0.000007	0.88	< 0.0005	0.000081
26-Mar-13	5	500	460	8.88	299	161																
2-Apr-13	6	500	445	8.84	306	147	#N/A	0.0	47.3	29	3.12	0.423	0.0058	0.0640	0.0146	< 0.00002	< 0.00001	0.0226	< 0.000003	1.15	< 0.0005	0.000416
9-Apr-13	7	500	455	8.76	322	129																
16-Apr-13	8	500	450	8.64	321	121	#N/A	0.0	39.8	28	3.02	0.196	0.0058	0.0489	0.00926	< 0.00002	< 0.00001	0.0178	< 0.000003	1.12	< 0.0005	0.000085
23-Apr-13	9	500	440	8.72	311	131																
30-Apr-13	10	500	515	8.30	347	98	#N/A	0.0	34.8	21	5.46	0.164	0.0046	0.0406	0.0110	< 0.00002	< 0.00001	0.0175	< 0.000003	2.03	< 0.0005	0.000069
7-May-13	11	500	520	7.96	360	81	#N/A	4.9	32.6	16	5.89	0.0875	0.0039	0.0264	0.0109	< 0.00002	< 0.00001	0.0128	0.000013	2.21	< 0.0005	0.000073
14-May-13	12	500	440	8.43	346	93	#N/A	0.0	35.0	17	4.28	0.361	0.0049	0.0393	0.0197	0.00002	< 0.00001	0.0155	< 0.000003	1.56	< 0.0005	0.000290
21-May-13	13	500	495	8.00	374	72	#N/A	2.6	27.4	15	6.33	0.107	0.0039	0.0238	0.0125	< 0.00002	< 0.00001	0.0116	< 0.000003	2.37	< 0.0005	0.000102
28-May-13	14	500	505	8.04	371	74	#N/A	2.5	25.2	17	6.73	0.105	0.0036	0.0224	0.01	< 0.00002	< 0.00001	0.0113	0.000004	2.5	< 0.0005	0.000059
4-Jun-13	15	500	470	8.17	379	81	#N/A	3.0	29.1	15	4.88	0.0853	0.0034	0.0246	0.00729	< 0.00002	< 0.00001	0.0126	< 0.000003	1.8	< 0.0005	0.000126
11-Jun-13	16	500	480	7.94	367	67	#N/A	5.0	24.9	15	4.73	0.104	0.0028	0.0213	0.00686	< 0.00002	< 0.00001	0.0116	0.000006	1.73	< 0.0005	0.00006
18-Jun-13	17	500	450	8.05	318.84	70.62	#N/A	2.64	23.69	14	5.86	0.131	0.0031	0.0228	0.00956	< 0.00002	< 0.00001	0.0122	0.000006	2.15	< 0.0005	0.000119
25-Jun-13	18	500	445	7.85	368.16	63.9	#N/A	2.87	23.47	14	6.33	0.0863	0.0029	0.019	0.00882	< 0.00002	< 0.00001	0.0113	0.000007	2.3	< 0.0005	0.000085
2-Jul-13	19	500	440	7.52	416.01	68.14	#N/A	5.03	21.16	16	7.56	0.159	0.0031	0.0191	0.0135	< 0.00002	< 0.00001	0.0133	0.000009	2.75	< 0.0005	0.000095
9-Jul-13	20	500	445	7.75	297.36	60.51	#N/A	4.56	20.86	13	9.23	0.0725	0.0025	0.016	0.0122	< 0.00002	< 0.00001	0.0108	0.000009	3.34	< 0.0005	0.000235
16-Jul-13	21	500	430	7.54	376.46	58.47	#N/A	3.22	14.59	11	9.34	0.124	0.0023	0.0145	0.014	< 0.00002	< 0.00001	0.0102	0.000013	3.37	< 0.0005	0.000125
23-Jul-13	22	500	470	7.7	403.32	58.18	#N/A	5.05	18.43	14	11.7	0.188	0.0027	0.0154	0.0169	< 0.00002	< 0.00001	0.0112	0.000026	4.2	< 0.0005	0.00015
30-Jul-13	23	500	425	7.57	386.23	55.29	#N/A	3.31	15.57	11	12.2	0.185	0.0022	0.0134	0.0155	< 0.00002	< 0.00001	0.011	0.000019	4.35	< 0.0005	0.000076
6-Aug-13	24	500	455	7.77	369.62	55.02	#N/A	5.94	16.75	8	13.3	0.107	0.0022	0.0136	0.0157	0.00004	< 0.00001	0.0112	0.000118	4.8	< 0.0005	0.000228
13-Aug-13	25	500	445	7.41	385	53	#N/A	2.4	13.0	11	14	0.142	0.0021	0.0133	0.0163	< 0.00002	< 0.00001	0.0107	0.000025	5.05	< 0.0005	0.000144
20-Aug-13	26	500	450	7.46	387	55	#N/A	2.7	12.1	12												
27-Aug-13	27	500	465	7.54	381	48	#N/A	2.35	12.63													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0008	< 0.003	0.00008	0.199	0.185	0.0098	< 0.01	0.0110	0.0002	0.029	3.64	0.00715	1.26	0.00002	99.4	0.288	57.9	0.00005	0.00359	0.0006	0.00140	0.00432	< 0.001	0.00008
26-Feb-13	1	0.0012	0.005	0.00016	0.171	0.128	0.0063	< 0.01	0.0115	0.0002	< 0.009	1.92	0.00868	1.73	0.00016	65.6	0.173	38.9	0.00004	0.00094	0.0007	0.00428	0.00576	< 0.001	0.00003
5-Mar-13	2	0.0006	0.005	0.00011	0.105	0.063	0.0052	< 0.01	0.00718	0.0001	< 0.009	1.32	0.00523	1.39	0.00010	48.2	0.0723	19.8	0.00003	0.00052	0.0007	0.00452	0.00525	< 0.001	0.00004
12-Mar-13	3	0.0016	0.010	0.00015	0.087	0.056	0.0042	< 0.01	0.00505	< 0.0001	< 0.009	1.33	0.00422	1.41	0.00005	39.8	0.0592	14.2	< 0.00002	0.00045	0.0003	0.00364	0.00480	< 0.001	0.00004
19-Mar-13	4	0.0008	0.003	0.00007	0.079	0.042	0.0029	< 0.01	0.00448	< 0.0001	< 0.009	1.09	0.00298	1.27	0.00006	36.2	0.0406	12.4	< 0.00002	0.00041	0.0002	0.00456	0.00466	< 0.001	0.00002
26-Mar-13	5																								
2-Apr-13	6	0.0008	0.013	0.00015	0.059	0.062	0.0052	< 0.01	0.00390	0.0004	0.017	1.20	0.00176	1.36	0.00005	30.5	0.0523	9.87	0.00002	0.00026	0.0009	0.00354	0.00441	0.001	0.00014
9-Apr-13	7																								
16-Apr-13	8	< 0.0005	0.008	0.00009	0.041	0.056	0.0052	< 0.01	0.00318	< 0.0001	0.016	1.02	0.00143	1.04	0.00002	25.3	0.0480	7.92	< 0.00002	0.00022	0.0003	0.00292	0.00302	0.001	0.00004
23-Apr-13	9																								
30-Apr-13	10	< 0.0005	0.005	0.00003	0.032	0.098	0.0100	< 0.01	0.00267	< 0.0001	< 0.009	0.996	0.00109	0.99	0.00002	18.5	0.0893	6.27	< 0.00002	0.00020	0.0005	0.00308	0.00228	< 0.001	0.00002
7-May-13	11	0.0014	0.003	0.00004	0.024	0.088	0.0240	< 0.01	0.00220	< 0.0001	< 0.009	0.965	0.00082	0.72	0.00001	15.6	0.0872	5.10	< 0.00002	0.00012	0.0002	0.00231	0.00147	< 0.001	0.00002
14-May-13	12	0.0010	0.018	0.00024	0.026	0.093	0.0094	< 0.01	0.00232	< 0.0001	< 0.009	1.33	0.00129	1.36	0.00003	19.0	0.0678	5.50	0.00002	0.00020	0.0009	0.00299	0.00260	0.002	0.00008
21-May-13	13	< 0.0005	0.008	0.00012	0.019	0.101	0.013	< 0.01	0.0019	0.0003	< 0.009	1.03	0.00108	0.71	0.00002	12.2	0.095	4.09	< 0.00002	0.00012	0.0001	0.00168	0.00137	< 0.001	0.00003
28-May-13	14	0.0009	0.004	0.00005	0.021	0.116	0.0165	< 0.01	0.00198	< 0.0001	< 0.009	1.2	0.00097	0.68	0.00001	13.8	0.101	4.73	< 0.00002	0.00013	0.0002	0.00177	0.0012	< 0.001	0.00001
4-Jun-13	15	< 0.0005	0.004	0.00005	0.019	0.096	0.011	< 0.01	0.00204	0.0001	0.009	1.22	0.00076	0.8	< 0.00001	12.7	0.0782	4.44	< 0.00002	0.00016	0.0001	0.00156	0.00122	< 0.001	0.00001
11-Jun-13	16	< 0.0005	< 0.003	0.00004	0.016	0.1	0.0101	< 0.01	0.00201	< 0.0001	< 0.009	1.17	0.00066	0.64	0.00001	11.8	0.0823	4.8	< 0.00002	0.00013	0.0002	0.0013	0.00109	< 0.001	0.00002
18-Jun-13	17	< 0.0005	0.005	0.00007	0.017	0.122	0.0109	< 0.01	0.00173	< 0.0001	< 0.009	1.45	0.00079	0.78	0.00003	11.6	0.103	4.24	< 0.00002	0.00016	0.0002	0.00118	0.00126	< 0.001	0.00002
25-Jun-13	18	0.0007	< 0.003	0.00008	0.015	0.141	0.0116	< 0.01	0.00171	0.0001	< 0.009	1.52	0.00105	0.29	0.00003	10.1	0.118	3.99	< 0.00002	0.00016	< 0.0001	0.00118	0.00101	< 0.001	< 0.00001
2-Jul-13	19	0.0007	0.005	0.00009	0.016	0.169	0.0144	< 0.01	0.00193	0.0002	< 0.009	1.74	0.00116	0.66	0.00002	9.54	0.142	4.59	< 0.00002	0.00012	0.0004	0.00117	0.00117	0.001	0.00002
9-Jul-13	20	0.001	0.005	0.0001	0.013	0.214	0.0196	< 0.01	0.00169	0.0003	< 0.009	1.79	0.00121	0.64	< 0.00001	7.83	0.17	4.32	0.00002	0.00009	0.0001	0.000978	0.00084	< 0.001	0.00004
16-Jul-13	21	0.0007	0.006	0.00011	0.011	0.223	0.0225	< 0.01	0.00164	0.0003	0.009	1.8	0.00099	0.57	< 0.00001	6.43	0.184	3.89	0.00002	0.00009	0.0003	0.000811	0.00086	0.003	0.00003
23-Jul-13	22	< 0.0005	0.011	0.00013	0.011	0.285	0.0328	< 0.01	0.00184	< 0.0001	< 0.009	2.01	0.001	0.76	0.00002	5.95	0.233	4.33	0.00003	0.00009	0.0006	0.000917	0.00104	0.001	0.00004
30-Jul-13	23	0.0005	0.008	0.00009	0.01	0.312	0.03	< 0.01	0.00159	< 0.0001	< 0.009	2.11	0.00081	0.72	< 0.00001	4.96	0.235	3.73	0.00003	0.00009	0.0005	0.000783	0.00089	0.001	0.00002
6-Aug-13	24	0.0005	0.004	0.00037	0.009	0.322	0.0465	< 0.01	0.00165	0.0001	< 0.009	2.03	0.00097	0.66	0.00001	3.93	0.262	3.88	0.00003	0.00006	0.0002	0.000804	0.00076	0.005	0.00003
13-Aug-13	25	0.0008	0.008	0.00012	0.007	0.344	0.0388	< 0.01	0.00155	0.0001	< 0.009	1.99	0.00078	0.61	< 0.00001	3.45	0.266	3.86	0.00002	0.00008	0.0003	0.000595	0.00081	0.002	0.00002
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
21-Feb-13	0	500	415	8.62	228	361	#N/A	0.0	55.4	118	8.22	0.351	0.0100	0.0770	0.00848	< 0.00002	< 0.00001	0.0337	0.000006	3.16	< 0.0005	0.000392
26-Feb-13	1	500	460	8.90	257	313	#N/A	0.0	69.8	84	4.15	0.650	0.0120	0.129	0.00407	< 0.00002	0.00001	0.0355	0.000017	1.60	< 0.0005	0.000274
5-Mar-13	2	500	490	9.04	294	223	#N/A	0.0	79.0	34	2.80	0.521	0.0165	0.154	0.00426	< 0.00002	< 0.00001	0.0416	0.000017	1.07	< 0.0005	0.000239
12-Mar-13	3	500	480	9.13	252	169	#N/A	0.0	60.2	26	3.40	0.335	0.0116	0.133	0.00443	< 0.00002	< 0.00001	0.0284	< 0.000003	1.31	< 0.0005	0.000226
19-Mar-13	4	500	465	8.68	283	153	#N/A	0.0	60.9	17	2.73	0.331	0.0089	0.120	0.00321	< 0.00002	< 0.00001	0.0324	0.000009	1.05	< 0.0005	0.000181
26-Mar-13	5	500	450	9.29	257	130																
2-Apr-13	6	500	455	8.95	257	116	#N/A	0.0	49.9	14	3.51	0.431	0.0074	0.0859	0.00574	< 0.00002	< 0.00001	0.0268	< 0.000003	1.35	< 0.0005	0.000446
9-Apr-13	7	500	465	9.11	263	105																
16-Apr-13	8	500	445	8.75	276	92	#N/A	0.0	41.5	13	4.03	0.210	0.0082	0.0587	0.00340	< 0.00002	< 0.00001	0.0209	0.000131	1.55	< 0.0005	0.000152
23-Apr-13	9	500	490	8.34	307	109																
30-Apr-13	10	500	450	8.43	307	83	#N/A	0.0	34.9	15	5.77	0.245	0.0054	0.0387	0.00583	< 0.00002	< 0.00001	0.0179	0.000008	2.22	< 0.0005	0.000206
7-May-13	11	500	455	8.12	342	70	#N/A	4.2	30.6	13	6.26	0.103	0.0043	0.0293	0.00536	< 0.00002	< 0.00001	0.0154	0.000003	2.41	< 0.0005	0.000218
14-May-13	12	500	460	8.25	336	66	#N/A	2.1	29.6	9	7.31	0.237	0.0075	0.0315	0.00695	< 0.00002	< 0.00001	0.0182	< 0.000003	2.82	< 0.0005	0.000344
21-May-13	13	500	445	8.17	346	67	#N/A	2.1	27.5	12	7.6	0.124	0.0084	0.0295	0.00533	< 0.00002	< 0.00001	0.0172	< 0.000003	2.93	< 0.0005	0.000174
28-May-13	14	500	450	8.09	358	63	#N/A	2.3	26.0	11	9.64	0.157	0.0073	0.0252	0.00723	< 0.00002	< 0.00001	0.0163	0.000003	3.71	< 0.0005	0.000214
4-Jun-13	15	500	445	7.91	374.02	62.09	#N/A	3.68	26.04	10	9.64	0.0862	0.0082	0.0249	0.00619	< 0.00002	< 0.00001	0.0177	< 0.000003	3.7	< 0.0005	0.000198
11-Jun-13	16	500	440	7.91	345.7	59.13	#N/A	6.13	27.71	9	10.9	0.0937	0.0056	0.0195	0.0058	< 0.00002	< 0.00001	0.0148	< 0.000003	4.2	< 0.0005	0.000133
18-Jun-13	17	500	450	7.87	334.47	58.38	#N/A	3.06	22.31	11	11.6	0.107	0.006	0.0197	0.00707	< 0.00002	< 0.00001	0.0176	< 0.000003	4.46	< 0.0005	0.000191
25-Jun-13	18	500	445	7.73	316.89	52.3	#N/A	3.73	22.21	7	12.6	0.0793	0.0061	0.0173	0.00732	< 0.00002	< 0.00001	0.0147	< 0.000003	4.85	< 0.0005	0.000195
2-Jul-13	19	500	445	7.59	384.27	55.51	#N/A	4.36	22.5	9	13.2	0.0687	0.0067	0.0172	0.00708	< 0.00002	< 0.00001	0.0177	< 0.000003	5.07	< 0.0005	0.000159
9-Jul-13	20	500	460	7.67	310.54	51.48	#N/A	5.48	22.77	7	14.1	0.0721	0.0066	0.0163	0.00796	< 0.00002	< 0.00001	0.0151	< 0.000003	5.39	< 0.0005	0.000348
16-Jul-13	21	500	450	7.55	376.46	47.94	#N/A	2.85	17.56	5	14.5	0.0861	0.0046	0.0156	0.00817	< 0.00002	< 0.00001	0.0135	0.000006	5.57	< 0.0005	0.000208
23-Jul-13	22	500	450	7.65	386.23	46.81	#N/A	5.79	21.58	8	15.4	0.0838	0.005	0.0144	0.00792	< 0.00002	< 0.00001	0.0132	0.000004	5.89	< 0.0005	0.000165
30-Jul-13	23	500	445	7.54	369.14	46.11	#N/A	3.9	20.23	7	15.9	0.0826	0.0058	0.0137	0.00786	< 0.00002	< 0.00001	0.0142	< 0.000003	6.09	< 0.0005	0.000185
6-Aug-13	24	500	445	7.74	348.63	45.1	#N/A	5.86	21.41	7	15.3	0.118	0.0045	0.0141	0.00889	< 0.00002	< 0.00001	0.0136	0.000028	5.89	< 0.0005	0.000335
13-Aug-13	25	500	455	7.51	359	45	#N/A	2.6	15.3	7	16	0.101	0.0042	0.0129	0.00869	< 0.00002	< 0.00001	0.0127	0.000004	6.12	< 0.0005	0.000239
20-Aug-13	26	500	450	7.52	364	48	#N/A	2.9	16.3	7												
27-Aug-13	27	500	440	7.64	363	42	#N/A	2.32	16.29													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	0.0059	0.004	0.00014	0.075	0.076	0.0083	< 0.01	0.0206	0.0011	0.020	3.77	0.00318	1.23	0.00001	70.4	0.103	37.9	0.00009	0.00005	0.0010	0.00556	0.00520	< 0.001	0.00011
26-Feb-13	1	0.0018	0.003	0.00014	0.074	0.038	0.0031	< 0.01	0.0222	0.0005	< 0.009	2.33	0.00334	1.71	0.00008	55.4	0.0604	26.7	0.00008	0.00027	0.0006	0.0240	0.00517	0.002	0.00004
5-Mar-13	2	0.0008	0.007	0.00014	0.056	0.029	0.0041	< 0.01	0.0156	0.0004	< 0.009	1.93	0.00203	1.53	0.00005	46.8	0.0366	13.2	0.00005	0.00008	0.0006	0.0328	0.00476	< 0.001	0.00005
12-Mar-13	3	0.0007	0.009	0.00020	0.037	0.031	0.0053	< 0.01	0.0119	0.0004	0.011	1.83	0.00151	1.41	0.00005	35.3	0.0386	9.61	0.00004	< 0.00001	0.0003	0.0266	0.00396	< 0.001	0.00003
19-Mar-13	4	0.0012	0.006	0.00013	0.038	0.025	0.0031	0.01	0.00956	0.0002	< 0.009	1.49	0.00105	1.34	0.00007	30.6	0.0291	7.14	0.00003	0.00009	0.0002	0.0202	0.00401	< 0.001	0.00004
26-Mar-13	5																								
2-Apr-13	6	0.0007	0.011	0.00016	0.027	0.036	0.0049	0.02	0.00857	0.0005	< 0.009	1.61	0.00047	1.29	0.00007	24.1	0.0383	4.90	0.00004	< 0.00001	0.0007	0.0129	0.00329	< 0.001	0.00013
9-Apr-13	7																								
16-Apr-13	8	0.0011	0.004	0.00006	0.019	0.037	0.0036	< 0.01	0.00589	0.0003	0.011	1.61	0.00053	1.01	0.00003	18.5	0.0457	3.39	0.00003	0.00004	0.0002	0.00925	0.00214	0.001	0.00002
23-Apr-13	9																								
30-Apr-13	10	0.0006	0.012	0.00016	0.015	0.052	0.0059	< 0.01	0.00586	0.0003	< 0.009	1.71	0.00061	1.02	0.00003	14.4	0.0692	3.91	0.00004	0.00004	0.0007	0.00533	0.00186	< 0.001	0.00007
7-May-13	11	0.0014	0.008	0.00017	0.013	0.059	0.0125	< 0.01	0.00497	0.0003	< 0.009	1.87	0.00051	0.73	0.00001	12.9	0.0853	3.68	0.00003	< 0.00001	< 0.0001	0.00435	0.00129	< 0.001	0.00003
14-May-13	12	0.0005	0.007	0.00016	0.011	0.063	0.0122	< 0.01	0.00490	0.0003	0.013	1.86	0.00043	0.94	0.00002	10.6	0.0888	2.50	0.00003	< 0.00001	0.0007	0.00547	0.00147	< 0.001	0.00003
21-May-13	13	0.0006	0.005	0.00011	0.011	0.066	0.0104	< 0.01	0.00532	0.0004	0.014	2	0.00047	0.68	0.00003	9.98	0.104	3.14	0.00004	0.00001	0.0002	0.00579	0.00105	< 0.001	0.00002
28-May-13	14	0.0009	0.007	0.00016	0.01	0.087	0.0157	< 0.01	0.00441	0.0004	0.009	2.26	0.00042	0.68	0.00002	9.35	0.128	3.05	0.00004	0.00004	0.0004	0.00468	0.00107	< 0.001	0.00004
4-Jun-13	15	0.0005	0.005	0.00009	0.009	0.094	0.0155	< 0.01	0.00437	0.0003	0.011	2.38	0.00037	0.74	< 0.00001	8	0.134	2.76	0.00003	0.00025	0.0001	0.00533	0.00095	< 0.001	< 0.00001
11-Jun-13	16	< 0.0005	< 0.003	0.00006	0.007	0.107	0.0234	< 0.01	0.00396	0.0003	< 0.009	2.32	0.0004	0.64	0.00005	7.18	0.157	3.05	0.00003	0.00003	0.0002	0.00425	0.00076	< 0.001	0.00001
18-Jun-13	17	< 0.0005	0.003	0.00007	0.007	0.123	0.0219	< 0.01	0.00364	0.0003	< 0.009	2.53	0.00038	0.69	< 0.00001	5.91	0.177	2.8	0.00004	0.00005	0.0001	0.00361	0.00083	< 0.001	0.00001
25-Jun-13	18	0.0006	0.004	0.00011	0.006	0.128	0.0336	< 0.01	0.00351	0.0003	< 0.009	2.34	0.00042	0.25	0.00001	4.47	0.188	2.51	0.00004	0.00002	0.0002	0.00313	0.00072	< 0.001	0.00002
2-Jul-13	19	< 0.0005	< 0.003	0.00008	0.006	0.133	0.0363	< 0.01	0.00387	0.0003	< 0.009	2.53	0.00053	0.6	< 0.00001	3.96	0.198	2.56	0.00004	< 0.00001	0.0001	0.00322	0.00073	< 0.001	0.00001
9-Jul-13	20	0.0007	0.003	0.00012	0.005	0.151	0.0418	< 0.01	0.00346	0.0006	< 0.009	2.41	0.00038	0.64	0.00002	3.22	0.215	2.33	0.00004	0.00002	0.0002	0.00339	0.00065	< 0.001	0.00003
16-Jul-13	21	< 0.0005	< 0.003	0.00012	0.004	0.146	0.0452	< 0.01	0.0034	0.0005	< 0.009	2.11	0.00033	0.55	0.00001	2.44	0.218	2.02	0.00004	0.00002	0.0003	0.00237	0.00066	0.002	0.00001
23-Jul-13	22	< 0.0005	0.004	0.00008	0.003	0.158	0.0516	< 0.01	0.00321	0.0003	< 0.009	2.16	0.00036	0.59	< 0.00001	2.14	0.23	2.31	0.00004	< 0.00001	0.0002	0.00248	0.00063	< 0.001	0.00003
30-Jul-13	23	0.0009	< 0.003	0.00008	0.003	0.163	0.0553	< 0.01	0.00301	0.0003	< 0.009	2.2	0.00034	0.6	< 0.00001	1.84	0.232	1.99	0.00004	0.00002	0.0001	0.00275	0.0006	< 0.001	0.00001
6-Aug-13	24	0.0015	0.006	0.0003	0.003	0.152	0.0589	< 0.01	0.00318	0.0005	< 0.009	2.1	0.00033	0.64	< 0.00001	1.54	0.222	2	0.00004	0.00005	0.0003	0.00256	0.00067	0.003	0.00005
13-Aug-13	25	0.0005	< 0.003	0.00013	0.002	0.165	0.0543	< 0.01	0.00309	0.0005	< 0.009	1.98	0.00031	0.55	< 0.00001	1.22	0.242	2.05	0.00004	0.00004	0.0003	0.00216	0.00061	< 0.001	0.00002
20-Aug-13	26																								
27-Aug-13	27																								

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
25-Jan-12	1	480	210	7.88	232	32	#N/A	2.1	10.8	6	7.60	5.95	0.0282	0.0030	0.0040	0.00325	< 0.00002	< 0.00001	0.0031	0.000004	1.93	< 0.0005	0.000203
1-Feb-12	2	500	255	8.07	181	55	#N/A	2.4	23.9	9	6.25	12.2	0.0685	0.0091	0.0102	0.00598	< 0.00002	< 0.00001	0.0066	0.000005	3.92	< 0.0005	0.000226
8-Feb-12	3	495	205	8.19	189	70	#N/A	3.1	31.2	11	6.35	16.9	0.0668	0.0121	0.0129	0.00759	< 0.00002	< 0.00001	0.0082	0.000006	5.34	< 0.0005	0.000251
15-Feb-12	4	530	220	8.03	256	74	#N/A	3.9	31.0	12	6.22	20.1	0.0689	0.0117	0.0131	0.00852	< 0.00002	< 0.00001	0.0085	0.000028	6.35	< 0.0005	0.000264
22-Feb-12	5	445	210	8.01	#N/A	81					6.25												
29-Feb-12	6	460	215	7.86	279	84	#N/A	2.6	35.6	13	6.72	26.9	0.0532	0.0139	0.0125	0.0111	< 0.00002	< 0.00001	0.0097	0.000003	8.42	< 0.0005	0.000348
7-Mar-12	7	435	215	8.02	#N/A	93					5.85												
14-Mar-12	8	425	210	7.77	292	94	#N/A	3.0	39.0	12	5.95	32.9	0.0280	0.0149	0.0133	0.0133	< 0.00002	< 0.00001	0.0119	0.000008	10.3	< 0.0005	0.000479
21-Mar-12	9	175	80	7.86	#N/A	98					5.62												
28-Mar-12	10	415	220	7.84	285	108	#N/A	2.4	44.7	15	5.75	37.7	0.0568	0.0140	0.0121	0.0134	< 0.00002	< 0.00001	0.0122	0.000013	11.8	0.0006	0.000559
4-Apr-12	11	160	65	7.80	#N/A	105					6.30												
11-Apr-12	12	385	175	7.86	280	112	#N/A	2.5	49.1	18	5.99	41.3	0.0357	0.0152	0.0145	0.0154	< 0.00002	< 0.00001	0.0156	< 0.000003	12.9	< 0.0005	0.000672
18-Apr-12	13	130	75	7.89	#N/A	121					5.97												
25-Apr-12	14	415	210	7.84	294	125	#N/A	4.0	51.8	19	0.92	47.1	0.0520	0.0176	0.0130	0.0169	< 0.00002	< 0.00001	0.0149	< 0.000003	14.6	< 0.0005	0.000803
2-May-12	15	75	50	7.55	#N/A	116					8.82												
9-May-12	16	335	175	7.90	316	131	#N/A	3.5	54.4	12	5.95	49.0	0.0297	0.0175	0.0147	0.0185	< 0.00002	< 0.00001	0.0170	< 0.000003	15.2	< 0.0005	0.000812
16-May-12	17	175	75	7.86	#N/A	132					5.95												
23-May-12	18	460	210	7.90	259	134	#N/A	3.1	57.1	12	5.62	51.1	0.0587	0.0168	0.0143	0.0192	< 0.00002	< 0.00001	0.0165	< 0.000003	15.9	< 0.0005	0.000996
30-May-12	19	135	70	7.87	#N/A	136					5.39												
6-Jun-12	20	445	220	7.81	320	138	#N/A	4.8	59.1	13	5.65	54.6	0.0408	0.0170	0.0190	0.0209	< 0.00002	< 0.00001	0.0206	< 0.000003	16.9	< 0.0005	0.000942
13-Jun-12	21	130	60	7.88	#N/A	136					5.31												
20-Jun-12	22	440	220	7.90	283	141	#N/A	4.5	60.6	13	6.33	54.5	0.0394	0.0157	0.0219	0.0210	< 0.00002	< 0.00001	0.0195	0.000164	16.9	< 0.0005	0.000984
27-Jun-12	23	130	70	7.83	#N/A	139					5.54												
4-Jul-12	24	415	200	7.84	330	143	#N/A	4.3	62.5	12	5.03	52.1	0.0479	0.0150	0.0216	0.0198	< 0.00002	< 0.00001	0.0192	0.000043	16.2	< 0.0005	0.000960
11-Jul-12	25	165	70	7.81	#N/A	141					7.70												
18-Jul-12	26	420	210	7.84	298	142	#N/A	3.8	61.6	14	6.76	56.9	0.0476	0.0149	0.0220	0.0202	< 0.00002	< 0.00001	0.0196	0.000031	17.7	< 0.0005	0.000889
25-Jul-12	27	160	75	7.77	#N/A	142					6.61												
1-Aug-12	28	380	205	7.91	307	147	#N/A	4.1	63.0	15	6.13	56.3	0.0787	0.0144	0.0242	0.0212	< 0.00002	< 0.00001	0.0224	0.000031	17.5	< 0.0005	0.000763
8-Aug-12	29	150	70	7.86	#N/A	143					6.50												
15-Aug-12	30	410	230	7.82	183	150	#N/A	4.1	62.5	16	6.50	57.0	0.0797	0.0138	0.0289	0.0245	< 0.00002	< 0.00001	0.0212	0.000016	17.8	< 0.0005	0.000744
22-Aug-12	31	110	50	7.77	#N/A	146					4.99												
29-Aug-12	32	315	165	7.82	311	150	#N/A	5.1	63.6	15	6.85	57.5	0.128	0.0128	0.0258	0.0225	< 0.00002	< 0.00001	0.0197	0.000031	18.0	< 0.0005	0.000525
5-Sep-12	33	130	55	7.77	#N/A	149					5.57												
12-Sep-12	34	350	165	7.81	312	159	#N/A	4.7	64.4	17	5.18	61.1	0.0256	0.0119	0.0290	0.0244	< 0.00002	< 0.00001	0.0222	0.000030	19.1	< 0.0005	0.000492
19-Sep-12	35	100	50	7.72	#N/A	153					5.70												
26-Sep-12	36	355	165	7.79	307	155	#N/A	3.6	68.3	18	5.26	61.9	0.0330	0.0124	0.0285	0.0245	< 0.00002	< 0.00001	0.0218	0.000016	19.4	< 0.0005	0.000472
3-Oct-12	37	110	50	7.74	#N/A	147					5.39												
10-Oct-12	38	352	170	7.76	280	153	#N/A	6.5	69.4	19	4.83	61.4	0.0453	0.0104	0.0288	0.0235	< 0.00002	< 0.00001	0.0205	0.000010	19.3	< 0.0005	0.000446
17-Oct-12	39	105	50	7.76	#N/A	160					4.84												
24-Oct-12	40	415	210	7.78	306	154	#N/A	3.9	69.0	23	5.31	60.5	0.0693	0.0117	0.0258	0.0232	< 0.00002	< 0.00001	0.0182	0.000014	19.0	< 0.0005	0.000407
31-Oct-12	41	95	50	7.77	#N/A	150					5.04												
7-Nov-12	42	365	195	7.82	324	144	#N/A	5.7	66.8	17	4.41	65.1	0.0179	0.0106	0.0258	0.0239	< 0.00002	< 0.00001	0.0196	0.000008	20.4	< 0.0005	0.000372
14-Nov-12	43	100	50	8.00	#N/A	151					7.16												
21-Nov-12	44	445	195	7.88	328	150	#N/A	5.2	67.8	24	5.07	67.8	0.0221	0.0115	0.0352	0.0276	< 0.00002	< 0.00001	0.0197	0.000016	21.4	< 0.0005	0.000594
28-Nov-12	45	210	70	7.81	#N/A	170					5.40												
5-Dec-12	46	445	210	7.92	329	142	#N/A	9.4	66.8	16	5.02	62.8	0.0173	0.0112	0.0263	0.0225	< 0.00002	< 0.00001	0.0185	0.000013	19.9	< 0.0005	0.000437
12-Dec-12	47	150	85	7.77	#N/A	140					6.74												
19-Dec-12	48	465	205	7.77	331	132	#N/A	4.5	64.1	14	5.52	64.3	0.0229	0.0109	0.0253	0.0226	< 0.00002	< 0.00001	0.0189	0.000013	20.4	< 0.0005	0.000379
26-Dec-12	49	270	70	7.86	#N/A	136					5.85												

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
2-Jan-13	50	430	215	7.74	332	135	#N/A	6.3	63.4	12	5.02	55.3	0.0198	0.0106	0.0242	0.0210	< 0.00002	< 0.00001	0.0164	< 0.000003	17.4	< 0.0005	0.000142
9-Jan-13	51	225	70	7.81	#N/A	165					6.35												
16-Jan-13	52	465	210	7.79	306	131	#N/A	3.9	63.2	19	5.57	55.7	0.0234	0.0106	0.0211	0.0194	< 0.00002	< 0.00001	0.0171	0.000015	17.8	< 0.0005	0.000067
23-Jan-13	53	245	75	7.91	#N/A	130					5.09												
30-Jan-13	54	465	200	7.78	321	129	#N/A	4.3	57.2	17	4.45	62.2	0.0048	0.0081	0.0227	0.0178	< 0.00002	< 0.00001	0.0158	0.000005	19.7	< 0.0005	0.000040
6-Feb-13	55	410	65	7.83	#N/A	140					6.62												
13-Feb-13	56	380	160	7.88	314	121	#N/A	7.8	55.3	16	6.30	50.6	0.0050	0.0072	0.0199	0.0179	< 0.00002	< 0.00001	0.0148	0.000003	16.0	< 0.0005	0.000048
20-Feb-13	57	275	70	7.86	#N/A	122					6.25												
27-Feb-13	58	440	165	7.83	270	119	#N/A	6.6	59.5	18	5.76	52.8	0.0042	0.0078	0.0190	0.0170	< 0.00002	< 0.00001	0.0145	< 0.000003	16.8	< 0.0005	0.000063
6-Mar-13	59	205	70	7.82	#N/A	120					6.10												
13-Mar-13	60	345	170	7.76	306	119	#N/A	5.5	48.8	15	6.99	53.8	0.0038	0.0064	0.0174	0.0158	< 0.00002	< 0.00001	0.0122	0.000003	17.2	< 0.0005	0.000042
20-Mar-13	61	175	70	7.91	#N/A	129					5.86												
27-Mar-13	62	440	170	7.83	324	120	#N/A	8.3	53.1	14	6.01	51.8	0.0051	0.0062	0.0176	0.0149	< 0.00002	< 0.00001	0.0127	< 0.000003	16.4	< 0.0005	0.000073
3-Apr-13	63	210	80	7.83	#N/A	120					6.01												
10-Apr-13	64	400	155	7.80	342	116	#N/A	5.9	48.6	16	6.09	53.6	0.0052	0.0056	0.0164	0.0137	< 0.00002	< 0.00001	0.0123	0.000005	16.9	< 0.0005	0.000077
17-Apr-13	65	160	70	7.81	#N/A	125					5.32												
24-Apr-13	66	430	160	7.80	327	119	#N/A	7.1	49.1	15	5.85	50.9	0.0055	0.0056	0.0182	0.0153	< 0.00002	< 0.00001	0.0131	< 0.000003	15.9	< 0.0005	0.000048
1-May-13	67	250	70	7.90	#N/A	114					6.05												
8-May-13	68	440	150	7.83	340	110	#N/A	8.1	49.3	18	6.75	50.8	0.0071	0.0056	0.0178	0.0147	< 0.00002	< 0.00001	0.0145	0.000343	16.0	< 0.0005	0.000243
15-May-13	69	145	65	7.79	#N/A	133					6.39												
22-May-13	70	400	175	7.84	333	110	#N/A	8.3	49.8	15	6.65	48.4	0.0065	0.0055	0.0162	0.0126	< 0.00002	< 0.00001	0.0134	< 0.000003	15.3	< 0.0005	0.000020
29-May-13	71	230	75	7.92	#N/A	110					5.26												
5-Jun-13	72	400	170	7.85	356	114	#N/A	8.4	52.7	13	6.20	51.4	0.0054	0.0048	0.0179	0.0131	< 0.00002	< 0.00001	0.0141	< 0.000003	16.3	< 0.0005	0.000018
12-Jun-13	73																						
19-Jun-13	74																						
26-Jun-13	75																						
3-Jul-13	76	420	175	7.67	415	126	#N/A	5.6	50.5	15	6.98	54.1	0.0067	0.0049	0.0192	0.0146	< 0.00002	< 0.00001	0.0196	0.000039	16.9	< 0.0005	0.000058
10-Jul-13	77																						
17-Jul-13	78																						
24-Jul-13	79																						
31-Jul-13	80	475	180	7.74	351	137	#N/A	6.0	51.6	18	6.80	60.8	0.0068	0.0047	0.0212	0.0147	< 0.00002	< 0.00001	0.0195	0.000005	19.0	< 0.0005	0.00325
7-Aug-13	81																						
14-Aug-13	82																						
21-Aug-13	83																						
28-Aug-13	84	435	195	7.83	343	137	#N/A	3.5	50.5		6.97												

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Jan-12	1	0.0006	< 0.003	< 0.00002	0.005	0.275	0.0138	0.01	0.00063	0.0007	< 0.009	1.39	0.00152	15.4	< 0.00001	1.83	0.0640	2.53	0.00004	0.00023	< 0.0001	0.000279	0.00028	< 0.001	< 0.00001
1-Feb-12	2	0.0008	< 0.003	0.00009	0.008	0.594	0.0192	< 0.01	0.00105	0.0008	< 0.009	2.43	0.00241	20.4	< 0.00001	2.55	0.132	3.66	0.00007	0.00048	0.0002	0.000580	0.00065	0.003	< 0.00001
8-Feb-12	3	0.0009	< 0.003	0.00018	0.008	0.870	0.0310	< 0.01	0.00119	0.0036	< 0.009	2.98	0.00217	18.1	< 0.00001	3.20	0.187	4.39	0.00010	0.00063	0.0004	0.000917	0.00066	0.003	0.00001
15-Feb-12	4	0.0011	< 0.003	0.00017	0.008	1.03	0.0414	0.01	0.00114	0.0009	< 0.009	3.18	0.00193	15.1	< 0.00001	2.76	0.206	4.13	0.00009	0.00058	0.0002	0.000825	0.00061	0.002	< 0.00001
22-Feb-12	5																								
29-Feb-12	6	0.0009	< 0.003	0.00074	0.006	1.42	0.0659	< 0.01	0.00109	0.0007	< 0.009	3.40	0.00142	23.4	< 0.00001	2.88	0.256	4.17	0.00009	0.00093	0.0002	0.000854	0.00055	0.003	0.00001
7-Mar-12	7																								
14-Mar-12	8	< 0.0005	< 0.003	0.00064	0.006	1.72	0.0943	0.01	0.00125	0.0010	< 0.009	3.78	0.00133	18.4	< 0.00001	2.80	0.299	4.70	0.00010	0.00112	< 0.0001	0.000992	0.00026	0.003	< 0.00001
21-Mar-12	9																								
28-Mar-12	10	0.0012	0.042	0.00019	0.006	1.99	0.115	0.01	0.00131	0.0017	< 0.009	3.85	0.00153	10.2	< 0.00001	2.71	0.327	4.74	0.00011	0.00125	0.0002	0.00114	0.00044	0.003	< 0.00001
4-Apr-12	11																								
11-Apr-12	12	0.0006	< 0.003	0.00015	0.007	2.20	0.134	0.01	0.00142	0.0019	< 0.009	3.94	0.00139	13.5	< 0.00001	2.63	0.343	5.14	0.00010	0.00142	0.0002	0.00124	0.00041	0.003	< 0.00001
18-Apr-12	13																								
25-Apr-12	14	0.0015	< 0.003	0.00039	0.007	2.58	0.164	0.02	0.00130	0.0015	< 0.009	4.18	0.00148	13.0	< 0.00001	2.67	0.383	5.44	0.00010	0.00159	0.0003	0.00142	0.00047	0.019	< 0.00001
2-May-12	15																								
9-May-12	16	< 0.0005	0.004	0.00029	0.007	2.68	0.174	< 0.01	0.00158	0.0019	< 0.009	4.18	0.00120	11.0	< 0.00001	2.55	0.396	5.44	0.00011	0.00159	0.0004	0.00172	0.00038	0.003	< 0.00001
16-May-12	17																								
23-May-12	18	< 0.0005	< 0.003	0.00029	0.007	2.80	0.191	0.01	0.00156	0.0025	< 0.009	4.17	0.00132	10.2	< 0.00001	2.42	0.403	5.79	0.00012	0.00160	0.0004	0.00177	0.00049	0.005	< 0.00001
30-May-12	19																								
6-Jun-12	20	0.0007	< 0.003	0.00029	0.008	3.02	0.204	0.02	0.00163	0.0025	< 0.009	4.47	0.00144	8.02	< 0.00001	2.57	0.443	6.18	0.00011	0.00144	0.0005	0.00191	0.00048	0.003	< 0.00001
13-Jun-12	21																								
20-Jun-12	22	< 0.0005	< 0.003	0.00028	0.008	3.01	0.204	< 0.01	0.00161	0.0025	< 0.009	4.38	0.00146	9.09	< 0.00001	2.46	0.435	5.88	0.00011	0.00205	0.0001	0.00198	0.00035	0.004	< 0.00001
27-Jun-12	23																								
4-Jul-12	24	0.0014	< 0.003	0.00026	0.007	2.81	0.197	0.02	0.00162	0.0023	< 0.009	4.05	0.00138	8.64	< 0.00001	2.24	0.421	5.69	0.00011	0.00202	0.0002	0.00195	0.00044	0.006	< 0.00001
11-Jul-12	25																								
18-Jul-12	26	0.0013	< 0.003	0.00020	0.007	3.09	0.215	0.02	0.00147	0.0025	< 0.009	4.38	0.00122	8.19	< 0.00001	2.32	0.452	6.14	0.00010	0.00143	0.0001	0.00197	0.00044	0.002	< 0.00001
25-Jul-12	27																								
1-Aug-12	28	0.0048	< 0.003	0.00027	0.008	3.07	0.213	0.01	0.00224	0.0025	0.013	4.29	0.00092	11.3	< 0.00001	2.17	0.451	6.31	0.00010	0.00257	0.0002	0.00210	0.00068	0.004	< 0.00001
8-Aug-12	29																								
15-Aug-12	30	0.0010	0.005	0.00007	0.008	3.08	0.205	< 0.01	0.00167	0.0024	< 0.009	4.32	0.00096	10.1	< 0.00001	2.08	0.466	6.36	0.00011	0.00195	0.0003	0.00212	0.00067	0.005	< 0.00001
22-Aug-12	31																								
29-Aug-12	32	0.0035	0.007	0.00033	0.007	3.04	0.203	0.04	0.00176	0.0024	< 0.009	3.77	0.00111	6.85	< 0.00001	2.07	0.464	6.30	0.00010	0.00219	0.0003	0.00213	0.00079	0.014	< 0.00001
5-Sep-12	33																								
12-Sep-12	34	0.0014	< 0.003	0.00008	0.008	3.22	0.210	< 0.01	0.00180	0.0027	< 0.009	4.26	0.00080	7.64	< 0.00001	2.10	0.486	6.97	0.00010	0.00131	0.0004	0.00233	0.00049	0.004	< 0.00001
19-Sep-12	35																								
26-Sep-12	36	< 0.0005	< 0.003	0.00008	0.008	3.30	0.208	< 0.01	0.0020	0.0026	< 0.009	4.28	0.00096	10.1	< 0.00001	2.06	0.493	7.08	0.00010	0.00144	0.0004	0.00218	0.00035	0.002	0.00002
3-Oct-12	37																								
10-Oct-12	38	0.0008	< 0.003	0.00007	0.007	3.22	0.207	< 0.01	0.0016	0.0025	< 0.009	4.22	0.00130	9.11	< 0.00001	1.82	0.485	7.04	0.00010	0.00143	0.0003	0.00212	0.00051	0.003	< 0.00001
17-Oct-12	39																								
24-Oct-12	40	0.0010	< 0.003	0.00014	0.006	3.15	0.201	0.01	0.00161	0.0024	< 0.009	3.91	0.00095	9.64	< 0.00001	1.70	0.468	6.72	0.00007	0.00139	0.0004	0.00189	0.00053	0.002	< 0.00001
31-Oct-12	41																								
7-Nov-12	42	0.0011	< 0.003	0.00041	0.006	3.44	0.219	0.02	0.00168	0.0019	< 0.009	3.92	0.00091	8.44	< 0.00001	1.81	0.503	6.93	0.00010	0.00141	0.0001	0.00191	0.00034	0.001	< 0.00001
14-Nov-12	43																								
21-Nov-12	44	0.0012	< 0.003	0.00008	0.007	3.51	0.204	0.02	0.00309	0.0026	< 0.009	4.04	0.00094	6.98	0.00003	1.82	0.502	7.41	0.00011	0.00153	0.0002	0.00254	0.00047	0.003	< 0.00001
28-Nov-12	45																								
5-Dec-12	46	0.0007	< 0.003	0.00007	0.006	3.20	0.192	< 0.01	0.00150	0.0022	< 0.009	3.76	0.00089	6.40	< 0.00001	1.58	0.467	6.50	0.00008	0.00116	< 0.0001	0.00178	0.00017	0.003	< 0.00001
12-Dec-12	47																								
19-Dec-12	48	0.0007	< 0.003	0.00006	0.006	3.28	0.193	0.21	0.00162	0.0020	0.040	4.13	0.00091	5.68	0.00001	1.76	0.478	7.27	0.00007	0.00135	0.0001	0.00168	0.00016	0.002	< 0.00001
26-Dec-12	49																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
2-Jan-13	50	< 0.0005	0.003	0.00005	0.005	2.89	0.149	< 0.01	0.00150	0.0021	0.028	3.15	0.00113	7.19	< 0.00001	1.40	0.420	5.97	0.00007	0.00108	0.0002	0.00165	0.00028	0.002	< 0.00001
9-Jan-13	51																								
16-Jan-13	52	0.0011	< 0.003	0.00003	0.005	2.74	0.0958	< 0.01	0.00135	0.0020	0.036	3.01	0.00119	6.52	< 0.00001	1.11	0.389	6.19	0.00006	0.00119	0.0002	0.00152	0.00033	0.002	< 0.00001
23-Jan-13	53																								
30-Jan-13	54	< 0.0005	< 0.003	0.00005	0.005	3.17	0.0274	< 0.01	0.00129	0.0012	0.048	3.26	0.00262	5.45	< 0.00001	1.31	0.450	6.24	0.00007	0.00116	0.0001	0.00149	0.00006	< 0.001	< 0.00001
6-Feb-13	55																								
13-Feb-13	56	< 0.0005	< 0.003	< 0.00002	0.004	2.57	0.0043	< 0.01	0.00139	0.0004	0.047	2.68	0.00256	4.89	< 0.00001	1.02	0.352	5.25	0.00005	0.00096	< 0.0001	0.00129	0.00010	0.001	< 0.00001
20-Feb-13	57																								
27-Feb-13	58	0.0006	< 0.003	0.00006	0.004	2.61	0.0065	< 0.01	0.00120	0.0004	0.045	2.63	0.00222	4.31	< 0.00001	0.94	0.356	5.35	0.00005	0.00098	< 0.0001	0.00132	0.00012	< 0.001	< 0.00001
6-Mar-13	59																								
13-Mar-13	60	0.0010	< 0.003	0.00003	0.004	2.67	0.0030	< 0.01	0.00114	0.0005	0.041	2.69	0.00251	4.24	< 0.00001	0.90	0.352	5.40	0.00005	0.00087	< 0.0001	0.00109	0.00005	0.001	< 0.00001
20-Mar-13	61																								
27-Mar-13	62	< 0.0005	< 0.003	0.00004	0.004	2.63	0.0042	< 0.01	0.00118	0.0004	0.041	2.53	0.00184	3.80	< 0.00001	0.88	0.338	5.09	0.00005	0.00074	< 0.0001	0.00114	0.00009	< 0.001	< 0.00001
3-Apr-13	63																								
10-Apr-13	64	< 0.0005	< 0.003	0.00041	0.003	2.77	0.0037	< 0.01	0.00108	0.0004	0.030	2.60	0.00127	3.98	< 0.00001	0.90	0.361	5.35	0.00004	0.00078	< 0.0001	0.00104	0.00004	0.001	< 0.00001
17-Apr-13	65																								
24-Apr-13	66	< 0.0005	< 0.003	0.00008	0.003	2.72	0.0046	< 0.01	0.00116	0.0005	0.029	2.51	0.00231	2.93	< 0.00001	0.81	0.352	5.31	0.00005	0.00095	< 0.0001	0.00114	0.00008	0.002	< 0.00001
1-May-13	67																								
8-May-13	68	0.0008	< 0.003	0.00014	0.004	2.65	0.0029	< 0.01	0.00177	0.0020	0.031	2.44	0.00183	3.02	< 0.00001	0.79	0.335	5.09	0.00005	0.00099	0.0001	0.00112	0.00013	0.005	< 0.00001
15-May-13	69																								
22-May-13	70	< 0.0005	< 0.003	0.00003	0.003	2.49	0.0025	< 0.01	0.00109	0.0003	0.022	2.16	0.00175	3.13	< 0.00001	0.70	0.314	4.72	0.00004	0.00212	< 0.0001	0.000990	0.00009	< 0.001	< 0.00001
29-May-13	71																								
5-Jun-13	72	< 0.0005	< 0.003	0.00003	0.003	2.63	0.0024	< 0.01	0.00127	0.0004	0.020	2.39	0.00160	3.25	< 0.00001	0.70	0.338	4.89	0.00005	0.00216	< 0.0001	0.00105	0.00008	< 0.001	< 0.00001
12-Jun-13	73																								
19-Jun-13	74																								
26-Jun-13	75																								
3-Jul-13	76	< 0.0005	< 0.003	0.00009	0.003	2.88	0.0038	0.01	0.00132	0.0005	0.031	2.54	0.00194	3.04	< 0.00001	0.75	0.365	5.49	0.00005	0.00208	< 0.0001	0.000976	0.00006	0.009	< 0.00001
10-Jul-13	77																								
17-Jul-13	78																								
24-Jul-13	79																								
31-Jul-13	80	< 0.0005	< 0.003	0.00003	0.004	3.23	0.0032	< 0.01	0.00157	0.0006	0.018	2.73	0.00206	2.12	0.00011	0.71	0.407	6.28	0.00005	0.00186	< 0.0001	0.00115	0.00007	0.003	< 0.00001
7-Aug-13	81																								
14-Aug-13	82																								
21-Aug-13	83																								
28-Aug-13	84																								

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
25-Jan-12	1	480	215	7.85	281	795	#N/A	4.4	121.2	284	1.19	191	0.0141	0.0896	0.0555	0.0887	< 0.00002	< 0.00001	0.0574	0.000098	57.6	0.0010	0.00521
1-Feb-12	2	500	250	7.88	231	839	#N/A	4.5	145.2	294	1.25	191	0.0272	0.137	0.0646	0.0890	< 0.00002	< 0.00001	0.0751	0.000083	57.4	0.0007	0.00416
8-Feb-12	3	495	240	7.91	246	756	#N/A	6.8	145.4	277	1.88	207	0.0238	0.0573	0.142	0.0716	< 0.00002	< 0.00001	0.0784	0.000031	62.3	0.0010	0.002461
15-Feb-12	4	530	215	7.88	294	661	#N/A	6.9	132.6	224	1.29	177	0.0263	0.0105	0.231	0.0595	< 0.00002	< 0.00001	0.0804	0.000024	53.6	0.0006	0.000649
22-Feb-12	5	445	210	7.96	#N/A	540					1.98												
29-Feb-12	6	460	210	7.95	298	446	#N/A	3.7	125.0	109	0.76	123	0.0314	0.0060	0.272	0.0471	< 0.00002	< 0.00001	0.0808	0.000003	37.4	< 0.0005	0.000123
7-Mar-12	7	435	210	7.94	#N/A	373					2.15												
14-Mar-12	8	425	210	7.95	286	322	#N/A	4.2	113.6	65	0.88	90.2	0.0151	0.0052	0.279	0.0409	< 0.00002	0.00001	0.0787	0.000005	27.2	< 0.0005	0.000071
21-Mar-12	9	175	70	7.97	#N/A	297					2.11												
28-Mar-12	10	415	210	8.03	288	287	#N/A	3.1	107.4	39	2.50	74.4	0.0613	0.0035	0.268	0.0385	< 0.00002	< 0.00001	0.0830	< 0.000003	22.4	< 0.0005	0.000047
4-Apr-12	11	160	60	8.05	#N/A	254					1.68												
11-Apr-12	12	385	180	8.01	282	241	#N/A	3.4	100.1	34	1.58	68.2	0.0364	0.0028	0.278	0.0428	< 0.00002	< 0.00001	0.0781	< 0.000003	20.5	< 0.0005	0.000052
18-Apr-12	13	130	60	7.98	#N/A	230					2.82												
25-Apr-12	14	415	205	7.94	271	240	#N/A	4.9	96.8	34	0.86	74.3	0.0431	0.0031	0.272	0.0452	< 0.00002	< 0.00001	0.0726	< 0.000003	22.4	< 0.0005	0.000057
2-May-12	15	75	50	7.84	#N/A	222					1.28												
9-May-12	16	335	160	7.99	318	226	#N/A	4.0	94.5	23	1.95	72.1	0.0293	0.0029	0.276	0.0461	< 0.00002	< 0.00001	0.0704	< 0.000003	21.8	< 0.0005	0.000054
16-May-12	17	175	85	7.98	#N/A	224					0.65												
23-May-12	18	460	205	8.00	269	221	#N/A	3.8	90.5	24	1.60	69.2	0.0653	0.0029	0.249	0.0460	< 0.00002	< 0.00001	0.0621	< 0.000003	20.9	< 0.0005	0.000058
30-May-12	19	135	75	7.92	#N/A	221					1.71												
6-Jun-12	20	445	215	7.89	322	212	#N/A	5.3	89.6	22	1.92	74.3	0.0386	0.0029	0.236	0.0466	< 0.00002	< 0.00001	0.0629	< 0.000003	22.6	< 0.0005	0.000046
13-Jun-12	21	130	65	7.88	#N/A	210					1.82												
20-Jun-12	22	440	215	7.98	281	212	#N/A	4.8	91.2	19	1.39	73.1	0.0446	0.0028	0.270	0.0461	< 0.00002	< 0.00001	0.0630	< 0.000003	22.2	< 0.0005	0.000086
27-Jun-12	23	130	70	7.87	#N/A	207					1.69												
4-Jul-12	24	415	210	7.91	322	208	#N/A	5.4	89.3	16	1.92	68.1	0.0426	0.0030	0.242	0.0442	< 0.00002	< 0.00001	0.0558	< 0.000003	20.8	< 0.0005	0.000040
11-Jul-12	25	165	70	7.87	#N/A	208					1.53												
18-Jul-12	26	420	205	7.87	305	202	#N/A	4.9	86.9	21	1.73	74.3	0.0469	0.0029	0.227	0.0427	< 0.00002	< 0.00001	0.0509	< 0.000003	22.6	< 0.0005	0.000055
25-Jul-12	27	160	70	7.83	#N/A	202					1.70												
1-Aug-12	28	380	200	7.93	299	205	#N/A	4.8	87.0	22	1.70	73.6	0.0904	0.0029	0.210	0.0440	< 0.00002	< 0.00001	0.0517	0.000009	22.4	< 0.0005	0.000044
8-Aug-12	29	150	65	7.90	#N/A	201					1.21												
15-Aug-12	30	410	130	7.89	187	204	#N/A	5.1	82.2	22	2.21	75.0	0.0409	0.0049	0.192	0.0481	< 0.00002	< 0.00001	0.0436	< 0.000003	22.9	< 0.0005	0.000098
22-Aug-12	31	110	55	7.78	#N/A	200					2.23												
29-Aug-12	32	315	160	7.88	314	206	#N/A	5.2	83.3	27	1.64	75.3	0.129	0.0043	0.142	0.0414	< 0.00002	< 0.00001	0.0371	0.000039	23.1	< 0.0005	0.000054
5-Sep-12	33	130	60	7.83	#N/A	212					1.68												
12-Sep-12	34	350	165	7.87	312	218	#N/A	4.8	85.5	25	1.61	81.3	0.0255	0.0025	0.150	0.0431	< 0.00002	< 0.00001	0.0390	0.000006	25.0	< 0.0005	0.000046
19-Sep-12	35	100	50	7.76	#N/A	212					2.49												
26-Sep-12	36	355	180	7.86	318	211	#N/A	4.0	90.1	29	1.39	83.0	0.0326	0.0027	0.153	0.0437	< 0.00002	< 0.00001	0.0392	< 0.000003	25.5	0.0008	0.000057
3-Oct-12	37	110	50	7.77	#N/A	208					1.82												
10-Oct-12	38	352	160	7.79	296	211	#N/A	7.8	92.8	29	1.49	81.9	0.0514	0.0024	0.156	0.0430	< 0.00002	< 0.00001	0.0381	< 0.000003	25.2	< 0.0005	0.000059
17-Oct-12	39	105	50	7.71	#N/A	209					1.20												
24-Oct-12	40	415	190	7.86	309	216	#N/A	3.9	93.1	32	2.08	81.4	0.0872	0.0023	0.151	0.0424	< 0.00002	< 0.00001	0.0355	0.000008	25.0	< 0.0005	0.000068
31-Oct-12	41	95	50	7.79	#N/A	213					1.74												
7-Nov-12	42	365	170	7.84	330	205	#N/A	5.9	92.3	24	1.28	87.2	0.0205	0.0020	0.169	0.0447	< 0.00002	< 0.00001	0.0385	0.000018	26.7	< 0.0005	0.000039
14-Nov-12	43	100	50	7.93	#N/A	262					1.58												
21-Nov-12	44	445	205	7.90	308	203	#N/A	4.9	90.8	35	2.10	88.2	0.0283	0.0052	0.187	0.0469	< 0.00002	< 0.00001	0.0307	0.000013	27.1	< 0.0005	0.000207
28-Nov-12	45	210	75	7.79	#N/A	210					1.92												
5-Dec-12	46	445	210	7.87	343	211	#N/A	10.5	95.1	28	2.26	87.1	0.0156	0.0020	0.177	0.0451	< 0.00002	< 0.00001	0.0331	0.000003	26.7	< 0.0005	0.000051
12-Dec-12	47	150	65	7.85	#N/A	206					3.35												
19-Dec-12	48	465	215	7.89	321	193	#N/A	4.7	91.5	26	2.24	88.9	0.0221	0.0021	0.169	0.0445	< 0.00002	< 0.00001	0.0370	< 0.000003	26.9	< 0.0005	0.000085
26-Dec-12	49	270	80	7.84	#N/A	204					2.15												

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
2-Jan-13	50	430	195	7.83	330	201	#N/A	6.4	91.2	19	1.16	78.5	0.0233	0.0019	0.162	0.0422	< 0.00002	0.00001	0.0331	0.000005	23.8	< 0.0005	0.000061
9-Jan-13	51	225	85	7.73	#N/A	195					1.22												
16-Jan-13	52	465	200	7.89	310	200	#N/A	4.4	95.8	29	1.49	83.3	0.0231	0.0014	0.159	0.0429	< 0.00002	< 0.00001	0.0334	0.000005	25.7	< 0.0005	0.000060
23-Jan-13	53	245	90	7.77	#N/A	242					1.07												
30-Jan-13	54	465	205	7.79	305	239	#N/A	5.2	85.4	29	1.11	91.5	0.0085	0.0013	0.175	0.0414	< 0.00002	< 0.00001	0.0345	< 0.000003	28.0	< 0.0005	0.000062
6-Feb-13	55	410	65	7.71	#N/A	245					1.31												
13-Feb-13	56	380	155	7.85	326	205	#N/A	9.7	88.2	30	1.95	82.1	0.0086	0.0013	0.175	0.0459	< 0.00002	< 0.00001	0.0320	< 0.000003	25.1	< 0.0005	0.000039
20-Feb-13	57	275	70	7.84	#N/A	208					1.55												
27-Feb-13	58	440	170	7.84	292	201	#N/A	7.4	95.9	30	1.80	84.5	0.0074	0.0015	0.171	0.0429	< 0.00002	< 0.00001	0.0321	< 0.000003	26.1	< 0.0005	0.000421
6-Mar-13	59	205	70	7.83	#N/A	209					1.85												
13-Mar-13	60	345	170	7.79	331	197	#N/A	6.5	79.5	31	1.32	84.0	0.0067	0.0014	0.159	0.0422	< 0.00002	< 0.00001	0.0274	0.000162	26.0	< 0.0005	0.000049
20-Mar-13	61	175	70	7.81	#N/A	195					1.51												
27-Mar-13	62	440	170	7.84	338	197	#N/A	9.5	79.4	26	1.06	87.5	0.0078	0.0014	0.145	0.0396	< 0.00002	< 0.00001	0.0285	< 0.000003	27.0	< 0.0005	0.000060
3-Apr-13	63	210	70	7.91	#N/A	205					2.20												
10-Apr-13	64	400	180	7.83	342	191	#N/A	7.0	77.2	34	0.95	86.8	0.0067	0.0014	0.127	0.0347	< 0.00002	< 0.00001	0.0252	0.000005	26.7	< 0.0005	0.000085
17-Apr-13	65	160	75	7.82	#N/A	220					1.40												
24-Apr-13	66	430	170	7.79	327	189	#N/A	8.6	75.6	28	1.55	81.3	0.0074	0.0014	0.140	0.0376	< 0.00002	< 0.00001	0.0258	< 0.000003	24.8	< 0.0005	0.000061
1-May-13	67	250	70	7.85	#N/A	192					1.04												
8-May-13	68	440	175	7.81	345	182	#N/A	9.3	76.4	33	1.84	81.7	0.0077	0.0015	0.119	0.0348	< 0.00002	< 0.00001	0.0242	0.000097	25.2	< 0.0005	0.000127
15-May-13	69	145	65	7.81	#N/A	215					1.14												
22-May-13	70	400	175	7.78	324	178	#N/A	9.3	74.0	31	1.38	77.0	0.0080	0.0015	0.117	0.0337	< 0.00002	< 0.00001	0.0254	0.000003	23.9	< 0.0005	0.000028
29-May-13	71	230	90	7.82	#N/A	185					1.04												
5-Jun-13	72	400	170	7.82	362	188	#N/A	8.6	75.9	27	1.23	81.3	0.0076	0.0016	0.120	0.0362	< 0.00002	< 0.00001	0.0241	< 0.000003	25.3	< 0.0005	0.000039
12-Jun-13	73																						
19-Jun-13	74																						
26-Jun-13	75																						
3-Jul-13	76	420	180	7.72	371	194	#N/A	7.4	72.4	27	1.12	82.8	0.0083	0.0013	0.112	0.0360	< 0.00002	< 0.00001	0.0303	< 0.000003	25.7	< 0.0005	0.000058
10-Jul-13	77																						
17-Jul-13	78																						
24-Jul-13	79																						
31-Jul-13	80	475	215	7.75	342	202	#N/A	7.8	71.2	29	1.75	89.7	0.0078	0.0022	0.113	0.0350	< 0.00002	< 0.00001	0.0298	0.000006	28.0	< 0.0005	0.000199
7-Aug-13	81																						
14-Aug-13	82																						
21-Aug-13	83																						
28-Aug-13	84	435	200	7.84	342	220	#N/A	5.2	78.4		1.66												

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Jan-12	1	0.0019	0.006	0.00036	0.098	11.5	0.262	0.02	0.0221	0.0224	< 0.009	28.0	0.0371	253	0.00027	64.3	2.42	100	0.00047	0.00013	0.0015	0.0192	0.00070	0.003	0.00003
1-Feb-12	2	0.0012	< 0.003	0.00078	0.109	11.5	0.312	0.01	0.0245	0.0175	< 0.009	25.0	0.0315	149	0.00003	57.8	2.82	93.0	0.00042	0.00031	0.0018	0.0299	0.00118	0.005	< 0.00001
8-Feb-12	3	0.0015	0.017	0.00061	0.101	12.4	0.264	< 0.01	0.0257	0.0119	< 0.009	27.7	0.0196	161	< 0.00001	66.7	2.57	108	0.00031	0.00033	0.0027	0.0310	0.00124	0.005	0.00002
15-Feb-12	4	0.0013	0.053	0.00006	0.107	10.6	0.230	< 0.01	0.02097	0.0054	< 0.009	24.3	0.00701	99.5	< 0.00001	51.2	2.25	69.6	0.00003	0.00008	0.0012	0.0282	0.00069	0.004	< 0.00001
22-Feb-12	5																								
29-Feb-12	6	0.0006	0.075	0.00010	0.069	7.25	0.151	< 0.01	0.0162	0.0009	< 0.009	21.2	0.00240	98.8	< 0.00001	37.1	1.53	39.3	< 0.00002	0.00040	0.0009	0.0211	0.00066	0.004	0.00014
7-Mar-12	7																								
14-Mar-12	8	< 0.0005	0.038	0.00028	0.046	5.38	0.114	0.01	0.0118	0.0005	0.011	15.8	0.00080	66.8	< 0.00001	22.8	1.17	20.0	< 0.00002	0.00051	0.0002	0.0144	0.00029	0.002	0.00003
21-Mar-12	9																								
28-Mar-12	10	0.0024	0.023	0.00011	0.040	4.51	0.0918	< 0.01	0.00847	0.0005	< 0.009	13.7	0.00055	28.4	< 0.00001	18.0	1.07	13.2	< 0.00002	0.00030	0.0002	0.0123	0.00059	0.003	< 0.00001
4-Apr-12	11																								
11-Apr-12	12	0.0012	0.018	0.00019	0.033	4.10	0.0818	0.01	0.00729	0.0008	< 0.009	13.0	0.00053	32.6	< 0.00001	13.6	0.976	10.9	< 0.00002	0.00311	0.0003	0.00882	0.00040	0.004	< 0.00001
18-Apr-12	13																								
25-Apr-12	14	0.0010	0.012	0.00016	0.030	4.44	0.0860	0.01	0.00582	0.0005	< 0.009	13.4	0.00014	28.9	< 0.00001	12.1	1.06	10.4	< 0.00002	0.00016	0.0003	0.00854	0.00047	0.005	< 0.00001
2-May-12	15																								
9-May-12	16	< 0.0005	0.011	0.00004	0.027	4.30	0.0851	< 0.01	0.00487	0.0005	< 0.009	13.2	0.00019	22.8	< 0.00001	9.97	0.950	9.49	< 0.00002	0.00047	0.0007	0.00744	0.00037	0.002	< 0.00001
16-May-12	17																								
23-May-12	18	< 0.0005	0.008	0.00005	0.024	4.14	0.0803	< 0.01	0.00452	0.0006	< 0.009	12.7	0.00024	19.5	< 0.00001	7.33	0.998	9.12	< 0.00002	0.00030	0.0006	0.00757	0.00058	0.003	< 0.00001
30-May-12	19																								
6-Jun-12	20	0.0006	0.010	0.00011	0.022	4.37	0.0845	0.01	0.00373	0.0001	< 0.009	11.5	0.00024	14.6	< 0.00001	6.71	0.990	9.22	< 0.00002	0.00024	0.0002	0.00672	0.00042	0.002	< 0.00001
13-Jun-12	21																								
20-Jun-12	22	< 0.0005	0.009	0.00005	0.022	4.29	0.0859	< 0.01	0.00333	0.0006	< 0.009	11.1	0.00024	15.7	< 0.00001	5.71	0.943	8.51	< 0.00002	0.00046	0.0002	0.00646	0.00034	0.006	< 0.00001
27-Jun-12	23																								
4-Jul-12	24	0.0008	0.007	0.00010	0.019	3.91	0.0781	< 0.01	0.00309	< 0.0001	< 0.009	9.92	0.00014	14.3	< 0.00001	4.62	0.891	7.85	< 0.00002	0.00044	0.0002	0.00545	0.00046	0.004	< 0.00001
11-Jul-12	25																								
18-Jul-12	26	0.0011	0.009	0.00004	0.017	4.33	0.0857	0.02	0.00260	0.0004	< 0.009	10.1	0.00024	13.3	< 0.00001	4.49	0.957	8.49	< 0.00002	0.00035	0.0002	0.00508	0.00049	0.002	< 0.00001
25-Jul-12	27																								
1-Aug-12	28	0.0019	0.008	0.00022	0.016	4.33	0.0843	< 0.01	0.00279	0.0004	< 0.009	10.4	0.00022	17.0	< 0.00001	3.87	1.01	8.83	< 0.00002	0.00114	0.0002	0.00486	0.00055	0.004	0.00004
8-Aug-12	29																								
15-Aug-12	30	< 0.0005	0.007	0.00006	0.014	4.37	0.0876	< 0.01	0.00243	0.0005	< 0.009	9.59	0.00042	14.8	< 0.00001	3.35	1.01	8.91	< 0.00002	0.00201	0.0002	0.00426	0.00045	0.006	< 0.00001
22-Aug-12	31																								
29-Aug-12	32	0.0017	0.016	0.00013	0.012	4.26	0.0925	0.05	0.00215	0.0005	< 0.009	7.46	0.00058	9.26	< 0.00001	2.97	0.981	8.98	< 0.00002	0.00132	0.0003	0.00419	0.00091	0.011	< 0.00001
5-Sep-12	33																								
12-Sep-12	34	0.0011	0.004	0.00005	0.013	4.59	0.102	< 0.01	0.00217	0.0006	< 0.009	7.62	0.00028	10.6	< 0.00001	3.01	0.996	10.1	< 0.00002	0.00064	0.0002	0.00428	0.00038	0.002	< 0.00001
19-Sep-12	35																								
26-Sep-12	36	< 0.0005	0.004	0.00003	0.013	4.73	0.104	< 0.01	0.0025	0.0007	< 0.009	7.98	0.00021	13.7	< 0.00001	2.90	1.02	10.2	< 0.00002	0.00061	0.0005	0.00398	0.00032	0.002	0.00009
3-Oct-12	37																								
10-Oct-12	38	0.0006	0.009	0.00004	0.012	4.59	0.106	< 0.01	0.0023	0.0005	< 0.009	7.82	0.00028	12.8	< 0.00001	2.72	1.00	10.0	< 0.00002	0.00070	0.0004	0.00393	0.00048	0.003	< 0.00001
17-Oct-12	39																								
24-Oct-12	40	0.0008	0.005	0.00006	0.011	4.61	0.104	0.01	0.00233	0.0007	< 0.009	7.56	0.00018	14.1	< 0.00001	2.64	1.01	9.67	< 0.00002	0.00060	0.0005	0.00357	0.00057	0.003	< 0.00001
31-Oct-12	41																								
7-Nov-12	42	0.0006	0.008	0.00005	0.012	4.99	0.129	0.01	0.00254	< 0.0001	< 0.009	7.56	0.00023	13.8	< 0.00001	2.73	1.10	9.54	< 0.00002	0.00058	0.0002	0.00348	0.00043	0.002	0.00083
14-Nov-12	43																								
21-Nov-12	44	0.0018	< 0.003	0.00014	0.012	5.00	0.123	0.02	0.00308	0.0007	< 0.009	6.83	0.00031	9.90	0.00004	2.69	1.01	10.0	0.00002	0.00076	0.0002	0.00523	0.00065	0.002	< 0.00001
28-Nov-12	45																								
5-Dec-12	46	0.0007	0.010	0.00004	0.012	4.97	0.119	< 0.01	0.00236	0.0003	< 0.009	7.57	0.00035	9.58	< 0.00001	2.40	1.07	9.67	< 0.00002	0.00051	0.0002	0.00470	0.00026	0.002	< 0.00001
12-Dec-12	47																								
19-Dec-12	48	< 0.0005	0.016	0.00007	0.011	5.27	0.125	< 0.01	0.00245	< 0.0001	< 0.009	8.69	0.00032	7.75	0.00001	3.10	1.15	9.65	< 0.00002	0.00057	0.0001	0.00430	0.00015	0.002	< 0.00001
26-Dec-12	49																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
2-Jan-13	50	0.0007	0.014	0.00007	0.010	4.66	0.114	< 0.01	0.00222	0.0004	< 0.009	6.64	0.00030	11.0	0.00013	2.21	1.02	9.11	< 0.00002	0.00073	0.0002	0.00408	0.00028	0.002	< 0.00001
9-Jan-13	51																								
16-Jan-13	52	0.0007	0.010	0.00011	0.011	4.62	0.111	< 0.01	0.00216	0.0005	0.014	6.89	0.00021	10.2	< 0.00001	1.95	1.00	10.0	< 0.00002	0.00048	0.0002	0.00389	0.00027	0.002	< 0.00001
23-Jan-13	53																								
30-Jan-13	54	< 0.0005	0.015	0.00004	0.011	5.25	0.121	< 0.01	0.00211	0.0004	0.020	7.44	0.00047	8.31	< 0.00001	2.23	1.15	9.95	< 0.00002	0.00035	0.0001	0.00382	0.00009	0.002	< 0.00001
6-Feb-13	55																								
13-Feb-13	56	< 0.0005	0.014	0.00003	0.010	4.72	0.114	< 0.01	0.00232	< 0.0001	< 0.009	6.75	0.00023	8.48	< 0.00001	1.87	0.992	9.44	< 0.00002	0.00033	< 0.0001	0.00335	0.00007	0.001	0.00005
20-Feb-13	57																								
27-Feb-13	58	< 0.0005	0.014	0.00055	0.010	4.69	0.112	< 0.01	0.00207	< 0.0001	0.013	6.55	0.00021	7.33	< 0.00001	1.70	1.01	9.62	< 0.00002	0.00038	< 0.0001	0.00339	0.00016	< 0.001	< 0.00001
6-Mar-13	59																								
13-Mar-13	60	< 0.0005	0.004	0.00002	0.009	4.65	0.109	< 0.01	0.00220	0.0002	0.018	6.78	0.00022	7.07	< 0.00001	1.67	0.977	9.76	< 0.00002	0.00032	< 0.0001	0.00272	0.00007	0.002	< 0.00001
20-Mar-13	61																								
27-Mar-13	62	0.0008	0.019	0.00004	0.008	4.91	0.111	< 0.01	0.00210	0.0003	0.023	6.67	0.00013	6.87	< 0.00001	1.64	1.02	9.71	< 0.00002	0.00037	< 0.0001	0.00267	0.00012	0.001	< 0.00001
3-Apr-13	63																								
10-Apr-13	64	< 0.0005	0.017	0.00014	0.008	4.87	0.116	< 0.01	0.00202	0.0003	0.020	6.52	0.00006	6.80	< 0.00001	1.55	1.04	9.63	< 0.00002	0.00038	< 0.0001	0.00236	< 0.00003	< 0.001	< 0.00001
17-Apr-13	65																								
24-Apr-13	66	< 0.0005	0.007	0.00003	0.008	4.71	0.112	< 0.01	0.00212	0.0003	0.035	6.23	0.00023	5.39	< 0.00001	1.43	0.992	9.51	< 0.00002	0.00034	< 0.0001	0.00236	0.00007	0.001	< 0.00001
1-May-13	67																								
8-May-13	68	< 0.0005	0.012	0.00005	0.007	4.58	0.109	< 0.01	0.00230	0.0008	0.026	5.92	0.00013	5.28	< 0.00001	1.36	0.947	9.26	< 0.00002	0.00033	0.0001	0.00217	0.00007	0.001	< 0.00001
15-May-13	69																								
22-May-13	70	< 0.0005	0.011	< 0.00002	0.007	4.22	0.100	0.02	0.00208	0.0001	0.027	5.09	0.00017	5.33	< 0.00001	1.18	0.871	8.57	< 0.00002	0.00036	< 0.0001	0.00208	0.00009	< 0.001	< 0.00001
29-May-13	71																								
5-Jun-13	72	< 0.0005	0.010	0.00003	0.007	4.40	0.106	< 0.01	0.00223	0.0003	0.018	5.47	0.00018	5.28	< 0.00001	1.17	0.917	8.81	< 0.00002	0.00050	< 0.0001	0.00219	0.00008	< 0.001	< 0.00001
12-Jun-13	73																								
19-Jun-13	74																								
26-Jun-13	75																								
3-Jul-13	76	< 0.0005	0.006	0.00011	0.007	4.55	0.115	< 0.01	0.00239	0.0004	0.023	5.40	0.00015	5.02	< 0.00001	1.25	0.931	9.52	< 0.00002	0.00046	< 0.0001	0.00171	0.00009	< 0.001	< 0.00001
10-Jul-13	77																								
17-Jul-13	78																								
24-Jul-13	79																								
31-Jul-13	80	< 0.0005	< 0.003	0.00008	0.007	4.80	0.126	< 0.01	0.00276	0.0006	0.020	5.37	0.00016	3.96	0.00007	1.12	0.974	10.4	< 0.00002	0.00046	< 0.0001	0.00190	0.00006	< 0.001	< 0.00001
7-Aug-13	81																								
14-Aug-13	82																								
21-Aug-13	83																								
28-Aug-13	84																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jul-12	0	950	580	7.40	315	874	#N/A	6.7	23.5	391	306	0.0600	0.0203	0.116	0.0322	< 0.00002	< 0.00001	0.0494	0.000005	95.0	0.0086	0.000118
31-Jul-12	1	500	490	7.87	313	307	#N/A	4.3	82.2	69	117	0.0571	0.0257	0.220	0.0324	< 0.00002	< 0.00001	0.0549	0.000009	34.9	0.0005	0.000141
7-Aug-12	2	500	510	7.90	283	232	#N/A	4.0	92.9	33	95.9	0.0624	0.0216	0.252	0.0402	< 0.00002	< 0.00001	0.0437	0.000008	28.3	< 0.0005	0.000208
14-Aug-12	3	500	465	7.86	270	196	#N/A	5.2	89.5	15	80.7	0.0598	0.0164	0.246	0.0397	< 0.00002	< 0.00001	0.0340	< 0.000003	23.9	0.0006	0.000133
21-Aug-12	4	500	520	7.84	276	158	#N/A	3.9	79.8	10	71.2	0.0655	0.0163	0.184	0.0333	< 0.00002	< 0.00001	0.0237	0.000008	21.3	< 0.0005	0.00009
28-Aug-12	5	500	495	7.97	320	161																
4-Sep-12	6	500	505	7.96	366	167	#N/A	5.4	88.2	5	74.0	0.0739	0.0132	0.149	0.0411	< 0.00002	< 0.00001	0.0201	< 0.000003	21.8	< 0.0005	0.000096
11-Sep-12	7	500	495	7.96	246	171																
18-Sep-12	8	500	490	7.79	340	157	#N/A	6.0	92.8	3	71.8	0.0479	0.0097	0.119	0.0395	< 0.00002	< 0.00001	0.0147	< 0.000003	21.6	< 0.0005	0.000080
25-Sep-12	9	500	460	7.91	320	182																
2-Oct-12	10	500	505	7.73	335	144	#N/A	5.4	86.1	4	68.0	0.0383	0.0079	0.0978	0.0360	< 0.00002	< 0.00001	0.0119	0.000008	20.7	< 0.0005	0.000075
9-Oct-12	11	500	505	7.92	358	143																
16-Oct-12	12	500	480	7.875	379.455	144.47	#N/A	0	0	5	63.7	0.0340	0.0064	0.0809	0.0287	< 0.00002	< 0.00001	0.0108	0.000010	19.3	< 0.0005	0.000073
23-Oct-12	13	500	485	7.83	401	146																
30-Oct-12	14	500	480	7.66	340	113	#N/A	7.1	71.3	4	55.7	0.0645	0.0046	0.0751	0.0247	< 0.00002	< 0.00001	0.0074	0.000012	17.2	< 0.0005	0.000093
6-Nov-12	15	500	490	7.81	440	155																
13-Nov-12	16	500	460	7.82	343	111	#N/A	11.0	69.7	3	50.7	0.0512	0.0039	0.0630	0.0225	< 0.00002	< 0.00001	0.0048	0.000103	15.8	< 0.0005	0.000076
20-Nov-12	17	500	500	7.83	430	190																
27-Nov-12	18	500	470	7.66	319	106	#N/A	5.3	65.5	4	53.9	0.0554	0.0044	0.0591	0.0210	< 0.00002	< 0.00001	0.0047	< 0.000003	16.9	< 0.0005	0.000305
4-Dec-12	19	500	500	7.83	420	180																
11-Dec-12	20	500	485	7.82	336	119	#N/A	7.2	71.4	2	57.5	0.0641	0.0040	0.0549	0.0223	0.00003	< 0.00001	0.0048	0.000013	18.1	< 0.0005	0.000086
18-Dec-12	21	500	485	7.82	323	102																
25-Dec-12	22	500	390	7.79	349	103	#N/A	4.3	67.3	3	55.1	0.0429	0.0034	0.0537	0.0205	< 0.00002	< 0.00001	0.0054	0.000014	16.9	< 0.0005	0.000130
1-Jan-13	23	500	465	7.83	390	180																
8-Jan-13	24	500	450	7.81	289	106	#N/A	4.1	68.6	2	59.2	0.0673	0.0040	0.0447	0.0204	< 0.00002	< 0.00001	0.0048	0.000016	19.0	< 0.0005	0.000079
15-Jan-13	25	500	465	7.82	390	140																
22-Jan-13	26	500	470	7.74	292	116	#N/A	4.8	73.6	4	57.4	0.0454	0.0028	0.0397	0.0209	< 0.00002	< 0.00001	0.0043	0.000013	18.2	< 0.0005	0.000063
29-Jan-13	27	500	465	7.87	335	115																
5-Feb-13	28	500	4450	7.92	344	133	#N/A	7.9	75.2	5	62.4	0.0247	0.0030	0.0398	0.0228	< 0.00002	< 0.00001	0.0033	0.000011	19.5	< 0.0005	0.000086
12-Feb-13	29	500	495	7.91	338	119																
19-Feb-13	30	500	495	7.95	358	125	#N/A	5.5	82.1	4	67.1	0.0258	0.0027	0.0336	0.0215	< 0.00002	< 0.00001	0.0058	0.000008	21.6	< 0.0005	0.000181
26-Feb-13	31	500	430	7.91	365	119																
5-Mar-13	32	500	415	7.98	136	126	#N/A	6.0	74.9	3	60.6	0.0304	0.0027	0.0312	0.0180	< 0.00002	< 0.00001	0.0044	0.000022	18.9	< 0.0005	0.000267
12-Mar-13	33	500	445	7.28	391	71																
19-Mar-13	34	500	490	7.89	323	126	#N/A	7.2	69.7	4	64.1	0.0287	0.0026	0.0314	0.0200	0.00006	< 0.00001	0.0083	0.000199	20.0	< 0.0005	0.00566
26-Mar-13	35	500	435	7.79	369	116																
2-Apr-13	36	500	445	7.61	380	121	#N/A	8.0	67.0	2	64.5	0.0280	0.0027	0.0278	0.0184	< 0.00002	< 0.00001	0.0034	0.000004	20.2	< 0.0005	0.000114
9-Apr-13	37	500	470	7.79	364	122																
16-Apr-13	38	500	450	7.98	321	122	#N/A	7.1	67.7	5	60.2	0.0271	0.0030	0.0273	0.0187	< 0.00002	< 0.00001	0.0051	0.000005	18.5	< 0.0005	0.000102
23-Apr-13	39	500	450	7.82	236	134																
30-Apr-13	40	500	480	7.79	361	125	#N/A	10.2	71.1	3	60.4	0.0292	0.0024	0.0230	0.0167	< 0.00002	< 0.00001	0.0060	0.000006	18.7	< 0.0005	0.000116
7-May-13	41	500	485	7.71	395	130																
14-May-13	42	500	480	7.99	297	104	#N/A	10.0	70.3	4	62.3	0.0337	0.0025	0.0195	0.0168	< 0.00002	< 0.00001	0.0041	0.000009	19.3	< 0.0005	0.000053
21-May-13	43	500	470	7.86	371	128																
28-May-13	44	500	480	7.93	399	124	#N/A	11.7	74.5	3	64.5	0.0315	0.0028	0.0194	0.0178	< 0.00002	< 0.00001	0.0042	< 0.000003	19.5	< 0.0005	0.000043
4-Jun-13	45	500	435	7.86	393	124																
11-Jun-13	46	500	460	7.76	359	123	#N/A	16.4	75.4	4												
18-Jun-13	47	500	445	7.82	312	130																

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L
25-Jun-13	48	500	485	8.04	371	133	#N/A	14.5	73.4	3	65.1	0.0223	0.0029	0.0169	0.0168	< 0.00002	< 0.00001	0.0044	0.000010	20.0	< 0.0005	0.000045
2-Jul-13	49	500	480	7.83	413	123																
9-Jul-13	50	500	465	7.41	427	117	#N/A	9.7	67.7	4												
16-Jul-13	51	500	465	8.19	369	122																
23-Jul-13	52	500	470	7.43	450	126	#N/A	13.1	68.4	3	61.4	0.0265	0.0028	0.0148	0.0145	< 0.00002	< 0.00001	0.0046	0.000007	18.7	< 0.0005	0.000034
30-Jul-13	53	500	475	7.87	393	126																
6-Aug-13	54	500	440	7.68	415	127	#N/A	18.3	73.6	6												
13-Aug-13	55	500	460	7.62	387	138																
20-Aug-13	56	500	480	7.68	374	123	#N/A	8.7	62.3	3												
27-Aug-13	57	500																				

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jul-12	0	0.0028	0.024	0.00005	0.039	16.7	0.0563	0.01	0.0241	0.0007	0.208	21.3	0.0203	55.3	< 0.00001	31.2	1.52	132	0.00018	0.0171	0.0011	0.000212	0.00385	0.002	0.00004
31-Jul-12	1	0.0013	< 0.003	0.00006	0.030	7.25	0.0706	0.02	0.00741	< 0.0001	0.027	12.3	0.00602	36.5	< 0.00001	10.4	0.918	25.6	0.00008	0.0274	0.0010	0.00332	0.00368	0.004	0.00001
7-Aug-12	2	0.0009	< 0.003	0.00006	0.026	6.12	0.0838	< 0.01	0.00413	< 0.0001	< 0.009	10.4	0.00352	37.4	< 0.00001	4.58	0.807	12.2	0.00008	0.0414	0.0002	0.00250	0.00343	0.001	0.00002
14-Aug-12	3	0.0033	< 0.003	0.00010	0.022	5.12	0.0743	< 0.01	0.00309	0.0004	< 0.009	8.68	0.00228	33.5	0.00001	2.62	0.687	7.22	0.00006	0.0501	0.0004	0.00168	0.00343	0.004	0.00001
21-Aug-12	4	0.0009	< 0.003	0.00004	0.017	4.40	0.0696	< 0.01	0.00206	0.0003	< 0.009	6.81	0.00189	24.2	< 0.00001	1.62	0.586	4.18	0.00005	0.0390	0.0002	0.00115	0.00305	0.002	< 0.00001
28-Aug-12	5																								
4-Sep-12	6	< 0.0005	0.037	0.00003	0.016	4.77	0.0632	0.08	0.00186	0.0003	< 0.009	5.97	0.00155	18.1	< 0.00001	1.02	0.616	2.68	0.00004	0.0384	0.0001	0.000966	0.00291	< 0.001	< 0.00001
11-Sep-12	7																								
18-Sep-12	8	< 0.0005	< 0.003	0.00049	0.014	4.34	0.0725	< 0.01	0.00200	< 0.0001	< 0.009	4.99	0.00153	15.7	< 0.00001	0.66	0.547	1.86	0.00004	0.0377	0.0002	0.000927	0.00265	0.007	< 0.00001
25-Sep-12	9																								
2-Oct-12	10	< 0.0005	0.128	0.00003	0.011	3.96	0.0746	< 0.01	0.00164	0.0003	< 0.009	4.16	0.00167	15.8	< 0.00001	0.48	0.484	1.75	0.00004	0.0392	0.0009	0.000919	0.00237	< 0.001	< 0.00001
9-Oct-12	11																								
16-Oct-12	12	< 0.0005	< 0.003	< 0.00002	0.010	3.77	0.0670	< 0.01	0.00157	0.0003	< 0.009	3.48	0.00123	12.2	< 0.00001	0.36	0.450	1.52	0.00003	0.0254	0.0001	0.000941	0.00205	0.001	< 0.00001
23-Oct-12	13																								
30-Oct-12	14	0.0024	0.154	0.00007	0.007	3.10	0.0620	0.01	0.00151	0.0002	< 0.009	3.02	0.00135	10.3	0.00003	0.30	0.369	1.32	0.00002	0.0373	0.0003	0.000712	0.00228	0.001	< 0.00001
6-Nov-12	15																								
13-Nov-12	16	0.0008	< 0.003	0.00056	0.006	2.70	0.0587	0.01	0.00149	0.0001	< 0.009	2.31	0.00144	8.10	0.00002	0.24	0.315	0.97	0.00007	0.0261	0.0001	0.000647	0.00193	0.002	< 0.00001
20-Nov-12	17																								
27-Nov-12	18	< 0.0005	0.006	0.00008	0.006	2.83	0.0594	< 0.01	0.00158	0.0002	< 0.009	2.20	0.00135	7.70	0.00003	0.24	0.329	1.02	0.00003	0.0447	0.0002	0.000666	0.00168	0.001	0.00002
4-Dec-12	19																								
11-Dec-12	20	0.0012	0.016	0.00007	0.006	2.96	0.0555	< 0.01	0.00185	0.0004	< 0.009	2.25	0.00150	7.80	< 0.00001	0.24	0.336	1.14	0.00002	0.0394	0.0003	0.000776	0.00163	0.002	< 0.00001
18-Dec-12	21																								
25-Dec-12	22	< 0.0005	< 0.003	0.00008	0.006	3.14	0.0431	< 0.01	0.00234	0.0002	0.010	2.11	0.00133	6.76	< 0.00001	0.20	0.346	1.20	< 0.00002	0.0371	< 0.0001	0.000727	0.00136	0.001	< 0.00001
1-Jan-13	23																								
8-Jan-13	24	< 0.0005	0.005	0.00009	0.005	2.84	0.0318	< 0.01	0.00247	< 0.0001	< 0.009	1.99	0.00132	7.74	0.00002	0.23	0.313	1.05	0.00002	0.0278	0.0004	0.000732	0.00143	< 0.001	0.00003
15-Jan-13	25																								
22-Jan-13	26	< 0.0005	0.005	0.00004	0.005	2.91	0.0276	< 0.01	0.00290	0.0007	< 0.009	1.86	0.00134	6.96	< 0.00001	0.13	0.316	1.15	< 0.00002	0.0377	0.0002	0.000722	0.00125	< 0.001	0.00001
29-Jan-13	27																								
5-Feb-13	28	< 0.0005	< 0.003	0.00003	0.006	3.33	0.0269	< 0.01	0.00364	0.0001	< 0.009	1.93	0.00123	8.71	< 0.00001	0.23	0.345	1.15	< 0.00002	0.0599	< 0.0001	0.000837	0.00094	< 0.001	< 0.00001
12-Feb-13	29																								
19-Feb-13	30	< 0.0005	0.004	0.00027	0.005	3.19	0.0214	< 0.01	0.00338	0.0002	0.013	2.13	0.00152	10.6	0.00862	0.24	0.321	1.30	< 0.00002	0.0469	< 0.0001	0.000769	0.00092	0.002	< 0.00001
26-Feb-13	31																								
5-Mar-13	32	< 0.0005	< 0.003	0.00008	0.005	3.23	0.0164	< 0.01	0.00363	0.0001	< 0.009	1.75	0.00171	6.88	< 0.00001	0.21	0.306	1.09	< 0.00002	0.0365	< 0.0001	0.000664	0.00081	< 0.001	< 0.00001
12-Mar-13	33																								
19-Mar-13	34	0.0018	0.014	0.00078	0.005	3.48	0.0164	< 0.01	0.00383	0.0049	< 0.009	1.84	0.00098	7.30	< 0.00001	0.20	0.313	1.33	0.00004	0.0467	< 0.0001	0.00105	0.00054	0.038	< 0.00001
26-Mar-13	35																								
2-Apr-13	36	< 0.0005	< 0.003	0.00005	0.004	3.42	0.0128	< 0.01	0.00426	0.0002	< 0.009	1.71	0.00014	7.59	< 0.00001	0.21	0.297	1.28	< 0.00002	0.0443	< 0.0001	0.000689	0.00071	< 0.001	< 0.00001
9-Apr-13	37																								
16-Apr-13	38	0.0006	< 0.003	0.00005	0.004	3.42	0.0106	< 0.01	0.00380	0.0002	< 0.009	1.60	0.00062	6.81	< 0.00001	0.20	0.283	1.18	< 0.00002	0.0424	< 0.0001	0.000692	0.00065	< 0.001	< 0.00001
23-Apr-13	39																								
30-Apr-13	40	0.0007	< 0.003	< 0.00002	0.004	3.31	0.0117	< 0.01	0.00382	0.0002	< 0.009	1.50	0.00074	6.61	< 0.00001	0.18	0.265	1.03	< 0.00002	0.0655	< 0.0001	0.000644	0.00070	< 0.001	0.00001
7-May-13	41																								
14-May-13	42	< 0.0005	0.190	0.00003	0.004	3.39	0.0088	< 0.01	0.00275	0.0002	< 0.009	1.46	0.00070	5.49	< 0.00001	0.16	0.255	1.23	< 0.00002	0.0506	< 0.0001	0.000612	0.00062	< 0.001	< 0.00001
21-May-13	43																								
28-May-13	44	< 0.0005	< 0.003	0.00003	0.004	3.83	0.0089	< 0.01	0.00452	0.0002	< 0.009	1.50	0.00076	6.49	< 0.00001	0.17	0.274	1.10	< 0.00002	0.0514	< 0.0001	0.000685	0.00049	< 0.001	< 0.00001
4-Jun-13	45																								
11-Jun-13	46																								
18-Jun-13	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Jun-13	48	< 0.0005	< 0.003	0.00010	0.004	3.69	0.0061	< 0.01	0.00485	0.0001	< 0.009	1.37	0.00147	5.63	< 0.00001	0.17	0.251	1.17	< 0.00002	0.0545	< 0.0001	0.000659	0.00037	< 0.001	< 0.00001
2-Jul-13	49																								
9-Jul-13	50																								
16-Jul-13	51																								
23-Jul-13	52	< 0.0005	< 0.003	0.00004	0.003	3.60	0.0027	< 0.01	0.00544	0.0002	< 0.009	1.23	0.00079	5.07	< 0.00001	0.15	0.229	0.98	< 0.00002	0.0564	< 0.0001	0.000618	0.00040	0.001	< 0.00001
30-Jul-13	53																								
6-Aug-13	54																								
13-Aug-13	55																								
20-Aug-13	56																								
27-Aug-13	57																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L	Cu mg/L
24-Jul-12	0	850	515	7.54	289	955	#N/A	7.2	40.8	418	382	0.0489	0.0244	0.101	0.0195	< 0.00002	< 0.00001	0.0627	0.000019	120	0.0018	0.000144	0.0022
31-Jul-12	1	500	495	8.00	306	313	#N/A	3.8	104.3	62	123	0.0512	0.0323	0.204	0.0388	< 0.00002	< 0.00001	0.0542	0.000009	38.3	0.0007	0.000084	0.0012
7-Aug-12	2	500	500	7.95	295	221	#N/A	4.2	93.8	28	93.2	0.0708	0.0240	0.232	0.0646	< 0.00002	< 0.00001	0.0372	0.000012	29.0	< 0.0005	0.000100	0.0015
14-Aug-12	3	500	505	7.89	292	181	#N/A	4.7	80.2	14	75.3	0.0805	0.0165	0.211	0.0696	< 0.00002	< 0.00001	0.0237	< 0.000003	23.5	0.0008	0.000013	0.0024
21-Aug-12	4	500	475	7.86	296	162	#N/A	3.7	75.8	14	71.9	0.0930	0.0159	0.159	0.0777	< 0.00002	< 0.00001	0.0167	0.000038	22.5	< 0.0005	0.00005	0.0006
28-Aug-12	5	500	505	7.89	336	157																	
4-Sep-12	6	500	505	7.91	361	160	#N/A	5.8	80.1	8	72.0	0.0900	0.0113	0.129	0.0957	< 0.00002	< 0.00001	0.0124	0.000003	22.5	< 0.0005	0.000040	< 0.0005
11-Sep-12	7	500	485	7.84	267	157																	
18-Sep-12	8	500	465	7.85	302	142	#N/A	5.3	79.9	7	62.7	0.0794	0.0072	0.0894	0.105	< 0.00002	< 0.00001	0.0091	< 0.000003	20.1	< 0.0005	0.000026	< 0.0005
25-Sep-12	9	500	470	7.86	362	160																	
2-Oct-12	10	500	490	7.81	339	135	#N/A	5.5	76.4	5	63.1	0.0824	0.0065	0.0713	0.117	< 0.00002	< 0.00001	0.0077	0.000004	20.6	< 0.0005	0.000022	0.0006
9-Oct-12	11	500	495	7.82	326	135																	
16-Oct-12	12	500	500	7.78	313	126	#N/A	4.6	72.3	6	59.0	0.0919	0.0052	0.0546	0.111	< 0.00002	< 0.00001	0.0056	0.000005	19.5	< 0.0005	0.000023	0.0008
23-Oct-12	13	500	480	7.89	390	145																	
30-Oct-12	14	500	455	7.84	329	110	#N/A	6.5	66.2	5	53.2	0.104	0.0042	0.0479	0.102	< 0.00002	< 0.00001	0.0059	0.000014	17.8	< 0.0005	0.000033	0.0024
6-Nov-12	15	500	470	7.83	395	120																	
13-Nov-12	16	500	460	8.00	336	115	#N/A	11.5	69.2	3	53.8	0.0762	0.0045	0.0463	0.109	< 0.00002	< 0.00001	0.0041	0.000030	18.2	< 0.0005	0.000035	0.0007
20-Nov-12	17	500	485	7.84	390	210																	
27-Nov-12	18	500	475	7.69	337	98	#N/A	5.5	58.3	5	50.4	0.121	0.0045	0.0380	0.106	< 0.00002	< 0.00001	0.0033	0.000011	17.3	< 0.0005	0.000337	< 0.0005
4-Dec-12	19	500	450	7.81	395	185																	
11-Dec-12	20	500	520	7.83	304	97	#N/A	2.8	60.1	2	48.6	0.109	0.0039	0.0368	0.108	< 0.00002	< 0.00001	0.0031	0.000005	16.7	< 0.0005	0.000043	0.0006
18-Dec-12	21	500	450	7.79	345	93																	
25-Dec-12	22	500	415	7.81	364	92	#N/A	4.9	60.3	3	46.6	0.0917	0.0039	0.0369	0.0947	< 0.00002	< 0.00001	0.0031	0.000005	15.9	< 0.0005	0.000096	< 0.0005
1-Jan-13	23	500	465	7.81	410	180																	
8-Jan-13	24	500	450	7.85	278	94	#N/A	3.9	62.0	3	59.9	0.0850	0.0051	0.0325	0.0979	< 0.00002	< 0.00001	0.0030	0.000003	21.1	< 0.0005	0.000036	< 0.0005
15-Jan-13	25	500	420	7.81	420	1350																	
22-Jan-13	26	500	465	7.75	313	101	#N/A	4.5	63.7	4	48.5	0.0825	0.0039	0.0300	0.105	< 0.00002	< 0.00001	0.0028	0.000010	17.0	< 0.0005	0.000038	< 0.0005
29-Jan-13	27	500	460	7.85	347	94																	
5-Feb-13	28	500	455	7.77	327	98	#N/A	4.9	55.7	4	46.8	0.0894	0.0039	0.0294	0.104	< 0.00002	< 0.00001	0.0009	0.000005	16.3	< 0.0005	0.000073	< 0.0005
12-Feb-13	29	500	440	7.73	354	96																	
19-Feb-13	30	500	475	7.73	381	103	#N/A	3.4	67.9	6	56.9	0.0860	0.0042	0.0274	0.109	< 0.00002	< 0.00001	0.0037	0.000006	20.2	< 0.0005	0.000104	< 0.0005
26-Feb-13	31	500	470	7.96	337	102																	
5-Mar-13	32	500	440	8.00	334	101	#N/A	5.2	62.3	4	47.4	0.0808	0.0038	0.0270	0.0954	< 0.00002	< 0.00001	0.0027	0.000012	16.7	< 0.0005	0.000255	< 0.0005
12-Mar-13	33	500	445	7.28	391	71																	
19-Mar-13	34	500	435	7.85	360	104	#N/A	6.9	57.0	4	47.6	0.0779	0.0034	0.0271	0.0925	0.00003	< 0.00001	0.0058	0.000099	16.8	< 0.0005	0.00249	0.0010
26-Mar-13	35	500	470	7.83	374	100																	
2-Apr-13	36	500	430	7.84	360	106	#N/A	7.7	58.3	4	54.3	0.0739	0.0040	0.0235	0.0966	< 0.00002	< 0.00001	0.0019	0.000005	19.5	< 0.0005	0.000089	< 0.0005
9-Apr-13	37	500	465	7.81	376	100																	
16-Apr-13	38	500	485	7.92	293	109	#N/A	7.4	65.4	5	51.7	0.0735	0.0045	0.0266	0.105	< 0.00002	< 0.00001	0.0033	0.000010	18.4	< 0.0005	0.000077	< 0.0005
23-Apr-13	39	500	455	7.74	243	114																	
30-Apr-13	40	500	450	7.84	371	105	#N/A	8.9	61.4	6	51.0	0.0710	0.0033	0.0233	0.0886	< 0.00002	< 0.00001	0.0044	0.000004	18.3	< 0.0005	0.000111	0.0007
7-May-13	41	500	450	7.81	405	117																	
14-May-13	42	500	495	7.85	338	100	#N/A	9.6	66.0	5	58.8	0.0627	0.0024	0.0220	0.0943	< 0.00002	< 0.00001	0.0032	0.000009	21.1	< 0.0005	0.000034	0.0005
21-May-13	43	500	440	7.87	389	109																	
28-May-13	44	500	450	8.00	335	116	#N/A	4.9	60.5	6	54.4	0.0664	0.0025	0.0195	0.0885	< 0.00002	< 0.00001	0.0028	< 0.000003	19.0	< 0.0005	0.000026	0.0014
4-Jun-13	45	500	425	8.03	355	120																	
11-Jun-13	46	500	445	7.90	386	122	#N/A	20.1	72.7	6													
18-Jun-13	47	500	455	7.84	302	127																	

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L	Cu mg/L
25-Jun-13	48	500	460	7.87	408	125	#N/A	4.7	61.5	4	60.8	0.0523	0.0032	0.0180	0.0910	< 0.00002	< 0.00001	0.0031	0.000012	20.7	< 0.0005	0.000027	< 0.0005
2-Jul-13	49	500	465	7.80	424	125																	
9-Jul-13	50	500	460	7.91	394	121	#N/A	9.2	69.2	5													
16-Jul-13	51	500	505	7.93	394	125																	
23-Jul-13	52	500	460	7.89	427	129	#N/A	14.1	68.9	4	62.5	0.0667	0.0033	0.0156	0.0896	< 0.00002	< 0.00001	0.0081	0.000011	20.8	< 0.0005	0.000039	0.0006
30-Jul-13	53	500	470	7.83	399	129																	
6-Aug-13	54	500	445	7.94	408	124	#N/A	19.5	68.8	6													
13-Aug-13	55	500	465	7.77	396	129																	
20-Aug-13	56	500	440	7.82	373	127	#N/A	8.6	59.3	6													

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jul-12	0	0.010	0.00013	0.043	20.2	0.290	0.01	0.0408	0.0010	0.441	37.3	0.00629	19.8	0.00002	25.4	1.25	151	0.00024	0.0332	0.0009	0.00174	0.00165	0.005	0.00003
31-Jul-12	1	< 0.003	0.00020	0.023	6.53	0.170	0.02	0.0113	0.0002	0.036	15.1	0.00182	30.7	< 0.00001	7.83	0.671	21.3	0.00010	0.0365	0.0003	0.00240	0.00358	0.004	< 0.00001
7-Aug-12	2	< 0.003	0.00025	0.017	5.07	0.145	< 0.01	0.00508	0.0001	< 0.009	11.4	0.00126	39.3	< 0.00001	3.41	0.607	11.2	0.00008	0.0374	0.0003	0.00229	0.00427	0.003	0.00001
14-Aug-12	3	< 0.003	0.00029	0.013	4.05	0.116	< 0.01	0.00383	0.0004	< 0.009	8.64	0.00093	33.4	< 0.00001	1.89	0.514	7.51	0.00006	0.0423	0.0005	0.00267	0.00445	0.003	< 0.00001
21-Aug-12	4	0.006	0.00033	0.009	3.80	0.117	< 0.01	0.00324	0.0003	< 0.009	6.84	0.00088	28.8	< 0.00001	1.34	0.483	5.74	0.00005	0.0569	0.0004	0.00204	0.00433	0.002	0.00002
28-Aug-12	5																							
4-Sep-12	6	0.011	0.00016	0.008	3.81	0.121	0.07	0.00186	0.0002	< 0.009	5.86	0.00071	20.5	< 0.00001	0.86	0.497	4.28	0.00004	0.0252	0.0003	0.000666	0.00374	< 0.001	< 0.00001
11-Sep-12	7																							
18-Sep-12	8	0.004	0.00042	0.006	3.04	0.113	< 0.01	0.00218	< 0.0001	< 0.009	4.56	0.00062	16.8	< 0.00001	0.54	0.416	2.94	0.00004	0.0425	0.0003	0.00167	0.00494	0.003	< 0.00001
25-Sep-12	9																							
2-Oct-12	10	0.069	0.00069	0.004	2.83	0.125	0.03	0.00188	0.0003	< 0.009	3.82	0.00084	17.5	0.00001	0.39	0.391	2.77	0.00003	0.0414	0.0014	0.00147	0.00345	< 0.001	0.00003
9-Oct-12	11																							
16-Oct-12	12	0.005	0.00042	0.003	2.52	0.119	< 0.01	0.00178	0.0002	0.012	3.23	0.00052	14.8	< 0.00001	0.39	0.357	2.09	0.00002	0.0420	0.0003	0.00139	0.00284	0.003	0.00004
23-Oct-12	13																							
30-Oct-12	14	0.090	0.00044	0.002	2.11	0.108	0.01	0.00202	0.0002	< 0.009	2.92	0.00061	12.9	0.00003	0.26	0.310	1.98	< 0.00002	0.0294	0.0005	0.00101	0.00267	0.001	< 0.00001
6-Nov-12	15																							
13-Nov-12	16	< 0.003	0.00059	0.002	2.04	0.112	0.01	0.00258	0.0002	< 0.009	2.57	0.00059	12.0	0.00003	0.24	0.300	1.65	0.00004	0.0251	0.0005	0.00105	0.00256	0.002	< 0.00001
20-Nov-12	17																							
27-Nov-12	18	0.011	0.00080	0.002	1.77	0.112	< 0.01	0.00338	0.0002	< 0.009	2.29	0.00069	9.19	0.00004	0.18	0.267	1.38	0.00003	0.0368	0.0007	0.000927	0.00279	0.002	0.00002
4-Dec-12	19																							
11-Dec-12	20	0.010	0.00044	0.002	1.65	0.105	< 0.01	0.00412	0.0006	< 0.009	2.17	0.00070	8.59	< 0.00001	0.17	0.249	1.30	0.00002	0.0663	0.0003	0.000873	0.00277	< 0.001	< 0.00001
18-Dec-12	21																							
25-Dec-12	22	0.008	0.00050	0.002	1.65	0.0929	< 0.01	0.00646	0.0001	< 0.009	2.02	0.00062	7.70	0.00001	0.15	0.251	1.42	< 0.00002	0.0336	0.0005	0.000742	0.00239	0.002	< 0.00001
1-Jan-13	23																							
8-Jan-13	24	0.005	0.00032	0.002	1.78	0.116	< 0.01	0.00747	< 0.0001	< 0.009	2.28	0.00056	11.6	0.00003	0.19	0.270	1.32	0.00002	0.0288	0.0004	0.000717	0.00259	< 0.001	< 0.00001
15-Jan-13	25																							
22-Jan-13	26	0.006	0.00030	0.001	1.49	0.104	< 0.01	0.00871	0.0005	0.010	1.89	0.00054	8.69	0.00001	0.07	0.227	1.24	0.00002	0.0330	0.0004	0.000661	0.00249	< 0.001	0.00001
29-Jan-13	27																							
5-Feb-13	28	0.008	0.00032	0.002	1.47	0.106	< 0.01	0.00968	< 0.0001	< 0.009	1.96	0.00053	9.42	< 0.00001	0.14	0.226	1.03	0.00002	0.0488	0.0003	0.000670	0.00248	< 0.001	< 0.00001
12-Feb-13	29																							
19-Feb-13	30	0.007	0.00037	0.001	1.55	0.116	0.01	0.00988	0.0001	0.010	1.97	0.00061	11.0	0.00005	0.16	0.232	1.36	< 0.00002	0.0421	0.0002	0.000588	0.00223	< 0.001	< 0.00001
26-Feb-13	31																							
5-Mar-13	32	0.003	0.00025	0.001	1.39	0.104	< 0.01	0.00952	0.0001	< 0.009	1.79	0.00065	8.39	0.00001	0.15	0.208	1.02	< 0.00002	0.0411	0.0002	0.000528	0.00212	< 0.001	< 0.00001
12-Mar-13	33																							
19-Mar-13	34	0.010	0.00061	0.001	1.35	0.102	< 0.01	0.0101	0.0021	< 0.009	1.85	0.00052	8.48	< 0.00001	0.13	0.198	1.35	0.00003	0.0344	< 0.0001	0.000668	0.00196	0.016	< 0.00001
26-Mar-13	35																							
2-Apr-13	36	< 0.003	0.00032	0.001	1.38	0.124	< 0.01	0.0107	0.0001	< 0.009	1.95	< 0.00004	9.39	< 0.00001	0.14	0.209	1.48	0.00002	0.0445	0.0003	0.000469	0.00186	< 0.001	< 0.00001
9-Apr-13	37																							
16-Apr-13	38	0.006	0.00043	0.001	1.41	0.120	< 0.01	0.00959	0.0002	< 0.009	1.86	0.00030	9.65	< 0.00001	0.13	0.205	1.45	< 0.00002	0.0475	0.0003	0.000497	0.00196	< 0.001	< 0.00001
23-Apr-13	39																							
30-Apr-13	40	< 0.003	0.00027	0.001	1.30	0.103	< 0.01	0.00957	0.0002	< 0.009	1.75	0.00041	8.54	< 0.00001	0.12	0.187	1.34	< 0.00002	0.0405	0.0002	0.000450	0.00204	< 0.001	< 0.00001
7-May-13	41																							
14-May-13	42	0.074	0.00027	0.001	1.50	0.0813	< 0.01	0.00759	0.0002	< 0.009	1.77	0.00048	8.69	< 0.00001	0.14	0.201	1.52	< 0.00002	0.0522	0.0002	0.000441	0.00186	0.002	< 0.00001
21-May-13	43																							
28-May-13	44	< 0.003	0.00025	< 0.001	1.67	0.0483	< 0.01	0.0130	0.0002	< 0.009	1.77	0.00047	8.29	< 0.00001	0.11	0.192	1.60	< 0.00002	0.0380	0.0001	0.000420	0.00163	0.002	< 0.00001
4-Jun-13	45																							
11-Jun-13	46																							
18-Jun-13	47																							

Date	Cycle No.	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Jun-13	48	< 0.003	0.00021	< 0.001	2.20	0.0294	< 0.01	0.0135	0.0002	< 0.009	1.77	0.00084	7.64	< 0.00001	0.13	0.193	2.03	< 0.00002	0.0481	0.0002	0.000346	0.00132	< 0.001	< 0.00001
2-Jul-13	49																							
9-Jul-13	50																							
16-Jul-13	51																							
23-Jul-13	52	0.014	0.00029	< 0.001	2.59	0.0217	< 0.01	0.0122	0.0003	< 0.009	1.70	0.00074	7.46	< 0.00001	0.13	0.190	2.31	< 0.00002	0.0562	0.0002	0.000313	0.00137	0.001	< 0.00001
30-Jul-13	53																							
6-Aug-13	54																							
13-Aug-13	55																							
20-Aug-13	56																							

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
25-Jul-12	1	565	265	7.47	346	25	#N/A	4.1	8.4	4	6.60	306	0.0600	0.0203	0.116	0.0322	< 0.00002	< 0.00001	0.0494	0.000005	95.0	0.0086	0.000118
1-Aug-12	2	395	185	7.61	301	95	#N/A	4.1	21.3	23	6.13	26.2	0.128	0.0021	0.0118	0.00924	< 0.00002	< 0.00001	0.0070	< 0.000003	8.75	0.0006	0.000034
8-Aug-12	3	535	250	7.79	216	120	#N/A	6.5	35.0	28	5.60	37.7	0.118	0.0026	0.0115	0.0182	< 0.00002	< 0.00001	0.0153	0.000004	12.8	< 0.0005	0.000038
15-Aug-12	4	555	200	7.65	192	351	#N/A	5.0	45.3	102	5.56	140	0.0767	0.0066	0.0175	0.0505	< 0.00002	< 0.00001	0.0209	< 0.000003	45.7	0.0007	0.000140
22-Aug-12	5	120	50	7.72	287	167					5.26												
29-Aug-12	6	325	190	7.76	315	152	#N/A	5.1	55.3	23	6.45	53.9	0.137	0.0036	0.0113	0.0251	< 0.00002	< 0.00001	0.0083	0.000025	18.8	< 0.0005	0.000046
5-Sep-12	7	155	70	7.72	326	153					6.66												
12-Sep-12	8	355	175	7.76	321	167	#N/A	4.5	58.3	24	5.24	60.4	0.0473	0.0037	0.0145	0.0296	< 0.00002	< 0.00001	0.0111	0.000015	20.8	< 0.0005	0.000059
19-Sep-12	9	100	50	7.69	306	166					5.92												
26-Sep-12	10	420	170	7.78	314	160	#N/A	3.2	63.8	25	4.48	66.0	0.0513	0.0041	0.0142	0.0304	< 0.00002	< 0.00001	0.0107	< 0.000003	22.9	< 0.0005	0.000057
3-Oct-12	11	125	50	7.71	325	161					5.07												
10-Oct-12	12	345	180	7.75	299	159	#N/A	6.6	67.9	21	5.09	61.4	0.0559	0.0037	0.0147	0.0331	< 0.00002	< 0.00001	0.0115	0.000009	21.0	0.0005	0.000076
17-Oct-12	13	115	50	7.81	325	170					6.19												
24-Oct-12	14	425	215	7.76	313	163	#N/A	3.1	68.9	29	5.19	61.9	0.0812	0.0042	0.0140	0.0342	< 0.00002	< 0.00001	0.0105	0.000005	21.1	< 0.0005	0.000063
31-Oct-12	15	125	50	7.79	281	156					4.23												
7-Nov-12	16	420	220	7.84	324	155	#N/A	5.7	71.8	40	5.08	96.8	0.0204	0.0025	0.227	0.0524	< 0.00002	< 0.00001	0.0548	0.000003	28.7	< 0.0005	0.000086
14-Nov-12	17	100	50	8.05	283	164					7.36												
21-Nov-12	18	450	200	7.87	311	161	#N/A	4.9	73.4	24	6.14	69.7	0.0312	0.0041	0.0187	0.0404	< 0.00002	< 0.00001	0.0117	0.000013	23.7	< 0.0005	0.000093
28-Nov-12	19	225	70	7.88	325	180					6.73												
5-Dec-12	20	420	215	7.94	326	161	#N/A	9.2	74.6	16	5.63	71.3	0.0275	0.0042	0.0174	0.0366	< 0.00002	< 0.00001	0.0114	0.000008	24.2	< 0.0005	0.000020
12-Dec-12	21	140	75	7.86	261	149					5.75												
19-Dec-12	22	405	185	7.88	322	143	#N/A	3.9	70.5	16	5.65	62.6	0.0378	0.0042	0.0184	0.0369	< 0.00002	< 0.00001	0.0131	< 0.000003	20.9	< 0.0005	0.000049
26-Dec-12	23	260	70	7.90	307	145					6.25												
2-Jan-13	24	350	185	7.83	320	144	#N/A	5.5	68.7	13	6.49	55.3	0.0420	0.0043	0.0173	0.0360	< 0.00002	0.00001	0.0110	< 0.000003	18.4	< 0.0005	0.000033
9-Jan-13	25	270	80	7.81	#N/A	170					6.38												
16-Jan-13	26	460	200	7.86	301	140	#N/A	3.7	69.7	17	6.56	58.7	0.0353	0.0045	0.0159	0.0351	< 0.00002	< 0.00001	0.0115	< 0.000003	19.7	< 0.0005	0.000042
23-Jan-13	27	255	70	7.91	260	135					5.62												
30-Jan-13	28	445	190	7.84	310	134	#N/A	4.3	63.1	17	4.99	59.4	0.0228	0.0035	0.0173	0.0328	< 0.00002	< 0.00001	0.0111	0.000003	19.8	< 0.0005	0.000050
6-Feb-13	29	190	70	7.79	#N/A	145					6.50												
13-Feb-13	30	400	165	7.93	310	128	#N/A	7.9	60.7	15	6.52	51.6	0.0292	0.0034	0.0166	0.0336	< 0.00002	< 0.00001	0.0106	< 0.000003	17.2	< 0.0005	0.000111
20-Feb-13	31	200	75	7.87	312	127					5.75												
27-Feb-13	32	380	190	7.86	291	122	#N/A	6.6	65.3	17	6.48	52.7	0.0216	0.0040	0.0165	0.0320	< 0.00002	< 0.00001	0.0108	< 0.000003	17.6	< 0.0005	0.000061
6-Mar-13	33	220	75	7.87	288	122					6.60												
13-Mar-13	34	400	185	7.82	317	120	#N/A	5.4	53.0	14	5.47	50.2	0.0208	0.0034	0.0158	0.0303	< 0.00002	< 0.00001	0.0093	< 0.000003	16.7	< 0.0005	0.000049

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Jul-12	1	0.0028	0.024	0.00005	0.039	16.7	0.0563	0.01	0.0241	0.0007	0.208	21.3	0.0203	55.3	< 0.00001	31.2	1.52	132	0.00018	0.0171	0.0011	0.000212	0.00385	0.002	0.00004
1-Aug-12	2	0.0022	< 0.003	0.00004	0.003	1.05	0.0310	0.01	0.00362	0.0002	0.010	2.74	0.00142	81.3	< 0.00001	2.90	0.147	8.46	0.00004	0.00159	0.0003	0.000171	0.00109	0.004	< 0.00001
8-Aug-12	3	0.0008	< 0.003	0.00008	0.004	1.39	0.0954	< 0.01	0.00302	0.0002	< 0.009	3.27	0.00128	50.9	< 0.00001	3.13	0.203	9.19	0.00004	0.00230	0.0001	0.000210	0.00111	0.004	0.00001
15-Aug-12	4	0.0021	< 0.003	0.00007	0.012	6.34	0.214	< 0.01	0.00969	0.0006	0.031	8.16	0.00248	166	< 0.00001	8.67	0.838	43.2	0.00008	0.00151	0.0006	0.00138	0.00097	0.008	< 0.00001
22-Aug-12	5																								
29-Aug-12	6	0.0015	0.006	0.00028	0.005	1.71	0.205	< 0.01	0.00261	0.0004	< 0.009	3.31	0.00131	36.5	< 0.00001	2.90	0.271	8.28	0.00005	0.00156	0.0003	0.000481	0.00129	0.005	< 0.00001
5-Sep-12	7																								
12-Sep-12	8	0.0029	< 0.003	0.00007	0.006	2.05	0.218	< 0.01	0.00283	0.0004	< 0.009	3.91	0.00120	46.5	< 0.00001	3.20	0.306	9.53	0.00006	0.00127	0.0003	0.000629	0.00090	0.007	< 0.00001
19-Sep-12	9																								
26-Sep-12	10	0.0007	< 0.003	0.00003	0.006	2.12	0.212	< 0.01	0.0029	0.0003	< 0.009	3.89	0.00111	69.1	< 0.00001	2.91	0.315	8.56	0.00005	0.00146	0.0003	0.00060	0.00087	0.002	< 0.00001
3-Oct-12	11																								
10-Oct-12	12	0.0018	< 0.003	0.00447	0.006	2.15	0.216	< 0.01	0.0026	0.0004	< 0.009	3.98	0.00158	39.0	< 0.00001	2.72	0.322	8.02	0.00006	0.00150	0.0003	0.00065	0.00104	0.004	< 0.00001
17-Oct-12	13																								
24-Oct-12	14	0.0009	< 0.003	0.00002	0.006	2.21	0.215	< 0.01	0.00254	0.0006	0.011	3.78	0.00110	46.5	< 0.00001	2.52	0.325	7.44	0.00002	0.00142	0.0008	0.00060	0.00116	0.002	< 0.00001
31-Oct-12	15																								
7-Nov-12	16	0.0018	0.017	0.00009	0.021	6.09	0.0737	0.02	0.00807	0.0004	< 0.009	10.7	0.00076	72.4	< 0.00001	6.28	0.880	15.2	0.00005	0.00096	0.0001	0.00250	0.00165	0.003	0.00002
14-Nov-12	17																								
21-Nov-12	18	0.0011	< 0.003	< 0.00002	0.006	2.54	0.216	0.01	0.00271	0.0004	< 0.009	3.90	0.00098	38.6	0.00003	2.62	0.362	7.32	0.00005	0.00147	0.0001	0.000774	0.00119	0.002	< 0.00001
28-Nov-12	19																								
5-Dec-12	20	0.0009	< 0.003	< 0.00002	0.006	2.64	0.205	< 0.01	0.00212	0.0002	< 0.009	4.16	0.00104	30.3	< 0.00001	2.33	0.376	6.99	0.00004	0.00117	< 0.0001	0.000681	0.00080	0.002	< 0.00001
12-Dec-12	21																								
19-Dec-12	22	0.0009	0.003	0.00003	0.006	2.53	0.166	< 0.01	0.00232	< 0.0001	< 0.009	4.28	0.00096	25.0	< 0.00001	2.70	0.364	6.04	0.00005	0.00190	0.0002	0.000687	0.00081	0.003	< 0.00001
26-Dec-12	23																								
2-Jan-13	24	0.0007	< 0.003	< 0.00002	0.005	2.25	0.147	< 0.01	0.00211	0.0003	< 0.009	3.33	0.00083	17.8	0.00006	1.99	0.319	5.71	0.00005	0.00161	0.0002	0.000691	0.00097	0.002	< 0.00001
9-Jan-13	25																								
16-Jan-13	26	0.0008	< 0.003	< 0.00002	0.006	2.29	0.142	< 0.01	0.00204	0.0003	< 0.009	3.40	0.00087	39.0	< 0.00001	1.70	0.314	6.10	0.00004	0.00142	0.0001	0.000675	0.00090	0.001	< 0.00001
23-Jan-13	27																								
30-Jan-13	28	< 0.0005	< 0.003	0.00004	0.006	2.41	0.141	< 0.01	0.00185	0.0002	< 0.009	3.49	0.00123	26.9	< 0.00001	1.90	0.337	5.59	0.00005	0.00139	< 0.0001	0.000657	0.00092	0.003	< 0.00001
6-Feb-13	29																								
13-Feb-13	30	0.0108	< 0.003	0.00007	0.005	2.11	0.122	< 0.01	0.00202	< 0.0001	< 0.009	3.10	0.00119	27.1	< 0.00001	1.57	0.288	4.88	0.00004	0.00123	< 0.0001	0.000616	0.00075	0.002	< 0.00001
20-Feb-13	31																								
27-Feb-13	32	0.0007	< 0.003	0.00007	0.005	2.12	0.116	< 0.01	0.00173	0.0002	< 0.009	3.04	0.00096	21.9	< 0.00001	1.44	0.293	4.81	0.00004	0.00126	< 0.0001	0.000619	0.00068	0.001	< 0.00001
6-Mar-13	33																								
13-Mar-13	34	0.0006	< 0.003	0.00002	0.004	2.04	0.101	< 0.01	0.00181	0.0002	< 0.009	3.00	0.00117	19.9	< 0.00001	1.34	0.273	4.43	0.00004	0.00110	< 0.0001	0.000542	0.00069	< 0.001	< 0.00001

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
25-Jul-12	1	565	225	7.34	349	103	#N/A	5.7	20.6	29	2.75	35.9	0.146	0.0136	0.0454	0.0209	< 0.00002	< 0.00001	0.0238	< 0.000003	12.2	0.0016	0.000046
1-Aug-12	2	395	180	7.64	320	554	#N/A	5.9	50.4	221	1.83	216	0.104	0.0252	0.0466	0.115	< 0.00002	< 0.00001	0.0551	0.000024	68.8	0.0021	0.000197
8-Aug-12	3	535	260	7.54	246	1064	#N/A	10.0	46.1	549	2.85	415	0.0750	0.0271	0.0385	0.201	< 0.00002	< 0.00001	0.0673	0.000031	127	< 0.0005	0.000302
15-Aug-12	4	555	315	7.57	215	1067	#N/A	6.8	40.8	541	2.50	461	0.0390	0.0233	0.0514	0.155	< 0.00002	< 0.00001	0.0678	0.000011	141	< 0.0005	0.000322
22-Aug-12	5	120	50	7.53	305	845					2.66												
29-Aug-12	6	325	155	7.57	333	672	#N/A	7.1	52.4	267	2.96	261	0.120	0.0056	0.127	0.0766	< 0.00002	< 0.00001	0.0836	< 0.000003	79.7	0.0007	0.000193
5-Sep-12	7	155	70	7.62	341	576					3.80												
12-Sep-12	8	355	175	7.72	328	465	#N/A	5.6	63.8	147	1.89	158	0.0226	0.0033	0.229	0.0491	< 0.00002	< 0.00001	0.0790	0.000004	47.9	0.0005	0.000103
19-Sep-12	9	100	50	7.68	313	398					1.99												
26-Sep-12	10	420	225	7.76	321	356	#N/A	4.2	79.0	102	1.50	125	0.0279	0.0025	0.253	0.0488	< 0.00002	< 0.00001	0.0783	< 0.000003	37.6	< 0.0005	0.000081
3-Oct-12	11	125	50	7.74	325	323					1.95												
10-Oct-12	12	345	155	7.77	310	299	#N/A	7.3	86.6	65	1.78	102	0.0476	0.0017	0.255	0.0500	< 0.00002	< 0.00001	0.0688	0.000003	30.7	< 0.0005	0.000079
17-Oct-12	13	115	50	7.79	390	301					2.59												
24-Oct-12	14	425	205	7.85	313	275	#N/A	4.3	90.5	56	1.78	94.1	0.0629	0.0021	0.228	0.0509	< 0.00002	< 0.00001	0.0572	0.000005	28.1	< 0.0005	0.000075
31-Oct-12	15	125	50	7.84	283	264					1.26												
7-Nov-12	16	420	200	7.89	326	244	#N/A	6.1	93.6	17	1.30	68.1	0.0302	0.0040	0.0159	0.0372	< 0.00002	< 0.00001	0.0132	0.000010	23.1	< 0.0005	0.000062
14-Nov-12	17	100	50	7.97	291	260					1.79												
21-Nov-12	18	450	230	7.93	303	235	#N/A	5.0	95.8	46	1.62	96.5	0.0264	0.0018	0.218	0.0525	< 0.00002	< 0.00001	0.0440	< 0.000003	28.7	< 0.0005	0.000109
28-Nov-12	19	225	70	7.86	390	305					4.10												
5-Dec-12	20	420	180	7.95	331	244	#N/A	10.2	101.4	41	2.04	98.4	0.0238	0.0018	0.197	0.0511	< 0.00002	< 0.00001	0.0447	0.000009	29.2	< 0.0005	0.000006
12-Dec-12	21	140	55	7.92	264	235					2.99												
19-Dec-12	22	405	175	7.94	327	217	#N/A	4.4	98.7	33	1.59	88.1	0.0315	0.0016	0.201	0.0541	< 0.00002	< 0.00001	0.0456	0.000003	25.7	< 0.0005	0.000058
26-Dec-12	23	260	70	7.90	311	233					3.34												
2-Jan-13	24	350	165	7.89	323	226	#N/A	6.0	99.9	29	2.57	80.8	0.0287	0.0018	0.213	0.0540	< 0.00002	< 0.00001	0.0390	< 0.000003	23.5	< 0.0005	0.000046
9-Jan-13	25	270	90	7.83	#N/A	295					2.75												
16-Jan-13	26	460	205	7.93	305	214	#N/A	3.8	101.7	32	2.72	85.6	0.0209	0.0030	0.215	0.0564	< 0.00002	< 0.00001	0.0367	0.000007	25.3	< 0.0005	0.000057
23-Jan-13	27	255	80	7.89	264	225					1.96												
30-Jan-13	28	445	205	7.91	310	215	#N/A	4.6	93.3	30	1.21	93.8	0.0121	0.0025	0.219	0.0536	< 0.00002	< 0.00001	0.0342	0.000003	27.6	< 0.0005	0.000057
6-Feb-13	29	190	65	7.89	#N/A	260					3.05												
13-Feb-13	30	400	195	7.92	320	212	#N/A	8.1	93.2	28	2.25	85.3	0.0155	0.0019	0.225	0.0597	< 0.00002	< 0.00001	0.0323	0.000005	25.1	< 0.0005	0.000094
20-Feb-13	31	200	80	7.90	319	218					3.16												
27-Feb-13	32	380	170	7.88	301	215	#N/A	7.3	101.2	29	2.82	88.8	0.0106	0.0021	0.216	0.0602	< 0.00002	< 0.00001	0.0313	< 0.000003	26.3	< 0.0005	0.000066
6-Mar-13	33	220	75	7.88	298	220					3.30												
13-Mar-13	34	400	180	7.89	324	207	#N/A	6.5	84.0	28	3.15	90.2	0.0093	0.0018	0.210	0.0584	< 0.00002	< 0.00001	0.0271	0.000145	26.7	< 0.0005	0.000067

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Jul-12	1	0.0012	0.003	0.00017	0.006	1.30	0.0254	0.04	0.00303	0.0003	< 0.009	3.69	0.00243	7.58	< 0.00001	1.41	0.252	10.2	0.00002	0.00278	0.0004	0.000263	0.00363	0.010	< 0.00001
1-Aug-12	2	0.0125	0.004	0.00032	0.026	10.7	0.271	< 0.01	0.0158	0.0008	0.028	16.5	0.00513	381	< 0.00001	13.3	1.56	75.4	0.00009	0.00206	0.0009	0.00316	0.00277	0.009	0.00008
8-Aug-12	3	0.0017	< 0.003	0.00003	0.041	23.8	0.290	0.02	0.0351	0.0010	0.139	26.9	0.00950	441	< 0.00001	30.3	3.00	159	0.00017	0.00092	0.0014	0.00598	0.00231	0.007	0.00002
15-Aug-12	4	0.0091	0.007	0.00013	0.041	26.3	0.247	0.01	0.0414	0.0012	0.232	30.2	0.00749	645	0.00002	35.4	2.94	174	0.00017	0.00065	0.0015	0.00601	0.00168	0.007	0.00001
22-Aug-12	5																								
29-Aug-12	6	0.0017	0.037	0.00006	0.036	15.2	0.182	< 0.01	0.0228	0.0341	0.117	19.8	0.00171	166	< 0.00001	22.6	1.63	94.9	0.00007	0.00073	0.0010	0.00479	0.00219	0.007	< 0.00001
5-Sep-12	7																								
12-Sep-12	8	0.0007	0.004	0.00004	0.028	9.25	0.0980	0.01	0.0118	0.0009	0.045	16.3	0.00119	166	< 0.00001	15.0	1.04	53.4	0.00006	0.00021	0.0006	0.00223	0.00147	0.003	< 0.00001
19-Sep-12	9																								
26-Sep-12	10	0.0006	0.007	0.00003	0.025	7.59	0.0757	< 0.01	0.0118	0.0007	0.026	14.7	0.00094	153	< 0.00001	12.3	0.977	35.6	0.00005	0.00040	0.0009	0.00361	0.00181	0.002	0.00015
3-Oct-12	11																								
10-Oct-12	12	0.0010	0.012	0.00013	0.022	6.24	0.0661	< 0.01	0.0097	0.0005	0.010	12.4	0.00085	68.9	< 0.00001	8.65	0.871	24.2	0.00005	0.00058	0.0006	0.00321	0.00171	0.003	0.00001
17-Oct-12	13																								
24-Oct-12	14	0.0010	0.011	0.00005	0.020	5.81	0.0570	0.01	0.00897	0.0006	< 0.009	11.4	0.00064	73.3	< 0.00001	6.96	0.833	18.3	0.00002	0.00062	0.0003	0.00259	0.00161	0.002	< 0.00001
31-Oct-12	15																								
7-Nov-12	16	0.0013	< 0.003	0.00014	0.006	2.50	0.243	0.01	0.00256	< 0.0001	< 0.009	3.92	0.00098	48.9	< 0.00001	2.62	0.366	7.29	0.00006	0.00154	0.0001	0.000660	0.00096	0.002	< 0.00001
14-Nov-12	17																								
21-Nov-12	18	0.0016	< 0.003	0.00004	0.021	6.04	0.0613	0.01	0.00750	0.0006	< 0.009	9.79	0.00053	49.6	0.00004	5.67	0.861	13.9	0.00004	0.00078	0.0004	0.00253	0.00170	0.005	0.00002
28-Nov-12	19																								
5-Dec-12	20	0.0012	0.015	< 0.00002	0.020	6.19	0.0653	< 0.01	0.00700	0.0003	< 0.009	10.8	0.00047	39.2	< 0.00001	4.76	0.888	12.7	0.00002	0.00079	0.0003	0.00230	0.00117	0.003	0.00001
12-Dec-12	21																								
19-Dec-12	22	0.0009	0.014	0.00004	0.020	5.81	0.0563	< 0.01	0.00766	< 0.0001	< 0.009	10.8	0.00046	66.0	< 0.00001	5.25	0.854	10.7	0.00002	0.00093	0.0002	0.00234	0.00089	0.003	0.00001
26-Dec-12	23																								
2-Jan-13	24	< 0.0005	0.011	0.00003	0.019	5.39	0.0501	< 0.01	0.00721	0.0004	< 0.009	8.25	0.00051	26.1	0.00007	3.77	0.784	10.3	0.00003	0.00120	0.0002	0.00226	0.00097	0.002	< 0.00001
9-Jan-13	25																								
16-Jan-13	26	< 0.0005	0.014	< 0.00002	0.021	5.44	0.0517	< 0.01	0.00679	0.0006	< 0.009	9.08	0.00067	49.9	< 0.00001	3.14	0.789	10.9	0.00003	0.00080	0.0002	0.00222	0.00120	0.002	< 0.00001
23-Jan-13	27																								
30-Jan-13	28	< 0.0005	0.018	0.00006	0.021	6.06	0.0548	< 0.01	0.00650	0.0004	< 0.009	9.26	0.00091	49.1	< 0.00001	3.49	0.884	10.5	0.00004	0.00086	0.0001	0.00225	0.00108	0.004	< 0.00001
6-Feb-13	29																								
13-Feb-13	30	0.0050	0.020	< 0.00002	0.020	5.52	0.0525	0.01	0.00767	0.0001	< 0.009	8.13	0.00051	33.8	< 0.00001	2.74	0.789	9.75	0.00002	0.00075	< 0.0001	0.00217	0.00086	< 0.001	0.00005
20-Feb-13	31																								
27-Feb-13	32	< 0.0005	0.012	0.00003	0.018	5.61	0.0534	< 0.01	0.00697	< 0.0001	< 0.009	7.89	0.00048	27.6	< 0.00001	2.56	0.807	9.89	0.00003	0.00091	< 0.0001	0.00222	0.00071	0.001	< 0.00001
6-Mar-13	33																								
13-Mar-13	34	< 0.0005	0.008	0.00007	0.017	5.70	0.0515	< 0.01	0.00757	0.0004	< 0.009	8.23	0.00048	28.0	< 0.00001	2.52	0.805	10.1	0.00003	0.00083	< 0.0001	0.00195	0.00070	0.003	< 0.00001

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	DO mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
22-Aug-12	1	400	170	7.46	323	44	#N/A	4.5	7.0	9	8.83	12.2	0.0721	< 0.0002	< 0.0002	0.00439	< 0.00002	< 0.00001	0.0010	< 0.000003	4.19	< 0.0005	0.000013
29-Aug-12	2	565	185	7.52	313	87	#N/A	3.3	9.6	21	9.05	22.3	0.116	0.0004	0.0013	0.0114	< 0.00002	< 0.00001	0.0045	0.000014	7.46	< 0.0005	0.000055
5-Sep-12	3	355	175	7.62	326	94	#N/A	4.8	12.3	23	8.78	25.0	0.111	< 0.0002	0.0003	0.0127	< 0.00002	< 0.00001	0.0047	< 0.000003	8.37	< 0.0005	0.000020
12-Sep-12	4	445	180	7.15	317	107	#N/A	3.8	14.0	25	8.95	29.5	0.0152	< 0.0002	0.0020	0.0153	< 0.00002	< 0.00001	0.0067	0.000005	9.89	< 0.0005	0.000024
19-Sep-12	5	350	70	7.66	#N/A	114					8.75												
26-Sep-12	6	420	210	7.51	316	123	#N/A	2.8	23.0	35	8.65	36.5	0.0247	< 0.0002	0.0026	0.0190	< 0.00002	< 0.00001	0.0073	0.000003	12.2	< 0.0005	0.000020
3-Oct-12	7	220	75	7.65	#N/A	124					8.85												
10-Oct-12	8	465	190	7.72	310	132	#N/A	4.7	29.5	36	9.03	40.1	0.0361	< 0.0002	0.0011	0.0210	< 0.00002	< 0.00001	0.0076	0.000003	13.3	< 0.0005	0.000031
17-Oct-12	9	50	70	7.72	#N/A	140					8.99												
24-Oct-12	10	840	195	7.62	312	141	#N/A	2.6	34.6	37	8.95	43.4	0.0705	< 0.0002	0.0009	0.0217	< 0.00002	< 0.00001	0.0080	0.000013	14.3	< 0.0005	0.000038
31-Oct-12	11	190	85	7.81	#N/A	136					8.64												
7-Nov-12	12	480	195	7.78	330	133	#N/A	5.1	36.9	27	8.88	46.8	0.0200	0.0004	0.0012	0.0229	< 0.00002	< 0.00001	0.0083	0.000009	15.3	< 0.0005	0.000038
14-Nov-12	13	390	190	8.00	#N/A	146					9.16												
21-Nov-12	14	580	190	7.85	315	136	#N/A	4.3	42.9	31	8.20	51.7	0.0259	0.0005	0.0015	0.0243	< 0.00002	< 0.00001	0.0082	0.000005	16.8	< 0.0005	0.000097
28-Nov-12	15	190	75	7.84	#N/A	150					8.50												
5-Dec-12	16	475	190	7.99	330	147	#N/A	8.7	53.4	25	8.67	56.1	0.0211	0.0007	0.0012	0.0232	< 0.00002	< 0.00001	0.0094	0.000006	18.2	< 0.0005	0.000004
12-Dec-12	17	320	60	7.83	#N/A	148					8.57												
19-Dec-12	18	380	195	7.86	333	141	#N/A	3.8	53.6	26	7.40	54.9	0.0295	0.0009	0.0016	0.0250	< 0.00002	< 0.00001	0.0108	0.000003	17.8	< 0.0005	0.000040
26-Dec-12	19	250	65	7.96	#N/A	151					8.25												
2-Jan-13	20	390	195	7.86	326	152	#N/A	5.9	59.4	19	8.07	53.6	0.0297	0.0010	0.0020	0.0257	< 0.00002	< 0.00001	0.0108	0.000004	17.0	< 0.0005	0.000022
9-Jan-13	21	360	75	7.83	#N/A	145					7.85												
16-Jan-13	22	370	185	7.84	311	150	#N/A	3.0	62.2	25	8.45	60.0	0.0273	0.0011	0.0021	0.0262	< 0.00002	< 0.00001	0.0119	0.000008	19.3	< 0.0005	0.000082
23-Jan-13	23	255	75	7.97	#N/A	154					5.71												
30-Jan-13	24	570	185	7.86	319	153	#N/A	4.1	58.4	29	5.64	63.8	0.0121	0.0009	0.0010	0.0251	< 0.00002	< 0.00001	0.0115	0.000012	20.2	< 0.0005	0.000050
6-Feb-13	25	250	70	7.81	#N/A	140					6.10												
13-Feb-13	26	430	170	7.94	313	146	#N/A	7.3	58.8	24	6.61	55.0	0.0123	0.0009	0.0008	0.0260	< 0.00002	< 0.00001	0.0109	0.000010	17.4	< 0.0005	0.000075
20-Feb-13	27	165	60	7.91	#N/A	146					5.75												
27-Feb-13	28	420	170	7.89	302	146	#N/A	6.2	64.5	25	4.96	56.5	0.0103	0.0011	0.0015	0.0259	< 0.00002	< 0.00001	0.0114	0.000006	17.9	< 0.0005	0.000069
6-Mar-13	29	195	75	7.91	#N/A	152					6.63												
13-Mar-13	30	435	175	7.85	321	146	#N/A	5.5	55.1	22	6.12	60.3	0.0084	0.0010	0.0013	0.0243	< 0.00002	< 0.00001	0.0098	0.000008	19.0	< 0.0005	0.000047
20-Mar-13	31	235	65	7.82	#N/A	175					7.23												
27-Mar-13	32	360	170	7.92	331	145	#N/A	8.0	59.2	19	6.47	59.4	0.0106	0.0010	0.0012	0.0244	< 0.00002	< 0.00001	0.0124	0.000070	18.5	< 0.0005	0.000065
3-Apr-13	33	190	70	7.89	#N/A	150					7.27												
10-Apr-13	34	430	165	7.88	342	142	#N/A	5.9	58.2	22	6.91	57.6	0.0095	0.0010	0.0014	0.0216	< 0.00002	< 0.00001	0.0114	0.000011	17.9	< 0.0005	0.000096
17-Apr-13	35	170	65	7.81	#N/A	190					7.35												
24-Apr-13	36	420	165	7.87	324	146	#N/A	7.4	58.1	19	7.20	57.2	0.0093	0.0010	0.0010	0.0245	< 0.00002	< 0.00001	0.0120	0.000011	17.6	< 0.0005	0.000080
1-May-13	37	220	85	7.93	#N/A	136					6.65												
8-May-13	38	430	175	7.86	346	133	#N/A	8.2	58.7	21	6.83	56.9	0.0094	0.0010	0.0017	0.0231	< 0.00002	< 0.00001	0.0123	0.000016	17.6	< 0.0005	0.000130
15-May-13	39	230	60	7.82	#N/A	163					6.85												
22-May-13	40	455	175	7.83	342	130	#N/A	9.1	58.5	20	6.82	56.2	0.0089	0.0011	0.0006	0.0208	< 0.00002	< 0.00001	0.0116	0.000011	17.4	< 0.0005	0.000031
29-May-13	41	200	65	7.91	#N/A	132					6.97												
5-Jun-13	42	440	195	7.90	363	136	#N/A	7.9	60.6	14	6.80	55.9	0.0093	0.0010	0.0010	0.0220	< 0.00002	< 0.00001	0.0132	0.000011	17.4	< 0.0005	0.000031
12-Jun-13	43																						
19-Jun-13	44																						
26-Jun-13	45																						
3-Jul-13	46	480	185	7.81	378	152	#N/A	6.0	60.3	15	8.94	61.9	0.0114	0.0011	0.0011	0.0234	< 0.00002	< 0.00001	0.0173	0.000016	19.0	< 0.0005	0.000038
10-Jul-13	47																						
17-Jul-13	48																						

Date	Cycle No.	Volume mL		pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	DO mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
		Input	Output																				
24-Jul-13	49																						
31-Jul-13	50	415	185	7.83	354	159	#N/A	6.0	61.3	18	7.60	66.6	0.0097	0.0011	0.0012	0.0236	< 0.00002	< 0.00001	0.0178	0.000014	20.4	< 0.0005	0.000085
7-Aug-13	51																						
14-Aug-13	52																						
21-Aug-13	53																						
28-Aug-13	54	500	200	7.92	359	158	#N/A	3.3	61.6		8.66												

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
22-Aug-12	1	0.0010	0.007	0.00006	< 0.001	0.419	0.0389	0.03	0.00189	0.0002	< 0.009	2.05	0.00033	0.12	< 0.00001	1.33	0.0457	7.20	< 0.00002	0.00046	0.0004	0.000008	0.00054	0.004	< 0.00001
29-Aug-12	2	0.0444	0.005	0.00162	0.002	0.883	0.0396	0.03	0.00743	< 0.0001	< 0.009	4.34	< 0.00004	3.40	0.00002	2.28	0.108	11.6	0.00003	0.00090	0.0002	0.000073	0.00071	0.029	< 0.00001
5-Sep-12	3	< 0.0005	0.003	< 0.00002	0.002	0.994	0.0390	< 0.01	0.00921	0.0003	< 0.009	5.90	0.00065	0.17	0.00002	2.41	0.132	12.1	0.00004	0.00020	0.0003	0.000049	0.00082	0.003	< 0.00001
12-Sep-12	4	< 0.0005	< 0.003	0.00003	0.002	1.17	0.0394	0.01	0.0129	0.0003	< 0.009	6.93	0.00070	2.74	0.00002	2.57	0.157	12.6	0.00006	0.00009	0.0002	0.00110	0.00036	0.003	0.00002
19-Sep-12	5																								
26-Sep-12	6	< 0.0005	< 0.003	< 0.00002	0.003	1.50	0.0407	< 0.01	0.0171	0.0004	< 0.009	7.81	0.00061	2.94	0.00001	2.48	0.201	15.4	0.00006	0.00013	0.0005	0.00012	0.00033	0.002	< 0.00001
3-Oct-12	7																								
10-Oct-12	8	0.0007	< 0.003	< 0.00002	0.003	1.67	0.0425	< 0.01	0.0201	0.0003	< 0.009	8.24	0.00046	2.05	< 0.00001	2.31	0.229	12.2	0.00007	0.00022	0.0004	0.00014	0.00030	0.002	< 0.00001
17-Oct-12	9																								
24-Oct-12	10	0.002	< 0.003	< 0.00002	0.003	1.85	0.0416	0.01	0.0218	0.0003	< 0.009	8.19	0.00044	2.04	< 0.00001	2.18	0.251	11.5	0.00004	0.00022	0.0003	0.000152	0.00053	0.002	< 0.00001
31-Oct-12	11																								
7-Nov-12	12	0.0008	< 0.003	0.00007	0.003	2.08	0.0587	0.01	0.0221	< 0.0001	< 0.009	8.04	0.00032	1.46	< 0.00001	2.14	0.272	10.7	0.00007	0.00026	0.0001	0.000193	0.00022	0.002	< 0.00001
14-Nov-12	13																								
21-Nov-12	14	0.0008	< 0.003	< 0.00002	0.004	2.34	0.0475	< 0.01	0.0210	0.0004	< 0.009	7.54	0.00039	1.46	0.00002	2.05	0.291	10.7	0.00007	0.00028	0.0002	0.000239	0.00033	0.003	< 0.00001
28-Nov-12	15																								
5-Dec-12	16	0.0007	< 0.003	< 0.00002	0.004	2.57	0.0534	< 0.01	0.0221	0.0001	< 0.009	8.28	0.00038	1.09	< 0.00001	1.79	0.315	9.98	0.00006	0.00021	0.0001	0.000233	0.00014	0.003	< 0.00001
12-Dec-12	17																								
19-Dec-12	18	0.0006	< 0.003	< 0.00002	0.004	2.52	0.0550	< 0.01	0.0238	< 0.0001	< 0.009	7.18	0.00044	0.97	< 0.00001	1.78	0.303	9.13	0.00007	0.00026	0.0002	0.000272	0.00014	0.003	< 0.00001
26-Dec-12	19																								
2-Jan-13	20	< 0.0005	< 0.003	< 0.00002	0.004	2.70	0.0588	< 0.01	0.0243	0.0004	< 0.009	7.33	0.00039	1.06	0.00003	1.70	0.317	8.94	0.00007	0.00038	0.0002	0.000310	0.00029	0.001	< 0.00001
9-Jan-13	21																								
16-Jan-13	22	0.0007	0.007	0.00002	0.005	2.89	0.0624	< 0.01	0.0235	0.0004	< 0.009	7.60	0.00040	1.25	< 0.00001	1.43	0.332	9.69	0.00007	0.00019	0.0002	0.000336	0.00030	0.002	< 0.00001
23-Jan-13	23																								
30-Jan-13	24	< 0.0005	< 0.003	< 0.00002	0.005	3.23	0.0672	< 0.01	0.0227	0.0003	0.011	7.92	0.00051	1.03	< 0.00001	1.59	0.369	8.87	0.00007	0.00031	< 0.0001	0.000335	0.00007	0.002	< 0.00001
6-Feb-13	25																								
13-Feb-13	26	0.0006	< 0.003	0.00002	0.004	2.83	0.0598	< 0.01	0.0230	< 0.0001	< 0.009	6.75	0.00034	0.99	< 0.00001	1.25	0.310	7.51	0.00006	0.00036	< 0.0001	0.000416	0.00013	0.001	< 0.00001
20-Feb-13	27																								
27-Feb-13	28	< 0.0005	< 0.003	< 0.00002	0.004	2.87	0.0585	< 0.01	0.0211	< 0.0001	< 0.009	6.58	0.00044	1.16	< 0.00001	1.14	0.316	7.32	0.00007	0.00030	< 0.0001	0.000341	0.00004	0.001	< 0.00001
6-Mar-13	29																								
13-Mar-13	30	0.0005	< 0.003	0.00002	0.004	3.12	0.0593	< 0.01	0.0219	0.0002	< 0.009	7.12	0.00045	1.16	< 0.00001	1.16	0.326	7.64	0.00007	0.00031	< 0.0001	0.000308	0.00005	< 0.001	< 0.00001
20-Mar-13	31																								
27-Mar-13	32	< 0.0005	< 0.003	< 0.00002	0.004	3.20	0.0629	< 0.01	0.0217	0.0003	< 0.009	6.71	0.00030	1.03	< 0.00001	1.14	0.325	6.97	0.00006	0.00026	< 0.0001	0.000346	0.00012	0.001	< 0.00001
3-Apr-13	33																								
10-Apr-13	34	< 0.0005	< 0.003	0.00006	0.004	3.13	0.0621	< 0.01	0.0200	0.0004	< 0.009	6.46	0.00019	1.12	< 0.00001	1.09	0.325	6.51	0.00005	0.00033	< 0.0001	0.000297	< 0.00003	< 0.001	< 0.00001
17-Apr-13	35																								
24-Apr-13	36	0.0006	< 0.003	0.00002	0.004	3.25	0.0624	< 0.01	0.0214	0.0003	< 0.009	6.48	0.00046	0.90	< 0.00001	1.00	0.327	6.57	0.00007	0.00042	< 0.0001	0.000360	0.00003	0.002	< 0.00001
1-May-13	37																								
8-May-13	38	< 0.0005	< 0.003	0.00002	0.004	3.15	0.0599	< 0.01	0.0203	0.0003	0.014	6.12	0.00036	0.87	< 0.00001	0.92	0.316	5.99	0.00006	0.00048	< 0.0001	0.000348	0.00010	0.002	< 0.00001
15-May-13	39																								
22-May-13	40	< 0.0005	< 0.003	0.00004	0.004	3.08	0.0551	< 0.01	0.0189	< 0.0001	< 0.009	5.53	0.00034	0.92	< 0.00001	0.88	0.300	5.69	0.00005	0.00134	< 0.0001	0.000306	0.00008	< 0.001	< 0.00001
29-May-13	41																								
5-Jun-13	42	< 0.0005	< 0.003	< 0.00002	0.004	3.04	0.0556	< 0.01	0.0183	0.0002	< 0.009	5.61	0.00032	0.95	< 0.00001	0.82	0.299	5.26	0.00006	0.00138	< 0.0001	0.000345	0.00008	0.001	< 0.00001
12-Jun-13	43																								
19-Jun-13	44																								
26-Jun-13	45																								
3-Jul-13	46	0.0011	< 0.003	0.00005	0.005	3.52	0.0582	< 0.01	0.0201	0.0004	0.010	6.11	0.00043	0.97	< 0.00001	0.87	0.338	5.89	0.00006	0.00144	< 0.0001	0.000336	0.00006	0.002	< 0.00001
10-Jul-13	47																								
17-Jul-13	48																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jul-13	49																								
31-Jul-13	50	< 0.0005	< 0.003	0.00004	0.005	3.82	0.0471	< 0.01	0.0228	0.0003	< 0.009	6.30	0.00042	0.88	< 0.00001	0.83	0.363	6.27	0.00006	0.00128	< 0.0001	0.000454	0.00005	< 0.001	< 0.00001
7-Aug-13	51																								
14-Aug-13	52																								
21-Aug-13	53																								
28-Aug-13	54																								

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
22-Aug-12	1	400	185	7.44	330	274	#N/A	7.2	32.9	86	6.53	87.2	0.0666	0.0015	0.0009	0.0528	< 0.00002	< 0.00001	0.0143	< 0.000003	28.9	0.0009	0.000052
29-Aug-12	2	565	190	7.68	360	809	#N/A	8.2	85.4	284	2.85	292	0.108	0.0029	0.0025	0.191	< 0.00002	< 0.00001	0.0362	0.000027	93.6	0.0008	0.000178
5-Sep-12	3	355	170	7.67	333	1242	#N/A	10.6	97.0	433	3.57	464	0.122	0.0026	0.0022	0.178	< 0.00002	< 0.00001	0.0452	0.000042	144	< 0.0005	0.000296
12-Sep-12	4	445	175	7.63	271	1409	#N/A	8.0	98.4	653	4.30	530	0.0182	0.0024	0.0033	0.120	< 0.00002	< 0.00001	0.0456	0.000037	164	0.0007	0.000333
19-Sep-12	5	350	70	7.64	#N/A	1306					2.36												
26-Sep-12	6	420	195	7.75	306	1121	#N/A	7.3	110.3	494	1.96	431	0.0364	0.0017	0.0024	0.0687	< 0.00002	< 0.00001	0.0481	0.000026	132	0.0007	0.000285
3-Oct-12	7	220	165	7.73	#N/A	988					4.26												
10-Oct-12	8	465	190	7.71	331	796	#N/A	8.5	117.6	273	5.50	290	0.0287	0.0011	0.0020	0.0447	< 0.00002	< 0.00001	0.0473	0.000018	88.5	0.0008	0.000189
17-Oct-12	9	50	70	7.71	#N/A	980					5.98												
24-Oct-12	10	840	205	7.85	322	626	#N/A	5.1	123.1	205	4.85	210	0.0581	0.0010	0.0018	0.0435	< 0.00002	< 0.00001	0.0426	0.000010	64.3	0.0007	0.000115
31-Oct-12	11	190	85	7.84	#N/A	570					4.85												
7-Nov-12	12	480	210	7.87	344	482	#N/A	5.9	125.0	102	3.85	171	0.0108	0.0009	0.0023	0.0569	< 0.00002	< 0.00001	0.0459	0.000013	52.5	< 0.0005	0.000086
14-Nov-12	13	390	195	7.91	#N/A	454					5.96												
21-Nov-12	14	580	250	7.87	340	278	#N/A	5.1	87.8	73	4.60	123	0.0178	0.0006	0.0027	0.0525	< 0.00002	< 0.00001	0.0303	0.000017	37.9	< 0.0005	0.000112
28-Nov-12	15	190	80	7.69	#N/A	990					4.15												
5-Dec-12	16	475	215	7.93	347	294	#N/A	9.5	104.3	54	1.88	101	0.0170	0.0011	0.0026	0.0619	< 0.00002	< 0.00001	0.0303	0.000028	32.1	< 0.0005	0.000046
12-Dec-12	17	320	50	7.93	#N/A	303					2.17												
19-Dec-12	18	380	190	7.97	337	292	#N/A	4.4	112.1	58	3.27	112	0.0219	0.0009	0.0036	0.0662	< 0.00002	< 0.00001	0.0405	0.000009	35.3	< 0.0005	0.000074
26-Dec-12	19	250	80	7.89	#N/A	320					4.10												
2-Jan-13	20	390	175	7.89	349	310	#N/A	6.5	113.9	49	2.94	110	0.0230	0.0007	0.0040	0.0630	< 0.00002	< 0.00001	0.0388	0.000008	33.9	< 0.0005	0.000065
9-Jan-13	21	360	80	7.69	#N/A	310					4.05												
16-Jan-13	22	370	200	7.94	318	294	#N/A	3.7	118.2	56	3.95	106	0.0169	0.0007	0.0041	0.0643	< 0.00002	< 0.00001	0.0416	0.000022	33.3	< 0.0005	0.000074
23-Jan-13	23	255	65	7.93	#N/A	299					3.44												
30-Jan-13	24	570	205	7.91	336	301	#N/A	4.3	110.9	48	3.42	120	0.0068	0.0005	0.0044	0.0626	< 0.00002	< 0.00001	0.0450	0.000011	37.6	< 0.0005	0.000117
6-Feb-13	25	250	80	7.68	#N/A	305					3.61												
13-Feb-13	26	430	205	7.91	335	287	#N/A	9.8	109.4	50	3.75	102	0.0049	0.0005	0.0038	0.0683	< 0.00002	< 0.00001	0.0444	< 0.000003	31.8	< 0.0005	0.000115
20-Feb-13	27	165	55	7.94	333	293					3.20												
27-Feb-13	28	420	155	7.9	322	287	#N/A	7.7	121.9	46	3.95	103	0.0037	0.0004	0.0038	0.0664	< 0.00002	< 0.00001	0.0423	0.000003	32.4	< 0.0005	0.000242
6-Mar-13	29	195	70	7.91	#N/A	293					3.80												
13-Mar-13	30	435	205	7.91	335	273	#N/A	7.1	101.5	40	3.54	108	0.0029	0.0004	0.0035	0.0693	< 0.00002	< 0.00001	0.0378	0.000008	33.7	< 0.0005	0.000071
20-Mar-13	31	235	70	7.93	#N/A	289					2.12												
27-Mar-13	32	360	175	7.88	347	264	#N/A	10.2	101.2	36	1.97	108	0.0049	0.0003	0.0032	0.0625	< 0.00002	< 0.00001	0.0425	0.000004	33.5	< 0.0005	0.000036
3-Apr-13	33	190	75	7.91	#N/A	265					2.01												
10-Apr-13	34	430	190	7.91	334	255	#N/A	7.3	100.2	40	3.25	96.6	0.0031	0.0003	0.0028	0.0594	< 0.00002	< 0.00001	0.0380	0.000015	30.0	< 0.0005	0.000081
17-Apr-13	35	170	75	7.93	#N/A	260					3.56												
24-Apr-13	36	420	200	7.88	327	251	#N/A	9.6	99.1	33	2.45	95.0	0.0026	0.0003	0.0028	0.0714	< 0.00002	< 0.00001	0.0412	0.000010	29.3	< 0.0005	0.000070
1-May-13	37	220	85	7.90	#N/A	247					4.18												
8-May-13	38	430	195	7.84	361	235	#N/A	10.0	98.2	38	4.15	95.3	0.0037	0.0003	0.0027	0.0638	< 0.00002	< 0.00001	0.0400	0.000036	29.6	< 0.0005	0.000102
15-May-13	39	230	65	7.61	#N/A	255					3.89												
22-May-13	40	455	260	7.83	347	223	#N/A	10.3	97.0	34	3.80	91.9	0.0030	0.0003	0.0020	0.0607	< 0.00002	< 0.00001	0.0378	0.000020	28.7	< 0.0005	0.000015
29-May-13	41	200	80	7.90	#N/A	232					3.64												
5-Jun-13	42	440	185	7.88	363	236	#N/A	9.7	97.8	30	2.60	94.6	0.0022	0.0002	0.0024	0.0652	< 0.00002	< 0.00001	0.0374	0.000005	29.6	< 0.0005	0.000015
12-Jun-13	43																						
19-Jun-13	44																						
26-Jun-13	45																						
3-Jul-13	46	480	205	7.85	374	249	#N/A	7.2	95.3	27	4.20	96.7	0.0037	0.0003	0.0023	0.0670	< 0.00002	< 0.00001	0.0460	0.000009	30.2	< 0.0005	0.000030
10-Jul-13	47																						
17-Jul-13	48																						

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
24-Jul-13	49																						
31-Jul-13	50	415	200	7.83	348	247	#N/A	8.1	91.3	23	3.55	99.3	0.0038	0.0003	0.0024	0.0627	< 0.00002	< 0.00001	0.0479	0.000007	31.0	< 0.0005	0.000099
7-Aug-13	51																						
14-Aug-13	52																						
21-Aug-13	53																						
28-Aug-13	54	500	245	7.92	334	230	#N/A	4.3	86.9		4.15												

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
22-Aug-12	1	0.0036	0.005	0.00014	0.006	3.62	0.0466	0.01	0.0779	0.0006	< 0.009	17.2	0.00243	0.61	0.00011	4.75	0.577	37.7	0.00010	0.00148	0.0007	0.000462	0.00087	0.014	< 0.00001
29-Aug-12	2	0.0024	0.019	0.00017	0.021	14.2	0.231	0.07	0.133	0.0010	< 0.009	49.4	0.00551	2.72	0.00133	16.6	1.91	118	0.00033	0.00071	0.0006	0.00162	0.00096	0.007	< 0.00001
5-Sep-12	3	0.0039	< 0.003	0.00064	0.031	25.4	0.353	< 0.01	0.126	0.0020	< 0.009	73.9	0.00316	1.55	0.00114	26.9	2.86	195	0.00046	0.00028	0.0003	0.00283	0.00126	0.005	0.00004
12-Sep-12	4	0.0047	< 0.003	0.00796	0.034	29.5	0.436	0.01	0.119	0.0039	< 0.009	77.2	0.00118	1.90	0.00241	31.1	2.90	236	0.00041	0.00030	0.0006	0.00345	0.00077	0.005	0.00003
19-Sep-12	5																								
26-Sep-12	6	0.0015	< 0.003	< 0.00002	0.034	24.8	0.332	0.01	0.106	0.0030	0.012	70.3	0.00061	2.96	0.00016	26.6	2.27	264	0.00027	0.00315	0.0007	0.00250	0.00057	0.008	0.00005
3-Oct-12	7																								
10-Oct-12	8	0.0012	0.008	< 0.00002	0.031	16.7	0.225	< 0.01	0.109	0.0013	< 0.009	52.2	0.00032	2.42	0.00002	16.6	1.63	131	0.00013	0.00019	0.0005	0.00160	0.00045	0.003	0.00002
17-Oct-12	9																								
24-Oct-12	10	0.0013	0.014	< 0.00002	0.028	12.1	0.174	0.01	0.111	0.0012	0.011	42.5	0.00015	2.28	< 0.00001	11.1	1.34	65.6	0.00002	0.00028	0.0009	0.00107	0.00059	0.003	< 0.00001
31-Oct-12	11																								
7-Nov-12	12	0.0009	0.010	0.00002	0.031	9.80	0.159	0.02	0.127	0.0003	< 0.009	35.9	0.00013	2.13	< 0.00001	8.12	1.33	43.6	0.00004	0.00023	0.0004	0.000651	0.00041	0.002	0.00003
14-Nov-12	13																								
21-Nov-12	14	0.0010	< 0.003	< 0.00002	0.022	6.77	0.102	0.01	0.0978	0.0006	< 0.009	24.9	0.00020	1.77	0.00003	4.96	1.04	26.5	0.00006	0.00008	0.0003	0.000616	0.00039	0.003	0.00002
28-Nov-12	15																								
5-Dec-12	16	0.0010	< 0.003	< 0.00002	0.020	5.15	0.112	< 0.01	0.0932	0.0007	< 0.009	22.1	0.00024	1.36	< 0.00001	3.35	0.925	17.9	0.00021	0.00028	0.0005	0.000964	0.00042	0.003	0.00001
12-Dec-12	17																								
19-Dec-12	18	0.0009	0.003	0.00002	0.025	5.69	0.128	< 0.01	0.131	0.0004	< 0.009	23.1	0.00012	1.45	< 0.00001	3.88	1.04	19.9	0.00012	0.00225	0.0002	0.000771	0.00017	0.003	0.00003
26-Dec-12	19																								
2-Jan-13	20	< 0.0005	< 0.003	< 0.00002	0.024	6.12	0.125	< 0.01	0.122	0.0007	< 0.009	24.3	0.00015	2.11	0.00003	3.89	1.16	19.9	0.00006	0.00034	0.0003	0.000627	0.00046	0.002	0.00001
9-Jan-13	21																								
16-Jan-13	22	0.0007	< 0.003	< 0.00002	0.027	5.55	0.117	< 0.01	0.130	0.0008	0.012	23.4	0.00011	1.76	< 0.00001	3.10	1.06	18.6	0.00004	0.00015	0.0003	0.000491	0.00033	0.002	< 0.00001
23-Jan-13	23																								
30-Jan-13	24	< 0.0005	0.009	0.00010	0.030	6.35	0.139	< 0.01	0.131	0.0006	< 0.009	24.8	0.00011	1.91	< 0.00001	3.60	1.24	17.5	< 0.00002	0.00003	0.0001	0.000386	0.00010	0.003	< 0.00001
6-Feb-13	25																								
13-Feb-13	26	< 0.0005	0.014	< 0.00002	0.030	5.52	0.132	< 0.01	0.146	0.0002	0.010	20.6	0.00006	1.83	< 0.00001	2.67	1.07	14.9	< 0.00002	0.00004	0.0001	0.000230	0.00010	0.002	< 0.00001
20-Feb-13	27																								
27-Feb-13	28	0.0008	0.020	0.00055	0.027	5.43	0.136	< 0.01	0.139	0.0001	0.012	19.6	0.00006	1.92	< 0.00001	2.45	1.08	14.3	< 0.00002	0.00005	< 0.0001	0.000194	< 0.00003	0.001	0.00001
6-Mar-13	29																								
13-Mar-13	30	0.0015	0.025	0.00002	0.026	5.78	0.143	< 0.01	0.131	0.0004	< 0.009	21.6	0.00006	1.81	< 0.00001	2.54	1.18	14.2	< 0.00002	0.00011	< 0.0001	0.000108	0.00009	0.002	< 0.00001
20-Mar-13	31																								
27-Mar-13	32	< 0.0005	0.038	< 0.00002	0.025	5.83	0.136	< 0.01	0.121	0.0003	< 0.009	20.3	< 0.00004	2.02	< 0.00001	2.44	1.16	13.1	< 0.00002	0.00009	< 0.0001	0.000082	0.00011	0.001	< 0.00001
3-Apr-13	33																								
10-Apr-13	34	< 0.0005	0.030	0.00008	0.024	5.24	0.125	< 0.01	0.115	0.0003	< 0.009	18.1	< 0.00004	2.02	< 0.00001	2.15	1.07	11.1	< 0.00002	0.00012	< 0.0001	0.000065	< 0.00003	0.001	< 0.00001
17-Apr-13	35																								
24-Apr-13	36	0.0005	0.026	0.00003	0.027	5.32	0.122	< 0.01	0.125	0.0003	< 0.009	18.0	0.00007	1.90	< 0.00001	2.06	1.06	11.0	< 0.00002	0.00003	< 0.0001	0.000095	< 0.00003	0.001	< 0.00001
1-May-13	37																								
8-May-13	38	< 0.0005	0.021	0.00002	0.024	5.18	0.116	< 0.01	0.112	0.0003	< 0.009	16.9	< 0.00004	1.80	< 0.00001	1.80	1.04	10.2	< 0.00002	0.00008	< 0.0001	0.000087	0.00013	< 0.001	< 0.00001
15-May-13	39																								
22-May-13	40	< 0.0005	0.015	0.00020	0.021	4.92	0.102	< 0.01	0.103	0.0001	< 0.009	14.5	< 0.00004	1.82	< 0.00001	1.58	0.960	9.67	< 0.00002	0.00005	< 0.0001	0.000077	0.00011	0.003	< 0.00001
29-May-13	41																								
5-Jun-13	42	< 0.0005	0.019	< 0.00002	0.022	5.00	0.104	< 0.01	0.107	0.0003	< 0.009	15.0	< 0.00004	1.95	< 0.00001	1.59	0.991	9.34	< 0.00002	0.00009	< 0.0001	0.000090	0.00008	< 0.001	< 0.00001
12-Jun-13	43																								
19-Jun-13	44																								
26-Jun-13	45																								
3-Jul-13	46	< 0.0005	0.043	0.00021	0.021	5.19	0.119	< 0.01	0.102	0.0004	< 0.009	14.7	0.00007	1.92	< 0.00001	1.69	1.01	9.55	< 0.00002	0.00008	< 0.0001	0.000093	0.00008	< 0.001	< 0.00001
10-Jul-13	47																								
17-Jul-13	48																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jul-13	49																								
31-Jul-13	50	< 0.0005	0.023	< 0.00002	0.021	5.29	0.123	< 0.01	0.100	0.0004	< 0.009	14.2	0.00010	2.00	< 0.00001	1.52	1.02	9.47	< 0.00002	0.00015	< 0.0001	0.000146	0.00005	< 0.001	0.00001
7-Aug-13	51																								
14-Aug-13	52																								
21-Aug-13	53																								
28-Aug-13	54																								

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
22-Aug-12	1	320	170	7.65	280	31	#N/A	4.4	8.2	6	6.15	7.0	0.0871	< 0.0002	< 0.0002	0.00464	< 0.00002	< 0.00001	0.0011	0.000005	2.52	< 0.0005	0.000012
29-Aug-12	2	445	175	7.52	284	52	#N/A	3.2	8.8	10	7.50	10.1	0.0815	< 0.0002	0.0009	0.00898	< 0.00002	< 0.00001	0.0027	0.000006	3.55	< 0.0005	0.000020
5-Sep-12	3	355	160	7.69	274	68	#N/A	4.4	11.3	15	6.09	13.8	0.133	< 0.0002	< 0.0002	0.0103	< 0.00002	< 0.00001	0.0030	0.000015	4.76	< 0.0005	0.000019
12-Sep-12	4	420	195	7.52	247	128	#N/A	4.4	17.4	32	5.29	31.4	0.0171	0.0005	0.0007	0.0160	< 0.00002	< 0.00001	0.0056	0.000008	10.5	< 0.0005	0.000031
19-Sep-12	5	100	50	7.75	#N/A	157					4.82												
26-Sep-12	6	370	160	7.64	270	127	#N/A	3.2	29.1	33	4.84	37.3	0.0313	0.0006	0.0007	0.0189	< 0.00002	< 0.00001	0.0061	< 0.000003	12.8	< 0.0005	0.000026
3-Oct-12	7	95	50	7.68	#N/A	170					5.05												
10-Oct-12	8	315	180	7.77	297	148	#N/A	5.9	40.4	32	5.29	45.0	0.0420	0.0007	0.0013	0.0227	< 0.00002	< 0.00001	0.0081	0.000006	15.4	< 0.0005	0.000039
17-Oct-12	9	120	50	7.73	#N/A	190					5.77												
24-Oct-12	10	395	185	7.73	297	155	#N/A	2.9	48.0	35	5.02	48.3	0.0741	0.0008	0.0010	0.0253	< 0.00002	< 0.00001	0.0079	0.000015	16.6	< 0.0005	0.000037
31-Oct-12	11	100	150	7.85	#N/A	171					4.93												
7-Nov-12	12	480	195	7.86	329	162	#N/A	5.1	58.2	26	4.64	57.6	0.0173	0.0011	0.0012	0.0308	< 0.00002	< 0.00001	0.0103	0.000013	19.7	< 0.0005	0.000033
14-Nov-12	13	100	50	7.98	#N/A	174					6.67												
21-Nov-12	14	445	190	7.87	331	169	#N/A	5.1	63.6	31	4.10	66.4	0.0243	0.0011	0.0059	0.0336	< 0.00002	< 0.00001	0.0094	0.000008	22.7	< 0.0005	0.000093
28-Nov-12	15	200	70	7.93	#N/A	190					6.19												
5-Dec-12	16	405	195	7.99	335	170	#N/A	8.7	67.6	26	5.66	65.2	0.0171	0.0012	0.0040	0.0305	< 0.00002	< 0.00001	0.0097	0.000014	22.2	< 0.0005	0.000002
12-Dec-12	17	125	55	7.89	#N/A	171					4.56												
19-Dec-12	18	410	180	7.91	331	153	#N/A	3.8	64.3	23	4.84	62.5	0.0284	0.0012	0.0034	0.0309	< 0.00002	< 0.00001	0.0113	0.000004	21.1	< 0.0005	0.000039
26-Dec-12	19	370	75	7.96	#N/A	162					5.75												
2-Jan-13	20	480	190	7.89	337	160	#N/A	5.4	65.0	20	4.54	51.5	0.0270	0.0013	0.0034	0.0297	< 0.00002	< 0.00001	0.0101	0.000032	17.0	< 0.0005	0.000047
9-Jan-13	21	290	75	7.72	#N/A	175					6.50												
16-Jan-13	22	470	195	7.88	317	152	#N/A	3.6	66.4	23	6.28	58.4	0.0237	0.0013	0.0030	0.0288	< 0.00002	< 0.00001	0.0103	0.000016	19.5	< 0.0005	0.000037
23-Jan-13	23	230	70	7.97	#N/A	150					4.72												
30-Jan-13	24	465	185	7.86	325	151	#N/A	4.1	61.6	22	6.00	61.5	0.0107	0.0011	0.0032	0.0279	< 0.00002	< 0.00001	0.0107	0.000012	20.2	< 0.0005	0.000060
6-Feb-13	25	180	70	7.81	#N/A	165					4.80												
13-Feb-13	26	485	170	7.92	328	148	#N/A	7.6	61.3	24	6.54	56.8	0.0109	0.0011	0.0027	0.0288	< 0.00002	< 0.00001	0.0102	0.000008	18.6	< 0.0005	0.000058
20-Feb-13	27	225	65	7.93	#N/A	147					5.75												
27-Feb-13	28	400	175	7.92	312	146	#N/A	6.6	67.7	18	6.25	59.1	0.0082	0.0012	0.0026	0.0268	< 0.00002	< 0.00001	0.0102	0.000004	19.4	< 0.0005	0.000079
6-Mar-13	29	290	70	7.88	#N/A	149					6.58												
13-Mar-13	30	460	180	7.82	326	143	#N/A	4.8	58.8	19	5.86	58.2	0.0071	0.0011	0.0020	0.0255	< 0.00002	< 0.00001	0.0089	0.000009	19.0	< 0.0005	0.000048
20-Mar-13	31	200	65	7.81	#N/A	144					5.68												
27-Mar-13	32	515	165	7.90	342	142	#N/A	7.8	59.4	17	5.24	58.7	0.0097	0.0010	0.0020	0.0254	< 0.00002	< 0.00001	0.0105	0.000012	19.1	< 0.0005	0.000052
3-Apr-13	33	270	75	7.89	#N/A	140					6.30												
10-Apr-13	34	640	175	7.87	337	136	#N/A	5.6	55.9	20	6.25	55.0	0.0081	0.0010	0.0019	0.0218	< 0.00002	0.00001	0.0093	0.000012	17.8	< 0.0005	0.000091
17-Apr-13	35	210	70	7.83	#N/A	145					6.06												
24-Apr-13	36	400	165	7.89	326	139	#N/A	7.4	57.0	17	5.43	54.7	0.0088	0.0010	0.0026	0.0256	< 0.00002	< 0.00001	0.0104	0.000009	17.5	< 0.0005	0.000071
1-May-13	37	220	75	7.89	#N/A	133					5.70												
8-May-13	38	460	175	7.90	347	131	#N/A	8.9	57.7	21	6.25	55.5	0.0095	0.0010	0.0020	0.0234	< 0.00002	< 0.00001	0.0104	0.000011	17.8	< 0.0005	0.000121
15-May-13	39	150	60	7.81	#N/A	140					6.18												
22-May-13	40	475	170	7.88	344	125	#N/A	8.5	58.6	17	5.90	53.9	0.0088	0.0010	0.0016	0.0210	< 0.00002	< 0.00001	0.0100	0.000010	17.4	< 0.0005	0.000024
29-May-13	41	285	80	7.93	#N/A	127					5.18												
5-Jun-13	42	450	180	7.88	366	130	#N/A	7.8	56.8	14	5.88	54.3	0.0093	0.0009	0.0017	0.0214	< 0.00002	< 0.00001	0.0104	0.000009	17.5	< 0.0005	0.000024
12-Jun-13	43																						
19-Jun-13	44																						
26-Jun-13	45																						
3-Jul-13	46	480	185	7.82	376	144	#N/A	6.3	59.6	14	6.55	57.3	0.0118	0.0011	0.0014	0.0224	< 0.00002	< 0.00001	0.0145	0.000015	18.2	< 0.0005	0.000032
10-Jul-13	47																						
17-Jul-13	48																						

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	DO mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jul-13	49																						
31-Jul-13	50	450	185	7.82	350	152	#N/A	6.3	59.9	17	6.45	64.2	0.0096	0.0011	0.0018	0.0229	< 0.00002	< 0.00001	0.0156	0.000011	20.3	< 0.0005	0.000116
7-Aug-13	51																						
14-Aug-13	52																						
21-Aug-13	53																						
28-Aug-13	54	465	185	7.91	341	149	#N/A	3.4	58.2		5.75												

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
22-Aug-12	1	0.0013	0.013	0.00007	< 0.001	0.164	0.0343	0.02	0.00392	0.0001	< 0.009	1.94	0.00012	33.3	< 0.00001	0.70	0.0269	3.70	< 0.00002	0.00257	0.0003	0.000010	0.00067	0.003	< 0.00001
29-Aug-12	2	0.0033	0.005	0.00014	< 0.001	0.302	0.0407	< 0.01	0.00618	0.0002	< 0.009	3.35	0.00023	33.2	0.00002	1.17	0.0475	5.61	0.00003	0.00217	0.0002	0.000027	0.00054	0.006	< 0.00001
5-Sep-12	3	0.0006	< 0.003	0.00022	0.001	0.474	0.0387	< 0.01	0.00703	0.0004	< 0.009	4.83	0.00025	32.0	0.00003	1.56	0.0738	7.47	0.00005	0.00179	0.0003	0.000035	0.00085	0.010	< 0.00001
12-Sep-12	4	0.0013	< 0.003	0.00011	0.002	1.27	0.0486	< 0.01	0.0160	0.0005	< 0.009	7.31	0.00033	53.7	0.00015	2.37	0.182	13.0	0.00008	0.00164	0.0003	0.000177	0.00035	0.004	< 0.00001
19-Sep-12	5																								
26-Sep-12	6	< 0.0005	< 0.003	< 0.00002	0.003	1.30	0.0570	< 0.01	0.0198	0.0004	< 0.009	8.00	0.00037	67.0	< 0.00001	2.12	0.209	11.5	0.00008	0.00178	0.0009	0.00011	0.00032	0.003	< 0.00001
3-Oct-12	7																								
10-Oct-12	8	0.0008	< 0.003	< 0.00002	0.003	1.57	0.0744	< 0.01	0.0231	0.0004	< 0.009	9.04	0.00025	44.5	< 0.00001	2.11	0.267	11.7	0.00010	0.00185	0.0004	0.00016	0.00041	0.005	< 0.00001
17-Oct-12	9																								
24-Oct-12	10	0.0010	< 0.003	0.00003	0.003	1.65	0.0823	0.01	0.0250	0.0005	< 0.009	8.89	0.00028	46.7	< 0.00001	1.92	0.286	10.4	0.00007	0.00175	0.0004	0.000171	0.00063	0.005	< 0.00001
31-Oct-12	11																								
7-Nov-12	12	0.0008	< 0.003	< 0.00002	0.004	2.01	0.120	0.01	0.0285	< 0.0001	< 0.009	8.70	0.00023	51.6	< 0.00001	1.91	0.346	9.75	0.00011	0.00153	0.0001	0.000240	0.00034	0.002	< 0.00001
14-Nov-12	13																								
21-Nov-12	14	0.0012	< 0.003	< 0.00002	0.005	2.34	0.122	0.01	0.0263	0.0004	< 0.009	8.89	0.00024	39.8	0.00002	2.05	0.373	10.7	0.00010	0.00158	0.0002	0.000318	0.00032	0.003	< 0.00001
28-Nov-12	15																								
5-Dec-12	16	0.0007	< 0.003	< 0.00002	0.005	2.41	0.115	< 0.01	0.0256	0.0002	< 0.009	9.43	0.00032	32.6	< 0.00001	1.82	0.370	9.67	0.00010	0.00135	< 0.0001	0.000309	0.00023	0.002	< 0.00001
12-Dec-12	17																								
19-Dec-12	18	0.0009	0.004	< 0.00002	0.005	2.38	0.103	< 0.01	0.0279	< 0.0001	< 0.009	8.28	0.00023	24.7	< 0.00001	1.85	0.361	9.11	0.00009	0.00166	0.0002	0.000322	0.00015	0.003	< 0.00001
26-Dec-12	19																								
2-Jan-13	20	0.0008	< 0.003	0.00003	0.005	2.19	0.0863	< 0.01	0.0265	0.0003	0.010	7.31	0.00026	37.5	0.00002	1.49	0.321	7.77	0.00009	0.00141	0.0002	0.000331	0.00029	0.004	< 0.00001
9-Jan-13	21																								
16-Jan-13	22	0.0005	< 0.003	< 0.00002	0.005	2.38	0.0869	< 0.01	0.0258	0.0004	< 0.009	7.74	0.00028	38.8	< 0.00001	1.29	0.335	8.64	0.00008	0.00126	0.0002	0.000345	0.00030	0.001	< 0.00001
23-Jan-13	23																								
30-Jan-13	24	< 0.0005	< 0.003	0.00005	0.006	2.68	0.0921	< 0.01	0.0252	0.0003	< 0.009	8.00	0.00036	24.7	< 0.00001	1.45	0.368	8.03	0.00009	0.00150	0.0002	0.000371	0.00008	0.001	< 0.00001
6-Feb-13	25																								
13-Feb-13	26	0.0016	< 0.003	0.00003	0.005	2.51	0.0851	< 0.01	0.0256	< 0.0001	< 0.009	7.25	0.00032	25.3	< 0.00001	1.25	0.331	7.37	0.00008	0.00122	< 0.0001	0.000358	0.00008	0.001	< 0.00001
20-Feb-13	27																								
27-Feb-13	28	0.0006	< 0.003	0.00009	0.005	2.59	0.0851	< 0.01	0.0223	< 0.0001	< 0.009	7.20	0.00034	19.5	< 0.00001	1.14	0.336	7.28	0.00008	0.00115	< 0.0001	0.000366	< 0.00003	0.001	< 0.00001
6-Mar-13	29																								
13-Mar-13	30	< 0.0005	< 0.003	< 0.00002	0.005	2.63	0.0799	< 0.01	0.0224	0.0002	< 0.009	7.30	0.00042	17.6	< 0.00001	1.08	0.335	6.95	0.00008	0.00101	< 0.0001	0.000306	0.00006	< 0.001	< 0.00001
20-Mar-13	31																								
27-Mar-13	32	0.0005	< 0.003	< 0.00002	0.005	2.71	0.0756	< 0.01	0.0229	0.0002	< 0.009	6.89	0.00020	14.6	< 0.00001	1.05	0.328	6.50	0.00007	0.00096	< 0.0001	0.000329	0.00006	0.001	< 0.00001
3-Apr-13	33																								
10-Apr-13	34	< 0.0005	< 0.003	0.00004	0.005	2.58	0.0719	< 0.01	0.0207	0.0003	< 0.009	6.46	0.00021	13.1	< 0.00001	0.93	0.317	5.98	0.00007	0.00100	< 0.0001	0.000290	0.00004	0.002	< 0.00001
17-Apr-13	35																								
24-Apr-13	36	0.0006	< 0.003	0.00003	0.005	2.68	0.0724	< 0.01	0.0234	0.0003	< 0.009	6.41	0.00027	8.43	< 0.00001	0.88	0.319	6.04	0.00008	0.00105	< 0.0001	0.000367	0.00003	0.002	< 0.00001
1-May-13	37																								
8-May-13	38	< 0.0005	< 0.003	< 0.00002	0.005	2.65	0.0703	< 0.01	0.0214	0.0003	< 0.009	6.22	0.00029	8.77	< 0.00001	0.88	0.311	5.68	0.00007	0.00089	< 0.0001	0.000327	0.00008	0.001	< 0.00001
15-May-13	39																								
22-May-13	40	< 0.0005	< 0.003	< 0.00002	0.005	2.55	0.0632	< 0.01	0.0206	0.0001	< 0.009	5.53	0.00023	9.41	< 0.00001	0.76	0.292	5.26	0.00006	0.00154	< 0.0001	0.000292	0.00007	< 0.001	< 0.00001
29-May-13	41																								
5-Jun-13	42	< 0.0005	< 0.003	< 0.00002	0.005	2.57	0.0618	< 0.01	0.0204	0.0002	< 0.009	5.68	0.00023	8.48	< 0.00001	0.72	0.295	4.93	0.00006	0.00170	< 0.0001	0.000317	0.00005	0.001	< 0.00001
12-Jun-13	43																								
19-Jun-13	44																								
26-Jun-13	45																								
3-Jul-13	46	0.0009	< 0.003	0.00005	0.005	2.86	0.0613	< 0.01	0.0215	0.0004	< 0.009	5.94	0.00026	7.45	< 0.00001	0.78	0.318	5.37	0.00005	0.00167	< 0.0001	0.000305	0.00009	0.002	< 0.00001
10-Jul-13	47																								
17-Jul-13	48																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jul-13	49																								
31-Jul-13	50	< 0.0005	< 0.003	< 0.00002	0.006	3.26	0.0632	< 0.01	0.0253	0.0003	< 0.009	6.39	0.00029	2.21	< 0.00001	0.74	0.356	5.94	0.00006	0.00155	< 0.0001	0.000394	0.00005	0.002	< 0.00001
7-Aug-13	51																								
14-Aug-13	52																								
21-Aug-13	53																								
28-Aug-13	54																								

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
22-Aug-12	1	320	140	7.37	313	239	#N/A	5.7	28.5	84	5.30	74.0	0.107	0.0015	0.0007	0.0769	< 0.00002	0.00002	0.0175	0.000004	24.6	0.0009	0.000035
29-Aug-12	2	445	200	7.66	318	863	#N/A	7.1	77.4	283	2.85	306	0.0660	0.0025	0.0024	0.202	< 0.00002	< 0.00001	0.0378	0.000026	98.3	< 0.0005	0.000174
5-Sep-12	3	355	190	7.63	304	1249	#N/A	9.5	87.4	460	3.21	477	0.0282	0.0027	0.0023	0.189	< 0.00002	< 0.00001	0.0409	0.000043	149	< 0.0005	0.000247
12-Sep-12	4	420	220	7.72	242	1428	#N/A	9.1	90.9	582	1.74	516	0.0150	0.0020	0.0027	0.130	< 0.00002	< 0.00001	0.0379	0.000080	160	0.0005	0.000286
19-Sep-12	5	100	50	7.54	#N/A	1309					1.96												
26-Sep-12	6	370	180	7.78	280	1159	#N/A	6.3	105.2	477	1.24	469	0.0296	0.0017	0.0023	0.0790	< 0.00002	< 0.00001	0.0429	0.000015	145	0.0006	0.000264
3-Oct-12	7	95	50	7.64	#N/A	1036					1.49												
10-Oct-12	8	315	165	7.71	309	886	#N/A	9.6	114.6	311	1.69	315	0.0309	0.0009	0.0028	0.0538	< 0.00002	< 0.00001	0.0459	0.000022	96.3	0.0008	0.000209
17-Oct-12	9	120	50	7.81	#N/A	920					2.07												
24-Oct-12	10	395	210	7.84	300	722	#N/A	6.6	121.6	235	1.62	241	0.0730	0.0007	0.0022	0.0452	< 0.00002	< 0.00001	0.0433	0.000016	74.0	0.0009	0.000140
31-Oct-12	11	100	50	7.80	#N/A	642					1.71												
7-Nov-12	12	480	185	7.89	330	565	#N/A	7.1	124.4	178	1.37	203	0.0120	0.0006	0.0022	0.0472	< 0.00002	< 0.00001	0.0457	0.000014	62.2	< 0.0005	0.000083
14-Nov-12	13	100	50	7.95	#N/A	530					1.86												
21-Nov-12	14	445	205	7.91	331	360	#N/A	5.6	101.2	97	2.50	143	0.0197	0.0006	0.0035	0.0475	< 0.00002	< 0.00001	0.0343	0.000021	44.6	0.0010	0.000133
28-Nov-12	15	200	90	7.83	#N/A	930					2.66												
5-Dec-12	16	405	200	7.93	343	312	#N/A	9.8	105.1	62	2.68	115	0.0137	0.0010	0.0040	0.0457	< 0.00002	< 0.00001	0.0299	0.000018	36.5	< 0.0005	0.000044
12-Dec-12	17	125	60	7.92	#N/A	320					1.26												
19-Dec-12	18	410	220	7.94	331	281	#N/A	4.9	104.3	51	1.51	107	0.0204	0.0011	0.0040	0.0486	< 0.00002	< 0.00001	0.0382	0.000022	34.0	< 0.0005	0.000064
26-Dec-12	19	370	170	7.88	#N/A	281					2.75												
2-Jan-13	20	480	255	7.87	336	251	#N/A	5.6	93.6	37	1.31	78.9	0.0237	0.0015	0.0046	0.0432	< 0.00002	< 0.00001	0.0273	0.000025	25.0	< 0.0005	0.000046
9-Jan-13	21	290	195	7.71	#N/A	250					5.25												
16-Jan-13	22	470	220	7.91	318	251	#N/A	3.9	103.8	44	3.17	89.7	0.0184	0.0012	0.0044	0.0463	< 0.00002	< 0.00001	0.0328	0.000020	28.6	< 0.0005	0.000063
23-Jan-13	23	230	100	7.90	#N/A	265					2.95												
30-Jan-13	24	465	205	7.92	320	260	#N/A	5.0	98.1	41	3.31	98.1	0.0061	0.0009	0.0044	0.0481	< 0.00002	< 0.00001	0.0342	0.000018	31.1	< 0.0005	0.000066
6-Feb-13	25	180	85	7.72	#N/A	245					2.65												
13-Feb-13	26	485	175	7.94	332	253	#N/A	8.3	98.4	44	3.40	89.7	0.0068	0.0006	0.0047	0.0511	< 0.00002	< 0.00001	0.0361	0.000018	28.4	< 0.0005	0.000246
20-Feb-13	27	225	100	7.90	#N/A	253					3.40												
27-Feb-13	28	400	170	7.91	321	246	#N/A	6.2	107.2	42	3.45	90.6	0.0048	0.0006	0.0049	0.0507	< 0.00002	< 0.00001	0.0334	0.000007	28.9	< 0.0005	0.000088
6-Mar-13	29	290	110	7.87	#N/A	262					3.50												
13-Mar-13	30	460	215	7.90	333	236	#N/A	5.9	87.9	34	2.30	58.2	0.0042	0.0006	0.0048	0.0521	< 0.00002	< 0.00001	0.0310	0.000147	28.6	< 0.0005	0.000063
20-Mar-13	31	200	75	7.81	#N/A	240					2.98												
27-Mar-13	32	515	230	7.85	345	227	#N/A	8.9	88.4	33	1.88	87.9	0.0048	0.0005	0.0043	0.0453	< 0.00002	< 0.00001	0.0328	0.000021	27.9	< 0.0005	0.000040
3-Apr-13	33	270	130	7.73	#N/A	230					3.60												
10-Apr-13	34	640	225	7.89	336	213	#N/A	6.5	85.3	36	3.40	84.4	0.0047	0.0006	0.0042	0.0428	< 0.00002	< 0.00001	0.0284	0.000015	26.9	< 0.0005	0.000097
17-Apr-13	35	210	75	7.81	#N/A	240					1.63												
24-Apr-13	36	400	185	7.88	328	211	#N/A	8.2	84.1	27	1.34	80.5	0.0047	0.0006	0.0050	0.0497	< 0.00002	< 0.00001	0.0320	0.000013	25.4	< 0.0005	0.000079
1-May-13	37	220	75	7.87	#N/A	217					1.31												
8-May-13	38	460	215	7.85	359	204	#N/A	9.7	86.2	34	3.25	82.8	0.0047	0.0008	0.0039	0.0459	< 0.00002	< 0.00001	0.0352	0.000033	26.3	< 0.0005	0.000113
15-May-13	39	150	60	7.82	#N/A	235					3.02												
22-May-13	40	475	215	7.83	346	194	#N/A	10.0	86.2	28	3.20	80.4	0.0055	0.0006	0.0048	0.0435	< 0.00002	< 0.00001	0.0335	0.000011	25.7	< 0.0005	0.000042
29-May-13	41	285	130	7.88	#N/A	204					1.01												
5-Jun-13	42	450	200	7.88	363	198	#N/A	10.1	84.4	24	3.50	84.3	0.0055	0.0005	0.0045	0.0426	< 0.00002	< 0.00001	0.0308	0.000010	27.0	< 0.0005	0.000241
12-Jun-13	43																						
19-Jun-13	44																						
26-Jun-13	45																						
3-Jul-13	46	480	180	7.81	378	211	#N/A	7.3	83.1	22	2.82	80.3	0.0068	0.0005	0.0042	0.0432	< 0.00002	< 0.00001	0.0370	0.000005	25.6	< 0.0005	0.000039
10-Jul-13	47																						
17-Jul-13	48																						

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	DO	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L	mg/L
24-Jul-13	49																						
31-Jul-13	50	450	215	7.81	344	212	#N/A	7.2	81.2	20	3.57	85.9	0.0048	0.0006	0.0044	0.0426	< 0.00002	< 0.00001	0.0434	0.000016	27.4	< 0.0005	0.000092
7-Aug-13	51																						
14-Aug-13	52																						
21-Aug-13	53																						
28-Aug-13	54	465	230	7.92	332	200	#N/A	4.0	77.7		1.42												

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
22-Aug-12	1	0.0037	0.004	0.00005	0.006	3.06	0.0456	0.04	0.0824	0.0009	< 0.009	17.6	0.00171	1.30	0.00002	3.92	0.583	29.2	0.00011	0.00299	0.0011	0.000260	0.00146	0.018	0.00002
29-Aug-12	2	0.0026	0.011	< 0.00002	0.021	14.7	0.279	0.05	0.147	0.0010	< 0.009	55.0	0.00377	29.2	0.00108	18.3	1.93	127	0.00035	0.00136	0.0006	0.00157	0.00060	0.009	< 0.00001
5-Sep-12	3	0.0118	< 0.003	0.00003	0.029	25.4	0.357	< 0.01	0.107	0.0020	< 0.009	80.8	0.00338	119	0.00752	33.1	2.84	201	0.00045	0.00033	0.0013	0.00134	0.00058	0.008	< 0.00001
12-Sep-12	4	0.0235	< 0.003	0.00005	0.028	28.0	0.364	< 0.01	0.127	0.0037	< 0.009	75.9	0.00112	271	0.00614	34.6	2.81	248	0.00052	0.00063	0.0026	0.00307	0.00067	0.005	0.00001
19-Sep-12	5																								
26-Sep-12	6	0.0030	< 0.003	< 0.00002	0.029	26.0	0.300	0.01	0.114	0.0034	< 0.009	78.0	0.00065	298	0.00036	27.9	2.33	321	0.00028	0.00070	0.0038	0.00261	0.00063	0.004	0.00021
3-Oct-12	7																								
10-Oct-12	8	0.0016	0.004	< 0.00002	0.030	18.1	0.234	< 0.01	0.105	0.0015	< 0.009	56.9	0.00042	159	0.00004	19.5	1.82	210	0.00011	0.00052	0.0027	0.00180	0.00048	0.004	0.00001
17-Oct-12	9																								
24-Oct-12	10	0.0019	0.017	0.00007	0.030	13.7	0.180	0.01	0.101	0.0012	< 0.009	48.0	0.00024	140	0.00001	14.7	1.51	113	< 0.00002	0.00085	0.0010	0.000928	0.00074	0.003	< 0.00001
31-Oct-12	11																								
7-Nov-12	12	0.0008	0.015	0.00037	0.033	11.7	0.177	0.02	0.104	0.0004	< 0.009	40.4	0.00023	124	0.00001	11.3	1.49	65.8	< 0.00002	0.00040	0.0004	0.000636	0.00045	0.002	0.00002
14-Nov-12	13																								
21-Nov-12	14	0.0014	< 0.003	< 0.00002	0.029	7.73	0.127	0.01	0.0817	0.0008	< 0.009	28.1	0.00014	62.1	0.00003	7.07	1.10	36.1	0.00005	0.00060	0.0004	0.000528	0.00049	0.006	0.00002
28-Nov-12	15																								
5-Dec-12	16	0.0010	< 0.003	< 0.00002	0.021	5.75	0.132	0.01	0.0729	0.0006	< 0.009	25.1	0.00019	44.8	0.00001	4.38	1.01	21.7	0.00008	0.00088	0.0003	0.000557	0.00033	0.003	< 0.00001
12-Dec-12	17																								
19-Dec-12	18	0.0007	< 0.003	0.00004	0.024	5.26	0.115	< 0.01	0.0898	0.0002	< 0.009	21.7	0.00016	73.1	0.00002	4.01	0.991	19.1	0.00006	0.00082	0.0002	0.000490	0.00011	0.004	< 0.00001
26-Dec-12	19																								
2-Jan-13	20	0.0006	< 0.003	< 0.00002	0.017	3.99	0.0915	< 0.01	0.0724	0.0005	< 0.009	16.0	0.00023	22.0	0.00003	2.76	0.747	13.9	0.00006	0.00101	0.0003	0.000443	0.00031	0.005	< 0.00001
9-Jan-13	21																								
16-Jan-13	22	0.0008	< 0.003	< 0.00002	0.022	4.43	0.0921	< 0.01	0.0835	0.0007	< 0.009	19.5	0.00022	49.0	< 0.00001	2.72	0.844	16.0	0.00005	0.00086	0.0002	0.000476	0.00030	0.002	< 0.00001
23-Jan-13	23																								
30-Jan-13	24	< 0.0005	< 0.003	< 0.00002	0.024	4.98	0.0965	< 0.01	0.0946	0.0005	< 0.009	20.9	0.00025	31.4	< 0.00001	3.03	0.993	15.0	0.00006	0.00058	0.0001	0.000508	0.00013	0.001	< 0.00001
6-Feb-13	25																								
13-Feb-13	26	0.0009	< 0.003	0.00003	0.024	4.57	0.0928	< 0.01	0.103	0.0003	< 0.009	18.7	0.00019	32.4	< 0.00001	2.41	0.907	13.8	0.00004	0.00058	0.0001	0.000475	0.00015	0.004	< 0.00001
20-Feb-13	27																								
27-Feb-13	28	0.0007	< 0.003	0.00008	0.022	4.46	0.0877	< 0.01	0.0908	< 0.0001	< 0.009	17.4	0.00018	22.7	< 0.00001	2.10	0.902	13.1	0.00004	0.00056	< 0.0001	0.000515	< 0.00003	0.001	< 0.00001
6-Mar-13	29																								
13-Mar-13	30	0.0005	< 0.003	0.00004	0.020	4.54	0.0819	< 0.01	0.0929	0.0004	< 0.009	18.2	0.00022	22.2	< 0.00001	2.12	0.927	12.8	0.00004	0.00053	0.0001	0.000408	0.00009	0.004	< 0.00001
20-Mar-13	31																								
27-Mar-13	32	< 0.0005	< 0.003	0.00002	0.019	4.45	0.0727	< 0.01	0.0821	0.0003	< 0.009	16.4	0.00017	19.1	< 0.00001	1.88	0.877	11.3	0.00003	0.00047	< 0.0001	0.000378	< 0.00003	0.002	< 0.00001
3-Apr-13	33																								
10-Apr-13	34	< 0.0005	< 0.003	0.00005	0.017	4.18	0.0837	< 0.01	0.0773	0.0004	< 0.009	15.2	0.00013	15.9	< 0.00001	1.62	0.830	10.3	0.00004	0.00056	< 0.0001	0.000382	0.00004	0.002	< 0.00001
17-Apr-13	35																								
24-Apr-13	36	< 0.0005	< 0.003	0.00006	0.018	4.13	0.0857	< 0.01	0.0861	0.0004	< 0.009	14.9	0.00020	10.3	< 0.00001	1.64	0.801	9.94	0.00004	0.00059	< 0.0001	0.000423	0.00005	0.002	< 0.00001
1-May-13	37																								
8-May-13	38	< 0.0005	< 0.003	< 0.00002	0.018	4.15	0.0830	< 0.01	0.0819	0.0004	< 0.009	14.5	0.00012	11.0	< 0.00001	1.57	0.820	9.40	0.00004	0.00048	0.0001	0.000380	0.00009	0.002	< 0.00001
15-May-13	39																								
22-May-13	40	< 0.0005	0.003	0.00003	0.016	3.94	0.0757	0.09	0.0777	0.0002	< 0.009	12.5	0.00018	11.7	< 0.00001	1.41	0.760	8.78	0.00003	0.00060	< 0.0001	0.000369	0.00014	0.002	< 0.00001
29-May-13	41																								
5-Jun-13	42	0.0010	0.003	0.00082	0.016	4.08	0.0800	< 0.01	0.0739	0.0003	< 0.009	13.1	0.00017	10.8	< 0.00001	1.39	0.785	8.46	0.00003	0.00085	< 0.0001	0.000369	0.00003	0.001	< 0.00001
12-Jun-13	43																								
19-Jun-13	44																								
26-Jun-13	45																								
3-Jul-13	46	0.0007	0.020	0.00022	0.016	3.98	0.0929	< 0.01	0.0756	0.0005	< 0.009	12.4	0.00020	9.20	< 0.00001	1.43	0.760	8.37	0.00002	0.00085	< 0.0001	0.000271	0.00009	0.004	< 0.00001
10-Jul-13	47																								
17-Jul-13	48																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jul-13	49																								
31-Jul-13	50	0.0006	0.018	0.00006	0.017	4.23	0.0951	< 0.01	0.0806	0.0005	< 0.009	13.3	0.00019	3.01	< 0.00001	1.34	0.805	8.62	0.00003	0.00080	< 0.0001	0.000375	0.00004	0.006	< 0.00001
7-Aug-13	51																								
14-Aug-13	52																								
21-Aug-13	53																								
28-Aug-13	54																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jan-12	0	500	400	7.74	334	339	#N/A	3.1	41.8	89	64.7	0.0895	0.0086	0.0058	0.0279	< 0.00002	< 0.00001	0.0398	0.000018	21.6	< 0.0005	0.000279
31-Jan-12	1	500	480	7.43	324	317	#N/A	3.3	29.2	105	75.4	0.109	0.0117	0.0096	0.0243	< 0.00002	< 0.00001	0.0534	0.000040	24.9	< 0.0005	0.000382
7-Feb-12	2	500	505	7.46	336	189	#N/A	3.9	28.6	62	58.7	0.105	0.0073	0.0055	0.0174	< 0.00002	< 0.00001	0.0443	0.000039	20.3	< 0.0005	0.000131
14-Feb-12	3	500	460	7.54	395	145	#N/A	4.3	24.4	50	45.5	0.0753	0.0063	0.0054	0.0138	< 0.00002	< 0.00001	0.0379	0.000028	15.6	< 0.0005	0.000085
21-Feb-12	4	500	470	7.45	331	129	#N/A	4.2	26.9	40	43.8	0.0634	0.0066	0.0055	0.0142	< 0.00002	< 0.00001	0.0408	0.000042	15.1	< 0.0005	0.000093
28-Feb-12	5	500	480	7.39	407	108																
6-Mar-12	6	500	460	7.54	368	85	#N/A	4.8	23.5	20	31.2	0.142	0.0049	0.0055	0.0112	< 0.00002	< 0.00001	0.0254	0.000028	11.2	< 0.0005	0.000042
13-Mar-12	7	500	470	7.46	370	93																
20-Mar-12	8	500	490	7.40	316	91	#N/A	3.6	23.0	24	35.8	0.0482	0.0071	0.0047	0.0116	< 0.00002	< 0.00001	0.0248	0.000053	12.8	< 0.0005	0.000078
27-Mar-12	9	500	495	7.39	329	89																
3-Apr-12	10	500	510	7.38	338	79	#N/A	2.6	22.3	21	32.1	0.0700	0.0048	0.0043	0.00982	< 0.00002	< 0.00001	0.0205	0.000107	11.6	< 0.0005	0.000048
10-Apr-12	11	500	500	7.44	319	81																
17-Apr-12	12	500	495	7.44	324	81	#N/A	2.6	21.7	20	32.6	0.0812	0.0044	0.0039	0.00936	< 0.00002	< 0.00001	0.0193	0.000010	11.9	< 0.0005	0.000048
24-Apr-12	13	500	495	7.38	472	78																
1-May-12	14	500	495	7.25	330	81	#N/A	4.7	21.7	23	32.3	0.0958	0.0043	0.0043	0.0109	< 0.00002	< 0.00001	0.0164	0.000017	11.8	< 0.0005	0.000072
8-May-12	15	500	500	7.35	381	77																
15-May-12	16	500	495	7.40	279	83	#N/A	3.0	20.9	19	34.2	0.0705	0.0044	0.0050	0.00959	< 0.00002	< 0.00001	0.0172	0.000005	12.6	< 0.0005	0.000041
22-May-12	17	500	450	7.33	278	77																
29-May-12	18	500	435	7.31	268	75	#N/A	2.9	15.9	15	32.2	0.0700	0.0031	0.0041	0.00786	< 0.00002	< 0.00001	0.0121	< 0.000003	12.0	< 0.0005	0.000031
5-Jun-12	19	500	450	7.30	352	73																
12-Jun-12	20	500	440	7.27	331	65	#N/A	3.2	15.4	15	28.2	0.114	0.0063	0.0040	0.00963	< 0.00002	< 0.00001	0.0117	< 0.000003	10.4	< 0.0005	0.000053
19-Jun-12	21	500	450	7.37	385	69																
26-Jun-12	22	500	445	7.26	364	68	#N/A	3.2	16.2	14	29.1	0.0753	0.0034	0.0048	0.00794	< 0.00002	< 0.00001	0.0112	< 0.000003	10.8	< 0.0005	0.000029
3-Jul-12	23	500	455	7.33	357	70																
10-Jul-12	24	500	445	7.31	320	79	#N/A	3.7	17.5	16	32.0	0.0751	0.0073	0.0067	0.00912	< 0.00002	< 0.00001	0.0117	0.000049	11.9	< 0.0005	0.000058
17-Jul-12	25	500	440	7.36	388	77																
24-Jul-12	26	500	440	7.22	328	77	#N/A	2.6	15.5	16	32.0	0.0921	0.0033	0.0040	0.00931	< 0.00002	< 0.00001	0.0103	0.000036	12.0	< 0.0005	0.000070
31-Jul-12	27	500	450	7.23	364	74																
7-Aug-12	28	500	455	7.32	287	74	#N/A	2.9	14.9	17	33.1	0.0872	0.0034	0.0034	0.00915	< 0.00002	< 0.00001	0.0106	0.000041	12.5	< 0.0005	0.000063
14-Aug-12	29	500	450	7.29	264	78																
21-Aug-12	30	500	450	7.24	208	77	#N/A	2.7	16.1	22	33.1	0.0777	0.0045	0.0029	0.0083	< 0.00002	0.00002	0.0102	0.000056	12.4	< 0.0005	0.00004
28-Aug-12	31	500	445	7.42	320	74																
4-Sep-12	32	500	455	7.20	356	62	#N/A	3.3	12.9	16	26.6	0.125	0.0027	0.0022	0.00650	< 0.00002	< 0.00001	0.0076	0.000040	10.0	< 0.0005	0.000018
11-Sep-12	33	500	445	7.28	391	71																
18-Sep-12	34	500	505	7.26	340	77	#N/A	2.5	17.8	19	32.0	0.0670	0.0091	0.0084	0.00871	< 0.00002	< 0.00001	0.0116	0.000064	12.0	< 0.0005	0.000062
25-Sep-12	35	500	455	7.31	270	79																
2-Oct-12	36	500	460	7.28	337	65	#N/A	2.5	15.3	15	28.0	0.0402	0.0032	0.0030	0.0064	< 0.00002	< 0.00001	0.0081	0.000047	10.6	< 0.0005	0.000090
9-Oct-12	37	500	450	7.33	290	83																
16-Oct-12	38	500	500	7.56	377	69	#N/A	4.4	24.3	16	27.0	0.0460	0.0033	0.0026	0.00635	< 0.00002	< 0.00001	0.0076	0.000074	10.2	< 0.0005	0.000044
23-Oct-12	39	500	465	7.21	285	80																
30-Oct-12	40	500	460	7.26	321	64	#N/A	3.0	16.6	15	29.3	0.0637	0.0032	0.0028	0.00723	< 0.00002	< 0.00001	0.0075	0.000064	11.1	< 0.0005	0.000027
6-Nov-12	41	500	425	7.31	290	85																
13-Nov-12	42	500	445	7.35	321	50	#N/A	4.8	14.0	9	24.0	0.0403	0.0024	0.0020	0.00522	< 0.00002	< 0.00001	0.0058	0.000039	9.14	< 0.0005	0.000031
20-Nov-12	43	500	490	7.43	295	90																
27-Nov-12	44	500	505	7.35	305	64	#N/A	4.2	20.2	15	29.8	0.0399	0.0034	0.0019	0.00650	< 0.00002	< 0.00001	0.0044	0.000060	11.3	< 0.0005	0.000088
4-Dec-12	45	500	485	7.41	305	70																
11-Dec-12	46	500	495	7.27	309	60	#N/A	2.7	15.1	12	27.4	0.0372	0.0039	0.0024	0.00593	< 0.00002	< 0.00001	0.0049	0.000049	10.5	< 0.0005	0.000035
18-Dec-12	47	500	440	7.36	383	60																

Date	Cycle No.	Volume mL		pH	ORP	Cond.	Acidity (pH 4.5)	Acidity (pH 8.3)	Alkalinity	Sulphate	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co
		Input	Output		mV	umhos/cm	mgCaCO3/L	mgCaCO3/L	mgCaCO3/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	mg/L
25-Dec-12	48	500	445	7.42	402	59	#N/A	4.1	15.8	12	26.4	0.0521	0.0029	0.0035	0.00711	< 0.00002	< 0.00001	0.0045	0.000047	10.0	< 0.0005	0.000094
1-Jan-13	49	500	455	7.43	315	75																
8-Jan-13	50	500	460	7.38	263	55	#N/A	3.2	14.6	12	24.5	0.0503	0.0033	0.0022	0.00583	< 0.00002	< 0.00001	0.0037	0.000053	9.37	< 0.0005	0.000036
15-Jan-13	51	500	460	7.42	320	65																
22-Jan-13	52	500	445	7.26	259	59	#N/A	4.1	14.8	14	24.2	0.0648	0.0024	0.0019	0.00669	< 0.00002	< 0.00001	0.0040	0.000056	9.24	< 0.0005	0.000041
29-Jan-13	53	500	460	7.36	453	53																
5-Feb-13	54	500	470	7.36	415	57	#N/A	3.9	12.9	17	24.2	0.0417	0.0027	0.0026	0.00618	< 0.00002	< 0.00001	0.0031	0.000118	9.25	< 0.0005	0.000233
12-Feb-13	55	500	455	7.11	354	59																
19-Feb-13	56	500	480	7.29	488	54	#N/A	3.0	13.7	13	25.6	0.0380	0.0024	0.0022	0.00688	< 0.00002	< 0.00001	0.0026	0.000061	9.17	< 0.0005	0.000055
26-Feb-13	57	500	450	7.37	446	58																
5-Mar-13	58	500	495	7.45	435	68	#N/A	4.7	18.0	18	28.5	0.0399	0.0032	0.0020	0.00747	< 0.00002	< 0.00001	0.0042	0.000071	10.9	< 0.0005	0.000155
12-Mar-13	59	500	455	7.41	340	68																
19-Mar-13	60	500	465	7.44	343	60	#N/A	6.2	14.2	14	25.0	0.0344	0.0022	0.0018	0.00574	< 0.00002	< 0.00001	0.0028	0.000057	9.57	< 0.0005	0.000041
26-Mar-13	61	500	460	7.39	489	55																
2-Apr-13	62	500	465	7.33	404	57	#N/A	4.5	13.5	14	26.0	0.0379	0.0023	0.0068	0.00583	< 0.00002	< 0.00001	0.0033	0.000050	9.97	< 0.0005	0.000484
9-Apr-13	63	500	445	7.43	411	60																
16-Apr-13	64	500	460	7.35	438	59	#N/A	5.2	13.6	17	25.3	0.0299	0.0027	0.0018	0.00568	< 0.00002	< 0.00001	0.0030	0.000068	9.75	< 0.0005	0.000036
23-Apr-13	65	500	450	7.47	393	60																
30-Apr-13	66	500	435	7.33	403	58	#N/A	4.4	12.8	21	26.4	0.0397	0.0022	0.0016	0.00569	< 0.00002	< 0.00001	0.0036	0.000062	10.2	< 0.0005	0.000039
7-May-13	67	500	445	7.33	430	60																
14-May-13	68	500	460	7.34	455	54	#N/A	4.6	13.1	14	24.0	0.0324	0.0024	0.0019	0.00535	< 0.00002	< 0.00001	0.0034	0.000060	9.22	< 0.0005	0.000178
21-May-13	69	500	440	7.37	425	58																
28-May-13	70	500	460	7.37	399	57	#N/A	3.8	12.5	17	25.7	0.0310	0.0023	0.0016	0.00560	< 0.00002	< 0.00001	0.0030	0.000062	9.90	< 0.0005	0.000031
4-Jun-13	71	500	440	7.42	410	60																
11-Jun-13	72	500	450	7.35	478	57	#N/A	6.8	14.4	17												
18-Jun-13	73	500	450	7.36	370	64																
25-Jun-13	74	500	445	7.26	377	55	#N/A	4.3	13.2	15	23.3	0.0551	0.0024	0.0019	0.00583	< 0.00002	< 0.00001	0.0119	0.000073	8.94	< 0.0005	0.000074
2-Jul-13	75	500	435	7.46	399	58																
9-Jul-13	76	500	445	7.28	340	59	#N/A	6.1	14.6	15												
16-Jul-13	77	500	440	7.27	426	58																
23-Jul-13	78	500	435	7.45	477	54	#N/A	5.7	14.1	14	23.8	0.0391	0.0024	0.0013	0.00492	< 0.00002	< 0.00001	0.0038	0.000066	9.15	< 0.0005	0.000035
30-Jul-13	79	500	450	7.28	417	56																
6-Aug-13	80	500	445	7.54	409	61	#N/A	6.4	13.9	14												
13-Aug-13	81	500	440	7.26	470	57																
20-Aug-13	82	500	460	7.36	453	60	#N/A	2.2	10.5	14												
27-Aug-13	83	500	425	7.30	417	50																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0053	0.003	0.00005	0.036	2.59	0.0659	< 0.01	0.00826	0.0012	< 0.009	21.4	0.00394	1.16	0.00003	22.9	0.773	39.2	0.00009	0.00006	0.0003	0.00148	0.00124	0.002	0.00002
31-Jan-12	1	0.0036	0.008	0.00030	0.037	3.23	0.0834	0.01	0.00955	0.0011	< 0.009	16.6	0.00425	1.31	0.00002	20.9	0.884	39.5	0.00016	0.00067	0.0008	0.00292	0.00105	0.002	0.00004
7-Feb-12	2	0.0015	0.005	0.00036	0.016	1.94	0.0899	< 0.01	0.00518	0.0008	< 0.009	10.2	0.00168	1.16	0.00001	8.08	0.642	21.5	0.00008	0.00032	0.0006	0.00168	0.00081	0.002	0.00004
14-Feb-12	3	0.0011	< 0.003	0.00012	0.010	1.57	0.0583	< 0.01	0.00490	0.0005	< 0.009	7.04	0.00114	0.95	< 0.00001	4.00	0.497	14.5	0.00006	0.00035	0.0006	0.00193	0.00067	< 0.001	< 0.00001
21-Feb-12	4	0.0009	< 0.003	0.00011	0.007	1.44	0.0804	< 0.01	0.00476	0.0004	< 0.009	6.61	0.00088	0.98	0.00001	2.34	0.463	12.2	0.00006	0.00016	0.0002	0.00219	0.00065	0.001	< 0.00001
28-Feb-12	5																								
6-Mar-12	6	0.0012	0.009	0.00029	0.003	0.815	0.0400	< 0.01	0.00346	0.0003	< 0.009	3.99	0.00066	1.14	0.00001	0.74	0.319	7.15	0.00003	0.00005	0.0004	0.00167	0.00094	0.002	< 0.00001
13-Mar-12	7																								
20-Mar-12	8	0.0007	< 0.003	0.00017	0.003	0.964	0.0768	0.01	0.00404	< 0.0001	< 0.009	3.67	0.00043	0.93	< 0.00001	0.58	0.326	7.67	0.00002	0.00023	0.0001	0.00208	0.00048	0.002	< 0.00001
27-Mar-12	9																								
3-Apr-12	10	0.0006	< 0.003	0.00012	0.002	0.774	0.0638	< 0.01	0.00361	0.0002	< 0.009	2.93	0.00039	0.88	< 0.00001	0.38	0.267	6.82	0.00003	0.00002	< 0.0001	0.00164	0.00045	0.003	< 0.00001
10-Apr-12	11																								
17-Apr-12	12	0.0006	0.024	0.00013	0.002	0.716	0.0536	0.02	0.00410	0.0006	< 0.009	2.60	0.00031	1.02	< 0.00001	0.29	0.256	6.57	0.00003	0.00004	0.0004	0.00153	0.00072	0.002	< 0.00001
24-Apr-12	13																								
1-May-12	14	0.0007	0.010	0.00046	0.002	0.673	0.0409	0.08	0.00398	0.0003	< 0.009	2.49	0.00021	1.01	0.00002	0.26	0.244	6.63	0.00003	0.00009	0.0009	0.00148	0.00077	0.002	0.00001
8-May-12	15																								
15-May-12	16	< 0.0005	0.003	0.00012	0.002	0.656	0.0336	< 0.01	0.00455	0.0002	< 0.009	2.42	0.00031	0.97	< 0.00001	0.23	0.245	6.75	0.00004	0.00001	0.0003	0.00128	0.00067	0.002	< 0.00001
22-May-12	17																								
29-May-12	18	0.0006	< 0.003	0.00008	0.002	0.554	0.0438	0.01	0.00347	< 0.0001	< 0.009	1.91	0.00008	0.76	< 0.00001	0.20	0.221	6.83	0.00002	0.00032	0.0002	0.000823	0.00069	0.002	< 0.00001
5-Jun-12	19																								
12-Jun-12	20	0.0009	0.013	0.00048	0.002	0.509	0.0321	< 0.01	0.00306	0.0001	< 0.009	1.86	0.00025	0.90	0.00004	0.18	0.195	5.58	0.00003	0.00110	0.0006	0.000724	0.00075	0.004	0.00002
19-Jun-12	21																								
26-Jun-12	22	0.0009	< 0.003	0.00010	0.001	0.509	0.0339	< 0.01	0.00376	< 0.0001	< 0.009	1.84	0.00043	0.85	< 0.00001	0.19	0.204	5.86	0.00002	0.00017	0.0002	0.000834	0.00075	0.002	0.00004
3-Jul-12	23																								
10-Jul-12	24	0.0008	< 0.003	0.00009	0.001	0.536	0.0445	0.02	0.00405	0.0002	< 0.009	1.84	0.00067	0.89	0.00001	0.21	0.211	6.63	< 0.00002	0.00071	0.0002	0.000708	0.00063	0.002	< 0.00001
17-Jul-12	25																								
24-Jul-12	26	0.0007	0.004	0.00015	0.001	0.512	0.0383	0.01	0.00371	0.0001	< 0.009	1.70	0.00066	0.79	< 0.00001	0.17	0.202	6.97	0.00003	0.00013	0.0003	0.000575	0.00071	0.002	0.00003
31-Jul-12	27																								
7-Aug-12	28	0.0007	< 0.003	0.00011	0.001	0.481	0.0376	< 0.01	0.00422	< 0.0001	< 0.009	1.63	0.00039	0.80	< 0.00001	0.17	0.193	7.47	< 0.00002	0.00022	0.0003	0.000462	0.00071	0.002	< 0.00001
14-Aug-12	29																								
21-Aug-12	30	0.0007	0.003	0.00009	0.001	0.490	0.0459	< 0.01	0.00464	0.0003	< 0.009	1.44	0.00047	0.91	0.00001	0.17	0.184	7.44	0.00002	0.00019	0.0002	0.00062	0.00058	0.002	< 0.00001
28-Aug-12	31																								
4-Sep-12	32	0.0005	0.003	0.00013	0.001	0.374	0.0342	0.05	0.00340	0.0002	< 0.009	1.14	0.00036	0.53	< 0.00001	0.13	0.139	5.63	< 0.00002	0.00021	0.0003	0.000485	0.00075	0.002	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	< 0.0005	0.005	0.00016	0.001	0.457	0.0475	0.01	0.00486	< 0.0001	< 0.009	1.31	0.00050	1.13	< 0.00001	0.14	0.171	6.77	< 0.00002	0.00148	0.0002	0.000936	0.00062	0.002	< 0.00001
25-Sep-12	35																								
2-Oct-12	36	0.0007	< 0.003	0.00010	0.001	0.388	0.0425	< 0.01	0.00396	< 0.0001	< 0.009	1.12	0.00033	0.69	< 0.00001	0.12	0.142	5.84	< 0.00002	0.00011	0.0002	0.000615	0.00045	0.002	< 0.00001
9-Oct-12	37																								
16-Oct-12	38	0.0006	< 0.003	0.00012	< 0.001	0.360	0.0431	< 0.01	0.00388	0.0001	< 0.009	0.991	0.00042	0.71	< 0.00001	0.09	0.129	5.28	< 0.00002	0.00039	0.0002	0.000870	0.00042	0.002	< 0.00001
23-Oct-12	39																								
30-Oct-12	40	< 0.0005	0.003	0.00011	< 0.001	0.388	0.0477	0.01	0.00422	0.0001	< 0.009	1.06	0.00028	0.71	< 0.00001	0.10	0.138	5.70	< 0.00002	0.00012	0.0007	0.000614	0.00059	0.002	< 0.00001
6-Nov-12	41																								
13-Nov-12	42	< 0.0005	< 0.003	0.00010	< 0.001	0.285	0.0407	0.01	0.00333	< 0.0001	< 0.009	0.867	0.00030	0.51	< 0.00001	0.09	0.105	4.71	< 0.00002	0.00010	0.0002	0.000469	0.00035	0.001	< 0.00001
20-Nov-12	43																								
27-Nov-12	44	< 0.0005	0.004	0.00008	< 0.001	0.359	0.0521	< 0.01	0.00334	0.0001	< 0.009	0.977	0.00045	0.67	0.00001	0.08	0.132	5.19	< 0.00002	0.00015	0.0001	0.000897	0.00033	0.003	< 0.00001
4-Dec-12	45																								
11-Dec-12	46	0.0008	< 0.003	0.00006	< 0.001	0.303	0.0358	< 0.01	0.00392	< 0.0001	< 0.009	0.934	0.00041	0.61	< 0.00001	0.08	0.116	4.65	< 0.00002	0.00008	0.0001	0.000647	0.00049	0.002	< 0.00001
18-Dec-12	47																								

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	0.0007	0.011	0.00015	< 0.001	0.322	0.0388	< 0.01	0.00337	0.0001	< 0.009	0.915	0.00049	0.59	< 0.00001	0.07	0.128	7.17	< 0.00002	0.00046	0.0002	0.000460	0.00025	0.002	< 0.00001
1-Jan-13	49																								
8-Jan-13	50	< 0.0005	0.006	0.00011	< 0.001	0.256	0.0331	< 0.01	0.00269	< 0.0001	< 0.009	0.825	0.00041	0.51	0.00001	0.07	0.0965	4.15	< 0.00002	0.00005	0.0004	0.000415	0.00039	0.001	< 0.00001
15-Jan-13	51																								
22-Jan-13	52	< 0.0005	0.008	0.00040	< 0.001	0.262	0.0375	< 0.01	0.00238	0.0002	< 0.009	0.788	0.00042	0.47	< 0.00001	< 0.01	0.102	4.84	< 0.00002	0.00009	0.0004	0.000385	0.00051	0.003	0.00002
29-Jan-13	53																								
5-Feb-13	54	< 0.0005	< 0.003	0.00021	< 0.001	0.275	0.0353	< 0.01	0.00288	< 0.0001	< 0.009	0.843	0.00056	0.51	< 0.00001	0.06	0.108	5.34	< 0.00002	0.00008	0.0002	0.000408	0.00028	0.003	0.00002
12-Feb-13	55																								
19-Feb-13	56	< 0.0005	< 0.003	0.00009	< 0.001	0.656	0.0325	< 0.01	0.00287	< 0.0001	< 0.009	1.46	0.00049	0.47	< 0.00001	2.38	0.0958	5.31	< 0.00002	0.00006	0.0002	0.000357	0.00024	0.001	< 0.00001
26-Feb-13	57																								
5-Mar-13	58	< 0.0005	< 0.003	0.00008	< 0.001	0.306	0.0418	< 0.01	0.00334	0.0001	< 0.009	0.781	0.00056	0.63	< 0.00001	0.07	0.119	5.94	< 0.00002	< 0.00001	0.0003	0.000620	0.00019	0.001	0.00002
12-Mar-13	59																								
19-Mar-13	60	0.0006	< 0.003	0.00014	< 0.001	0.263	0.0318	< 0.01	0.00310	< 0.0001	< 0.009	0.713	0.00045	0.53	< 0.00001	0.06	0.0968	5.18	< 0.00002	0.00014	< 0.0001	0.000367	0.00022	0.001	< 0.00001
26-Mar-13	61																								
2-Apr-13	62	0.0011	< 0.003	0.00008	< 0.001	0.256	0.0305	< 0.01	0.00325	0.0005	< 0.009	0.711	0.00022	0.48	< 0.00001	0.06	0.0968	5.23	< 0.00002	< 0.00001	0.0001	0.000323	0.00018	0.001	< 0.00001
9-Apr-13	63																								
16-Apr-13	64	< 0.0005	< 0.003	0.00012	< 0.001	0.242	0.0327	< 0.01	0.00315	0.0001	< 0.009	0.650	0.00036	0.50	< 0.00001	0.07	0.0944	5.12	0.00002	0.00004	< 0.0001	0.000346	0.00021	0.002	< 0.00001
23-Apr-13	65																								
30-Apr-13	66	< 0.0005	< 0.003	0.00014	< 0.001	0.250	0.0318	< 0.01	0.00331	< 0.0001	< 0.009	0.640	0.00036	0.50	< 0.00001	0.07	0.0947	5.37	< 0.00002	0.00002	0.0004	0.000273	0.00021	0.002	< 0.00001
7-May-13	67																								
14-May-13	68	< 0.0005	0.086	0.00009	< 0.001	0.236	0.0280	< 0.01	0.00384	0.0002	0.009	0.634	0.00034	0.59	< 0.00001	0.06	0.0822	4.93	< 0.00002	0.00060	0.0001	0.000324	0.00015	0.002	< 0.00001
21-May-13	69																								
28-May-13	70	< 0.0005	< 0.003	0.00009	< 0.001	0.239	0.0284	< 0.01	0.00348	< 0.0001	< 0.009	0.637	0.00037	0.40	< 0.00001	0.06	0.0904	4.93	< 0.00002	0.00002	< 0.0001	0.000284	0.00015	0.001	< 0.00001
4-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	0.0008	0.006	0.00040	< 0.001	0.244	0.0313	0.01	0.00498	< 0.0001	< 0.009	0.636	0.00050	0.17	< 0.00001	0.08	0.0854	4.67	< 0.00002	0.00005	0.0004	0.000271	0.00033	0.003	< 0.00001
2-Jul-13	75																								
9-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	< 0.0005	0.005	0.00013	< 0.001	0.221	0.0351	< 0.01	0.00412	< 0.0001	< 0.009	0.572	0.00048	0.43	< 0.00001	0.05	0.0812	4.61	< 0.00002	0.00002	0.0003	0.000263	0.00018	0.002	< 0.00001
30-Jul-13	79																								
6-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
24-Jan-12	0	500	410	7.53	292	295	#N/A	3.2	32.2	101	100.0	0.0441	0.0100	0.0040	0.0301	< 0.00002	< 0.00001	0.0132	0.000015	35.7	< 0.0005	0.00142
31-Jan-12	1	500	470	7.52	273	268	#N/A	3.1	27.8	103	102	0.0704	0.0116	0.0048	0.0310	< 0.00002	< 0.00001	0.0126	0.000061	36.0	< 0.0005	0.00106
7-Feb-12	2	500	455	7.54	298	167	#N/A	3.1	27.3	56	68.3	0.0688	0.0081	0.0031	0.0237	< 0.00002	< 0.00001	0.0111	0.000039	24.6	< 0.0005	0.000676
14-Feb-12	3	500	460	7.66	377	133	#N/A	3.9	24.6	47	55.4	0.0773	0.0074	0.0035	0.0309	< 0.00002	< 0.00001	0.0094	0.000073	20.2	< 0.0005	0.000474
21-Feb-12	4	500	485	7.57	324	125	#N/A	4.5	28.1	38	53.2	0.0594	0.0079	0.0038	0.0342	< 0.00002	< 0.00001	0.0102	0.000053	19.7	< 0.0005	0.000480
28-Feb-12	5	500	475	7.60	384	97																
6-Mar-12	6	500	440	7.58	366	93	#N/A	4.7	24.4	24	38.7	0.0713	0.0073	0.0034	0.0305	< 0.00002	< 0.00001	0.0063	0.000071	14.5	< 0.0005	0.000324
13-Mar-12	7	500	445	7.66	357	80																
20-Mar-12	8	500	455	7.47	306	79	#N/A	3.2	23.5	17	36.5	0.0470	0.0050	0.0032	0.0240	< 0.00002	< 0.00001	0.0050	0.000056	13.9	< 0.0005	0.000288
27-Mar-12	9	500	455	7.63	319	83																
3-Apr-12	10	500	480	7.46	320	72	#N/A	2.6	22.0	17	33.8	0.0605	0.0036	0.0027	0.0222	< 0.00002	< 0.00001	0.0041	0.000041	13.0	< 0.0005	0.000270
10-Apr-12	11	500	465	7.57	316	81																
17-Apr-12	12	500	460	7.47	317	78	#N/A	2.7	20.8	19	33.9	0.0714	0.0037	0.0025	0.0224	0.00002	< 0.00001	0.0050	0.000059	13.0	< 0.0005	0.000331
24-Apr-12	13	500	460	7.75	371	79																
1-May-12	14	500	460	7.50	327	77	#N/A	3.8	21.7	22	36.0	0.0665	0.0034	0.0029	0.0218	0.00002	< 0.00001	0.0038	0.000071	13.9	< 0.0005	0.000290
8-May-12	15	500	455	7.49	377	79																
15-May-12	16	500	460	7.44	250	78	#N/A	3.1	22.1	15	34.3	0.0592	0.0033	0.0020	0.0181	0.00002	< 0.00001	0.0040	0.000063	13.3	< 0.0005	0.000237
22-May-12	17	500	455	7.42	272	72																
29-May-12	18	500	460	7.41	265	76	#N/A	2.8	20.1	18	34.8	0.0601	0.0027	0.0019	0.0164	0.00004	< 0.00001	0.0036	0.000117	13.6	< 0.0005	0.000340
5-Jun-12	19	500	460	7.42	331	79																
12-Jun-12	20	500	460	7.41	325	72	#N/A	2.9	21.0	16	32.9	0.0704	0.0028	0.0015	0.0163	< 0.00002	< 0.00001	0.0035	0.000059	12.9	< 0.0005	0.000146
19-Jun-12	21	500	460	7.54	377	77																
26-Jun-12	22	500	455	7.38	318	73	#N/A	3.0	21.3	18	33.5	0.0598	0.0025	0.0017	0.0161	0.00003	< 0.00001	0.0030	0.000089	13.1	< 0.0005	0.000226
3-Jul-12	23	500	465	7.57	369	79																
10-Jul-12	24	500	455	7.37	326	81	#N/A	4.0	21.9	19	36.0	0.0556	0.0027	0.0015	0.0157	< 0.00002	< 0.00001	0.0030	0.000126	14.1	< 0.0005	0.000154
17-Jul-12	25	500	460	7.44	386	81																
24-Jul-12	26	500	460	7.30	336	79	#N/A	2.4	16.9	19	34.7	0.0544	0.0023	0.0012	0.0128	< 0.00002	< 0.00001	0.0028	0.000117	13.7	< 0.0005	0.000150
31-Jul-12	27	500	455	7.49	375	80																
7-Aug-12	28	500	465	7.47	299	77	#N/A	2.9	17.8	17	36.0	0.0855	0.0024	0.0013	0.0137	< 0.00002	< 0.00001	0.0079	0.000135	14.2	< 0.0005	0.000178
14-Aug-12	29	500	460	7.35	237	80																
21-Aug-12	30	500	465	7.34	212	79	#N/A	2.8	20.3	20	35.8	0.0549	0.0027	0.0009	0.0119	< 0.00002	0.00001	0.0029	0.000128	14.1	< 0.0005	0.00012
28-Aug-12	31	500	465	7.47	260	77																
4-Sep-12	32	500	470	7.22	356	66	#N/A	3.5	16.1	15	30.5	0.0981	0.0018	0.0010	0.00964	< 0.00002	< 0.00001	0.0023	0.000132	12.0	< 0.0005	0.000150
11-Sep-12	33	500	460	7.53	388	80																
18-Sep-12	34	500	500	7.27	338	84	#N/A	2.6	20.9	23	37.1	0.0496	0.0028	0.0010	0.0149	< 0.00002	< 0.00001	0.0031	0.000214	14.6	< 0.0005	0.000152
25-Sep-12	35	500	455	7.31	290	90																
2-Oct-12	36	500	485	7.33	336	74	#N/A	2.6	21.8	16	33.8	0.0253	0.0021	0.0009	0.0124	< 0.00002	< 0.00001	0.0027	0.000153	13.4	< 0.0005	0.000186
9-Oct-12	37	500	495	7.39	295	96																
16-Oct-12	38	500	495	7.42	379	73	#N/A	5.2	21.3	20	33.6	0.0311	0.0022	0.0012	0.0104	< 0.00002	< 0.00001	0.0022	0.000154	13.3	< 0.0005	0.000090
23-Oct-12	39	500	500	7.32	290	105																
30-Oct-12	40	500	455	7.34	315	76	#N/A	2.9	23.4	17	36.6	0.0472	0.0022	0.0010	0.0124	< 0.00002	< 0.00001	0.0025	0.000164	14.5	< 0.0005	0.000068
6-Nov-12	41	500	450	7.32	295	110																
13-Nov-12	42	500	450	7.42	336	59	#N/A	4.0	21.3	12	29.6	0.0291	0.0018	0.0010	0.0113	< 0.00002	< 0.00001	0.0021	0.000109	11.7	< 0.0005	0.000116
20-Nov-12	43	500	490	7.32	295	120																
27-Nov-12	44	500	500	7.38	300	78	#N/A	4.6	22.0	21	36.1	0.0320	0.0020	0.0007	0.0137	< 0.00002	< 0.00001	0.0010	0.000210	14.3	< 0.0005	0.000079
4-Dec-12	45	500	475	7.39	305	100																
11-Dec-12	46	500	475	7.42	313	66	#N/A	2.3	20.6	12	33.7	0.0297	0.0027	0.0009	0.0126	< 0.00002	< 0.00001	0.0010	0.000154	13.4	< 0.0005	0.000039
18-Dec-12	47	500	460	7.51	379	68																

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
25-Dec-12	48	500	455	7.54	375	67	#N/A	3.9	23.5	13	31.3	0.0293	0.0025	0.0011	0.0145	< 0.00002	< 0.00001	0.0013	0.000207	12.4	< 0.0005	0.000138
1-Jan-13	49	500	455	7.43	315	105																
8-Jan-13	50	500	460	7.51	276	61	#N/A	3.1	22.9	12	33.7	0.0330	0.0024	0.0008	0.01296	< 0.00002	< 0.00001	0.0011	0.000120	13.4	< 0.0005	0.000056
15-Jan-13	51	500	460	7.43	325	95																
22-Jan-13	52	500	460	7.50	240	72	#N/A	4.1	25.9	16	30.0	0.0313	0.0019	0.0013	0.0138	< 0.00002	< 0.00001	0.0015	0.000171	11.9	< 0.0005	0.000056
29-Jan-13	53	500	470	7.52	388	68																
5-Feb-13	54	500	470	7.49	378	69	#N/A	3.9	20.1	18	29.8	0.0250	0.0017	0.0010	0.0132	< 0.00002	< 0.00001	< 0.0002	0.000178	11.9	< 0.0005	0.000162
12-Feb-13	55	500	460	7.59	364	68																
19-Feb-13	56	500	465	7.41	395	68	#N/A	3.1	22.4	18	31.7	0.0242	0.0016	0.0012	0.0126	< 0.00002	< 0.00001	0.0009	0.000179	12.6	< 0.0005	0.000085
26-Feb-13	57	500	450	7.52	399	67																
5-Mar-13	58	500	495	7.52	396	78	#N/A	4.4	22.3	19	34.1	0.0201	0.0019	0.0011	0.0125	< 0.00002	< 0.00001	0.0013	0.000139	13.5	< 0.0005	0.000189
12-Mar-13	59	500	455	7.43	240	90																
19-Mar-13	60	500	470	7.52	310	67	#N/A	6.6	21.7	14	29.7	0.0194	0.0016	0.0010	0.0111	< 0.00002	< 0.00001	0.0009	0.000183	11.8	< 0.0005	0.000088
26-Mar-13	61	500	460	7.64	398	67																
2-Apr-13	62	500	460	7.53	382	66	#N/A	4.7	21.0	13	31.8	0.0235	0.0016	0.0009	0.0127	< 0.00002	< 0.00001	0.0013	0.000175	12.6	< 0.0005	0.000240
9-Apr-13	63	500	445	7.56	403	70																
16-Apr-13	64	500	455	7.57	384	67	#N/A	4.7	21.4	16	32.0	0.0207	0.0019	0.0008	0.0138	< 0.00002	< 0.00001	0.0011	0.000231	12.7	< 0.0005	0.000088
23-Apr-13	65	500	465	7.59	396	71																
30-Apr-13	66	500	455	7.48	400	65	#N/A	4.0	20.0	21	32.1	0.0154	0.0014	0.0007	0.0127	< 0.00002	< 0.00001	0.0016	0.000231	12.8	< 0.0005	0.000047
7-May-13	67	500	440	7.53	433	70																
14-May-13	68	500	460	7.57	413	70	#N/A	4.5	20.4	16	31.8	0.0168	0.0015	0.0009	0.0146	< 0.00002	< 0.00001	0.0017	0.000214	12.6	< 0.0005	0.000155
21-May-13	69	500	460	7.59	420	64																
28-May-13	70	500	470	7.53	406	68	#N/A	3.7	20.2	18	34.3	0.0192	0.0015	0.0007	0.0154	< 0.00002	< 0.00001	0.0016	0.000252	13.6	< 0.0005	0.000048
4-Jun-13	71	500	455	7.59	425	68																
11-Jun-13	72	500	460	7.55	418	66	#N/A	7.3	22.0	16												
18-Jun-13	73	500	455	6.98	419	68																
25-Jun-13	74	500	470	7.51	382	62	#N/A	3.8	17.7	14	28.2	0.0173	0.0013	0.0009	0.0133	< 0.00002	< 0.00001	0.0034	0.000241	11.2	< 0.0005	0.000076
2-Jul-13	75	500	455	7.53	419	68																
9-Jul-13	76	500	455	7.54	329	72	#N/A	6.6	22.7	17												
16-Jul-13	77	500	450	7.49	414	74																
23-Jul-13	78	500	465	7.58	411	70	#N/A	6.8	22.6	18	32.3	0.0221	0.0012	0.0007	0.0168	< 0.00002	< 0.00001	0.0026	0.000210	12.8	< 0.0005	0.000048
30-Jul-13	79	500	470	7.43	430	73																
6-Aug-13	80	500	465	7.55	397	76	#N/A	7.0	22.1	20												
13-Aug-13	81	500	455	7.45	412	72																
20-Aug-13	82	500	460	7.45	406	72	#N/A	2.9	16.3	17												
27-Aug-13	83	500	455	7.64	406	69																

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
24-Jan-12	0	0.0008	< 0.003	0.00091	0.012	2.62	0.0905	< 0.01	0.00460	0.0018	< 0.009	12.7	0.00280	1.07	< 0.00001	6.62	1.04	35.6	0.00023	0.00004	0.0002	0.000439	0.00050	0.002	0.00001
31-Jan-12	1	< 0.0005	< 0.003	0.00310	0.011	2.97	0.0920	0.01	0.00425	0.0004	< 0.009	7.09	0.00390	1.02	< 0.00001	4.33	1.07	33.1	0.00018	0.00083	0.0006	0.000685	0.00052	0.004	< 0.00001
7-Feb-12	2	0.0005	< 0.003	0.00426	0.006	1.69	0.0691	< 0.01	0.00315	0.0010	< 0.009	4.12	0.00227	0.88	< 0.00001	1.66	0.773	18.7	0.00012	0.00062	0.0002	0.000519	0.00025	0.003	< 0.00001
14-Feb-12	3	< 0.0005	< 0.003	0.00464	0.004	1.18	0.0585	< 0.01	0.00301	0.0006	< 0.009	2.66	0.00191	0.88	< 0.00001	0.80	0.617	13.4	0.00010	0.00062	0.0003	0.000491	0.00028	0.004	< 0.00001
21-Feb-12	4	< 0.0005	< 0.003	0.00489	0.003	0.987	0.0734	0.01	0.00334	0.0005	< 0.009	2.37	0.00136	0.95	< 0.00001	0.49	0.564	11.7	0.00008	0.00041	0.0001	0.000508	0.00017	0.004	< 0.00001
28-Feb-12	5																								
6-Mar-12	6	0.0006	< 0.003	0.00407	0.002	0.618	0.0541	< 0.01	0.00301	0.0003	< 0.009	1.87	0.00167	0.84	< 0.00001	0.28	0.380	8.19	0.00006	0.00040	0.0002	0.000402	0.00027	0.005	< 0.00001
13-Mar-12	7																								
20-Mar-12	8	< 0.0005	< 0.003	0.00622	< 0.001	0.421	0.0862	< 0.01	0.00186	< 0.0001	< 0.009	1.21	0.00156	0.67	< 0.00001	0.18	0.296	6.10	0.00004	0.00024	< 0.0001	0.000297	0.00011	0.004	< 0.00001
27-Mar-12	9																								
3-Apr-12	10	< 0.0005	< 0.003	0.00624	< 0.001	0.334	0.0801	< 0.01	0.00144	0.0002	< 0.009	0.928	0.00122	0.60	< 0.00001	0.14	0.246	5.99	0.00003	0.00016	< 0.0001	0.000212	0.00006	0.005	< 0.00001
10-Apr-12	11																								
17-Apr-12	12	< 0.0005	< 0.003	0.00706	< 0.001	0.315	0.0845	0.02	0.00183	0.0003	< 0.009	0.890	0.00118	0.66	< 0.00001	0.09	0.241	6.27	0.00004	0.00014	0.0002	0.000203	0.00023	0.007	< 0.00001
24-Apr-12	13																								
1-May-12	14	< 0.0005	0.003	0.00761	< 0.001	0.285	0.0899	0.06	0.00160	0.0003	< 0.009	0.842	0.00143	0.67	< 0.00001	0.10	0.230	6.40	0.00004	0.00013	0.0002	0.000164	0.00022	0.006	< 0.00001
8-May-12	15																								
15-May-12	16	< 0.0005	< 0.003	0.00580	< 0.001	0.243	0.0773	0.01	0.00201	0.0002	< 0.009	0.765	0.00110	0.63	< 0.00001	0.12	0.202	6.16	0.00004	0.00009	0.0001	0.000136	0.00021	0.006	< 0.00001
22-May-12	17																								
29-May-12	18	< 0.0005	< 0.003	0.00693	< 0.001	0.211	0.0943	< 0.01	0.00165	0.0001	< 0.009	0.632	0.00108	0.55	< 0.00001	0.08	0.183	6.46	0.00003	0.00022	< 0.0001	0.000133	0.00024	0.008	< 0.00001
5-Jun-12	19																								
12-Jun-12	20	< 0.0005	0.004	0.00379	< 0.001	0.186	0.0523	< 0.01	0.00159	< 0.0001	< 0.009	0.571	0.00096	0.56	< 0.00001	0.08	0.164	5.52	0.00006	0.00019	0.0003	0.000089	0.00024	0.004	< 0.00001
19-Jun-12	21																								
26-Jun-12	22	< 0.0005	0.004	0.00307	< 0.001	0.181	0.0460	0.01	0.00176	< 0.0001	< 0.009	0.554	0.00107	0.55	< 0.00001	0.11	0.159	6.10	0.00003	0.00018	0.0002	0.000100	0.00026	0.007	< 0.00001
3-Jul-12	23																								
10-Jul-12	24	< 0.0005	0.016	0.00340	< 0.001	0.176	0.0574	0.01	0.00173	0.0001	< 0.009	0.538	0.00118	0.57	< 0.00001	0.08	0.158	6.56	0.00002	0.00037	0.0002	0.000070	0.00024	0.005	< 0.00001
17-Jul-12	25																								
24-Jul-12	26	< 0.0005	0.006	0.00301	< 0.001	0.156	0.0488	0.02	0.00173	< 0.0001	< 0.009	0.489	0.00122	0.49	< 0.00001	0.07	0.145	6.92	< 0.00002	0.00009	0.0002	0.000059	0.00023	0.004	0.00003
31-Jul-12	27																								
7-Aug-12	28	< 0.0005	0.037	0.00308	< 0.001	0.147	0.0416	< 0.01	0.00183	< 0.0001	< 0.009	0.479	0.00085	0.51	< 0.00001	0.07	0.136	7.17	0.00003	0.00028	0.0001	0.000066	0.00031	0.007	< 0.00001
14-Aug-12	29																								
21-Aug-12	30	0.0009	0.006	0.00245	< 0.001	0.136	0.0440	0.03	0.00177	0.0003	< 0.009	0.409	0.00082	0.49	< 0.00001	0.07	0.129	7.11	0.00003	0.00020	0.0002	0.00006	0.00025	0.003	< 0.00001
28-Aug-12	31																								
4-Sep-12	32	0.0006	0.006	0.00301	< 0.001	0.103	0.0344	< 0.01	0.00126	0.0002	< 0.009	0.318	0.00068	0.34	< 0.00001	0.07	0.105	5.63	< 0.00002	0.00018	0.0003	0.000048	0.00040	0.006	< 0.00001
11-Sep-12	33																								
18-Sep-12	34	< 0.0005	0.004	0.00254	< 0.001	0.136	0.0432	< 0.01	0.00196	< 0.0001	< 0.009	0.390	0.00083	0.54	< 0.00001	0.06	0.134	7.73	< 0.00002	0.00020	0.0002	0.000065	0.00026	0.007	< 0.00001
25-Sep-12	35																								
2-Oct-12	36	< 0.0005	< 0.003	0.00248	< 0.001	0.107	0.0405	< 0.01	0.00156	< 0.0001	< 0.009	0.342	0.00088	0.45	< 0.00001	0.05	0.111	6.38	< 0.00002	0.00007	< 0.0001	0.000052	0.00013	0.004	< 0.00001
9-Oct-12	37																								
16-Oct-12	38	< 0.0005	< 0.003	0.00268	< 0.001	0.101	0.0262	< 0.01	0.00164	0.0001	< 0.009	0.308	0.00094	0.45	< 0.00001	0.05	0.111	6.42	< 0.00002	0.00019	< 0.0001	0.000061	0.00017	0.004	< 0.00001
23-Oct-12	39																								
30-Oct-12	40	< 0.0005	0.007	0.00241	< 0.001	0.099	0.0342	0.01	0.00157	0.0001	< 0.009	0.344	0.00064	0.43	0.00001	0.05	0.115	6.68	< 0.00002	0.00011	< 0.0001	0.000058	0.00019	0.003	< 0.00001
6-Nov-12	41																								
13-Nov-12	42	< 0.0005	< 0.003	0.00243	< 0.001	0.076	0.0254	0.01	0.00135	< 0.0001	< 0.009	0.285	0.00063	0.37	< 0.00001	0.04	0.0921	5.16	< 0.00002	0.00010	< 0.0001	0.000041	0.00013	0.004	< 0.00001
20-Nov-12	43																								
27-Nov-12	44	0.0007	0.008	0.00467	< 0.001	0.097	0.0263	< 0.01	0.00138	< 0.0001	< 0.009	0.318	0.00135	0.44	< 0.00001	0.05	0.107	6.82	< 0.00002	0.00025	< 0.0001	0.000045	0.00011	0.005	< 0.00001
4-Dec-12	45																								
11-Dec-12	46	< 0.0005	< 0.003	0.00237	< 0.001	0.073	0.0133	< 0.01	0.00142	< 0.0001	< 0.009	0.298	0.00102	0.37	< 0.00001	0.04	0.0920	5.11	< 0.00002	0.00038	< 0.0001	0.000035	0.00016	0.003	< 0.00001
18-Dec-12	47																								

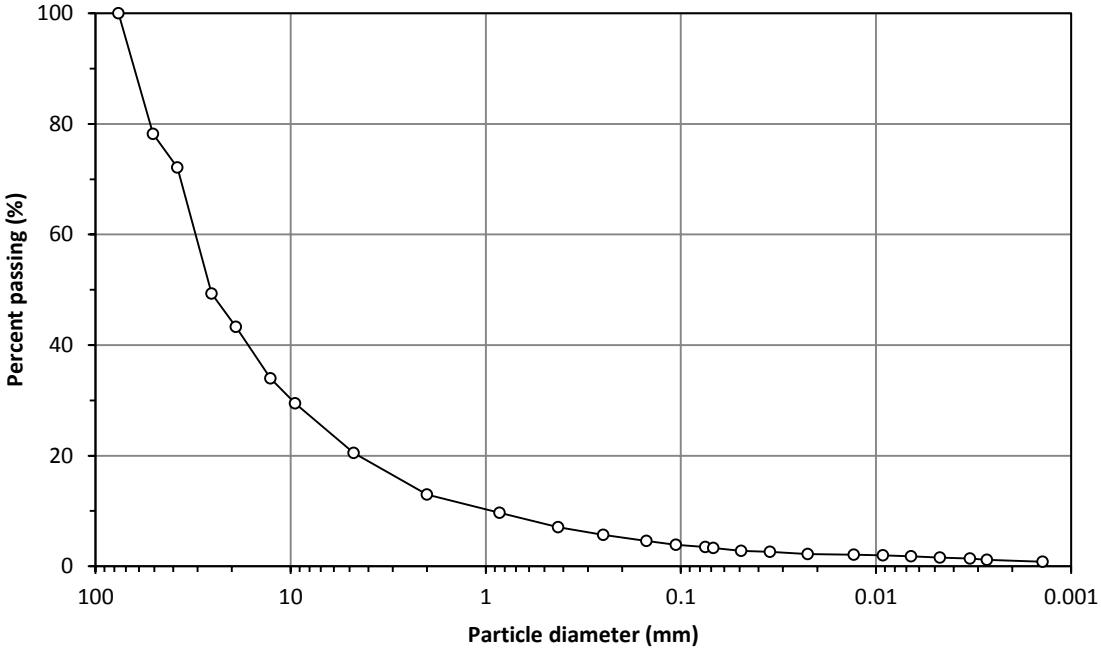
Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
25-Dec-12	48	0.0008	0.004	0.00228	< 0.001	0.078	0.0153	< 0.01	0.00165	0.0002	< 0.009	0.302	0.00100	0.32	< 0.00001	0.03	0.106	5.17	< 0.00002	0.00015	< 0.0001	0.000029	< 0.00003	0.004	< 0.00001
1-Jan-13	49																								
8-Jan-13	50	< 0.0005	0.004	0.00212	< 0.001	0.071	0.0154	< 0.01	0.00128	< 0.0001	< 0.009	0.319	0.00109	0.41	< 0.00001	0.04	0.0914	4.78	< 0.00002	0.00017	0.0001	0.000031	0.00018	0.003	< 0.00001
15-Jan-13	51																								
22-Jan-13	52	< 0.0005	0.004	0.00243	< 0.001	0.067	0.0179	< 0.01	0.00122	0.0003	< 0.009	0.289	0.00130	0.30	< 0.00001	0.03	0.0856	5.06	< 0.00002	0.00011	0.0001	0.000033	0.00018	0.003	< 0.00001
29-Jan-13	53																								
5-Feb-13	54	< 0.0005	< 0.003	0.00209	< 0.001	0.060	0.0133	< 0.01	0.00144	< 0.0001	< 0.009	0.272	0.00175	0.29	< 0.00001	0.03	0.0872	5.56	< 0.00002	0.00006	< 0.0001	0.000037	0.00004	0.003	< 0.00001
12-Feb-13	55																								
19-Feb-13	56	< 0.0005	0.006	0.00225	< 0.001	0.081	0.0172	< 0.01	0.00128	< 0.0001	< 0.009	0.266	0.00168	0.20	< 0.00001	0.08	0.0787	5.73	< 0.00002	0.00006	0.0001	0.000024	0.00004	0.003	< 0.00001
26-Feb-13	57																								
5-Mar-13	58	< 0.0005	< 0.003	0.00183	< 0.001	0.088	0.0165	< 0.01	0.00146	0.0002	< 0.009	0.263	0.00148	0.35	< 0.00001	0.06	0.0910	7.02	< 0.00002	< 0.00001	< 0.0001	0.000038	< 0.00003	0.003	0.00002
12-Mar-13	59																								
19-Mar-13	60	0.0005	< 0.003	0.00185	< 0.001	0.068	0.0139	< 0.01	0.00129	0.0001	< 0.009	0.248	0.00094	0.32	< 0.00001	0.03	0.0761	5.22	< 0.00002	0.00004	< 0.0001	0.000027	0.00004	0.003	< 0.00001
26-Mar-13	61																								
2-Apr-13	62	< 0.0005	< 0.003	0.00182	< 0.001	0.071	0.0152	< 0.01	0.00148	0.0007	0.011	0.254	0.00081	0.30	< 0.00001	0.03	0.0821	5.19	< 0.00002	0.00003	< 0.0001	0.000029	< 0.00003	0.003	< 0.00001
9-Apr-13	63																								
16-Apr-13	64	< 0.0005	0.004	0.00195	< 0.001	0.072	0.0146	< 0.01	0.00153	0.0001	0.014	0.256	0.00082	0.36	< 0.00001	0.03	0.0790	5.45	< 0.00002	0.00006	< 0.0001	0.000030	0.00006	0.003	< 0.00001
23-Apr-13	65																								
30-Apr-13	66	< 0.0005	0.016	0.00193	< 0.001	0.071	0.0154	0.03	0.00127	< 0.0001	< 0.009	0.232	0.00101	0.31	< 0.00001	0.04	0.0770	5.24	< 0.00002	0.00006	< 0.0001	< 0.000001	0.00014	0.002	< 0.00001
7-May-13	67																								
14-May-13	68	< 0.0005	< 0.003	0.00233	< 0.001	0.070	0.0144	< 0.01	0.00129	< 0.0001	0.010	0.238	0.00096	0.34	< 0.00001	0.03	0.0744	5.48	< 0.00002	0.00004	< 0.0001	0.000029	0.00004	0.003	< 0.00001
21-May-13	69																								
28-May-13	70	< 0.0005	0.007	0.00241	< 0.001	0.080	0.0171	< 0.01	0.00137	0.0001	< 0.009	0.263	0.00097	0.32	< 0.00001	0.04	0.0837	5.52	< 0.00002	0.00007	< 0.0001	0.000032	< 0.00003	0.003	< 0.00001
4-Jun-13	71																								
11-Jun-13	72																								
18-Jun-13	73																								
25-Jun-13	74	< 0.0005	< 0.003	0.00185	< 0.001	0.070	0.0129	< 0.01	0.00121	< 0.0001	0.020	0.222	0.00104	0.29	< 0.00001	0.03	0.0720	4.61	< 0.00002	0.00007	< 0.0001	0.000029	0.00007	0.003	< 0.00001
2-Jul-13	75																								
9-Jul-13	76																								
16-Jul-13	77																								
23-Jul-13	78	< 0.0005	0.005	0.00210	< 0.001	0.073	0.0124	< 0.01	0.00114	< 0.0001	< 0.009	0.205	0.00123	0.30	< 0.00001	0.03	0.0762	5.59	< 0.00002	0.00012	< 0.0001	0.000030	0.00007	0.003	0.00001
30-Jul-13	79																								
6-Aug-13	80																								
13-Aug-13	81																								
20-Aug-13	82																								
27-Aug-13	83																								

Date	Cycle No.	Volume mL Input	Volume mL Output	pH	ORP mV	Cond. umhos/cm	Acidity (pH 4.5) mgCaCO3/L	Acidity (pH 8.3) mgCaCO3/L	Alkalinity mgCaCO3/L	Sulphate mg/L	Hardness CaCO3 mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L
21-Feb-13	0	500	420	7.50	338	1016	#N/A	7.8	35.5	441	151	0.0284	0.0077	0.0473	0.0401	< 0.00002	< 0.00001	0.0287	0.000034	55.2	< 0.0005	0.000602
26-Feb-13	1	500	445	7.47	343	653	#N/A	5.7	23.6	272	81.8	0.109	0.0064	0.0627	0.0336	< 0.00002	< 0.00001	0.0279	0.000005	30.0	< 0.0005	0.000114
5-Mar-13	2	500	480	7.43	375	484	#N/A	4.6	23.7	203	67.7	0.120	0.0081	0.0468	0.0311	< 0.00002	< 0.00001	0.0368	0.000008	24.5	< 0.0005	0.000135
12-Mar-13	3	500	455	7.51	373	323	#N/A	4.0	17.0	130	59.6	0.0535	0.0057	0.0354	0.0271	< 0.00002	< 0.00001	0.0262	0.000319	21.6	< 0.0005	0.000041
19-Mar-13	4	500	450	7.34	388	264	#N/A	6.6	16.1	101	52.6	0.0442	0.0054	0.0313	0.0249	< 0.00002	< 0.00001	0.0281	0.000019	19.1	< 0.0005	0.000136
26-Mar-13	5	500	450	7.47	378	218																
2-Apr-13	6	500	440	7.30	389	204	#N/A	5.5	15.3	82	59.9	0.0580	0.0048	0.0230	0.0292	< 0.00002	< 0.00001	0.0265	0.000016	21.9	< 0.0005	0.000343
9-Apr-13	7	500	450	7.34	412	180																
16-Apr-13	8	500	450	7.33	398	173	#N/A	5.4	14.4	76	59.2	0.0262	0.0052	0.0181	0.0278	< 0.00002	< 0.00001	0.0237	0.000011	21.7	< 0.0005	0.000060
23-Apr-13	9	500	505	7.41	387	181																
30-Apr-13	10	500	440	7.34	401	164	#N/A	4.4	14.2	76	67.0	0.0238	0.0039	0.0135	0.0270	< 0.00002	< 0.00001	0.0201	0.000067	24.9	< 0.0005	0.000070
7-May-13	11	500	520	7.39	397	152	#N/A	7.2	18.0	64	64.4	0.0167	0.0036	0.0112	0.0263	< 0.00002	< 0.00001	0.0185	0.000016	23.9	< 0.0005	0.000086
14-May-13	12	500	510	7.34	411	158	#N/A	5.0	15.9	73	67.7	0.0204	0.0053	0.0124	0.0310	< 0.00002	< 0.00001	0.0187	0.000022	25.3	< 0.0005	0.000186
21-May-13	13	500	520	7.40	404	156	#N/A	4.1	15.0	66	64.6	0.0164	0.0045	0.0107	0.0305	< 0.00002	< 0.00001	0.0175	0.000018	24.2	< 0.0005	0.000075
28-May-13	14	500	520	7.41	396	158	#N/A	4.3	15.0	73	70.4	0.0133	0.0039	0.0097	0.0292	< 0.00002	< 0.00001	0.0184	0.000023	26.4	< 0.0005	0.000075
4-Jun-13	15	500	520	7.44	414	156	#N/A	5.7	16.3	64	63.5	0.0199	0.0035	0.0099	0.0305	< 0.00002	< 0.00001	0.0194	0.000013	23.8	< 0.0005	0.000129
11-Jun-13	16	500	485	7.3	398	144	#N/A	7.8	15.7	58	58.8	0.0207	0.0029	0.0083	0.0235	< 0.00002	< 0.00001	0.0154	0.000012	22	< 0.0005	0.000058
18-Jun-13	17	500	510	7.34	358.88	147.55	#N/A	4.97	15.09	58	60.6	0.0165	0.0034	0.0087	0.0288	< 0.00002	< 0.00001	0.0174	0.000017	22.7	< 0.0005	0.00012
25-Jun-13	18	500	445	7.33	377.92	150.34	#N/A	4.51	14.81	57	61.7	0.0201	0.0032	0.0089	0.0329	< 0.00002	< 0.00001	0.0146	0.000019	23.1	< 0.0005	0.000093
2-Jul-13	19	500	455	7.21	440.42	158.33	#N/A	5.78	14.25	59	62.2	0.0273	0.0034	0.0088	0.0274	< 0.00002	< 0.00001	0.018	0.000019	23.3	< 0.0005	0.000085
9-Jul-13	20	500	445	7.33	354.98	153.38	#N/A	6.9	16.02	64	67.2	0.0297	0.003	0.0081	0.0296	< 0.00002	< 0.00001	0.0158	0.000035	25.2	< 0.0005	0.000231
16-Jul-13	21	500	435	7.25	389.64	149.5	#N/A	3.73	12	62	61.7	0.0175	0.003	0.0081	0.0254	< 0.00002	< 0.00001	0.0153	0.000023	23.1	< 0.0005	0.000098
23-Jul-13	22	500	440	7.37	420.89	135.92	#N/A	6.42	13.99	57	60.3	0.0284	0.0026	0.0072	0.0233	< 0.00002	< 0.00001	0.014	0.000025	22.6	< 0.0005	0.000097
30-Jul-13	23	500	440	7.27	405.76	144.72	#N/A	4.11	12.18	61	60.5	0.0148	0.0023	0.0062	0.022	< 0.00002	< 0.00001	0.0144	0.000014	22.8	< 0.0005	0.000069
6-Aug-13	24	500	460	7.49	376.46	151.04	#N/A	7.35	13.85	61	60.6	0.0238	0.0026	0.0064	0.0231	0.00002	< 0.00001	0.0148	0.000103	22.8	< 0.0005	0.000193
13-Aug-13	25	500	460	7.43	385	156	#N/A	3.0	14.5	58	62.4	0.028	0.0025	0.0064	0.0214	< 0.00002	< 0.00001	0.0147	0.000024	23.5	< 0.0005	0.000158
20-Aug-13	26	500	445	7.22	389	162	#N/A	3.4	11.2	56												
27-Aug-13	27	500	445	7.3	395	133	#N/A	2.78	12													

Date	Cycle No.	Cu mg/L	Fe mg/L	Pb mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg ug/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	S mg/L	Tl mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L	Zr mg/L
21-Feb-13	0	< 0.0005	< 0.003	0.00003	0.308	3.19	0.514	< 0.01	0.00105	0.0003	0.021	9.97	0.00990	0.77	< 0.00001	141	1.46	146	0.00024	0.00023	0.0003	0.00125	0.00025	< 0.001	< 0.00001
26-Feb-13	1	< 0.0005	< 0.003	0.00004	0.210	1.66	0.172	< 0.01	0.00078	0.0001	< 0.009	4.84	0.0154	0.77	< 0.00001	81.1	0.891	88.1	0.00015	0.00002	0.0006	0.000629	0.00042	< 0.001	< 0.00001
5-Mar-13	2	< 0.0005	< 0.003	0.00003	0.139	1.57	0.189	< 0.01	0.00059	0.0001	< 0.009	4.16	0.00917	0.87	< 0.00001	59.4	0.826	63.9	0.00013	0.00004	0.0004	0.000649	0.00042	< 0.001	0.00002
12-Mar-13	3	0.0013	< 0.003	< 0.00002	0.083	1.35	0.154	< 0.01	0.00039	0.0001	< 0.009	4.01	0.00689	0.74	< 0.00001	37.8	0.741	45.9	0.00010	0.00002	< 0.0001	0.000344	0.00033	< 0.001	< 0.00001
19-Mar-13	4	0.0006	< 0.003	0.00009	0.062	1.18	0.132	< 0.01	0.00037	< 0.0001	< 0.009	3.23	0.00431	0.66	< 0.00001	23.6	0.648	33.5	0.00011	0.00006	< 0.0001	0.000370	0.00037	< 0.001	< 0.00001
26-Mar-13	5																								
2-Apr-13	6	< 0.0005	< 0.003	0.00002	0.039	1.24	0.154	< 0.01	0.00033	0.0003	< 0.009	3.07	0.00269	0.61	< 0.00001	12.8	0.749	26.6	0.00009	< 0.00001	0.0002	0.000280	0.00025	< 0.001	< 0.00001
9-Apr-13	7																								
16-Apr-13	8	< 0.0005	< 0.003	0.00002	0.024	1.24	0.151	< 0.01	0.00033	0.0002	0.011	2.77	0.00237	0.59	< 0.00001	6.10	0.734	22.2	0.00007	0.00002	< 0.0001	0.000273	0.00023	< 0.001	< 0.00001
23-Apr-13	9																								
30-Apr-13	10	< 0.0005	0.004	0.00005	0.016	1.20	0.203	< 0.01	0.00022	0.0002	< 0.009	2.36	0.00242	0.53	< 0.00001	3.09	0.777	21.8	0.00007	0.00059	< 0.0001	0.000262	0.00017	< 0.001	< 0.00001
7-May-13	11	< 0.0005	< 0.003	< 0.00002	0.014	1.16	0.223	< 0.01	0.00023	0.0002	< 0.009	2.28	0.00229	0.51	< 0.00001	2.16	0.774	20.4	0.00006	< 0.00001	< 0.0001	0.000285	0.00015	< 0.001	< 0.00001
14-May-13	12	< 0.0005	< 0.003	< 0.00002	0.012	1.10	0.239	< 0.01	0.00021	0.0001	< 0.009	2.29	0.00213	0.60	< 0.00001	1.84	0.752	21.4	0.00006	< 0.00001	< 0.0001	0.000322	0.00011	< 0.001	< 0.00001
21-May-13	13	< 0.0005	< 0.003	< 0.00002	0.01	1.03	0.235	< 0.01	0.00021	< 0.0001	< 0.009	1.99	0.0022	0.47	< 0.00001	1.3	0.741	20.8	0.00006	0.00004	< 0.0001	0.000286	0.00013	< 0.001	< 0.00001
28-May-13	14	< 0.0005	< 0.003	< 0.00002	0.01	1.1	0.249	< 0.01	0.0002	0.0002	< 0.009	2.08	0.00238	0.45	< 0.00001	1.19	0.784	20.5	0.00005	0.00003	< 0.0001	0.000294	0.00009	< 0.001	< 0.00001
4-Jun-13	15	< 0.0005	< 0.003	< 0.00002	0.009	0.989	0.224	< 0.01	0.00018	< 0.0001	< 0.009	1.97	0.00205	0.51	< 0.00001	0.93	0.7	17.8	0.00005	0.00025	< 0.0001	0.000271	0.00013	< 0.001	< 0.00001
11-Jun-13	16	< 0.0005	< 0.003	< 0.00002	0.007	0.919	0.212	< 0.01	0.00019	0.0002	< 0.009	1.74	0.002	0.46	< 0.00001	0.79	0.647	18.8	0.00004	0.00035	0.0002	0.000233	0.00007	< 0.001	< 0.00001
18-Jun-13	17	< 0.0005	< 0.003	< 0.00002	0.008	0.935	0.228	< 0.01	0.00019	0.0002	< 0.009	1.87	0.00211	0.48	< 0.00001	0.69	0.669	17.9	0.00005	0.00004	< 0.0001	0.000265	0.0001	< 0.001	< 0.00001
25-Jun-13	18	< 0.0005	< 0.003	0.00005	0.007	0.959	0.224	< 0.01	0.00019	0.0002	0.014	1.77	0.0025	0.11	< 0.00001	0.66	0.681	18.1	0.00004	0.00007	< 0.0001	0.000237	0.00011	< 0.001	< 0.00001
2-Jul-13	19	< 0.0005	< 0.003	< 0.00002	0.008	0.965	0.222	< 0.01	0.00021	0.0003	< 0.009	1.92	0.00277	0.49	< 0.00001	0.55	0.674	19.9	0.00005	0.00002	< 0.0001	0.000255	0.00015	< 0.001	< 0.00001
9-Jul-13	20	0.0011	< 0.003	0.00003	0.007	1.04	0.239	< 0.01	0.00021	0.0007	< 0.009	1.8	0.00271	0.51	< 0.00001	0.51	0.696	20.4	0.00005	0.00004	< 0.0001	0.000266	0.00012	< 0.001	0.0018
16-Jul-13	21	< 0.0005	< 0.003	0.00003	0.006	0.944	0.237	< 0.01	0.00026	0.0004	0.01	1.69	0.00256	0.43	< 0.00001	0.45	0.664	17.9	0.00004	0.00001	< 0.0001	0.000248	0.00009	0.003	< 0.00001
23-Jul-13	22	< 0.0005	< 0.003	0.00008	0.006	0.924	0.227	< 0.01	0.00021	< 0.0001	< 0.009	1.55	0.00273	0.43	< 0.00001	0.35	0.628	18.2	0.00004	< 0.00001	0.0001	0.000247	0.00011	< 0.001	< 0.00001
30-Jul-13	23	< 0.0005	< 0.003	< 0.00002	0.006	0.901	0.235	0.01	0.00021	0.0002	< 0.009	1.42	0.00248	0.38	< 0.00001	0.31	0.605	17.1	0.00003	< 0.00001	< 0.0001	0.000237	0.00007	< 0.001	< 0.00001
6-Aug-13	24	< 0.0005	< 0.003	0.00009	0.006	0.869	0.25	< 0.01	0.00022	0.0003	< 0.009	1.46	0.00249	0.45	< 0.00001	0.3	0.604	18.2	0.00004	< 0.00001	< 0.0001	0.000311	0.00019	0.003	0.00003
13-Aug-13	25	< 0.0005	< 0.003	0.00002	0.006	0.89	0.259	< 0.01	0.00019	0.0005	< 0.009	1.4	0.00242	0.46	< 0.00001	0.25	0.614	18	0.00004	0.00004	< 0.0001	0.000269	0.00007	< 0.001	< 0.00001
20-Aug-13	26																								
27-Aug-13	27																								

APPENDIX H
FIELD BARREL TEST DATA

Particle size distribution (PSD) curves of material used in Field Barrel 7



Particle size distribution (PSD) curves of material used in Field Barrel 8

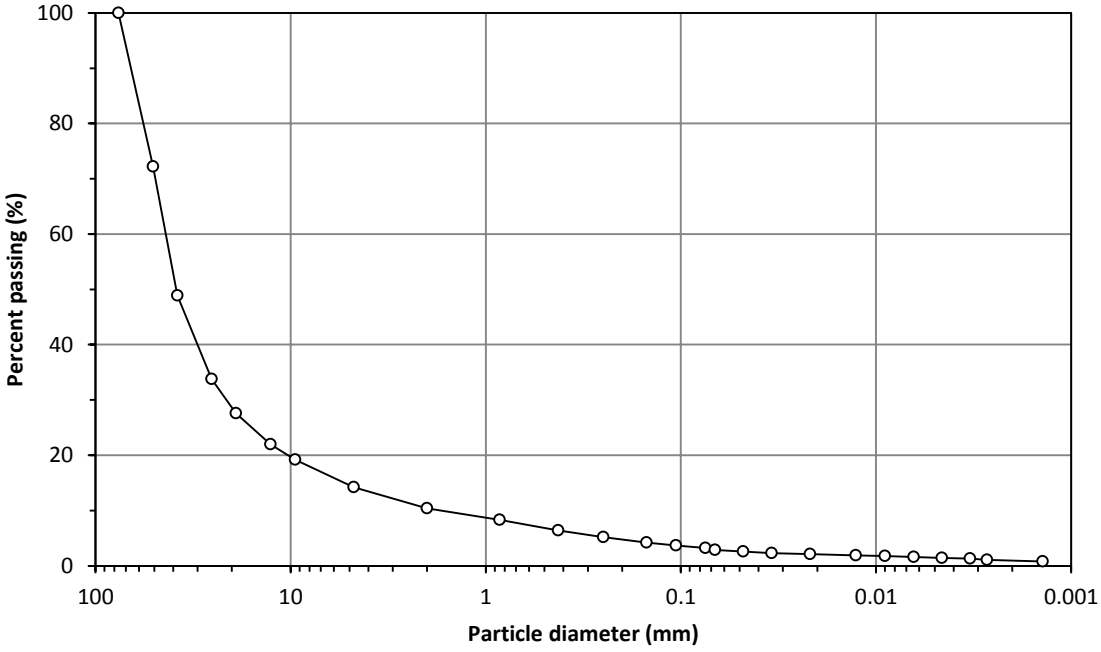


Table H-1 Total Species from all Field Barrels.

Field Barrel #	Date Sampled	Time Sampled	ALS Sample ID	Cycle No. Note: 0 = Flush	Physical Tests							Anions and Nutrients (mg/L)															Cyanide (mg/L)		Inorganic/Organic Carbon (mg/L)		Aggregate Organics	Total Metals (mg/L)			
					Colour, True (Color Units)	Cond. (uS/cm)	Hardness as CaCO3 (mg/L)	pH	Total Susp. Solids (mg/L)	Total Diss. Solids (mg/L)	Turbidity (NTU)	Acidity (as CaCO3)	Alkalinity, Bicarbonate (as CaCO3)	Alkalinity, Carbonate (as CaCO3)	Alkalinity, Hydroxide (as CaCO3)	Alkalinity, Total (as CaCO3)	Ammonia, Total (as N)	Bromide (Br)	Chloride (Cl)	Fluoride (F)	Nitrate (as N)	Nitrite (as N)	Total Kjeldahl Nitrogen	Total Nitrogen	Orthophosphate-Dissolved (as P)	Phosphorus (P)-Total	Sulfate (SO4)	Cyanide, Total	Cyanide, Weak Acid Dissociated	Total Organic Carbon	Dissolved Organic Carbon	COD (mg/L)	Aluminum (Al)-Total	Antimony (Sb)-Total	Arsenic (As)-Total	Barium (Ba)-Total
1	7-Jul-12	00:00	L1175814-1	0	<5.0	147	4.79	8.52	137	97	142	<1.0	37.3	10.4	<1.0	47.7		<0.050	1.32	0.128	<0.0050	<0.0010	0.202	0.202	0.0137	0.0875	23.8						6.3	0.0115	0.256	0.233
	1-Aug-12	00:00	L1189376-1	1	6.5	869	14.5	8.17	7	689	26.4	1.9	168	<2.0	<2.0	168		<0.50	11.8	0.74	<0.050	<0.010			0.0203	0.076	230						1.35	0.177	1.54	0.126
	22-Aug-12	00:00	L1199717-10	2	12.3	1070	24.2	8.15	10.5	740	21.9	2.6	167	<2.0	<2.0	167		<0.50	5.2	0.87	0.172	0.027			0.0418	0.063	330						1.6	0.2	1.79	0.0712
	29-Sep-12	00:00	L1218204-1	3	<5.0	627	13.4	8.2	4.7	407	18.9	1.5	138	<2.0	<2.0	138		<0.050	0.8	0.505	0.0725	0.0185			0.0219	0.0494	168						1.69	0.104	1.01	0.0744
	30-Oct-12	21:10	L1236050-1	4[1]	<5.0	417	5.25	8.37	4.6	283	32.8	<1.0	128	<1.0	<1.0	128		<0.050	<0.50	0.312	0.0622	0.0158	-	-	0.0145	0.0406	83.5						2.04	0.0612	0.551	0.0945
	25-Jul-13	14:55	L1339023-1	5	18.3	688	32.4	8.08	9.7	476	19	1.5	100	<2.0	<2.0	100	0.88	<0.25	<2.5	0.33	0.227	0.0444	2.54	2.81	0.0036	0.063	231	<0.0010	<0.0010			38	1.54	0.0589	0.409	0.0556
	4-Sep-13	10:13	L1359314-1	6	6.1	1100	77.8	8.18	126	786	105	3.9	83.3	<2.0	<2.0	83.3	0.39	<0.50	<5.0	0.22	0.317	0.037	1.07	1.42	0.0068	0.141	475	<0.0010	<0.0010			28	2.88	0.069	0.201	0.171
	23-Sep-13	09:00	L1368653-1	7	<5.0	484	27.8	8.22	11.5	313	18.7	1.2	66.8	<2.0	<2.0	66.8	0.0869	<0.050	0.9	0.152	0.119	0.0117	0.183	0.313	0.0023	0.0412	157	<0.0010	<0.0010	5.15	4.28	<20	0.912	0.0321	0.152	0.0342
	28-Sep-13	10:00	L1371294-11	8[2]	<5.0	588	38	8.26	52	378	43.3	1.6	75.2	<2.0	<2.0	75.2	0.0353	<0.050	0.61	0.17	0.116	0.012	0.305	0.433	0.003	0.0853	201			2.96		<20	-	-	-	-
2	7-Jul-12	00:00	L1175814-2	0	<5.0	146	7.79	8.54	145	106	163	<1.0	46.7	4.5	<1.0	51.2		<0.050	2.54	0.031	0.0161	0.0011	0.343	0.36	0.0107	0.0716	16.7						5.57	0.00522	0.0197	0.265
	1-Aug-12	00:00	L1189376-2	1	8.3	763	5.13	8.52	19	545	30.5	<1.0	258	14.8	<1.0	273		<0.25	17.7	0.42	0.1	0.02			0.0043	0.0895	104						1.4	0.0962	0.151	0.228
	22-Aug-12	00:00	L1199717-11	2	8.6	701	9.11	8.58	7.8	493	18.2	<1.0	227	11.7	<1.0	238		<0.25	6.4	0.39	0.181	0.0435			0.0011	0.034	109						1.31	0.0809	0.185	0.16
	29-Sep-12	00:00	L1218204-2	3	<5.0	533	4.07	8.58	3	358	21.8	<1.0	207	7.2	<1.0	214		<0.050	0.73	0.239	0.0837	0.0268			0.0062	0.0266	70.3						1.47	0.0516	0.201	0.155
	5-Jul-13	11:00	L1331121-2	4[3]	6.2	431	3.12	8.75	<3.0	293	16	<1.0	174	7.8	<1.0	182	0.0628	<0.050	<0.50	0.144	0.126	0.0274	0.516	0.669	0.0065	0.0342	45.9	<0.0010	<0.0010			<20	2.58	0.0304	0.144	0.132
	25-Jul-13	14:20	L1339023-2	5	<5.0	549	6.4	8.51	6.1	374	23.2	<1.0	173	8.3	<1.0	182	0.0587	<0.050	<0.50	0.143	0.18	0.0594	0.343	0.582	0.0054	0.0243	103	<0.0010	<0.0010			<20	0.332	0.0333	0.195	0.0866
	4-Sep-13	10:24	L1359314-2	6	<5.0	909	18.3	8.49	16.3	630	20.6	<1.0	188	<1.0	<1.0	188	0.0802	<0.50	<5.0	<0.20	0.494	0.085	0.562	1.14	0.0049	0.0651	277	<0.0010	<0.0010			<20	1.38	0.06	0.165	0.125
	23-Sep-13	09:00	L1368653-2	7	<5.0	388	6.34	8.45	8.7	260	22.3	<1.0	128	<1.0	<1.0	128	0.0523	<0.050	<0.50	0.085	0.136	0.0129	0.859	1.01	0.0029	0.025	70.1	<0.0010	<0.0010	1.65	1.85	<20	1.31	0.0183	0.122	0.0684
	28-Sep-13	10:00	L1371294-12	8[2]	<5.0	619	12.2	8.5	7.9	413	15.4	<1.0	196	<1.0	<1.0	196	0.0607	<0.050	<0.50	0.121	0.196	0.0104	0.283	0.49	0.004	0.0295	127			2.55		<20	-	-	-	-
3	7-Jul-12	00:00	L1175814-3	0	<5.0	133	12	8.32	96	124	129	<1.0	47.1	<1.0	<1.0	47.1		<0.050	4.02	<0.020	<0.0050	<0.0010	0.202	0.202	0.0032	0.055	13						6.05	0.0086	0.00841	0.218
	1-Aug-12	00:00	L1189376-3	1	8.3	573	18.1	8.06	9	441	13.5	1.7	249	<2.0	<2.0	249		<0.050	9.16	0.409	<0.0050	0.0024			<0.0010	0.0627	51.4						0.795	0.115	0.034	0.259
	22-Aug-12	00:00	L1199717-12	2	7.9	496	10.1	8.43	3.2	336	18.4	<1.0	206	4	<1.0	210		<0.050	1.37	0.231	0.0695	0.0161			0.0011	0.0367	54.3						1.15	0.106	0.032	0.188
	29-Sep-12	00:00	L1218204-3	3	5.5	315	8.72	8.03	9.6	209	17.2	2.6	151	<2.0	<2.0	151		<0.050	<0.50	0.084	0.0393	0.0098			0.0106	0.037	24.3						1.24	0.0497	0.0217	0.151
	30-Oct-12	21:20	L1236050-2	4[1]	<5.0	329	5.24	8.98	28	229	65.8	<1.0	148	13.6	<1.0	161		<0.050	<0.50	0.059	0.0552	0.0154	-	-	0.0065	0.0776	16.4						2.47	0.0321	0.0259	0.216
	25-Jul-13	15:34	L1339023-3	5	8.5	316	10.3	8.32	3.5	221	17.7	<1.0	139	<1.0	<1.0	139	0.296	<0.050	0.64	0.067	0.168	0.0285	1.04	1.23	0.0123	0.0388	27.4	<0.0010	<0.0010			24	1.04	0.0295	0.021	0.0731
	4-Sep-13	10:34	L1359314-3	6	<5.0	544	24.5	8.46	40.3	370	32	<1.0	197	1.9	<1.0	199	0.0065	<0.050	<0.50	0.107	0.295	0.0441	0.324	0.663	0.0012	0.0864	98	<0.0010	<0.0010			<20	0.993	0.0714	0.0335	0.159
	23-Sep-13	09:00	L1368653-3	7[4]	<5.0	253	11	8.37	11.8	176	30.3	<1.0	113	<1.0	<1.0	113	0.0075	<0.050	<0.50	0.043	0.0993	0.0096	0.375	0.484	0.0079	0.0447	24.7	<0.0010	<0.0010	3.67	2.97	<20	1.53	0.0203	0.0161	0.0612
	28-Sep-13	10:00	L1371294-13	8	<5.0	183	18.7	8.13	194	127	200	2.8	78.3	<2.0	<2.0	78.3	0.0764	<0.050	<0.50	0.025	0.134	0.0053	0.707	0.846	0.0154	0.324	16.4			5.07		25	-	-	-	-
4	7-Jul-12	00:00	L1175814-4	0	<5.0	132	36.3	8.09	75.3	103	108	7.6	31.2	<2.0	<2.0	31.2		<0.050	3.77	0.022	0.0211	<0.0010	0.254	0.275	<0.0010	0.0377	16.8						3.93	0.00896	0.00915	0.146
	1-Aug-12	00:00	L1189376-4	1	<5.0	507	149	8.02	7	395	6.9	3.2	138	<2.0	<2.0	138		<0.050	24.4	0.303	0.0482	0.0099			<0.0010	0.0565	84.7						0.188	0.0894	0.0613	0.258
	22-Aug-12	00:00	L1199717-13	2	<5.0	427	106	8.07	<3.0	295	4.02	3.6	83.2	<2.0	<2.0	83.2		<0.050	4.09	0.282	0.0848	0.0147	-	-	0.0021	0.0245	115						0.19	0.12	0.0972	0.0944
	29-Sep-12	00:00	L1218204-4	3	<5.0	235	60.6	8.01	<3.0	147	8.14	3.3	75.6	<2.0	<2.0	75.6		<0.050	<0.50	0.141	0.0426	0.0098			0.0028	0.014	44.2						0.47	0.0638	0.0678	0.0996
	30-Oct-12	21:30	L1236050-3	4[1]	<5.0	156	35.9	8.12	3.1	93	7.44	1.4	67.8	<2.0	<2.0	67.8		<0.050	<0.50	0.084	0.049	0.0118	-	-	0.002	0.0114	20.8						1.04	0.0423	0.0539	0.122
	25-Jul-13	16:30	L1339023-4	5	<5.0	233	78.5	8.1	<3.0	158	10.1	1.1	67.3	<2.0	<2.0	67.3	0.0975	<0.050	<0.50	0.104	0.179	0.0344	0.377	0.59	<0.0010	0.0093	49.6	<0.0010	<0.0010			<20	0.469	0.0436	0.0586	0.0718
	4-Sep-13	10:44	L1359314-4	6	<5.0	395	141	7.97	7.3	285	4.67	7.4	66.8	<2.0	<2.0	66.8	0.0652	<0.050	<0.50	0.106	0.399	0.132	0.335	0.866	0.0028	0.0285	130	<0.0010	<0.0010			<20	0.296	0.0714	0.0532	0.113
	23-Sep-13	09:00	L1368653-4	7	<5.0	182	66.7	8.08	<3.0	119	6.44	2.5	53	<2.0	<2.0	53	0.0559	<0.050	<0.50	0.054	0.135	0.0381	0.147	0.32	0.0013	0.013	37.9	<0.0010	<0.0010	1.43	1.55	<20	0.438	0.0269	0.0336	0.0594
	28-Sep-13	10:00	L1371294-14	8[2]	<5.0	282	102	8.04	17.7	185	19.1	4.1	77.3	<2.0	<2.0	77.3	0.0365	<0.050	<0.50	0.08	0.26	0.162	0.212	0.634	0.0041	0.0319	64.2			2.12		<20	-	-	-	-
5	7-Jul-12	00:00	L1175814-5	0	<5.0	314	27.5	8.58	209	214	250	<1.0	42.3	<1.0	<1.0	42.3		<0.050	2.14	0.042	0.0226	<0.0010	0.221	0.244	0.0073	0.0965	98.5						5.22	0.00489	0.0557	0.241
	1-Aug-12	00:00	L1189376-5	1	<5.0	1920	116	8.04	17.7	1480	13.3	2.7	200	<2.0	<2.0	200		<1.0	26	<1.0	0.11	0.026			<0.0010	0.0821	736						0.195	0.0651	0.193	0.037
	22-Aug-12	00:00	L1199717-14	2	5.5	2130	126	8.18	11.8	1630	11.5	2.5	154	<2.0	<2.0	154		<1.0	12	0.43	0.2	0.023	-	-	<0.0010	0.0427	935						0.585	0.0761	0.162	0.0386
	29-Sep-12	00:00	L1218204-5	3	<5.0	1380	85.2	7.92	18.7	937	19	4.4	91.6	<2.0	<2.0	91.6		<0.50	<5.0	0.27	0.122	0.037			0.0014	0.0481	589						0.764	0.0511	0.0861	0.0421
	30-Oct-12	21:40	L1236050-4	4[1]	<5.0	563	32.8	8.07	4.8	357	7.75	1.7	86.4	<2.0	<2.0	86.4		<0.050	<0.50	0.152	0.0574	0.0116	-	-	0.0012	0.0156	194						1.45	0.03	0.0554	0.0822
	25-Jul-13	17:00	L1339023-5	5	<5.0	1060	110	7.85	5.5	746	8.5	1.8	64.4	<2.0	<2.0	64.4	0.0285	<0.50	<5.0	0.27	0.237	0.035	0.575	0.846	<0.0010	0.0133	467	<0.0010	<0.0010			<20	0.141	0.0229	0.0277	0.0276
	4-Sep-13	10:57	L1359314-5	6	5.3	1660	255	7.97	128	1250	138	8.3	47	<2.0	<2.0	47	0.369	<1.0	<10	<0.40	0.27	<0.020	1.32	1.59	<0.0010	0.165	817	<0.0010	<0.0010			22	4.57	0.0253	0.0357	0.217
	23-Sep-13	09:00	L1368653-5	7	<5.0	770	94.1	8.13	19.1	515	15.1	2.7	49.8	<2.0	<2.0	49.8	0.0737	<0.50	<5.0	<0.20	0.102	0.014	0.172	0.288	<0.0010	0.0375	319	<0.0010	<0.0010	1.4	1.59	<20	0.345	0.0144	0.019	0.0227
	28-Sep-13	10:00	L1371294-15	8[2]	<5.0	1350	195	8.12	37.5	976	36.6	3.9	76.4	<2.0	<2.0	76.4	0.0374	<0.50	<5.0	<0.20	1.44	0.018	0.319	1.78	<0.0010	0.0979	602			2.43		<20	-	-	-	-
6	7-Jul-12	00:00	L1175814-6	0	<5.0	325	126	8.06	48	225	56.5	10	18.8	<2.0	<2.0	18.8		<0.050	<0.50	0.037	0.024	<0.0010	0.239	0.263	<0.0010	0.0338	131						1.6	0.00305	0.00309	0.0857
	1-Aug-12	00:00	L1189376-6	1	5.1	807	267	7.28	<3.0	619	5.34	4	17.7	<2.0	<2.0	17.7		<0.50	<5.0	<0.40	0.174	0.012			<0.0010	0.041	409						0.15	0.0226	0.00631	0.0686
	22-Aug-12	00:00	L1199717-15	2	<5.0	874	293	7.82	<3.0	670	2.76	5.6	27.4	<2.0	<2.0	27.4		<0.50	<5.0	<0.20	0.166	0.011	-	-	<0.0010	0.0191	439						0.067	0.0226	0.00473	0.0421
	29-Sep-12	00:00	L1218204-6	3	11.9	493	168	7.72	4.2	338	4.73	4.2	24	<2.0	<2.0	24		<0.050	0.68	0.044	0.0868	0.0074			<0.0010	0.0091	212						0.241	0.0154	0.00279	0.0468
	30-Oct-12	21:50	L1236050-5	4	<5.0	331	106	7.63	3.4	221	2.45	1.9	19.6	<2.0	<2.0	19.6		<0.050	<0.50	0.027	0.0507	0.0056	-	-	<0.0010	0.0088	136						0.106	0.00934	0.00201	0.0434
	25-Jul-13	17:30	L1339023-6	5	8.3	526	225	7.23	5.3	402	4.3	2.5	19.9	<2.0	<2.0	19.9	0.105	<0.050	<0.50	0.048	0.165	0.0183	1.05	1.23	<0.0010	0.0058	242	<0.0010	<0.0010			30	0.139	0.00991	0.00203	0.0392
	4-Sep-13	11:06	L1359314-6	6	6.3	1000	481	7.85	16.5	888	8.76	9.2	21.2	<2.0	<2.0	21.2	0.0954	<0.50	<5.0	<0.20	0.28	<0.010	0.683	0.963	<0.0010	0.0038	549	<0.0010	<0.0010			<20	0.569	0.0146	0.00246	0.0716
	23-Sep-13	09:00	L1368653-6	7	<5.0	397	160	7.99	6.1	279	6.82	3.7	13.4	<2.0	<2.0	13.4	0.038	<0.050	<0.50	<0.020	0.098	0.0073	0.195	0.301	<0.0010	0.0155	174	<0.0010	<0.0010	1.72	1.59	<20	0.414	0.00565	0.00234	0.0418
	28-Sep-13	10:00	L1371294-16	8[2]	10.1	495	206	7.92	79.7	374	94.8	5.8	21.3	<2.0	<2.0	21.3	0.195	<0.050	1.12	0.03	0.505	0.0112	1.74	2.25	<0.0010	0.0795	216			11.9		32	-	-	-	-
7	6-Jul-13	10:00	L1331121-3	0	<5.0	1050	16.6	8.43	8200	1270	<4000	<1.0	126	3.9	<1.0	130	2.9	<0.50	7.5	1.25	46	8.89	5.88	60.8	0.0056	4.66	131	0.0115	<0.0040	-		67	108	0.0129	0.623	13.7
	25-Jul-13	17:50	L1339023-7	1	<5.0	1250	19.6	8.24	3.4	931	83.5	<1.0	206	<2.0	<2.0	206	1.57	<0.50	<5.0	1.09	25.4	4.45	2.44	32.2	0.0032	0.02	295	0.0102	0.0019			<20	5.81	0.0678	0.0477	0.318
	23-Sep-13	09:00	L1368653-7	2	<5.0	1920	172	8.23	8.8	1380	17.6	1.5	100	<2.0	<2.0	100	2.06	<1.0	<10	0.51	3.91	0.065	3.85	7.82	<0.0010	0.0181	899	<0.0010	<0.0010	2.25	1.85	<20	1.51	0.0142	0.0204	0.0782
	28-Sep-13	10:00	L1371294-17	3[2]	<5.0	3000	333	8.15	-	2370	315	1.9	105	<1.7	<1.7	105	-	<1.0	<10	0.6	6.56	0.118	-	-	<0.0010	0.184	1530			-		-	-	-	-	-
8	6-Jul-13	10:00	L1331121-4	0	<5.0	1330	129	7.89	5880	995	<4000	2.6	75.1	<1.0	<1.0	75.1	3.74	<0.50	5.1	0.4	37.7	7.32	6.9	51.9	<0.0010	1.88	318	0.0031	<0.0020		-	43	22.5	0.0447	0.428	2.71
	25-Jul-13	18:15	L1339023-8	1	<5.0	1550	224	8.1	<3.0	1140	0.81	2.1	95.2	<2.0	<2.0	95.2	3.75	<1.0	<10	0.7	33	5.18	4.68	42.8	0.0071	0.0156	568	0.0122	0.0012			23	0.0458	0.0646	0.0155	0.0317
	23-Sep-13	09:00	L1368653-8	2	<5.0	1030	292	8.06	6.5	769	2.77	3.7	45.6	<2.0	<2.0	45.6	1.86	<0.50	<5.0	<0.20	1.36	0.015	2.45	3.82	<0.0010	0.0087	465	<0.0010	<0.0010	1.02	1.16	<20	0.331	0.0177	0.00745	0.0389
	28-Sep-13	10:00	L1371294-18	3[2]	<5.0	1890	606	7.97	-	1580	244	4.1	51.7	<3.6	<3.6	51.7	-	<1.0	11	<0.40	3.96	0.033	-	-	<0.0010	0.204	1030			-		-	-	-	-	-

Notes: [1] Leachate was completely frozen, as of date unknown. Sample was collected (and volume measured) after letting leachate thaw in >25 deg C heated room for ~36 hours. Minimal ice remained in buckets at time of sampling; [2] Winterized field barrels, due to early winter snow. Very little volume collected from last sample time, as such no total metals; [3] This sample consisted of thawed leachate from the previous year (corresponds to sample date 10/30/2012, for which barrels 1 and 3-6 were sampled); [4] Leachate bucket was full and overflowing

Field Barrel #	Date Sampled	Time Sampled	ALS Sample ID	Cycle No. Note: 0 = Flush	Total Metals (mg/L)																										
					Beryllium (Be)-Total	Bismuth (Bi)-Total	Boron (B)-Total	Cadmium (Cd)-Total	Calcium (Ca)-Total	Chromium (Cr)-Total	Cobalt (Co)-Total	Copper (Cu)-Total	Iron (Fe)-Total	Lead (Pb)-Total	Lithium (Li)-Total	Magnesium (Mg)-Total	Manganese (Mn)-Total	Mercury (Hg)-Total	Molybdenum (Mo)-Total	Nickel (Ni)-Total	Phosphorus (P)-Total	Potassium (K)-Total	Selenium (Se)-Total	Silicon (Si)-Total	Silver (Ag)-Total	Sodium (Na)-Total	Strontium (Sr)-Total	Thallium (Tl)-Total	Tin (Sn)-Total	Titanium (Ti)-Total	Uranium (U)-Total	Vanadium (V)-Total	Zinc (Zn)-Total
1	7-Jul-12	00:00	L1175814-1	0	0.00016	<0.00050	0.032	0.000046	2.71	0.00066	0.00022	0.00395	1.05	0.00422	0.0791	1.19	0.1	0.000029	0.00118	<0.00050	<0.30	3	0.00234	7.37	0.000217	29.6	0.0737	0.000223	0.00012	0.031	0.00114	0.0087	0.0156
	1-Aug-12	00:00	L1189376-1	1	<0.00010	<0.00050	0.243	0.000016	5.05	0.00034	0.00018	0.00328	0.231	0.00212	0.651	0.594	0.0633	0.000023	0.0114	<0.00050	<0.30	3.12	0.0321	5.44	0.000162	193	0.256	0.000107	<0.00010	0.011	0.0291	0.004	0.0057
	22-Aug-12	00:00	L1199717-10	2	<0.00020	<0.0010	0.407	0.000028	8.3	0.00032	0.00026	0.233	0.287	0.00253	0.762	0.872	0.108	0.000021	0.0176	<0.0010	<0.30	4.11	0.054	3.85	0.000388	234	0.345	0.000123	<0.00020	<0.010	0.0423	0.0043	0.0074
	29-Sep-12	00:00	L1218204-1	3	<0.00010	<0.00050	0.179	0.000021	4.86	0.00045	0.00028	0.0529	0.384	0.00248	0.413	0.561	0.0932	0.000018	0.0104	<0.00050	<0.30	2.69	0.0282	5.22	0.00026	135	0.192	0.000097	<0.00010	0.018	0.0229	0.0036	0.0086
	30-Oct-12	21:10	L1236050-1	4[1]	<0.00010	<0.00050	0.131	0.000017	2.19	0.00032	0.00026	0.0397	0.421	0.00273	0.256	0.456	0.0761	0.000028	0.00633	<0.00050	<0.30	2.23	0.0131	6.2	0.000404	97.8	0.0839	0.000113	<0.00010	0.019	0.0148	0.0035	0.0053
	25-Jul-13	14:55	L1339023-1	5	<0.00010	<0.00050	0.634	0.000036	12.1	0.00078	0.00071	0.601	0.883	0.00294	0.327	1.2	0.209	0.000016	0.015	0.00064	<0.30	4.37	0.0275	3.37	0.000167	137	0.441	0.000089	<0.00010	0.014	0.0119	0.003	0.011
	4-Sep-13	10:13	L1359314-1	6	<0.00010	<0.00050	0.323	0.00013	27.9	0.00154	0.00169	0.211	3.63	0.00684	0.45	3.15	0.542	0.000032	0.0204	0.0015	<0.30	5.37	0.0468	4.86	0.000886	202	0.964	0.000171	0.00011	0.027	0.0186	0.0047	0.0345
	23-Sep-13	09:00	L1368653-1	7	<0.00010	<0.00050	0.312	0.000021	10.3	0.0004	0.00038	0.182	0.562	0.00134	0.211	0.942	0.158	<0.000010	0.00796	<0.00050	<0.30	3.13	0.0165	2.14	0.00008	92.6	0.368	0.000073	<0.00010	<0.010	0.00673	0.0017	0.0059
	28-Sep-13	10:00	L1371294-11	8[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	7-Jul-12	00:00	L1175814-2	0	0.00027	<0.00050	0.03	0.000044	3.9	0.00163	0.00107	0.00416	0.95	0.00384	0.0621	0.74	0.0858	0.000022	0.00249	0.00082	<0.30	3.2	0.00126	6.5	0.000202	28.6	0.182	0.000312	0.00017	0.021	0.0034	0.0148	0.0111
	1-Aug-12	00:00	L1189376-2	1	<0.00010	<0.00050	0.347	0.00003	1.61	0.00063	0.00094	0.00546	0.233	0.00205	0.369	0.269	0.0294	0.000028	0.0527	0.00124	<0.30	2.2	0.0146	4.48	0.000286	182	0.188	0.000107	<0.00010	<0.010	0.117	0.0077	0.007
	22-Aug-12	00:00	L1199717-11	2	<0.00010	<0.00050	0.435	0.000032	3.17	0.00052	0.00101	0.0966	0.196	0.00133	0.403	0.287	0.0564	0.00002	0.0454	0.00121	<0.30	2.29	0.0151	3.44	0.000337	163	0.16	0.000096	<0.00010	<0.010	0.132	0.0074	0.0049
	29-Sep-12	00:00	L1218204-2	3	0.0001	<0.00050	0.135	0.000025	1.5	0.00066	0.00113	0.00407	0.244	0.0017	0.317	0.24	0.0361	0.000013	0.028	0.00067	<0.30	1.91	0.0102	5.71	0.00027	130	0.135	0.0001	<0.00010	0.013	0.0893	0.0072	0.0049
	5-Jul-13	11:00	L1331121-2	4[3]	0.00011	<0.00050	0.092	0.000035	1.15	0.00063	0.0018	0.0643	0.345	0.00252	0.23	0.23	0.0479	0.000022	0.0183	0.00089	<0.30	1.81	0.00748	4.73	0.000391	106	0.0818	0.000126	<0.00010	<0.010	0.0594	0.0068	0.0068
	25-Jul-13	14:20	L1339023-2	5	<0.00010	<0.00050	0.093	0.000048	2.43	0.00031	0.00187	0.0065	0.171	0.00243	0.237	0.238	0.0673	0.000014	0.0313	0.00106	<0.30	1.67	0.0121	1.78	0.000042	136	0.182	0.000054	<0.00010	<0.010	0.0512	0.0035	0.0055
	4-Sep-13	10:24	L1359314-2	6	<0.00010	<0.00050	0.214	<0.000090	6.67	0.00093	0.00175	0.0847	0.697	0.00199	0.346	0.726	0.129	<0.000010	0.0636	0.00133	<0.30	3.03	0.028	3.51	0.000244	200	0.432	0.000093	<0.00010	<0.010	0.065	0.0044	0.0176
	23-Sep-13	09:00	L1368653-2	7	<0.00010	<0.00050	0.062	0.000041	2.2	0.00057	0.00131	0.0114	0.332	0.00176	0.156	0.307	0.0603	<0.000010	0.0171	0.00058	<0.30	1.87	0.00803	2.87	0.000076	90.4	0.145	0.000082	<0.00010	<0.010	0.0244	0.0045	0.0058
	28-Sep-13	10:00	L1371294-12	8[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	7-Jul-12	00:00	L1175814-3	0	0.00026	<0.00050	0.034	0.000055	5.2	0.00189	0.00052	0.00476	1.12	0.00731	0.0545	1.2	0.0768	<0.000010	0.00216	0.00169	<0.30	4.35	0.00039	8	0.000202	24.2	0.122	0.000327	0.00012	0.043	0.00207	0.0097	0.0131
	1-Aug-12	00:00	L1189376-3	1	<0.00010	<0.00050	0.312	0.00002	5.26	0.00058	0.00055	0.0537	0.158	0.00283	0.308	1.05	0.0404	<0.000010	0.0295	0.00272	<0.30	4.25	0.00268	3.05	0.000155	136	0.252	0.000091	<0.00010	<0.010	0.0391	0.0021	0.0063
	22-Aug-12	00:00	L1199717-12	2	<0.00010	<0.00050	0.26	0.000025	3.09	0.00059	0.00053	0.115	0.252	0.00403	0.315	0.67	0.0369	<0.000010	0.0295	0.00123	<0.30	3.22	0.00253	3.28	0.000238	122	0.131	0.000085	<0.00010	<0.010	0.0466	0.0027	0.0072
	29-Sep-12	00:00	L1218204-3	3	<0.00010	<0.00050	0.216	0.000018	3.08	0.00071	0.00045	0.132	0.297	0.00372	0.199	0.548	0.0429	<0.000010	0.016	0.00072	<0.30	2.71	0.00136	3.63	0.000108	80.4	0.106	0.00007	<0.00010	0.015	0.0222	0.0023	0.0077
	30-Oct-12	21:20	L1236050-2	4[1]	0.00017	<0.00050	0.09	0.000174	4.22	0.00146	0.00126	0.0327	1.67	0.0187	0.186	0.847	0.126	0.000019	0.0107	0.0016	<0.30	3.16	0.00134	10.8	0.000447	83.1	0.102	0.000152	<0.00010	0.072	0.0173	0.0047	0.0298
	25-Jul-13	15:34	L1339023-3	5	<0.00010	<0.00050	0.3	0.000032	3.54	0.00075	0.00073	0.278	0.613	0.00399	0.154	0.622	0.0823	<0.000010	0.0163	0.00094	<0.30	3.26	0.00153	2.43	0.000085	73	0.0933	0.000055	<0.00010	<0.010	0.0134	0.0022	0.0076
	4-Sep-13	10:34	L1359314-3	6	<0.00010	<0.00050	0.202	0.000121	8.42	0.00133	0.00093	0.0162	0.943	0.00798	0.251	1.37	0.092	<0.000010	0.0441	0.00131	<0.30	3.6	0.00397	3.12	0.000218	116	0.245	0.000089	<0.00010	0.014	0.0265	0.0022	0.0215
	23-Sep-13	09:00	L1368653-3	7[4]	<0.00010	<0.00050	0.135	0.000039	3.61	0.00086	0.00074	0.0704	0.669	0.00614	0.126	0.67	0.0704	<0.000010	0.0117	0.00081	<0.30	2.76	0.0011	3.17	0.000089	53.4	0.0977	0.000072	<0.00010	0.015	0.0077	0.0027	0.011
	28-Sep-13	10:00	L1371294-13	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	7-Jul-12	00:00	L1175814-4	0	0.00021	<0.00050	0.024	0.000122	11.5	0.00275	0.0005	0.00353	0.498	0.00567	0.0133	1.63	0.0721	<0.000010	0.00173	0.00363	<0.30	6.01	0.0007	6.76	0.000252	9.8	0.434	0.000353	0.00015	0.029	0.00108	0.0059	0.0117
	1-Aug-12	00:00	L1189376-4	1	<0.00010	<0.00050	0.23	0.000058	48.1	0.00029	0.00195	0.00458	0.049	0.000994	0.0823	6.28	0.127	<0.000010	0.0225	0.0169	<0.30	9.04	0.00485	2.22	0.000066	47	1.89	0.000257	<0.00010	<0.010	0.015	<0.0010	0.0068
	22-Aug-12	00:00	L1199717-13	2	<0.00010	<0.00050	0.179	0.000052	35.5	0.00022	0.00131	0.00183	<0.030	0.000772	0.0925	4.59	0.0929	<0.000010	0.032	0.0117	<0.30	8.5	0.00632	2.59	0.000059	44.8	1.31	0.00023	<0.00010	<0.010	0.0249	<0.0010	0.0054
	29-Sep-12	00:00	L1218204-4	3	<0.00010	<0.00050	0.101	0.000039	20.8	0.00049	0.00046	0.00184	0.061	0.0015	0.0446	2.53	0.0551	<0.000010	0.0161	0.00565	<0.30	6.28	0.00311	2.36	0.000036	22.8	0.725	0.000174	<0.00010	<0.010	0.0136	0.0011	0.0053
	30-Oct-12	21:30	L1236050-3	4[1]	<0.00010	<0.00050	0.059	0.000047	15.9	0.00079	0.00069	0.00349	0.159	0.00336	0.0299	1.94	0.0658	<0.000010	0.00976	0.00499	<0.30	5.42	0.00195	3.56	0.000085	15.8	0.548	0.000183	<0.00010	0.012	0.0108	0.0019	0.0054
	25-Jul-13	16:30	L1339023-4	5	<0.00010	<0.00050	0.086	0.00011	26.7	0.00041	0.00122	0.041	0.11	0.00344	0.034	3.01	0.0934	<0.000010	0.019	0.00851	<0.30	7.52	0.00466	2.23	0.000035	13.8	0.937	0.000197	<0.00010	<0.010	0.00929	0.0011	0.0062
	4-Sep-13	10:44	L1359314-4	6	<0.00010	<0.00050	0.149	0.000115	49	0.00035	0.00109	0.0221	0.183	0.00117	0.0446	5.66	0.142	<0.000010	0.0329	0.0118	<0.30	10.2	0.0102	2.07	0.00005	16.4	1.58	0.00024	<0.00010	<0.010	0.0132	<0.0010	0.0115
	23-Sep-13	09:00	L1368653-4	7	<0.00010	<0.00050	0.06	0.000071	23	0.00031	0.00072	0.00717	0.129	0.00132	0.0227	2.59	0.0822	<0.000010	0.0114	0.00534	<0.30	6.4	0.00368	1.67	0.000016	7.5	0.75	0.000152	<0.00010	<0.010	0.00532	<0.0010	0.006
	28-Sep-13	10:00	L1371294-14	8[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	7-Jul-12	00:00	L1175814-5	0	0.00021	<0.00050	0.036	0.000132	11.7	0.0006	0.00028	0.00309	0.743	0.0122	0.123	0.77	0.0633	0.000026	0.0013	<0.00050	<0.30	4.15	0.00345	7.26	0.000137	51.6	0.126	0.000254	0.00011	0.035	0.000753	0.007	0.0145
	1-Aug-12	00:00	L1189376-5	1	<0.00020	<0.0010	0.205	0.00008	37.5	0.00022	0.00034	0.0028	0.147	0.00764	1.04	4.27	0.133	<0.000010	0.0095	<0.0010	<0.30	8.47	0.104	2.06	0.000166	390	1.26	0.000212	<0.00020	<0.010	0.016	<0.0020	<0.0060
	22-Aug-12	00:00	L1199717-14	2	<0.00050	<0.0025	0.335	0.000087	41	<0.00050	<0.00050	0.0512	0.182	0.00927	1.32	5.29	0.112	0.00002	0.0143	<0.0025	<0.30	9.63	0.178	2.81	0.000275	460	1.47	0.000253	<0.00050	0.015	0.0231	<0.0050	<0.015
	29-Sep-12	00:00	L1218204-5	3	<0.00020	<0.0010	0.186	0.00009	30.6	0.00031	0.00039	0.0074	0.139	0.0111	0.76	3.25	0.142	0.000017	0.0112	<0.0010	<0.30	6.62	0.103	3.13	0.000127	279	0.954	0.000184	<0.00020	0.015	0.0138	<0.0020	0.009
	30-Oct-12	21:40	L1236050-4	4[1]	<0.00010	<0.00050	0.142	0.000122	11.6	0.00034	0.00046	0.0159	0.482	0.021	0.332	1.32	0.112	0.000032	0.00676	<0.00050	<0.30	4.6	0.0494	4.06	0.000198	150	0.314	0.000144	<0.00010	0.03	0.00783	0.002	0.0088
	25-Jul-13	17:00	L1339023-5	5	<0.00010	<0.00050	0.219	0.000159	40.1	0.00014	0.00109	0.0846	0.095	0.0103	0.402	3.82	0.265	0.000017	0.0136	<0.00050	<0.30	6.61	0.122	1.4	0.000038	199	1.04	0.000165	<0.00010	<0.010	0.00541	<0.0010	0.0065
	4-Sep-13	10:57	L1359314-5	6	0.00016	<0.00050	0.444	0.000527	86.6	0.002	0.00312	0.423	4.1	0.0339	0.548	10	0.714	0.000027	0.00897	0.00205	<0.30	10.9	0.25	8.66	0.000572	271	2.35	0.000347	0.00012	0.053	0.00786	0.0058	0.0361
	23-Sep-13	09:00	L1368653-5	7	<0.00010	<0.00050	0.094	0.000108	31	0.00015	0.00057	0.00937	0.212	0.00816	0.234	3.11	0.171	<0.000010	0.00518	<0.00050	<0.30	5.77	0.0935	1.53	0.000037	121	0.852	0.000154	<0.00010	<0.010	0.00363	<0.0010	0.0074
	28-Sep-13	10:00	L1371294-15	8[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	7-Jul-12	00:00	L1175814-6	0	0.00019	<0.00050	0.027	0.000111	42.4	0.00029	0.00326	0.00364	0.345	0.00329	0.00515	3.13	0.34	<0.000010	0.00461	0.00137	<0.30	6.98	0.00171	3.48	0.000186	10.4	0.657	0.0002	<0.00010	0.021	0.00306	0.0029	0.011
	1-Aug-12	00:00	L1189376-6	1	<0.00010	<0.00050	0.159	0.00026	89.3	0.00017	0.00603	0.00275	0.036	0.000588	0.0311	10.9	1.15	<0.000010	0.0302	0.00235	<0.30	13.4	0.011	1.94	0.000048	55	2.06	0.000286	<0.00010	<0.010	0.00883	<0.0010	0.0173
	22-Aug-12	00:00	L1199717-15	2	<0.00010	<0.00050	0.156	0.000285	98.9	<0.00010	0.00552	0.00374	0.034	0.000271	0.0321	12.4	1.21	<0.000010	0.0336	0.00186	<0.30	14.5	0.00979	1.97	0.000027	62.4	2.14	0.000311	<0.00010	0.013	0.00895	<0.0010	0.0161
	29-Sep-12	00:00	L1218204-6	3	<0.00010	<0.00050	0.344	0.000162	55.9	0.00019	0.00289	0.244	0.066	0.00056	0.0155	7.03	0.746	<0.000010	0.022	0.00114	<0.30	9.42	0.00416	1.63	0.000036	26.8	1.23	0.000182	<0.00010	0.01	0.00526	<0.0010	0.0124
	30-Oct-12	21:50	L1236050-5	4	<0.00010	<0.00050	0.074	0.000095	37	<0.00010	0.00177	0.0241	0.072	0.000539	0.0076	4.8	0.409	<0.000010	0.0172	0.00081	<0.30	6.93	0.00225	1.14	0.000036	14.5	0.818	0.00013	<0.00010	<0.010	0.00432	<0.0010	0.006
	25-Jul-13	17:30	L1339023-6	5	<0.00010	<0.00050	0.302	0.000303	72.4	0.00016	0.00641	0.314	0.083	0.000415	0.0101	9.36	1.15	<0.000010	0.0198	0.00222	<0.30	10.5	0.00421	1.47	0.000023	13.3	1.5	0.000205	<0.00010	<0.010	0.00357	<0.0010	0.0156
	4-Sep-13	11:06	L1359314-6	6	<0.00010	<0.00050	0.328	0.000603	159	0.00032	0.00914	0.226	0.369	0.00061	0.0164	21.5	2.49	<0.000010	0.017	0.00365	<0.30	15.8	0.00981	2.46	0.000052	16.8	3.17	0.000312	<0.00010	0.011	0.00382	<0.0010	0.0333
	23-Sep-13	09:00	L1368653-6	7	<0.00010	<0.00050	0.071	0.000185	49.3	0.00025	0.00322	0.0436	0.555	0.000658	0.00663	7.03	0.77	<0.000010	0.0124	0.00149	<0.30	7.37	0.00337	1.6	0.000052	6.1	0.988	0.000146	<0.00010	0.011	0.00174	<0.0010	0.02
	28-Sep-13	10:00	L1371294-16	8[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	6-Jul-13	10:00	L1331121-3	0	0.00709	0.006	0.103	0.00418	121	0.0407	0.0527	0.237	123	0.807	0.857	38.1	6.34	0.00032	0.0176	0.0422	3.93	34.6	0.025	135	0.0444	217	2.19	0.00419	<0.00050	0.178	0.0238	0.288	1.15
	25-Jul-13	17:50	L1339023-7	1	0.00022	<0.00050	0.067	0.000032	6.76	0.00164	0.00181	0.00275	0.858	0.0113	0.799	1.03	0.101	<0.000010	0.0123	0.00103	<0.30	10.6	0.0102	11.3	0.000273	271	0.617	0.000433	0.0001	0.037	0.0216	0.0161	0.0145
	23-Sep-13	09:00	L1368653-7	2	<0.00020	<0.0010	0.062	0.000063	59.6	0.00046	0.00241	0.0142	0.352	0.0026	0.869	4.44	0.335	<0.000010	0.00947	0.0015	<0.30	12.9	0.0171	3.81	0.000131	359	3.48	0.000332	<0.00020	0.017	0.0147	0.0039	0.0069
	28-Sep-13	10:00	L1371294-17	3[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	6-Jul-13	10:00	L1331121-4	0	0.00272	0.00085	0.097	0.0117	81.5	0.00931	0.0204	0.0959	39.5	0.32	0.382	11.9	1.79	0.000056	0.0134	0.0198	1.86	26.6	0.0102	45.3	0.02	203	3.68	0.00649	0.0002	0.178	0.0283	0.0428	0.703
	25-Jul-13	18:15	L1339023-8	1	<0.00010	<0.00050	0.11	0.000237	74.9	0.00012	0.00151	0.00088	<0.030	0.000409	0.445	10.2	0.393	<0.000010	0.0116	0.00173	<0.30	23.4	0.00851	2.31	0.000021	245	5.02	0.00113	<0.00010	<0.010	0.046	<0.0010	0.0045
	23-Sep-13	09:00	L1368653-8	2	<0.00010	<0.00050	0.077	0.000457	103	0.00015	0.00189	0.00083	0.071	0.000759	0.19	9.67	0.633	<0.000010	0.00535	0.00112	<0.30	17	0.00963	2.13	0.000026	99.1	4.32	0.000683	<0.00010	0.011	0.0139	<0.0010	0.0076
	28-Sep-13	10:00	L1371294-18	3[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes: [1] Leachate was completely frozen, as of date unknown. Sample was collected (and volume measured) after letting leachate thaw in >25 deg C heated room for ~36 hours. Minimal ice remained in buckets at time of sampling; [2] Winterized field barrels, due to early winter snow. Very little volume collected from last sample time, as such no total metals; [3] This sample consisted of thawed leachate from the previous year (corresponds to sample date 10/30/2012, for which barrels 1 and 3-6 were sampled); [4] Leachate bucket was full and overflowing

Table H-2 Dissolved Species from all Field Barrels

Field Barrel #	Date Sampled	Time Sampled	ALS Sample ID	Cycle No. Note: 0=Flush	Dissolved Metals (mg/L)																					
					Filtration Location	Aluminum (Al)-Dissolved	Antimony (Sb)-Dissolved	Arsenic (As)-Dissolved	Barium (Ba)-Dissolved	Beryllium (Be)-Dissolved	Bismuth (Bi)-Dissolved	Boron (B)-Dissolved	Cadmium (Cd)-Dissolved	Calcium (Ca)-Dissolved	Chromium (Cr)-Dissolved	Cobalt (Co)-Dissolved	Copper (Cu)-Dissolved	Iron (Fe)-Dissolved	Lead (Pb)-Dissolved	Lithium (Li)-Dissolved	Magnesium (Mg)-Dissolved	Manganese (Mn)-Dissolved	Mercury (Hg)-Dissolved	Molybdenum (Mo)-Dissolved	Nickel (Ni)-Dissolved	Phosphorus (P)-Dissolved	Potassium (K)-Dissolved
1	7-Jul-12	00:00	L1175814-1	0	LAB	0.173	0.0134	0.251	0.0145	<0.00010	<0.00050	0.031	<0.000010	1.77	0.00014	<0.00010	0.00186	<0.030	0.000116	0.0837	0.092	0.00403	0.000011	0.00106	<0.00050	<0.30	0.674
	1-Aug-12	00:00	L1189376-1	1	LAB	0.183	0.184	1.53	0.087	<0.00010	<0.00050	0.246	0.000011	5.09	0.00018	0.0001	0.0024	<0.030	0.000315	0.674	0.43	0.0543	<0.000010	0.0116	<0.00050	<0.30	2.84
	22-Aug-12	00:00	L1199717-10	2	LAB	0.0668	0.211	1.9	0.0335	<0.00020	<0.0010	0.42	<0.000020	8.52	<0.00020	<0.00020	0.183	<0.030	0.00024	0.797	0.696	0.0958	0.000017	0.0185	<0.0010	<0.30	3.84
	29-Sep-12	00:00	L1218204-1	3	LAB	0.428	0.103	0.949	0.0398	<0.00010	<0.00050	0.177	0.000013	4.77	0.00014	0.00013	0.0331	0.042	0.00045	0.415	0.37	0.0676	<0.000010	0.0102	<0.00050	<0.30	2.14
	30-Oct-12	21:10	L1236050-1	4[1]	LAB	0.057	0.0614	0.537	0.0262	<0.00010	<0.00050	0.124	<0.000010	1.82	<0.00010	0.0001	0.0182	<0.030	0.000106	0.229	0.171	0.052	<0.000010	0.00579	<0.00050	<0.30	1.52
	25-Jul-13	14:55	L1339023-1	5	LAB	0.0259	0.0609	0.392	0.0236	<0.00010	<0.00050	0.635	0.000025	11.5	0.00016	0.00032	0.436	<0.030	0.000087	0.321	0.886	0.163	<0.000010	0.0154	<0.00050	<0.30	3.87
	4-Sep-13	10:13	L1359314-1	6	LAB	0.0142	0.0744	0.164	0.046	<0.00010	<0.00050	0.32	0.000038	27.9	<0.00010	0.00042	0.0673	<0.030	<0.000050	0.464	1.99	0.371	<0.000010	0.0212	<0.00050	<0.30	4.66
	23-Sep-13	09:00	L1368653-1	7	LAB	0.0269	0.0313	0.15	0.0166	<0.00010	<0.00050	0.324	0.000013	9.93	<0.00010	0.00016	0.126	<0.030	<0.000050	0.206	0.734	0.126	<0.000010	0.00754	<0.00050	<0.30	2.85
	28-Sep-13	10:00	L1371294-11	8[2]	LAB	0.022	0.039	0.126	0.027	<0.00010	<0.00050	0.122	0.000042	13.5	<0.00010	0.00016	0.0219	<0.030	<0.000050	0.263	1.01	0.17	<0.000010	0.0109	<0.00050	<0.30	2.57
2	7-Jul-12	00:00	L1175814-2	0	LAB	0.137	0.00562	0.0171	0.0317	<0.00010	<0.00050	0.027	<0.000010	2.69	<0.00010	<0.00010	0.00119	<0.030	0.000075	0.0625	0.258	0.00385	<0.000010	0.00244	<0.00050	<0.30	0.9
	1-Aug-12	00:00	L1189376-2	1	LAB	0.385	0.1	0.151	0.163	<0.00010	<0.00050	0.381	0.000018	1.73	0.00024	0.00059	0.00376	<0.030	0.000341	0.405	0.198	0.0199	0.000016	0.0539	0.00099	<0.30	1.92
	22-Aug-12	00:00	L1199717-11	2	LAB	0.179	0.0875	0.187	0.124	<0.00010	<0.00050	0.449	0.000025	3.29	0.00016	0.0007	0.0829	<0.030	0.000208	0.419	0.215	0.0472	0.000011	0.0479	0.00102	<0.30	1.88
	29-Sep-12	00:00	L1218204-2	3	LAB	0.207	0.0511	0.191	0.0854	<0.00010	<0.00050	0.125	0.000013	1.39	0.00022	0.00043	0.0024	<0.030	0.000201	0.297	0.142	0.0173	<0.000010	0.0265	<0.00050	<0.30	1.36
	5-Jul-13	11:00	L1331121-2	4[3]	FIELD	0.0284	0.0311	0.141	0.04	<0.00010	<0.00050	0.086	0.000011	1.08	0.00013	0.00044	0.0378	<0.030	0.000109	0.223	0.105	0.0203	<0.000010	0.0175	<0.00050	<0.30	1.11
	25-Jul-13	14:20	L1339023-2	5	LAB	0.16	0.0335	0.187	0.0555	<0.00010	<0.00050	0.084	0.000021	2.23	0.00022	0.00049	0.00379	<0.030	0.000268	0.227	0.203	0.0391	<0.000010	0.0298	0.00058	<0.30	1.57
	4-Sep-13	10:24	L1359314-2	6	LAB	0.0461	0.0597	0.158	0.0765	<0.00010	<0.00050	0.217	<0.000050	6.46	0.00028	0.00083	0.0403	<0.030	<0.000050	0.348	0.531	0.092	<0.000010	0.0603	0.00069	<0.30	2.54
	23-Sep-13	09:00	L1368653-2	7	LAB	0.119	0.0192	0.124	0.0333	<0.00010	<0.00050	0.06	0.000022	2.22	0.00022	0.00029	0.00552	<0.030	0.000118	0.159	0.196	0.0318	<0.000010	0.0173	<0.00050	<0.30	1.45
	28-Sep-13	10:00	L1371294-12	8[2]	LAB	0.11	0.0356	0.143	0.0612	<0.00010	<0.00050	0.093	0.000038	4.23	0.00018	0.00049	0.007	<0.030	0.000094	0.252	0.394	0.0536	<0.000010	0.0271	<0.00050	<0.30	1.97
3	7-Jul-12	00:00	L1175814-3	0	LAB	0.233	0.00875	0.00638	0.0368	<0.00010	<0.00050	0.03	<0.000010	4.12	<0.00010	<0.00010	0.00208	<0.030	0.000193	0.0554	0.423	0.00808	<0.000010	0.00197	0.00082	<0.30	1.42
	1-Aug-12	00:00	L1189376-3	1	LAB	0.497	0.119	0.0316	0.247	<0.00010	<0.00050	0.347	0.000022	5.58	0.00032	0.00048	0.0461	0.044	0.00116	0.334	1.02	0.0367	<0.000010	0.0294	0.00255	<0.30	3.85
	22-Aug-12	00:00	L1199717-12	2	LAB	0.193	0.109	0.0317	0.156	<0.00010	<0.00050	0.267	0.000016	3.11	0.00025	0.00038	0.0925	<0.030	0.00064	0.332	0.565	0.0272	<0.000010	0.0301	0.00094	<0.30	2.91
	29-Sep-12	00:00	L1218204-3	3	LAB	0.0953	0.0469	0.019	0.0973	<0.00010	<0.00050	0.205	0.000013	2.84	0.00029	0.00026	0.08	<0.030	0.000347	0.185	0.392	0.0277	<0.000010	0.015	<0.00050	<0.30	2.05
	30-Oct-12	21:20	L1236050-2	4[1]	LAB	0.112	0.0329	0.019	0.0409	<0.00010	<0.00050	0.087	<0.000010	1.47	0.0001	0.00015	0.00804	<0.030	0.000282	0.169	0.378	0.0186	<0.000010	0.0102	<0.00050	<0.30	1.98
	25-Jul-13	15:34	L1339023-3	5	LAB	0.0868	0.029	0.0177	0.0467	<0.00010	<0.00050	0.279	0.000016	3.41	0.00021	0.00026	0.161	<0.030	0.000259	0.15	0.432	0.0428	<0.000010	0.017	<0.00050	<0.30	2.89
	4-Sep-13	10:34	L1359314-3	6	LAB	0.0412	0.0752	0.0299	0.0965	<0.00010	<0.00050	0.204	0.000025	7.95	0.00072	0.00022	0.00671	<0.030	0.00014	0.253	1.12	0.0269	<0.000010	0.0454	0.00056	<0.30	3.25
	23-Sep-13	09:00	L1368653-3	7[4]	LAB	0.179	0.0207	0.0143	0.029	<0.00010	<0.00050	0.135	0.000016	3.6	0.00022	0.00019	0.0378	0.042	0.000698	0.127	0.481	0.0333	<0.000010	0.0122	<0.00050	<0.30	2.29
	28-Sep-13	10:00	L1371294-13	8	LAB	0.13	0.013	0.00532	0.0376	<0.00010	<0.00050	0.16	0.000023	6.61	0.00022	0.00027	0.0336	0.061	0.00048	0.0731	0.529	0.0908	<0.000010	0.00789	0.00064	<0.30	1.85
4	7-Jul-12	00:00	L1175814-4	0	LAB	0.0808	0.0097	0.00742	0.0481	<0.00010	<0.00050	0.024	0.000011	12.3	0.00012	0.00016	0.00138	<0.030	0.000117	0.0139	1.32	0.0359	<0.000010	0.0018	0.00216	<0.30	4.02
	1-Aug-12	00:00	L1189376-4	1	LAB	0.0035	0.0943	0.059	0.258	<0.00010	<0.00050	0.228	0.000058	49.4	0.00011	0.00191	0.00334	<0.030	0.000306	0.0889	6.23	0.127	<0.000010	0.0221	0.0167	<0.30	9.35
	22-Aug-12	00:00	L1199717-13	2	LAB	0.0144	0.12	0.0946	0.0914	<0.00010	<0.00050	0.175	0.000053	35.1	<0.00010	0.00128	0.00123	<0.030	0.000175	0.0885	4.41	0.0888	<0.000010	0.0311	0.0111	<0.30	8.19
	29-Sep-12	00:00	L1218204-4	3	LAB	0.037	0.0595	0.0644	0.0875	<0.00010	<0.00050	0.096	0.000028	20.3	0.00018	0.00032	0.00094	<0.030	0.000174	0.0479	2.42	0.0485	<0.000010	0.0156	0.00517	<0.30	5.94
	30-Oct-12	21:30	L1236050-3	4[1]	LAB	0.0231	0.0378	0.0468	0.0816	<0.00010	<0.00050	0.058	0.000016	11.4	<0.00010	0.00018	0.00094	<0.030	0.000087	0.028	1.83	0.0306	<0.000010	0.00896	0.00318	<0.30	4.85
	25-Jul-13	16:30	L1339023-4	5	LAB	0.0157	0.0432	0.0552	0.0612	<0.00010	<0.00050	0.083	0.000091	26.7	0.00012	0.00092	0.0274	<0.030	0.000298	0.0327	2.86	0.0813	<0.000010	0.0189	0.00722	<0.30	6.87
	4-Sep-13	10:44	L1359314-4	6	LAB	0.0064	0.0678	0.0507	0.104	<0.00010	<0.00050	0.147	0.000101	47.3	0.00014	0.0009	0.0143	<0.030	<0.000050	0.0419	5.54	0.129	<0.000010	0.0329	0.0112	<0.30	9.42
	23-Sep-13	09:00	L1368653-4	7	LAB	0.0207	0.0265	0.0316	0.0512	<0.00010	<0.00050	0.056	0.000063	22.6	0.00011	0.00058	0.00427	<0.030	0.00007	0.0212	2.53	0.0733	<0.000010	0.0113	0.00505	<0.30	6.21
	28-Sep-13	10:00	L1371294-14	8[2]	LAB	0.0085	0.0475	0.0475	0.089	<0.00010	<0.00050	0.078	0.000092	34.1	<0.00010	0.00075	0.00623	<0.030	<0.000050	0.0334	4	0.0961	<0.000010	0.019	0.00821	<0.30	7.41
5	7-Jul-12	00:00	L1175814-5	0	LAB	0.222	0.00553	0.0536	0.0185	<0.00010	<0.00050	0.032	<0.000010	10.5	<0.00010	<0.00010	0.00075	<0.030	0.000087	0.128	0.323	0.00285	<0.000010	0.00113	<0.00050	<0.30	2.09
	1-Aug-12	00:00	L1189376-5	1	LAB	0.0238	0.0683	0.196	0.0271	<0.00020	<0.0010	0.209	0.000048	39.1	<0.00020	0.00029	0.0043	<0.030	0.00257	1.05	4.47	0.136	<0.000010	0.00959	<0.0010	<0.30	9.04
	22-Aug-12	00:00	L1199717-14	2	LAB	0.019	0.0778	0.161	0.0187	<0.00050	<0.0025	0.329	0.000058	41.2	<0.00050	<0.00050	0.046	<0.030	0.00323	1.33	5.52	0.108	0.000028	0.0142	<0.0025	<0.30	10
	29-Sep-12	00:00	L1218204-5	3	LAB	0.0177	0.0502	0.0786	0.0173	<0.00020	<0.0010	0.183	0.000063	29	<0.00020	0.00033	0.0049	<0.030	0.00299	0.743	3.14	0.131	<0.000010	0.0109	<0.0010	<0.30	6.23
	30-Oct-12	21:40	L1236050-4	4[1]	LAB	0.0225	0.0299	0.0497	0.0203	<0.00010	<0.00050	0.137	0.000036	11.2	<0.00010	0.00012	0.00555	<0.030	0.000802	0.308	1.16	0.0831	<0.000010	0.00634	<0.00050	<0.30	3.9
	25-Jul-13	17:00	L1339023-5	5	LAB	0.0159	0.0237	0.0274	0.0224	<0.00010	<0.00050	0.222	0.000135	38.3	<0.00010	0.0009	0.0646	<0.030	0.0027	0.401	3.43	0.232	<0.000010	0.0138	<0.00050	<0.30	6.69
	4-Sep-13	10:57	L1359314-5	6	LAB	0.0086	0.0259	0.0201	0.0397	<0.00010	<0.00050	0.434	0.000256	87.5	<0.00010	0.00173	0.114	<0.030	0.000204	0.53	8.99	0.562	<0.000010	0.00869	<0.00050	<0.30	9.89
	23-Sep-13	09:00	L1368653-5	7	LAB	0.0127	0.0148	0.0179	0.0156	<0.00010	<0.00050	0.099	0.000096	32.4	<0.00010	0.0005	0.00451	<0.030	0.000683	0.251	3.19	0.163	<0.000010	0.00529	<0.00050	<0.30	5.88
	28-Sep-13	10:00	L1371294-15	8[2]	LAB	0.0072	0.0226	0.0247	0.0291	<0.00010	<0.00050	0.155	0.000182	66.4	<0.00010	0.00071	0.00747	<0.030	0.000585	0.451	7.09	0.327	<0.000010	0.00691	<0.00050	<0.30	8.81
6	7-Jul-12	00:00	L1175814-6	0	LAB	0.0241	0.00314	0.00176	0.0306	<0.00010	<0.00050	0.027	0.00009	45.5	<0.00010	0.00302	0.002	<0.030	0.00009	0.00516	3.06	0.336	<0.000010	0.0043	0.00127	<0.30	6.2
	1-Aug-12	00:00	L1189376-6	1	LAB	0.0081	0.0218	0.00533	0.0652	<0.00010	<0.00050	0.152	0.000249	89.6	<0.00010	0.00574	0.00235	<0.030	0.000129	0.0299	10.5	1.13	<0.000010	0.0286	0.00235	<0.30	13.2
	22-Aug-12	00:00	L1199717-15	2	LAB	0.0077	0.0231	0.00445	0.0417	<0.00010	<0.00050	0.15	0.000283	96.7	<0.00010	0.00564	0.00348	<0.030	<0.000050	0.0304	12.5	1.25	<0.000010	0.0335	0.00196	<0.30	14.8
	29-Sep-12	00:00	L1218204-6	3	LAB	0.0053	0.0151	0.00246	0.0417	<0.00010	<0.00050	0.344	0.000156	55.5	0.00014	0.00281	0.226	<0.030	0.000074	0.0145	7.07	0.752	<0.000010	0.0217	0.00114	<0.30	9.22
	30-Oct-12	21:50	L1236050-5	4	LAB	<0.0030	0.00989	0.00175	0.0584	<0.00010	<0.00050	0.074	0.000111	34.7	<0.00010	0.00176	0.0188	<0.030	<0.000050	0.00741	4.8	0.47	<0.000010	0.0164	0.00081	<0.30	6.78
	25-Jul-13	17:30	L1339023-6	5	LAB	<0.0040	0.00983	0.00176	0.0366	<0.00010	<0.00050	0.304	0.0003	75.5	0.00014	0.00636	0.284	<0.030	<0.000050	0.00962	8.87	1.15	<0.000010	0.0206	0.00216	<0.30	10.7
	4-Sep-13	11:06	L1359314-6	6	LAB	0.0049	0.0144	0.00153	0.0631	<0.00010	<0.00050	0.332	0.000609	158	<0.00010	0.00907	0.171	<0.030	<0.000050	0.0152	21.3	2.43	<0.000010	0.0175	0.00351	<0.30	15.5
	23-Sep-13	09:00	L1368653-6	7	LAB	0.0031	0.00591	0.00094	0.0367	<0.00010	<0.00050	0.071	0.000185	52.1	<0.00010	0.00315	0.0207	<0.030	<0.000050	0.00598	7.2	0.768	<0.000010	0.0129	0.00132	<0.30	7.68
	28-Sep-13	10:00	L1371294-16	8[2]	LAB	0.0096	0.00634	0.00123	0.052	<0.00010	<0.00050	0.479	0.000196	67.1	<0.00010	0.00275	0.274	<0.030	<0.000050	0.00678	9.23	0.91	<0.000010	0.0128	0.00153	<0.30	8.05
7	6-Jul-13	10:00	L1331121-3	0	LAB	1.74	0.0568	0.0896	0.164	<0.00050	<0.0025	0.056	<0.000050	5.88	0.00168	0.00118	0.0012	0.169	0.00247	0.637	0.455	0.0763	<0.000010	0.0114	<0.0025	<0.30	7.29
	25-Jul-13	17:50	L1339023-7	1	LAB	0.0844	0.0716	0.0411	0.0462	<0.00010	<0.00050	0.064	0.000018	6.89	0.00029	0.00093	0.00077	<0.030	0.000299	0.815	0.574	0.0759	<0.000010	0.013	<0.00050	<0.30	8.03
	23-Sep-13	09:00	L1368653-7	2	LAB	0.0706	0.0148	0.0191	0.0288	<0.00020	<0.0010	0.064	0.000059	61.5	<0.00020	0.00218	0.00921	<0.030	0.00014	0.931	4.38	0.329	<0.000010	0.00969	0.0014	<0.30	12.6
	28-Sep-13	10:00	L1371294-17	3[2]	LAB	0.0254	0.0173	0.0208	0.0235	<0.00020	<0.0010	0.081	0.000081	117	<0.00020	0.00378	0.0192	<0.030	<0.00010	1.51	9.85	0.714	<0.000010	0.0139	0.0014	<0.30	19.9
8	6-Jul-13	10:00	L1331121-4	0	FIELD	0.0349	0.0517	0.0161	0.0612	<0.00010	<0.00050	0.073	0.000119	42.4	<0.00010	0.00079	0.00094	<0.030	0.000214	0.37	5.61	0.137	<0.000010	0.00875	0.00073	<0.30	20.3
	25-Jul-13	18:15	L1339023-8	1	LAB	0.0129	0.0637	0.0152	0.0302	<0.00010	<0.00050	0.109	0.000248	73.6	0.00014	0.00136	0.00108	<0.030	0.000061	0.434	9.84	0.385	<0.000010	0.0116	0.0017	<0.30	23.8
	23-Sep-13	09:00	L1368653-8	2	LAB	0.0148	0.0174	0.00689	0.029	<0.00010	<0.00050	0.072	0.000454	101	<0.00010	0.00177	<0.00050	<0.030	0.000079	0.179	9.44	0.616	<0.000010	0.00523	0.00111	<0.30	16.6
	28-Sep-13	10:00	L1371294-18	3[2]	LAB	0.0086	0.0214	0.00659	0.0313	<0.00010	<0.00050	0.114	0.000929	205	<0.00010	0.00382	0.00736	<0.030	0.000064	0.325	22.8	1.39	<0.000010	0.00743	0.00222	<0.30	24.6

Notes: [1] Leachate was completely frozen, as of date unknown. Sample was collected (and volume measured) after letting leachate thaw in >25 deg C heated room for ~36 hours. Minimal ice remained in buckets at time of sampling; [2] Winterized field barrels, due to early winter snow. Very little volume collected from last sample time, as such no total metals; [3] This sample consisted of thawed leachate from the previous year (corresponds to sample date 10/30/2012, for which barrels 1 and 3-6 were sampled); [4] Leachate bucket was full and overflowing

Field Barrel #	Date Sampled	Time Sampled	ALS Sample ID	Dissolved Metals (mg/L)										
				Selenium (Se)-Dissolved	Silicon (Si)-Dissolved	Silver (Ag)-Dissolved	Sodium (Na)-Dissolved	Strontium (Sr)-Dissolved	Thallium (Tl)-Dissolved	Tin (Sn)-Dissolved	Titanium (Ti)-Dissolved	Uranium (U)-Dissolved	Vanadium (V)-Dissolved	Zinc (Zn)-Dissolved
1	7-Jul-12	00:00	L1175814-1	0.00232	0.85	0.000057	29.5	0.0589	0.000021	<0.00010	<0.010	0.00108	<0.0010	<0.0030
	1-Aug-12	00:00	L1189376-1	0.0311	1.69	0.000021	204	0.251	0.000063	<0.00010	<0.010	0.03	0.0025	<0.0030
	22-Aug-12	00:00	L1199717-10	0.0545	1.77	0.000343	244	0.357	0.000067	<0.00020	<0.010	0.0431	0.0024	<0.0060
	29-Sep-12	00:00	L1218204-1	0.0265	1.63	0.000097	131	0.187	0.000054	<0.00010	<0.010	0.0222	0.0018	0.0033
	30-Oct-12	21:10	L1236050-1	0.0126	0.746	0.000073	96.6	0.0744	0.000033	<0.00010	<0.010	0.0138	<0.0010	<0.0030
	25-Jul-13	14:55	L1339023-1	0.0262	0.961	0.000047	135	0.44	0.00005	<0.00010	<0.010	0.0113	<0.0010	0.0054
	4-Sep-13	10:13	L1359314-1	0.0463	1.09	0.000026	207	0.99	0.000096	<0.00010	<0.010	0.0183	<0.0010	0.0043
	23-Sep-13	09:00	L1368653-1	0.0157	0.708	<0.000010	89.3	0.336	0.000048	<0.00010	<0.010	0.00605	<0.0010	<0.0030
	28-Sep-13	10:00	L1371294-11	0.0207	0.772	<0.000010	111	0.472	0.000043	<0.00010	<0.010	0.0119	<0.0010	0.0086
2	7-Jul-12	00:00	L1175814-2	0.00122	0.837	0.000059	28.7	0.16	0.000054	<0.00010	<0.010	0.00319	0.0013	<0.0030
	1-Aug-12	00:00	L1189376-2	0.0135	1.87	0.000117	187	0.186	0.000055	<0.00010	<0.010	0.118	0.0052	<0.0030
	22-Aug-12	00:00	L1199717-11	0.0156	1.95	0.000188	175	0.167	0.000049	<0.00010	<0.010	0.144	0.0048	<0.0030
	29-Sep-12	00:00	L1218204-2	0.00961	1.54	0.000151	127	0.125	0.000038	<0.00010	<0.010	0.089	0.0039	<0.0030
	5-Jul-13	11:00	L1331121-2	0.00721	0.969	0.000146	105	0.0723	0.000027	<0.00010	<0.010	0.0577	0.0025	<0.0030
	25-Jul-13	14:20	L1339023-2	0.0114	1.53	0.000092	127	0.163	0.000045	<0.00010	<0.010	0.0493	0.0028	<0.0030
	4-Sep-13	10:24	L1359314-2	0.0271	1.59	0.000016	200	0.421	0.000045	<0.00010	<0.010	0.0644	0.0016	<0.0030
	23-Sep-13	09:00	L1368653-2	0.00807	1.11	0.000027	87.8	0.143	0.000032	<0.00010	<0.010	0.0243	0.0018	<0.0030
	28-Sep-13	10:00	L1371294-12	0.0134	1.46	0.000014	142	0.294	0.000039	<0.00010	<0.010	0.0481	0.0016	0.0033
3	7-Jul-12	00:00	L1175814-3	0.00035	1.01	0.000023	24.5	0.112	0.00006	<0.00010	<0.010	0.00186	<0.0010	<0.0030
	1-Aug-12	00:00	L1189376-3	0.0023	1.83	0.000087	133	0.242	0.000075	<0.00010	<0.010	0.0372	0.0015	0.0033
	22-Aug-12	00:00	L1199717-12	0.00248	1.75	0.000134	126	0.132	0.000052	<0.00010	<0.010	0.0491	0.0011	<0.0030
	29-Sep-12	00:00	L1218204-3	0.00124	0.965	0.000026	74.3	0.0978	0.00003	<0.00010	<0.010	0.0217	<0.0010	<0.0030
	30-Oct-12	21:20	L1236050-2	0.00123	0.954	0.000034	81.5	0.0581	0.00003	<0.00010	<0.010	0.016	<0.0010	<0.0030
	25-Jul-13	15:34	L1339023-3	0.00153	1.05	0.000012	73.8	0.0926	0.000034	<0.00010	<0.010	0.0129	<0.0010	<0.0030
	4-Sep-13	10:34	L1359314-3	0.00387	1.46	<0.000010	116	0.246	0.000042	<0.00010	<0.010	0.026	<0.0010	<0.0030
	23-Sep-13	09:00	L1368653-3	0.00117	1.04	0.000017	56.4	0.101	0.000027	<0.00010	<0.010	0.00807	<0.0010	<0.0030
	28-Sep-13	10:00	L1371294-13	0.00052	0.711	0.00001	32.1	0.109	0.000028	<0.00010	<0.010	0.00469	<0.0010	0.0031
4	7-Jul-12	00:00	L1175814-4	0.00059	0.785	<0.000010	9.9	0.473	0.000133	<0.00010	<0.010	0.00105	<0.0010	<0.0030
	1-Aug-12	00:00	L1189376-4	0.00445	1.79	0.000052	47.6	1.83	0.000267	<0.00010	<0.010	0.0163	<0.0010	0.0066
	22-Aug-12	00:00	L1199717-13	0.00595	2.28	0.00002	45	1.27	0.000212	<0.00010	<0.010	0.0243	<0.0010	0.0043
	29-Sep-12	00:00	L1218204-4	0.00295	1.44	<0.000010	22.5	0.72	0.000136	<0.00010	<0.010	0.0131	<0.0010	<0.0030
	30-Oct-12	21:30	L1236050-3	0.00179	1.16	<0.000010	15.5	0.469	0.000101	<0.00010	<0.010	0.00838	<0.0010	<0.0030
	25-Jul-13	16:30	L1339023-4	0.00453	1.45	<0.000010	13.3	0.93	0.000176	<0.00010	<0.010	0.00921	<0.0010	0.0034
	4-Sep-13	10:44	L1359314-4	0.01	1.68	<0.000010	16.5	1.59	0.00022	<0.00010	<0.010	0.0128	<0.0010	0.0062
	23-Sep-13	09:00	L1368653-4	0.00372	0.953	<0.000010	6.9	0.737	0.000135	<0.00010	<0.010	0.00531	<0.0010	0.0034
	28-Sep-13	10:00	L1371294-14	0.00583	1.48	<0.000010	11.7	1.17	0.000154	<0.00010	<0.010	0.0111	<0.0010	0.0059
5	7-Jul-12	00:00	L1175814-5	0.00343	0.947	<0.000010	54.3	0.113	0.000049	<0.00010	<0.010	0.000632	<0.0010	<0.0030
	1-Aug-12	00:00	L1189376-5	0.0944	1.66	0.000097	398	1.27	0.000215	<0.00020	<0.010	0.0168	<0.0020	<0.0060
	22-Aug-12	00:00	L1199717-14	0.174	1.95	0.000201	471	1.45	0.000228	<0.00050	<0.010	0.0227	<0.0050	<0.015
	29-Sep-12	00:00	L1218204-5	0.085	1.5	0.000082	274	0.921	0.000155	<0.00020	<0.010	0.0137	<0.0020	<0.0060
	30-Oct-12	21:40	L1236050-4	0.0471	1.11	<0.000010	148	0.318	0.000089	<0.00010	<0.010	0.00772	<0.0010	<0.0030
	25-Jul-13	17:00	L1339023-5	0.118	1.21	0.00001	193	1	0.00016	<0.00010	<0.010	0.00545	<0.0010	0.0045
	4-Sep-13	10:57	L1359314-5	0.242	1.47	<0.000010	275	2.32	0.000239	<0.00010	<0.010	0.00712	<0.0010	0.0068
	23-Sep-13	09:00	L1368653-5	0.0965	1.02	<0.000010	125	0.868	0.000144	<0.00010	<0.010	0.00376	<0.0010	0.0039
	28-Sep-13	10:00	L1371294-15	0.183	1.43	<0.000010	218	1.7	0.00018	<0.00010	<0.010	0.00749	<0.0010	0.0062
6	7-Jul-12	00:00	L1175814-6	0.00169	0.744	<0.000010	10.3	0.708	0.000149	<0.00010	<0.010	0.00288	<0.0010	0.0059
	1-Aug-12	00:00	L1189376-6	0.01	1.5	<0.000010	52.9	1.98	0.000282	<0.00010	<0.010	0.00831	<0.0010	0.0163
	22-Aug-12	00:00	L1199717-15	0.00955	1.9	<0.000010	64.5	2.22	0.000309	<0.00010	0.013	0.00882	<0.0010	0.0154
	29-Sep-12	00:00	L1218204-6	0.00407	1.17	<0.000010	26.2	1.24	0.000171	<0.00010	<0.010	0.00499	<0.0010	0.0109
	30-Oct-12	21:50	L1236050-5	0.0022	1.02	<0.000010	14.4	0.794	0.000115	<0.00010	<0.010	0.00385	<0.0010	0.0076
	25-Jul-13	17:30	L1339023-6	0.00406	1.23	<0.000010	13.1	1.58	0.000205	<0.00010	<0.010	0.0035	<0.0010	0.0154
	4-Sep-13	11:06	L1359314-6	0.0101	1.64	<0.000010	17	3.18	0.000299	<0.00010	<0.010	0.00358	<0.0010	0.0317
	23-Sep-13	09:00	L1368653-6	0.00329	0.893	<0.000010	6.2	1.06	0.000145	<0.00010	<0.010	0.00148	<0.0010	0.0174
	28-Sep-13	10:00	L1371294-16	0.0049	0.918	<0.000010	8.2	1.28	0.000123	<0.00010	<0.010	0.00432	<0.0010	0.0226
7	6-Jul-13	10:00	L1331121-3	0.015	5.34	0.000541	220	0.414	0.000305	<0.00050	0.012	0.00981	0.0073	<0.0050
	25-Jul-13	17:50	L1339023-7	0.0102	1.93	<0.000010	272	0.617	0.000215	<0.00010	<0.010	0.0222	<0.0010	<0.0030
	23-Sep-13	09:00	L1368653-7	0.0176	1.47	<0.000020	361	3.54	0.000279	<0.00020	<0.010	0.0145	<0.0020	0.0031
	28-Sep-13	10:00	L1371294-17	0.0323	1.85	<0.000020	592	6.22	0.000403	<0.00020	<0.010	0.0262	<0.0020	0.0059
8	6-Jul-13	10:00	L1331121-4	0.00824	1.84	0.000062	215	3.12	0.00108	<0.00010	<0.010	0.0209	<0.0010	<0.0030
	25-Jul-13	18:15	L1339023-8	0.00813	2.24	<0.000010	242	4.98	0.00111	<0.00010	<0.010	0.0454	<0.0010	0.0047
	23-Sep-13	09:00	L1368653-8	0.00963	1.49	<0.000010	99.5	4.34	0.000662	<0.00010	<0.010	0.0138	<0.0010	0.0064
	28-Sep-13	10:00	L1371294-18	0.0216	1.89	<0.000010	190	7.92	0.000931	<0.00010	0.012	0.0308	<0.0010	0.0201

Notes: [1] Leachate was completely frozen, as of date unknown. Sample was collected (and volume measured) after letting leachate thaw in >25 deg C heated room for ~36 hours. Minimal ice remained in buckets at time of sampling; [2] Winterized field barrels, due to early winter snow. Very little volume collected from last sample time, as such no total metals; [3] This sample consisted of thawed leachate from the previous year (corresponds to sample date 10/30/2012, for which barrels 1 and 3-6 were sampled); [4] Leachate bucket was full and overflowing

Table H-3 Temporary waste rock storage terms for base-case scenarios.

Field Barrel		1	2	3	4	5	6	7	8
Zone		WZ	VOK	VOK	VOK	WZ	WZ	VOK	VOK
Block Model		P2/ Fragmental	VSF	Bridge P1	VSF	Fragmental	Fragmental	Fragmental	Conglomerate
Logged Lithology		Feldspar-porphyry	Inter. Volcanics	Plag-Hbl Porphyry	Pelite	Conglomerate	Andesite	Andesite	Polymictic conglomerate
Alk	mg $CaCO_3$/kg	44	63	48	33	35	8.3	35	20
SO4	mg/kg	44	20	9.3	20	143	82	83	113
Al	mg/kg	0.092	0.069	0.090	0.027	0.049	0.0055	0.24	0.0066
Sb	mg/kg	0.029	0.014	0.016	0.022	0.013	0.0042	0.013	0.013
As	mg/kg	0.29	0.044	0.0062	0.019	0.034	0.0010	0.015	0.0037
Ba	mg/kg	0.013	0.026	0.033	0.047	0.0082	0.017	0.026	0.012
B	mg/kg	0.053	0.046	0.051	0.041	0.050	0.053	0.015	0.022
Cd	µg /kg	0.0034	0.0046	0.0038	0.012	0.013	0.056	0.0075	0.061
Ca	mg/kg	1.4	1.1	1.5	10	8	22	4.5	17
Cr	µg /kg	0.057	0.055	0.061	0.063	0.033	0.029	0.25	0.020
Co	µg /kg	0.038	0.13	0.072	0.25	0.067	1.3	0.33	0.31
Cu	mg/kg	0.011	0.0067	0.012	0.0008	0.0023	0.023	0.00070	0.00023
Fe	mg/kg	0.0095	0.0075	0.0076	0.0080	0.0064	0.0061	0.024	0.0040
Pb	µg /kg	0.094	0.061	0.15	0.080	0.54	0.031	0.35	0.038
Li	mg/kg	0.12	0.085	0.060	0.019	0.19	0.0049	0.18	0.093
Mg	mg/kg	0.10	0.10	0.20	1.3	0.77	2.3	0.33	2.0
Mn	mg/kg	0.016	0.0064	0.0074	0.028	0.027	0.24	0.032	0.083
Hg	µg/kg	0.0040	0.0028	0.0021	0.0027	0.0027	0.0020	0.0012	0.0013
Mo	mg/kg	0.0026	0.0071	0.0043	0.0053	0.0024	0.0060	0.0028	0.0024
Ni	mg/kg	0.00012	0.00016	0.00034	0.0028	0.00017	0.00054	0.00025	0.00029
K	mg/kg	0.67	0.56	0.82	2.9	1.9	3.4	2.1	5.5
Se	mg/kg	0.0066	0.0026	0.00041	0.0011	0.0201	0.0015	0.0036	0.0023
Si	mg/kg	0.51	0.55	0.47	0.63	0.52	0.42	0.90	0.50
Ag	µg /kg	0.039	0.051	0.016	0.0060	0.018	0.0020	0.072	0.0092
Na	mg/kg	40	38	25	11	75	9.3	65	53
Sr	mg/kg	0.055	0.068	0.049	0.39	0.22	0.44	0.28	1.0
U	mg/kg	0.0056	0.021	0.0060	0.0042	0.0032	0.0018	0.0034	0.0071
V	mg/kg	0.00047	0.0012	0.00027	0.00027	0.00033	0.00020	0.0010	0.00013
Zn	mg/kg	0.00091	0.00075	0.00071	0.0012	0.0010	0.0037	0.00059	0.00093

Table H-4 Temporary waste rock storage terms for conservative-case scenarios.

Field Barrel		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Zone		WZ	VOK	VOK	VOK	WZ	WZ	VOK	VOK
Block Model		P2/ Fragmental	VSF	Bridge P1	VSF	Fragmental	Fragmental	Fragmental	Conglomerate
Complementary HC		30	29	28, 35	13, 20	24	4	31	21, 23, 25
Alk	mg $CaCO_3$/kg	120	248	176	164	139	*8.3*	110	143
SO4	mg/kg	444	123	54	54	*143*	333	105	325
Al	mg/kg	0.29	1.5	1.4	0.44	0.086	0.29	0.33	0.40
Sb	mg/kg	0.040	0.023	*0.016*	0.039	0.013	0.0075	0.031	0.039
As	mg/kg	*0.29*	0.17	0.034	*0.072*	0.034	0.0048	0.020	0.051
Ba	mg/kg	0.11	0.068	0.034	0.075	0.040	0.17	0.059	0.097
B	mg/kg	0.094	0.071	*0.051*	0.047	*0.050*	*0.053*	0.089	0.10
Cd	µg /kg	0.048	0.027	0.030	0.041	0.20	66	0.042	0.129
Ca	mg/kg	53	2.3	5.4	23	44	85	47	70
Cr	µg /kg	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Co	µg /kg	0.92	1.1	0.53	0.44	0.61	101	1.1	1.6
Cu	mg/kg	*0.011*	*0.0067*	*0.012*	*0.00077*	0.0024	*0.023*	0.0015	0.0015
Fe	mg/kg	*0.0095*	0.030	0.021	0.033	0.0090	4.4	*0.024*	0.0045
Pb	µg /kg	0.21	0.48	0.75	0.63	6.8	69	0.45	3.3
Li	mg/kg	0.36	0.35	0.14	0.071	*0.19*	0.11	*0.18*	0.39
Mg	mg/kg	3.5	0.17	0.51	2.5	*0.77*	7.3	4.4	2.3
Mn	mg/kg	0.43	0.016	0.017	0.10	0.27	3.3	0.28	0.33
Hg	µg/kg	0.15	0.15	0.15	0.030	0.030	0.15	0.15	0.15
Mo	mg/kg	*0.0026*	0.015	0.0077	0.042	0.0085	*0.0060*	0.022	0.0047
Ni	mg/kg	0.00060	0.00030	*0.00034*	*0.0028*	0.0012	0.039	0.0012	0.0012
K	mg/kg	15	5.6	12	21	7.6	36	27	20
Se	mg/kg	0.018	0.013	0.0064	0.0054	*0.020*	0.015	0.0046	0.046
Si	mg/kg	3.9	6.1	5.4	5.9	7.3	3.3	5.0	4.8
Ag	µg /kg	*0.039*	0.15	*0.016*	0.045	*0.018*	0.015	*0.072*	0.24
Na	mg/kg	148	153	79	37	*75*	48	*65*	101
Sr	mg/kg	2.1	0.14	0.17	1.0	0.75	2.4	0.87	1.5
U	mg/kg	*0.0056*	*0.021*	*0.0060*	*0.0042*	*0.0032*	0.0034	0.010	*0.0071*
V	mg/kg	0.0020	0.019	0.0053	0.0048	0.0018	0.00066	0.0018	0.0017
Zn	mg/kg	0.0015	0.0015	0.0015	0.0015	0.0090	1.6	0.0015	0.0045

Note: *Italicized* values represent loads obtained from field barrel tests (i.e., field barrel loads > SFE loads).

APPENDIX I
SITE CHARACTERIZATION MATERIALS

Site Characterization Materials -
ABA Data

Sample ID	Lithology	Paste pH	TIC	Tot-S	SO_4-S	Sulp-S	Ins-S	AP	TotS AP	Sobek NP	$CaCO_3$ NP	NNP	NPR	Fizz Test
			%	%	%	%	%	← kg $CaCO_3$/t →						
AR 01	Conglomerate	8.26	0.87	0.96	<0.01	0.83	0.13	25.9	30.0	77.6	72.5	51.7	2.59	Slight
AR 02	Shale	8.91	0.29	0.13	<0.01	0.12	0.01	3.8	4.1	34.7	24.2	31.0	8.54	Slight
AR 03	Fragmental Volcanic Rocks	8.64	0.49	0.10	<0.01	0.06	0.04	1.9	3.1	50.6	40.8	48.7	16.2	Slight
AR 04	Shale	7.77	1.56	1.78	0.12	1.42	0.24	44.4	55.6	145	130	101	2.61	Moderate
AR 05	Mudstone	7.63	0.75	1.08	0.06	0.87	0.15	27.2	33.8	99.9	62.5	72.7	2.96	Moderate
AR 05.5	Mudstone	5.64	<0.01	2.94	0.06	2.42	0.46	75.6	91.9	8.9	<0.8	-66.7	**0.10**	None
AR 06	Till	8.22	0.23	0.17	<0.01	0.13	0.04	4.1	5.3	36.7	19.2	32.6	6.91	Slight
AR 07	Shale	5.79	<0.01	0.47	<0.01	0.40	0.07	12.5	14.7	13.5	<0.8	1.00	**0.92**	Slight
AR 08	Till	8.12	0.21	0.24	<0.01	0.18	0.06	5.6	7.5	33.1	17.5	27.5	4.41	Slight
AR 09	Till	8.30	0.31	0.22	<0.01	0.17	0.05	5.3	6.9	38.3	25.8	33.0	5.57	Slight
AR 09.5	Shale	7.95	0.97	4.49	<0.01	4.00	0.49	125	140	85.6	80.8	-39.4	**0.61**	Slight
AR 10	Intermediate Volcanic Rocks Rocks	7.35	0.28	3.34	0.23	2.82	0.29	88.1	104	27.7	23.3	-60.4	**0.27**	Slight
AR 10.5	Intermediate Volcanic Rocks	9.31	0.33	0.05	<0.01	0.04	0.01	1.3	1.6	42.2	27.5	41.0	27.0	Slight
AR 11	Porphyry	8.97	0.32	0.03	<0.01	<0.01	0.03	<0.3	0.9	26.1	26.7	26.1	27.8	Slight
AR 12	Porphyry	8.91	0.15	0.03	<0.01	<0.01	0.03	<0.3	0.9	24.9	12.5	24.9	26.6	Slight
AR 13	Shale	6.84	0.03	0.75	0.02	0.68	0.05	21.3	23.4	4.6	2.5	-16.7	**0.20**	None
AR 14	Conglomerate	8.36	0.35	0.06	<0.01	0.02	0.04	0.6	1.9	41.5	29.2	40.9	22.1	Slight
AR 15	Till	7.83	0.26	0.27	<0.01	0.20	0.07	6.3	8.4	33.1	21.7	26.9	3.92	Slight
AR 16	Till	7.15	<0.01	0.14	<0.01	0.10	0.04	3.1	4.4	8.7	<0.8	5.58	**1.99**	None
AR 17	Shale	9.02	0.03	0.06	<0.01	0.04	0.02	1.3	1.9	12.6	2.5	11.4	6.72	Slight
AR 18	Shale	7.89	0.30	1.31	<0.01	1.26	0.05	39.4	40.9	36.0	25.0	-3.38	**0.88**	Slight
AR 19	Till	7.99	0.27	0.08	<0.01	0.03	0.05	0.9	2.5	33.7	22.5	32.8	13.5	Slight
AR 20	Sandstone	7.13	0.04	0.58	<0.01	0.49	0.09	15.3	18.1	17.0	3.3	1.69	**0.94**	None
AR 21	Shale	6.61	<0.01	0.50	<0.01	0.40	0.10	12.5	15.6	11.1	<0.8	-1.40	**0.71**	None
AR 22	Shale	8.16	0.24	0.86	<0.01	0.75	0.11	23.4	26.9	38.0	20.0	14.6	**1.41**	Slight
AR 23	Shale	8.32	0.24	0.32	<0.01	0.27	0.05	8.4	10.0	36.4	20.0	28.0	3.64	Slight
AR 24	Shale	8.61	0.28	0.16	<0.01	0.11	0.05	3.4	5.0	40.4	23.3	37.0	8.08	Slight
AR 25	Sandstone	8.66	0.06	0.06	<0.01	0.03	0.03	0.9	1.9	25.9	5.0	25.0	13.8	Slight
AR 26	Sandstone	8.64	0.10	0.12	<0.01	0.07	0.05	2.2	3.8	31.3	8.3	29.1	8.35	Slight
AR 27	Sandstone	8.35	0.04	0.51	<0.01	0.45	0.06	14.1	15.9	16.0	3.3	1.94	**1.00**	None
AR 28	Sandstone	9.09	0.79	0.08	<0.01	0.05	0.03	1.6	2.5	72.9	65.8	71.3	29.2	Slight
AR 29	Shale	8.67	0.79	0.19	<0.01	0.13	0.06	4.1	5.9	68.5	65.8	64.4	11.5	Slight
AR 30	Shale	7.70	0.08	1.03	<0.01	0.88	0.15	27.5	32.2	26.4	6.7	-1.10	**0.82**	Slight
AR 31	Mudstone	8.33	0.45	0.35	<0.01	0.26	0.09	8.1	10.9	52.5	37.5	44.4	4.80	Slight
ARD #1[1]	Shale - 2012 Sample	8.55	0.63	0.25	<0.01	0.15	0.25	4.7	7.8	93.9	52.5	89.2	12.0	Moderate
ARD #2[1]	Shale - 2012 Sample	8.51	0.29	0.05	<0.01	<0.01	0.05	<0.3	1.6	33.0	24.2	33.0	21.1	Slight
ARD #3[1]	Shale - 2012 Sample	7.03	<0.01	2.03	0.05	1.75	0.23	54.7	63.4	14.7	<0.8	-40.0	**0.23**	None
ARD #4[1]	Shale - 2012 Sample	7.45	0.43	1.83	0.02	1.55	0.26	48.4	57.2	46.2	35.8	-2.24	**0.81**	Slight
ARD #5[1]	Shale - 2012 Sample	4.99	<0.01	1.53	0.04	1.29	0.20	40.3	47.8	9.6	<0.8	-30.7	**0.20**	None
ARD #6[1]	Shale - 2012 Sample	4.91	<0.01	1.28	0.03	0.99	0.26	30.9	40.0	10.2	<0.8	-20.7	**0.26**	None
AERO - 1	Intermediate Volcanic Rocks Rocks	9.15	0.06	0.03	<0.01	<0.01	0.03	<0.3	0.9	29.8	5.0	29.8	31.8	Slight
AERO - 2	Till	8.30	0.13	0.28	<0.01	0.21	0.07	6.6	8.8	29.6	10.8	23.0	3.38	Slight
AERO - 3	Intermediate Volcanic Rocks	8.30	0.21	0.21	<0.01	0.15	0.06	4.7	6.6	32.5	17.5	27.8	4.95	Slight
AERO - 4	Till	8.91	0.17	0.05	<0.01	<0.01	0.05	<0.3	1.6	37.3	14.2	37.3	23.9	Slight
OB - 01	Arenite	5.94	<0.01	0.18	0.04	0.08	0.06	2.5	5.6	2.3	<0.8	-0.20	**0.41**	None
OB - 02	Arenite	7.38	0.06	0.17	0.03	0.10	0.04	3.1	5.3	11.5	5.0	8.38	2.16	None
OB - 03	Arenite	6.25	<0.01	0.09	0.02	0.04	0.03	1.3	2.8	3.4	<0.8	2.15	**1.21**	None
OB - 04	Intermediate Volcanic Rocks	7.49	0.13	0.76	0.05	0.62	0.09	19.4	23.8	16.0	10.8	-3.38	**0.67**	None
OB - 05	Intermediate Volcanic Rocks	8.14	0.28	0.54	0.01	0.49	0.04	15.3	16.9	33.8	23.3	18.5	2.00	Slight
OB - 06	Intermediate Volcanic Rocks	8.02	<0.01	1.72	0.02	1.58	0.12	49.4	53.8	39.6	<0.8	-9.78	**0.74**	Slight
OB - 07	Fragmental Volcanic Rocks	5.37	<0.01	0.10	0.07	0.01	0.02	0.3	3.1	0.0	<0.8	-0.31	**0.26**	None
OB - 08	Fragmental Volcanic Rocks	5.93	0.04	0.31	0.05	0.23	0.03	7.2	9.7	6.5	3.3	-0.69	**0.67**	None
OB - 09	Latite flows	7.61	0.34	1.44	0.02	1.26	0.16	39.4	45.0	38.5	28.3	-0.88	**0.86**	Slight
OB - 10	Latite flows	4.20	<0.01	0.19	0.08	0.08	0.03	2.5	5.9	0.9	<0.8	-1.60	**0.15**	None
OB - 11	Latite flows	4.39	<0.01	0.21	0.17	<0.01	0.04	<0.3	6.6	0.0	<0.8	0.00	**0.12**	None
OB - 12	Latite Flows	5.52	<0.01	0.12	<0.01	0.07	0.05	2.2	3.8	5.8	<0.8	3.61	**1.55**	None
OB - 13	Latite Flows	7.36	<0.01	1.14	0.02	1.08	0.04	33.8	35.6	20.8	<0.8	-13.0	**0.58**	Slight

Sample ID	Lithology	Paste pH	TIC	Tot-S	SO_4-S	Sulp-S	Ins-S	AP	TotS AP	Sobek NP	$CaCO_3$ NP	NNP	NPR	Fizz Test
			%	%	%	%	%	← kg $CaCO_3$/t →						
OB - 14	Fragmental Volcanic Rocks	7.69	<0.01	0.40	0.02	0.35	0.03	10.9	12.5	23.1	<0.8	12.2	**1.85**	Slight
RD - 01	Intermediate Volcanic Rocks	6.13	<0.01	0.15	0.03	0.08	0.04	2.5	4.7	4.6	<0.8	2.10	**0.98**	None
RD - 02	Intermediate Volcanic Rocks	5.22	<0.01	0.15	0.08	0.04	0.03	1.3	4.7	3.0	<0.8	1.75	**0.64**	None
RD - 03	Intermediate Volcanic Rocks	8.48	0.03	0.20	<0.01	0.15	0.05	4.7	6.3	15.9	2.5	11.2	2.54	None
RD - 04	Fragmental Volcanic Rocks	7.92	1.27	1.29	0.02	1.20	0.07	37.5	40.3	108	106	70.4	2.68	Moderate
RD - 05	Latite Flow	9.01	0.24	0.03	<0.01	<0.01	0.03	<0.3	0.9	26.4	20.0	26.4	28.2	Slight
RD - 06	Till	7.98	0.56	0.87	0.02	0.80	0.05	25.0	27.2	54.6	46.7	29.6	2.01	Slight
RD - 07	Intermediate Volcanic Rocks	8.37	1.12	0.11	<0.01	0.07	0.04	2.2	3.4	134	93.3	132	39.0	Moderate
RD - 08	Arenite	7.85	0.77	6.10	0.04	6.07	<0.01	190	191	70.9	64.2	-119	**0.37**	Slight
RD - 09	Intermediate Volcanic Rocks	8.28	0.65	0.08	<0.01	0.03	0.05	0.9	2.5	61.8	54.2	60.9	24.7	Slight
RD - 10	Latite Flow	8.79	0.08	0.03	<0.01	<0.01	0.03	<0.3	0.9	18.3	6.7	18.3	19.5	None
RD - 11	Arenite	7.71	0.79	6.96	0.04	6.79	0.13	212	218	70.1	65.8	-142	**0.32**	Slight
RD - 12	Latite Flow	8.21	0.82	2.18	<0.01	2.02	0.16	63.1	68.1	72.8	68.3	9.68	**1.07**	Slight
RD - 13	Conglomerate	8.52	1.75	0.04	<0.01	<0.01	0.04	<0.3	1.3	156	146	156	125	Moderate
RD - 14	Fragmental Volcanic Rocks	7.30	0.91	2.11	0.14	1.85	0.12	57.8	65.9	89.2	75.8	31.4	**1.35**	Moderate
RD - 15	Fragmental Volcanic Rocks	8.92	0.83	0.05	0.01	<0.01	0.04	<0.3	1.6	86.1	69.2	86.1	55.1	Moderate
RD - 16	Latite Flow	9.35	0.60	0.02	<0.01	<0.01	0.02	<0.3	0.6	53.4	50.0	53.4	85.4	Slight
SU-381-1	Porphyry	7.96	0.73	5.52	0.03	5.12	0.37	160	173	63.0	60.8	-97.0	**0.37**	Moderate
SU383[2]	Porphyry	9.26	1.22	0.07	<0.01	0.06	0.01	1.9	2.2	89.9	102	88.0	41.1	Moderate
SU389[2]	Porphyry	9.33	1.08	<0.01	<0.01	<0.01	<0.01	<0.3	<0.3	96.4	90.0	96.4	321	Moderate
SU-391-1	Arenite	8.09	2.01	3.02	0.01	2.89	0.12	90.3	94.4	168	168	77.4	**1.78**	Moderate
SU-391-2	Conglomerate	8.08	1.26	7.63	0.02	6.78	0.83	212	238	127	105	-84.7	**0.53**	Moderate
SU-391-3	Conglomerate	8.03	1.98	14.00	0.03	13.60	0.37	425	438	162	165	-263	**0.37**	Moderate
SU-583-1	Intermediate Volcanic Rocks	8.08	1.69	3.53	0.02	3.31	0.20	103	110	165	141	61.8	**1.50**	Moderate
SU-587-2	Intermediate Volcanic Rocks	8.16	1.52	4.10	0.01	3.88	0.21	121	128	135	127	13.5	**1.05**	Moderate
SU-587-3	Intermediate Volcanic Rocks	8.34	1.47	2.20	<0.01	1.94	0.26	60.6	68.8	122	123	61.0	**1.77**	Moderate
SU-589-2	Arenite	7.27	0.04	7.25	0.03	6.92	0.3	216	227	13.9	3.3	-202	**0.06**	None

Notes: NPR=NP/totS AP; Where AP reported was <0.3, 0.3 was used to calculate NPR and $CaCO_3$NPR; where SobekNP was reported as 0, $CaCO_3$NPR was calculated using the 0.8 detection limit for $CaCO_3$NP; [1]Samples were collected in 2012 during road design/construction, by a staff member of Cypress Forest Consultants; [2]Data is from Metro testing, received December 2012 as part of geotechnical drilling program

Site Characterization Materials -
Total Metals

Sample ID	Rock Type	Al %	B ppm	Ba ppm	Ca %	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Na %	Ni ppm	P ppm	S %	Sr ppm	Ti %	V ppm	Zn ppm	Zr ppm	Ag ppm	As ppm	Be ppm	Bi ppm	Cd ppm	Ce ppm
Method Code		ICM14B																									
LOD		0.01	10	5	0.01	1	0.5	0.01	0.01	1	0.01	2	0.01	0.5	50	0.01	0.5	0.01	1	1	0.5	0.01	1	0.1	0.02	0.01	0.05
AERO - 1	Intermediate Volcanic Rocks	2.21	40	58	1.54	19	23.4	5.8	0.15	23	1.53	1480	0.08	5.3	3200	<0.01	77.4	0.37	148	97	20.6	0.04	<1	0.6	<0.02	0.09	39.9
AERO - 2	Till	2.08	40	124	1.09	61	39.7	4.2	0.17	24	1.36	744	0.05	30.1	1450	0.28	48.1	0.12	89	88	6.7	0.18	8	0.4	0.11	0.33	18.2
AERO - 3	Till	1.97	40	125	1.27	78	40.1	4.0	0.12	25	1.26	666	0.04	38.7	1180	0.23	56.0	0.11	73	80	6.4	0.32	8	0.3	0.09	0.25	15.9
AERO - 4	Intermediate Volcanic Rocks	3.15	40	58	1.64	47	54.5	5.7	0.16	42	2.68	1430	0.03	23.7	2220	<0.01	40.5	0.34	124	91	27.1	0.02	9	0.4	<0.02	0.17	18.9
RD - 12	Latite Flow	0.83	40	147	2.96	24	29.8	3.1	0.17	11	0.24	1340	0.02	1.8	1250	2.34	49.9	<0.01	10	36	5.3	1.4	166	0.4	<0.02	0.08	16.2
RD - 13	Conglomerate	0.8	40	310	6.08	19	0.70	2.1	0.19	11	0.27	1370	0.02	1.2	1230	0.01	103	<0.01	29	52	4.0	0.01	2	0.5	<0.02	0.07	28.4
RD - 14	Fragmental Volcanic Rocks	1.25	40	89	3.21	23	16.2	3.9	0.12	28	0.75	1150	0.03	1.4	840	2.26	65.1	<0.01	14	141	2.6	0.06	5	0.3	0.08	0.13	13.8
RD - 15	Fragmental Volcanic Rocks	1.14	40	898	3.03	34	3.9	2.7	0.13	29	0.77	800	0.03	2.0	950	0.03	101	0.01	41	61	3.5	0.05	2	0.4	0.04	0.11	27.6
RD - 16	Latite Flow	0.35	50	167	2.25	33	0.90	1.2	0.21	<1	0.03	1010	0.05	0.90	730	<0.01	123	0.02	14	8	3.3	<0.01	27	0.4	0.04	0.12	35.4
AR 01	Conglomerate	2.26	40	116	3.26	21	7.3	4.4	0.18	29	1.15	1060	0.04	9.1	1480	1.02	117	0.03	24	87	3.4	0.07	13	0.8	0.04	0.12	44.4
AR 02	Shale	1.66	40	86	1.42	19	1.1	3.9	0.25	17	0.52	853	0.05	0.60	2730	0.14	106	<0.01	15	126	1.8	0.02	3	0.7	0.03	0.18	78.2
AR 03	Fragmental Volcanic Rocks	2.96	30	366	2.27	22	3.8	6.6	0.29	34	1.30	1000	0.03	5.5	3640	0.07	182	<0.01	32	107	2.1	0.03	2	1	0.06	0.12	75.1
AR 04	Shale	1.35	40	277	5.67	32	42.9	3.2	0.12	25	0.72	700	0.03	45.2	1140	1.78	179	<0.01	50	251	2.7	0.35	19	0.6	0.11	2.9	23.1
AR 05	Mudstone	2.29	50	133	2.73	82	52.2	4.7	0.16	45	1.41	721	0.02	111	1140	1.15	130	<0.01	49	109	1.6	0.34	19	0.6	0.26	0.20	17.3
AR 05.5	Mudstone	2.05	30	102	0.18	75	66.5	5.5	0.16	40	1.30	697	0.03	154	650	3.01	21.2	<0.01	60	99	1.7	0.80	32	0.6	0.30	0.18	14.3
AR 06	Till	2.15	40	143	1.37	55	43.9	4.6	0.13	27	1.57	861	0.04	29.7	1470	0.16	64.2	0.15	103	95	8.0	0.19	8	0.4	0.09	0.32	23.1
AR 07	Shale	2.62	30	123	0.09	77	67.0	4.7	0.16	46	1.61	464	0.02	96.7	520	0.49	12.0	<0.01	64	113	2.1	0.23	15	0.6	0.30	0.31	22.4
AR 08	Till	2.17	50	129	1.30	68	48.3	4.5	0.15	27	1.37	982	0.04	43.5	1260	0.24	67.9	0.12	88	103	7.5	0.26	9	0.4	0.11	0.32	23.5
AR 09	Till	2.21	40	124	1.63	78	46.4	4.6	0.15	25	1.41	793	0.04	35.5	1190	0.23	74.1	0.14	96	93	7.2	0.19	8	0.4	0.13	0.33	18.3
AR 09.5	Shale	1.72	50	113	3.53	18	51.4	5.1	0.17	40	1.27	839	0.03	20.9	880	4.81	76.9	<0.01	54	213	1.7	0.32	16	0.4	0.08	2.5	11.9
AR 10	Intermediate Volcanic Rocks	0.47	50	134	1.49	23	2.5	3.7	0.31	2	0.07	221	0.04	2.6	1820	3.69	83.0	<0.01	8	36	2.5	0.37	22	0.7	0.06	0.17	41.5
AR 10.5	Intermediate Volcanic Rocks	1.47	50	41	1.62	56	9.8	3.3	0.05	17	0.85	661	0.07	2.1	1690	0.05	38.0	0.17	62	77	13.7	0.04	12	0.4	0.04	0.15	50.9
AR 11	Porphyry	0.43	60	421	0.72	39	1.8	2.2	0.32	1	0.25	561	0.02	1.3	550	0.02	54.9	0.02	33	27	6.2	0.18	2	0.8	<0.02	0.06	47.3
AR 12	Porphyry	1.38	50	66	0.46	30	<0.5	2.1	0.37	17	1.02	831	0.01	1.0	590	<0.01	22.3	<0.01	18	49	3.4	0.04	2	0.9	<0.02	0.02	46.7
AR 13	Shale	0.42	50	108	0.10	43	3.5	1.2	0.25	2	0.13	235	0.02	1.5	240	0.8	7.1	<0.01	2	38	2.0	0.66	21	0.5	0.62	0.18	44.8
AR 14	Conglomerate	2.1	50	195	1.35	12	18.0	3.4	0.17	34	1.33	743	0.02	3.9	610	0.03	29.6	0.13	42	67	7.1	0.02	5	0.6	0.16	0.09	19.2
AR 15	Till	1.54	50	158	1.30	70	19.8	3.7	0.16	18	0.95	854	0.04	26.5	1310	0.27	56.2	0.11	72	98	7.9	0.18	8	0.5	0.07	0.48	26.5
AR 16	Till	2.79	30	144	0.37	47	37.6	5.2	0.14	34	1.27	605	0.03	37.8	1680	0.12	40.3	<0.01	56	114	1.6	0.12	8	0.4	0.16	0.34	27.7
ARD #6[1]	Shale	2.24	20	141	0.13	101	55.9	5.0	0.21	41	1.30	190	0.02	117	720	1.34	21.9	<0.01	44	107	2.2	0.66	13	0.5	0.21	0.22	11.1
ARD #5[1]	Shale	1.77	20	143	0.11	137	47.8	4.6	0.17	36	1.04	365	0.02	130	640	1.74	20.6	<0.01	37	96	2.4	0.46	19	0.6	0.14	0.30	6.2
AR 17	Shale	0.76	70	80	0.18	162	13.6	1.3	0.10	14	0.44	113	0.03	51.5	280	0.05	24.2	<0.01	14	36	0.90	0.09	8	0.2	0.06	0.10	14.9
AR 18	Shale	2.01	40	133	0.74	90	54.0	4.3	0.20	40	1.40	400	0.02	121	920	1.35	87.8	<0.01	41	123	1.5	0.58	15	0.7	0.25	0.34	14.6
ARD #4[1]	Shale	2.31	20	176	1.07	102	58.1	5.3	0.25	45	1.68	654	0.02	128	1150	2.05	96.6	<0.01	51	122	2.7	0.52	14	0.7	0.21	0.29	11.7
ARD #3[1]	Shale	2.37	20	228	0.18	67	76.0	4.9	0.25	42	1.62	481	0.02	111	610	2.27	29.8	<0.01	65	111	2.5	0.49	16	0.7	0.17	0.39	17.8
AR 19	Till	2.48	50	151	1.10	123	54.5	4.3	0.19	42	1.58	1080	0.02	121	950	0.04	53.8	<0.01	66	124	1.4	0.27	15	0.7	0.16	0.35	20.7
ARD #2[1]	Shale	1.27	30	121	0.82	151	19.6	2.6	0.16	23	0.86	144	0.02	104	350	<0.01	127	<0.01	24	71	1.7	0.09	4	0.4	0.06	0.16	13.8

Sample ID	Rock Type	Al %	B ppm	Ba ppm	Ca %	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Na %	Ni ppm	P ppm	S %	Sr ppm	Ti %	V ppm	Zn ppm	Zr ppm	Ag ppm	As ppm	Be ppm	Bi ppm	Cd ppm	Ce ppm
Method Code		ICM14B																									
LOD		0.01	10	5	0.01	1	0.5	0.01	0.01	1	0.01	2	0.01	0.5	50	0.01	0.5	0.01	1	1	0.5	0.01	1	0.1	0.02	0.01	0.05
ARD #1[1]	Shale	1.9	30	110	2.0	164	20.5	3.4	0.15	37	1.2	400	0.03	102	420	0.26	336	<0.01	34	67	1.7	0.11	5	0.4	0.06	0.20	10.4
AR 20	Sandstone	2.8	50	121	0.74	106	50.6	4.3	0.16	41	2.1	650	0.03	94.9	2060	0.61	31.4	0.18	81	94	6.0	0.20	11	0.6	0.14	0.28	26.8
AR 21	Shale	2.6	50	159	0.18	153	62.2	4.5	0.20	49	2.1	517	0.02	162	920	0.50	27.0	<0.01	74	114	1.5	0.26	11	0.6	0.19	0.32	20.3
AR 22	Shale	2.0	40	105	0.74	71	52.9	3.9	0.16	41	1.4	658	0.02	80.9	690	0.77	90.3	<0.01	56	178	1.3	0.24	10	0.5	0.18	0.24	9.9
AR 23	Shale	2.4	50	222	0.65	127	61.8	4.0	0.23	46	2.0	445	0.02	132	750	0.32	52.3	<0.01	58	135	1.8	0.25	9	0.8	0.18	0.44	14.4
AR 24	Shale	2.6	50	177	0.86	116	72.5	4.4	0.20	52	2.0	575	0.03	128	940	0.13	71.7	<0.01	65	136	1.8	0.19	7	0.8	0.18	0.31	8.3
AR 25	Sandstone	2.0	50	137	0.31	195	42.3	3.1	0.17	37	1.8	275	0.03	136	500	0.03	33.2	<0.01	61	97	1.5	0.16	5	0.6	0.11	0.44	12.4
AR 26	Sandstone	2.7	50	129	0.38	165	69.5	4.2	0.21	56	2.3	358	0.03	173	600	0.09	34.8	<0.01	76	129	1.9	0.29	6	0.7	0.16	0.53	11.2
AR 27	Sandstone	2.1	60	191	0.28	170	53.9	3.6	0.19	39	1.7	173	0.03	127	550	0.51	36.9	<0.01	66	84	1.8	0.19	4	0.6	0.12	0.49	13.1
AR 28	Sandstone	1.4	70	91	2.5	165	27.1	2.2	0.14	26	1.3	435	0.03	83.7	510	0.06	279	<0.01	46	64	1.2	0.10	4	0.4	0.08	0.19	11.4
AR 29	Shale	2.3	60	154	1.8	142	59.3	3.8	0.22	40	2.1	1240	0.03	124	600	0.17	107	<0.01	63	118	1.7	0.14	6	0.6	0.15	0.41	8.7
AR 30	Shale	2.4	40	129	0.49	113	58.8	4.6	0.14	47	1.8	316	0.02	95.0	1460	1.1	57.0	<0.01	68	150	1.8	0.30	11	0.6	0.15	0.41	11.7
AR 31	Mudstone	2.1	50	108	1.6	160	45.5	3.8	0.14	42	1.7	465	0.03	124	560	0.33	214	<0.01	57	104	1.6	0.27	17	0.4	0.11	0.32	7.8
OB - 01	Arenite	0.94	30	84	0.06	33	44.1	4.1	0.13	9	0.19	1400	0.02	7.9	990	0.14	4.0	<0.01	11	70	9.6	0.60	33	0.8	0.04	0.12	53.2
OB - 02	Arenite	0.94	20	94	0.39	19	22.2	4.5	0.11	10	0.37	2210	0.02	12.6	1000	0.16	12.6	<0.01	15	32	1.4	0.05	21	0.3	0.56	0.24	25.0
OB - 03	Arenite	1.6	30	92	0.18	36	34.0	4.0	0.12	22	0.59	1850	0.04	24.7	1430	0.06	10.9	0.04	27	145	23.6	1.1	58	0.7	0.18	0.25	41.5
OB - 04	Intermediate Volcanic Rocks	0.92	30	262	0.62	46	16.3	4.1	0.13	15	0.43	739	0.02	3.1	1240	0.84	21.5	<0.01	22	63	3.6	2.3	61	0.3	0.28	0.27	14.7
OB - 05	Intermediate Volcanic Rocks	1.2	20	294	1.3	37	30.1	4.3	0.12	19	0.61	1200	0.03	2.9	1310	0.60	39.0	0.02	40	75	4.7	15.1	42	0.3	0.07	0.24	16.6
OB - 06	Intermediate Volcanic Rocks	1.2	30	188	1.5	33	27.8	4.4	0.12	21	0.61	1330	0.02	5.7	1340	1.9	43.3	<0.01	25	91	5.4	3.8	59	0.3	0.08	0.36	14.6
OB - 07	Fragmental Volcanic Rocks	0.28	40	119	0.01	20	14.9	2.5	0.16	1	0.03	38.0	0.01	0.50	920	0.08	3.5	<0.01	10	15	2.3	7.5	42	<0.1	0.32	0.09	19.8
OB - 08	Fragmental Volcanic Rocks	1.1	30	425	0.26	32	12.2	4.0	0.10	15	0.54	399	0.03	2.0	1140	0.36	18.1	0.02	31	59	4.2	2.9	50	0.2	0.15	0.07	12.4
OB - 09	Latite Flow	1.3	20	203	1.4	30	19.0	3.9	0.11	23	0.56	1030	0.02	3.4	1270	1.5	35.6	<0.01	20	89	3.7	3.3	65	0.3	0.06	0.26	15.7
OB - 10	Latite Flow	0.26	30	75	0.07	22	21.5	2.7	0.16	<1	0.01	722	<0.01	2.2	1060	0.15	6.5	<0.01	5	73	0.60	8.8	220	0.2	0.11	0.34	19.9
OB - 11	Latite Flow	0.35	30	137	0.03	26	38.9	6.1	0.21	2	0.08	50.0	0.01	1.8	2090	0.19	10.8	0.01	23	23	0.90	25.6	180	0.1	0.46	0.07	23.8
OB - 12	Latite Flow	1.3	30	226	0.19	45	22.3	3.6	0.12	22	0.74	740	0.02	13.3	870	0.10	21.5	0.04	35	69	3.0	0.48	42	0.3	0.10	0.09	16.7
OB - 13	Latite Flow	1.2	20	156	0.58	32	31.6	4.4	0.12	21	0.68	1910	0.02	5.9	1150	1.2	20.3	<0.01	23	140	3.9	8.8	71	0.4	0.08	0.54	14.8
OB - 14	Fragmental Volcanic Rocks	1.1	30	359	0.71	56	16.7	3.8	0.12	19	0.56	1020	0.02	3.3	1190	0.43	23.8	<0.01	22	63	4.7	1.0	63	0.3	0.04	0.11	19.9
RD - 01	Intermediate Volcanic Rocks	0.71	30	172	0.10	29	34.9	3.1	0.22	8	0.35	571	0.01	7.3	1040	0.13	4.5	<0.01	15	60	1.2	1.4	78	0.2	0.57	0.25	17.4
RD - 02	Intermediate Volcanic Rocks	0.37	40	167	0.03	44	23.8	4.1	0.22	3	0.12	220	0.01	3.4	870	0.14	3.7	<0.01	12	30	2.1	5.0	58	<0.1	0.43	0.09	16.9
RD - 03	Intermediate Volcanic Rocks	1.7	31	482	0.56	31	28.9	3.4	0.14	28	1.4	1130	0.04	4.7	1010	0.19	99	0.13	61	116	5.9	0.25	29	0.3	0.05	0.16	8.3
RD - 04	Fragmental Volcanic rocks	1.1	30	193	4.4	30	21.5	3.6	0.14	15	0.54	1560	0.02	4.0	1320	1.4	75	0.04	30	62	5.8	1.5	48	0.3	0.04	0.26	14.4
RD - 05	Latite Flow	0.38	35	509	1.0	35	22.5	0.62	0.29	<1	0.11	330	0.02	1.1	980	0.02	70	0.06	12	5	5.1	0.29	8	0.3	0.06	0.09	18.1
RD - 06	Till	1.2	38	312	2.2	38	12.9	3.4	0.13	19	0.53	1030	0.02	2.7	1100	0.92	60	<0.01	29	74	4.7	1.4	35	0.3	0.07	0.22	15.4
RD - 07	Intermediate Volcanic Rocks	2.2	22	94	4.0	22	4.3	3.5	0.12	63	1.4	1760	0.02	1.1	1190	0.09	94	<0.01	22	81	5.8	0.10	5	0.4	<0.02	0.09	17.6
RD - 08	Arenite	0.95	18	77	3.0	18	23.7	5.5	0.12	19	0.53	953	0.03	1.8	1400	>5	80	<0.01	17	107	2.4	0.29	49	0.3	0.08	0.29	12.8

Sample ID	Rock Type	Al %	B ppm	Ba ppm	Ca %	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Na %	Ni ppm	P ppm	S %	Sr ppm	Ti %	V ppm	Zn ppm	Zr ppm	Ag ppm	As ppm	Be ppm	Bi ppm	Cd ppm	Ce ppm
Method Code		ICM14B																									
LOD		0.01	10	5	0.01	1	0.5	0.01	0.01	1	0.01	2	0.01	0.5	50	0.01	0.5	0.01	1	1	0.5	0.01	1	0.1	0.02	0.01	0.05
RD - 09	Intermediate Volcanic Rocks	2.1	30	341	2.5	30	3.9	4.1	0.10	56	1.1	1170	0.02	1.3	1200	0.04	43	<0.01	19	141	2.7	0.05	6	0.6	<0.02	0.14	20.2
RD - 10	Latite Flow	0.73	39	326	0.98	39	6.2	1.1	0.23	6	0.26	374	0.02	1.4	1950	0.01	65	0.09	16	31	6.6	0.36	68	0.4	<0.02	0.08	18.1
RD - 11	Arenite	0.49	29	60	2.8	29	89.8	6.2	0.15	7	0.20	1350	0.02	24.8	860	>5	95	<0.01	6	136	1.9	0.28	355	0.5	0.14	0.38	8.2
SU - 381-1	Porphyry	0.55	27	68	2.8	27	21.6	5.0	0.13	8	0.23	807	0.03	3.9	1420	>5	115	<0.01	11	41	2.8	0.51	67	0.3	0.80	0.86	11.1
SU - 391-1	Arenite	0.51	59	65	6.7	59	15.5	2.8	0.14	7	0.28	2240	0.02	9.8	860	3.4	169	<0.01	5	32	1.5	0.10	137	0.2	0.06	0.17	6.8
SU - 391-2	Conglomerate	1.3	36	54	4.2	36	100.0	7.2	0.12	33	1.1	3700	0.02	72.4	1550	>5	197	<0.01	24	81	1.5	0.13	885	0.4	0.12	0.31	9.1
SU - 391-3	Conglomerate	0.68	43	47	5.3	43	79.5	12.1	0.09	18	0.78	5640	0.02	45.6	1560	>5	275	<0.01	13	69	1.7	0.13	1170	0.3	0.10	0.21	8.0
SU - 583-1	Intermediate Volcanic Rocks	1.9	16	105	6.0	16	75.1	5.4	0.13	53	1.3	1580	0.03	3.6	1410	4.0	134	<0.01	41	80	1.6	1.0	243	0.2	0.04	0.13	10.1
SU - 587-2	Intermediate Volcanic Rocks	0.77	25	72	5.3	25	8.1	3.7	0.14	14	0.63	1810	0.02	3.0	1050	4.8	116	<0.01	9	59	2.5	0.70	18	0.3	0.10	0.15	7.5
SU - 587-3	Intermediate Volcanic Rocks	0.44	26	67	5.2	26	9.8	2.0	0.16	5	0.26	2170	0.02	2.6	1080	2.6	132	<0.01	6	23	2.2	3.8	15	0.3	<0.02	0.07	9.0
SU - 589-2	Arenite	1.3	62	55	0.41	62	52.0	6.3	0.12	18	0.71	147	0.02	74.0	1380	>5	13	<0.01	24	60	1.8	0.29	17	0.4	0.56	0.16	8.6
# Values < DL		-	3	-	-	-	1	-	-	3	-	-	1	-	-	11	-	58	-	-	-	1	1	2	10	-	-

Notes: [1] Samples were collected in 2012 during road design/construction, by a staff member of Cypress Forest Consultants

Sample ID	Rock Type	Co ppm	Cs ppm	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	La ppm	Lu ppm	Mo ppm	Nb ppm	Pb ppm	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sn ppm	Ta ppm	Tb ppm	Te ppm	Th ppm	Tl ppm	U ppm	W ppm	Y ppm	Yb ppm
Method Code		ICM14B																									
LOD		0.1	0.05	0.1	0.1	0.05	0.01	0.02	0.1	0.01	0.05	0.05	0.2	0.2	0.05	0.1	1	0.3	0.05	0.02	0.05	0.1	0.02	0.05	0.1	0.05	0.1
AERO - 1	Intermediate Volcanic Rocks	19.9	6.36	9.9	0.10	0.50	<0.01	<0.02	18.4	0.19	0.54	0.58	2.3	8.6	<0.05	5.0	<1	0.5	<0.05	0.71	<0.05	2.6	0.03	0.63	0.10	18.6	1.3
AERO - 2	Till	14.7	0.94	7.0	<0.1	0.23	0.04	0.04	9.1	0.14	1.36	0.43	7.0	6.9	0.89	7.3	<1	<0.3	<0.05	0.45	<0.05	1.4	0.11	0.45	0.10	12.1	0.9
AERO - 3	Till	12.8	0.64	6.6	<0.1	0.21	0.06	0.03	8.0	0.11	1.7	0.24	6.1	4.4	0.65	5.2	<1	<0.3	<0.05	0.37	<0.05	1.5	0.08	0.45	0.10	10.0	0.8
AERO - 4	Intermediate Volcanic Rocks	25.2	2.46	10.6	<0.1	0.67	0.01	<0.02	8.3	0.16	0.67	0.34	1.4	8.0	0.06	7.5	<1	0.4	<0.05	0.44	<0.05	1.8	0.05	1.01	0.20	13.1	1.1
RD - 12	Latite Flow	13.3	3.23	1.9	<0.1	0.15	0.13	<0.02	9.2	0.12	1.96	0.10	14.6	9.2	3.7	2.0	<1	<0.3	<0.05	0.33	<0.05	2.4	0.32	1.31	0.20	8.06	0.7
RD - 13	Conglomerate	8.7	4.09	2.1	<0.1	0.11	<0.01	<0.02	16.6	0.17	0.2	0.13	3.6	9.8	0.63	2.3	<1	<0.3	<0.05	0.48	<0.05	2.6	0.10	0.83	<0.1	11.1	1
RD - 14	Fragmental Volcanic Rocks	6.5	2.13	3.0	<0.1	0.06	0.15	<0.02	8.9	0.17	1.17	0.12	12.0	4.8	0.69	2.7	<1	<0.3	<0.05	0.38	<0.05	1.9	0.10	1.16	<0.1	12.0	0.9
RD - 15	Fragmental Volcanic Rocks	8.0	3.23	3.3	<0.1	0.11	<0.01	<0.02	16.4	0.11	0.44	0.10	6.2	5.3	0.35	2.8	<1	<0.3	<0.05	0.38	<0.05	3.0	0.04	1.20	<0.1	7.94	0.7
RD - 16	Latite Flow	1.2	1.47	1.5	<0.1	0.15	0.01	<0.02	21.3	0.11	0.31	0.72	6.1	7.2	1.5	1.8	<1	<0.3	<0.05	0.52	<0.05	3.7	0.08	1.25	0.10	12.2	0.8
AR 01	Conglomerate	6.1	2.35	7.2	0.10	0.12	0.03	0.05	25.8	0.19	1.92	0.18	14.2	4.6	0.46	4.0	<1	0.5	<0.05	0.98	<0.05	2.0	0.12	0.39	<0.1	21.5	1.3
AR 02	Shale	2.4	1.75	7.9	0.10	0.06	0.02	0.04	35.9	0.22	0.98	<0.05	6.4	9.3	0.11	2.8	<1	<0.3	<0.05	1.05	<0.05	1.4	0.06	0.16	<0.1	21.0	1.4
AR 03	Fragmental Volcanic Rocks	9.8	1.45	11.8	0.20	0.05	<0.01	0.04	35.2	0.30	0.44	0.13	4.1	9.7	0.19	5.9	<1	<0.3	<0.05	1.27	<0.05	2.0	0.05	0.27	<0.1	26.3	2
AR 04	Shale	6.8	1.23	4.4	<0.1	0.07	0.19	0.07	13.0	0.23	21.7	0.06	6.9	4.7	0.90	6.7	3	0.4	<0.05	0.74	<0.05	1.0	0.74	0.78	<0.1	19.1	1.5
AR 05	Mudstone	19.2	2.88	6.8	<0.1	<0.05	0.11	0.06	7.7	0.08	2.25	<0.05	16.4	6.5	0.81	5.5	1	<0.3	<0.05	0.48	0.10	2.9	0.08	0.28	<0.1	9.36	0.5
AR 05.5	Mudstone	32.4	2.46	6.3	<0.1	<0.05	0.44	0.07	6.7	0.05	3.32	0.05	26.6	6.7	2.3	4.6	6	0.4	<0.05	0.40	0.15	2.3	0.15	0.18	<0.1	6.22	0.3
AR 06	Till	15.8	1.15	7.8	<0.1	0.26	0.04	0.03	11.9	0.15	1.25	0.26	7.7	5.3	0.81	7.9	<1	0.4	<0.05	0.51	<0.05	1.6	0.09	0.46	0.10	12.8	1
AR 07	Shale	13.1	2.91	7.5	<0.1	<0.05	0.10	0.07	11.7	0.05	1.37	<0.05	9.7	7.0	0.57	6.3	<1	0.3	<0.05	0.33	0.13	2.3	0.09	0.20	<0.1	4.5	0.3
AR 08	Till	14.9	0.86	7.6	<0.1	0.23	0.06	0.05	11.8	0.13	2.47	0.24	8.4	5.5	0.97	7.1	<1	0.4	<0.05	0.49	<0.05	1.7	0.13	0.42	0.10	11.8	0.9
AR 09	Till	15.4	1.18	7.9	<0.1	0.23	0.04	0.04	9.2	0.14	1.45	0.19	7.6	5.9	1.1	8.0	<1	0.4	<0.05	0.47	<0.05	1.6	0.09	0.41	0.10	12.0	0.9
AR 09.5	Shale	14.4	2.07	4.9	<0.1	<0.05	0.16	0.10	6.1	0.14	17.7	<0.05	8.7	5.9	0.83	7.8	2	0.4	<0.05	0.45	<0.05	0.60	0.79	0.39	<0.1	10.1	0.9
AR 10	Intermediate Volcanic Rocks	5.3	1.95	2.2	<0.1	0.06	0.02	0.02	22.3	0.14	4.05	1.23	22.0	11.5	3.1	2.4	<1	<0.3	<0.05	0.62	<0.05	1.5	0.57	0.38	<0.1	13.7	0.9
AR 10.5	Intermediate Volcanic Rocks	7.3	0.46	9.2	0.20	0.57	<0.01	0.04	24.6	0.15	0.6	1.19	11.5	1.7	0.25	4.6	<1	0.6	<0.05	0.67	<0.05	1.9	<0.02	0.79	<0.1	14.5	1
AR 11	Porphyry	3.9	2.95	1.8	<0.1	0.16	<0.01	<0.02	24.3	0.10	1.47	0.64	8.8	17.6	2.6	3.6	<1	0.4	<0.05	0.47	<0.05	7.1	0.15	2.06	0.30	8	0.6
AR 12	Porphyry	3.0	4.33	5.0	<0.1	0.07	<0.01	<0.02	24.5	0.06	0.21	<0.05	2.8	21.6	1.5	2.6	<1	<0.3	<0.05	0.37	<0.05	5.0	0.19	0.50	<0.1	6.43	0.4
AR 13	Shale	1.4	2.57	1.4	<0.1	<0.05	0.02	<0.02	25.1	0.02	6.09	0.08	20.7	8.4	2.7	0.40	<1	<0.3	<0.05	0.23	0.09	3.6	0.13	0.49	<0.1	2.48	0.1
AR 14	Conglomerate	11.9	2.82	5.8	<0.1	0.25	0.09	0.02	9.4	0.09	0.23	0.53	2.9	6.9	0.27	5.6	<1	0.5	<0.05	0.39	0.09	2.5	0.10	0.90	0.30	9.42	0.7
AR 15	Till	11.9	1.63	6.5	<0.1	0.28	0.05	0.04	14.2	0.15	12.6	0.42	8.6	6.6	1.4	6.1	<1	0.5	<0.05	0.56	<0.05	2.0	0.13	0.64	0.20	13.8	1
AR 16	Till	17.6	1.17	7.3	<0.1	<0.05	0.05	0.05	12.5	0.07	0.78	0.14	13.2	7.2	0.93	6.1	<1	<0.3	<0.05	0.36	<0.05	2.8	0.07	0.16	<0.1	5.69	0.5
ARD #6[1]	Shale	13.2	1.71	5.2	<0.1	<0.05	0.14	0.04	5.2	0.02	1.64	<0.05	26.3	6.1	1.9	4.6	1	<0.3	<0.05	0.19	0.09	2.0	0.18	0.14	<0.1	2.76	0.2
ARD #5[1]	Shale	19.9	1.66	4.5	<0.1	<0.05	0.30	0.03	2.7	0.03	2.67	<0.05	19.9	5.5	1.6	3.6	1	<0.3	<0.05	0.19	0.06	1.7	0.16	0.15	<0.1	2.88	0.2
AR 17	Shale	11.1	0.58	2.5	<0.1	<0.05	0.03	<0.02	7.8	0.02	0.62	0.14	10.4	3.7	0.23	2.1	<1	<0.3	<0.05	0.16	<0.05	1.1	0.05	0.12	<0.1	2.4	0.1
AR 18	Shale	22.4	3.24	5.9	<0.1	<0.05	0.25	0.05	6.0	0.07	1.81	<0.05	15.8	8.7	0.67	6.6	1	<0.3	<0.05	0.51	0.08	2.8	0.12	0.31	<0.1	9.32	0.5
ARD #4[1]	Shale	19.2	4.73	5.8	<0.1	<0.05	0.23	0.05	3.9	0.07	1.73	<0.05	16.2	8.5	0.90	7.5	2	0.3	<0.05	0.47	0.07	2.4	0.17	0.29	<0.1	10.0	0.5
ARD #3[1]	Shale	17.7	1.98	6.0	<0.1	<0.05	0.25	0.06	8.7	0.04	1.93	<0.05	10.6	8.2	0.76	5.8	2	0.3	<0.05	0.31	0.12	1.3	0.17	0.12	<0.1	4.95	0.3
AR 19	Till	17.7	1.05	7.5	<0.1	<0.05	0.23	0.06	10.4	0.09	1.78	<0.05	8.1	8.0	0.57	8.8	<1	0.3	<0.05	0.57	0.05	1.6	0.31	0.26	<0.1	12.1	0.6
ARD #2[1]	Shale	12.7	1.55	3.8	<0.1	<0.05	0.02	0.02	6.0	0.03	0.7	<0.05	8.9	4.9	0.30	2.9	<1	<0.3	<0.05	0.18	<0.05	1.1	0.04	0.12	<0.1	3.01	0.2

Sample ID	Rock Type	Co ppm	Cs ppm	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	La ppm	Lu ppm	Mo ppm	Nb ppm	Pb ppm	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sn ppm	Ta ppm	Tb ppm	Te ppm	Th ppm	Tl ppm	U ppm	W ppm	Y ppm	Yb ppm
Method Code		ICM14B																									
LOD		0.1	0.05	0.1	0.1	0.05	0.01	0.02	0.1	0.01	0.05	0.05	0.2	0.2	0.05	0.1	1	0.3	0.05	0.02	0.05	0.1	0.02	0.05	0.1	0.05	0.1
ARD #1[1]	Shale	13.9	0.77	4.8	<0.1	<0.05	0.03	0.02	5.1	0.03	0.81	0.05	7.1	4.5	0.28	2.8	<1	<0.3	<0.05	0.23	<0.05	1.0	0.05	0.10	<0.1	4.8	0.2
AR 20	Sandstone	15.3	1.1	10.0	0.10	0.24	0.08	0.06	13.0	0.14	1.6	0.23	8.0	6.5	0.42	9.0	<1	0.5	<0.05	0.84	0.06	1.3	0.06	0.28	0.30	19.3	1
AR 21	Shale	20.3	1.9	8.4	<0.1	<0.05	0.11	0.06	10.6	0.05	2.2	<0.05	9.7	9.6	0.54	8.8	<1	<0.3	<0.05	0.40	0.08	2.0	0.09	0.16	<0.1	7.3	0.4
AR 22	Shale	24.3	1.5	6.2	<0.1	<0.05	0.12	0.06	3.6	0.07	1.3	<0.05	9.0	7.1	0.31	7.5	1	<0.3	<0.05	0.41	0.09	1.3	0.04	0.16	<0.1	8.8	0.5
AR 23	Shale	19.7	1.9	7.5	<0.1	<0.05	0.06	0.06	6.5	0.07	1.3	<0.05	8.2	10.4	0.45	9.6	<1	<0.3	<0.05	0.44	0.07	1.7	0.06	0.18	<0.1	8.4	0.4
AR 24	Shale	18.2	1.9	8.2	<0.1	<0.05	0.05	0.07	3.0	0.07	1.7	<0.05	6.8	9.3	0.40	10.7	<1	0.4	<0.05	0.50	0.07	1.7	0.05	0.20	<0.1	9.6	0.5
AR 25	Sandstone	14.0	1.2	6.9	<0.1	<0.05	0.09	0.04	4.9	0.05	1.1	<0.05	6.5	8.1	0.34	7.1	<1	0.3	<0.05	0.34	<0.05	1.5	0.05	0.16	<0.1	6.5	0.3
AR 26	Sandstone	19.4	1.5	8.5	<0.1	<0.05	0.06	0.06	4.2	0.06	2.3	<0.05	7.7	10.4	0.30	10.4	<1	0.4	<0.05	0.47	0.06	1.9	0.04	0.21	<0.1	8.7	0.4
AR 27	Sandstone	14.7	1.4	7.2	<0.1	<0.05	0.39	0.05	5.2	0.05	1.7	0.15	5.4	9.1	0.60	7.9	6	0.3	<0.05	0.33	<0.05	1.7	0.12	0.19	<0.1	5.8	0.3
AR 28	Sandstone	10.5	1.0	5.2	<0.1	<0.05	0.02	0.03	4.6	0.05	0.76	<0.05	3.1	6.4	0.29	6.1	<1	<0.3	<0.05	0.30	<0.05	1.2	0.04	0.14	<0.1	6.5	0.4
AR 29	Shale	14.5	1.7	7.0	<0.1	<0.05	0.03	0.05	3.2	0.06	1.8	<0.05	5.7	10.3	0.30	9.5	<1	0.3	<0.05	0.39	0.05	1.5	0.07	0.19	<0.1	7.7	0.4
AR 30	Shale	17.4	1.4	7.0	<0.1	0.06	0.11	0.06	4.0	0.09	2.3	<0.05	7.3	6.0	0.37	8.7	1	<0.3	<0.05	0.72	0.07	1.6	0.08	0.26	<0.1	14.9	0.6
AR 31	Mudstone	18.6	1.1	6.3	<0.1	0.06	0.11	0.04	2.7	0.05	1.6	0.06	8.6	6.3	0.41	7.3	<1	<0.3	<0.05	0.37	<0.05	1.4	0.07	0.15	<0.1	7.3	0.3
OB - 01	Arenite	12.5	2.0	2.5	<0.1	0.07	0.38	<0.02	16.3	0.19	1.7	3.4	9.0	5.2	2.1	1.7	2	0.7	<0.05	0.52	0.51	2.0	0.10	1.2	0.10	7.6	1.5
OB - 02	Arenite	11.4	6.7	2.1	<0.1	<0.05	0.16	<0.02	10.9	0.10	2.4	<0.05	12.2	5.7	3.1	3.7	3	<0.3	<0.05	0.33	0.21	1.9	0.11	0.23	<0.1	6.5	0.7
OB - 03	Arenite	11.3	3.5	7.6	<0.1	0.19	0.26	0.05	15.4	0.21	2.2	9.2	12.9	6.2	1.3	3.1	<1	2	<0.05	0.64	0.12	2.7	0.22	1.2	0.30	13.0	1.4
OB - 04	Intermediate Volcanic Rocks	6.7	2.2	2.2	<0.1	<0.05	0.22	<0.02	7.7	0.07	1.8	0.16	25.6	5.3	2.6	2.1	1	<0.3	<0.05	0.23	0.18	1.7	0.12	0.39	<0.1	5.4	0.5
OB - 05	Intermediate Volcanic Rocks	9.3	1.4	3.3	<0.1	0.08	0.17	<0.02	8.3	0.11	0.90	0.14	48.7	4.3	7.2	2.9	<1	<0.3	<0.05	0.30	<0.05	2.0	0.07	0.68	0.10	8.2	0.7
OB - 06	Intermediate Volcanic Rocks	11.7	1.7	2.8	<0.1	0.07	0.31	<0.02	7.4	0.10	1.3	0.13	17.3	4.5	2.4	2.6	<1	<0.3	<0.05	0.30	<0.05	1.6	0.10	0.48	0.10	8.1	0.7
OB - 07	Fragmental Volcanic Rocks	0.60	1.4	0.70	<0.1	<0.05	0.09	<0.02	11.0	0.02	2.3	0.12	43.7	6.6	7.2	0.90	5	<0.3	<0.05	0.11	0.26	2.1	0.17	0.26	0.20	1.3	0.1
OB - 08	Fragmental Volcanic Rocks	6.0	1.2	3.0	<0.1	0.07	0.64	<0.02	5.8	0.06	0.95	0.23	12.7	4.1	2.0	2.3	<1	<0.3	<0.05	0.18	0.05	1.7	0.09	0.54	0.10	3.7	0.4
OB - 09	Latite Flow	10.3	2.2	2.9	<0.1	<0.05	0.33	<0.02	8.0	0.09	1.2	<0.05	14.4	4.3	1.4	2.3	<1	<0.3	<0.05	0.31	<0.05	1.7	0.10	0.47	<0.1	7.6	0.6
OB - 10	Latite Flow	6.7	2.4	0.60	<0.1	<0.05	0.01	<0.02	10.0	0.03	4.3	0.10	114	7.6	15.2	0.90	1	<0.3	<0.05	0.16	0.52	1.4	0.43	0.97	1.0	2.3	0.2
OB - 11	Latite Flow	2.0	1.9	2.3	<0.1	0.11	0.09	0.02	14.3	0.01	4.1	1.3	153	11.3	30.3	1.6	1	<0.3	<0.05	0.14	0.73	1.5	0.24	0.15	0.20	1.2	<0.1
OB - 12	Latite Flow	10.8	1.1	3.7	<0.1	0.07	0.09	0.02	8.7	0.05	1.2	1.1	10.3	5.8	1.5	2.8	<1	<0.3	<0.05	0.22	0.06	1.7	0.11	0.57	0.10	4.6	0.4
OB - 13	Latite Flow	12.4	2.6	2.9	<0.1	0.08	0.64	0.02	7.6	0.12	2.3	0.16	15.1	6.1	3.8	3.2	<1	<0.3	<0.05	0.34	<0.05	1.5	0.21	0.63	<0.1	8.2	0.7
OB - 14	Fragmental Volcanic Rocks	9.9	1.4	2.8	<0.1	0.11	0.50	<0.02	11.0	0.11	1.7	0.15	14.8	5.3	1.7	2.4	<1	<0.3	<0.05	0.31	<0.05	2.5	0.18	0.70	0.10	7.1	0.6
RD - 01	Intermediate Volcanic Rocks	6.8	3.1	2.0	<0.1	<0.05	0.04	<0.02	9.3	0.05	0.97	0.18	38.3	11.2	1.6	1.9	1	<0.3	<0.05	0.19	0.06	1.7	0.27	0.27	0.70	3.2	0.3
RD - 02	Intermediate Volcanic Rocks	2.1	1.8	1.4	<0.1	<0.05	0.03	<0.02	9.4	0.02	1.4	0.13	50.5	9.8	1.1	1.2	2	<0.3	<0.05	0.13	0.08	1.8	0.23	0.17	0.50	1.4	0.1
RD - 03	Intermediate Volcanic Rocks	9.6	1.4	6.7	<0.1	0.24	<0.01	<0.02	4.2	0.08	0.19	0.39	11.4	7.8	1.7	4.8	<1	<0.3	<0.05	0.21	<0.05	1.1	0.12	0.47	0.30	6.9	0.6
RD - 04	Fragmental Volcanic rocks	11.0	1.6	2.5	<0.1	0.16	0.14	<0.02	7.5	0.13	1.1	0.29	9.8	6.1	1.8	3.3	<1	<0.3	<0.05	0.35	<0.05	1.8	0.08	0.67	<0.1	9.5	0.8
RD - 05	Latite Flow	0.80	3.7	1.0	<0.1	0.24	<0.01	<0.02	9.5	0.08	0.32	1.8	3.7	11.9	0.82	1.3	<1	<0.3	<0.05	0.27	<0.05	2.3	0.12	0.82	0.30	7.0	0.5
RD - 06	Till	9.3	1.7	2.9	<0.1	0.12	0.16	<0.02	8.3	0.11	0.84	0.18	9.0	5.4	1.5	3.0	<1	<0.3	<0.05	0.34	<0.05	2.3	0.10	0.76	<0.1	8.2	0.7
RD - 07	Intermediate Volcanic Rocks	4.4	6.3	5.1	<0.1	0.11	0.01	<0.02	9.9	0.20	0.49	0.06	2.8	6.4	0.35	2.7	<1	<0.3	<0.05	0.35	<0.05	1.8	0.07	0.39	<0.1	11.0	1.1
RD - 08	Arenite	10.0	8.2	2.1	<0.1	0.05	0.49	0.02	6.9	0.12	1.6	0.08	13.6	5.8	3.1	2.5	2	<0.3	<0.05	0.39	0.69	1.4	0.20	0.24	<0.1	8.9	0.7

Sample ID	Rock Type	Co ppm	Cs ppm	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	La ppm	Lu ppm	Mo ppm	Nb ppm	Pb ppm	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sn ppm	Ta ppm	Tb ppm	Te ppm	Th ppm	Tl ppm	U ppm	W ppm	Y ppm	Yb ppm
Method Code		ICM14B																									
LOD		0.1	0.05	0.1	0.1	0.05	0.01	0.02	0.1	0.01	0.05	0.05	0.2	0.2	0.05	0.1	1	0.3	0.05	0.02	0.05	0.1	0.02	0.05	0.1	0.05	0.1
RD - 09	Intermediate Volcanic Rocks	2.9	7.7	5.3	<0.1	0.05	0.02	<0.02	12.2	0.18	0.22	0.09	3.3	4.5	0.37	3.1	<1	<0.3	<0.05	0.41	0.08	1.2	0.04	0.28	<0.1	11.5	1
RD - 10	Latite Flow	3.7	2.3	1.9	<0.1	0.27	<0.01	<0.02	10.1	0.14	0.30	0.81	2.2	7.8	1.7	1.9	<1	<0.3	<0.05	0.37	<0.05	1.9	0.08	6.4	0.30	11.4	0.9
RD - 11	Arenite	14.4	3.3	1.1	<0.1	<0.05	0.30	0.03	4.0	0.09	2.0	0.08	21.5	6.3	2.9	1.8	<1	<0.3	<0.05	0.27	0.06	1.0	0.52	0.17	<0.1	6.9	0.5
SU - 381-1	Porphyry	10.0	8.7	1.2	<0.1	<0.05	0.36	<0.02	5.8	0.10	2.7	<0.05	17.3	5.7	2.8	1.9	3	<0.3	<0.05	0.29	0.30	1.4	0.26	0.21	<0.1	7.8	0.6
SU - 391-1	Arenite	5.8	5.1	1.0	<0.1	<0.05	1.5	<0.02	3.2	0.06	2.5	<0.05	14.0	5.7	0.75	1.6	<1	<0.3	<0.05	0.18	<0.05	1.0	0.67	0.70	0.10	4.7	0.4
SU - 391-2	Conglomerate	18.6	4.3	3.4	<0.1	<0.05	0.11	0.05	4.2	0.07	0.59	<0.05	20.2	4.9	1.9	3.3	<1	<0.3	<0.05	0.27	0.14	1.2	0.33	0.10	<0.1	6.0	0.5
SU - 391-3	Conglomerate	12.3	2.8	1.8	<0.1	<0.05	0.11	0.04	3.9	0.11	0.64	0.07	16.3	4.1	3.4	2.6	5	<0.3	<0.05	0.31	1.4	0.70	0.16	0.06	0.10	9.3	0.7
SU - 583-1	Intermediate Volcanic Rocks	16.0	6.0	5.2	<0.1	<0.05	0.11	<0.02	5.2	0.10	0.65	<0.05	8.7	5.6	1.2	4.2	<1	<0.3	<0.05	0.28	0.05	0.40	0.09	0.17	<0.1	8.2	0.7
SU - 587-2	Intermediate Volcanic Rocks	9.2	6.2	1.5	<0.1	<0.05	0.13	<0.02	3.6	0.11	0.29	<0.05	8.7	7.0	1.6	2.2	2	<0.3	<0.05	0.25	0.12	0.30	0.10	0.13	<0.1	7.1	0.7
SU - 587-3	Intermediate Volcanic Rocks	7.1	7.6	0.80	<0.1	<0.05	0.12	<0.02	4.4	0.11	0.27	<0.05	8.1	8.1	1.6	2.2	<1	<0.3	<0.05	0.27	<0.05	0.20	0.13	0.17	<0.1	7.6	0.6
SU - 589-2	Arenite	24.3	5.1	3.0	<0.1	<0.05	0.10	<0.02	4.1	0.02	0.86	<0.05	9.3	5.6	8.2	3.7	1.0	<0.3	<0.05	0.16	0.47	1.5	0.15	0.14	<0.1	2.6	0.1
# Values < DL		-	-	-	76	40	10	36	-	-	-	30	-	-	1	-	57	57	82	-	43	-	1	-	52	-	1

Notes: 1 Samples were collected in 2012 during road design/construction, by a staff member of Cypress Forest Consultants

Site Characterization Materials - SFE

Sample ID	Lithology								Ion Balance				Major Ions				Dissolved Metals		
		pH	Redox	Cond.	Total Acidity (to pH 8.3)	Alkalinity	Sulphate	Hardness	Major Anions	Major Cations	Diff.	Balance (%)	Ca	Mg	K	Na	Al	Sb	As
		meter	meter	meter	titration	titration	Turbidity	CaCO3	Calc	Calc	Calc	Calc	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS
			mV	uS/cm	mg CaCO3/L	mg CaCO3/L	mg/L	mg/L	meq/L	meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SU-381-1	Porphyry	7.76	291	391	5.9	35.6	151	133	3.86	3.56	0.30	4.0%	48.6	2.78	4.06	16.2	0.037	0.0120	0.0584
SU-391-1	Arenite	7.71	304	208	5.2	37.9	66	80.8	2.13	1.90	0.24	5.9%	26.6	3.53	3.19	3.37	0.068	0.0052	0.0098
SU-587-2	Intermediate Volcanic Rocks	7.81	305	118	4.8	43.3	14	49.1	1.16	1.10	0.06	2.5%	18.8	0.49	1.92	1.14	0.113	0.0148	0.112
SU-589-2	Arenite	7.52	321	167	4.7	21.0	57	67.2	1.61	1.43	0.18	5.8%	24.6	1.39	1.21	0.95	0.027	0.0104	0.0032
RD-02	Intermediate Volcanic Rocks	5.63	429	36	6.3	1.1	11	6.9	0.25	0.22	0.03	6.8%	2.09	0.41	1.91	0.28	0.052	<0.0002	<0.0002
RD-03	Intermediate Volcanic Rocks	7.50	360	58	5.4	26.7	8	24.6	0.70	0.62	0.08	6.2%	8.92	0.56	1.6	1.27	0.222	0.0010	0.0014
RD-05	Latite flow	7.65	380	55	4.9	29.2	5	23.3	0.69	0.59	0.10	7.6%	8.99	0.19	2.44	0.64	0.244	0.0004	0.0046
RD-08	Arenite	7.53	374	373	6.6	35.6	163	180	4.11	3.75	0.36	4.6%	69.5	1.59	2.18	0.87	0.030	0.0048	0.0081
RD-09	Intermediate Volcanic Rocks	7.81	331	71	4.7	33.8	6	35.6	0.80	0.76	0.04	2.4%	13.6	0.41	0.66	0.40	0.112	0.0003	<0.0002
RD-10	Latite Flow	7.74	363	55	4.6	29.1	5	22.1	0.69	0.59	0.10	7.5%	8.33	0.31	2.49	0.94	0.335	0.0003	0.0065
RD-13	Conglomerate	7.74	374	65	4.8	32.2	6	29.9	0.77	0.70	0.07	4.7%	11.2	0.49	2.06	0.29	0.209	0.0022	0.0044
RD-14	Conglomerate	7.35	367	1021	10.3	37.4	572	582	12.7	11.8	0.84	3.4%	225	4.71	0.932	0.60	0.007	<0.0002	0.0006
RD-16	Till	7.96	297	49	4.4	29.7	4	21.5	0.68	0.56	0.12	9.6%	8.31	0.18	1.21	1.00	0.430	0.0006	0.0074
AR01	Conglomerate	7.68	357	119	5.0	31.7	31	51.2	1.28	1.18	0.09	3.8%	18.8	1.07	2.31	1.37	0.270	0.0013	0.0017
AR03	Fragmental Volcanic Rocks	7.79	353	66	4.4	32.4	8	26.5	0.81	0.71	0.10	6.7%	9.17	0.87	2.32	1.74	0.330	0.0007	0.0063
AR05	Mudstone	7.64	371	385	6.9	49.4	172	193	4.57	3.94	0.63	7.4%	68.3	5.36	1.41	0.59	0.047	0.0003	0.0004
AR05.5	Mudstone	4.67	486	395	29.2	<0.1	222	195	4.63	4.51	0.12	1.3%	58.9	11.5	2.36	1.20	1.82	<0.0002	0.0004
AR10	Intermediate Volcanic Rocks	6.12	245	1159	13.8	2.4	751	781	15.7	16.0	-0.34	-1.1%	295	10.9	2.33	0.71	0.045	<0.0002	0.0008
AR10.5	Intermediate Volcanic Rocks	7.79	320	49	4.7	27.7	4	25.5	0.64	0.60	0.04	3.3%	9.48	0.44	0.5	0.98	0.292	0.0004	0.0043
AR11	Porphyry	7.66	360	60	5.3	31.9	5	29.0	0.74	0.68	0.06	4.5%	9.61	1.23	1.49	1.19	0.052	0.0005	<0.0002
AR12	Porphyry	7.79	364	57	4.7	31.4	4	28.3	0.71	0.67	0.04	2.8%	8.39	1.78	2.6	0.36	0.220	0.0013	0.0004
AR14	Conglomerate	7.75	371	69	4.9	36.9	5	35.6	0.84	0.81	0.03	1.8%	13.2	0.65	1.29	0.82	0.271	0.0003	0.0007
AR18	Shale	7.42	373	179	5.7	22.0	90	90.0	2.32	1.88	0.44	10.4%	22.3	8.36	1.16	0.62	0.013	0.0005	0.0002
AR22	Shale	7.69	346	98	5.6	34.7	20	50.6	1.11	1.10	0.01	0.3%	15.4	2.95	1.14	1.10	0.055	0.0010	0.0005
AR27	Sandstone	7.66	353	67	5.2	27.1	12	29.3	0.79	0.71	0.08	5.7%	8.48	1.98	1.32	1.74	0.093	0.0017	0.0008
AR29	Shale	7.75	356	76	5.5	34.8	10	36.6	0.90	0.82	0.08	4.8%	10.7	2.38	1.17	0.95	0.157	0.0013	0.0007
Aero - 1	Intermediate Volcanic Rocks	7.78	357	50	4.7	28.7	4	26.3	0.66	0.61	0.04	3.4%	9.85	0.43	0.858	0.75	0.283	<0.0002	<0.0002
Blank		6.99	385	<1	3.5	1.8	2	0.08	#N/A	#N/A	#N/A	#N/A	0.03	0.00	0.01	0.04	0.002	<0.0002	<0.0002
# Values <DL		-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	6	5

Notes: All tested materials consisted of 250g samples, 'shaken' for 24 hours in 750mL of water

Sample ID	Lithology	Dissolved Metals																		
		Ba ICP-MS mg/L	Be ICP-MS mg/L	Bi ICP-MS mg/L	B ICP-MS mg/L	Cd ICP-MS mg/L	Cr ICP-MS mg/L	Co ICP-MS mg/L	Cu ICP-MS mg/L	Fe ICP-MS mg/L	Pb ICP-MS mg/L	Li ICP-MS mg/L	Mn ICP-MS mg/L	Hg ICP-MS ug/L	Mo ICP-MS mg/L	Ni ICP-MS mg/L	P ICP-MS mg/L	Se ICP-MS mg/L	Si ICP-MS mg/L	Ag ICP-MS mg/L
SU-381-1	Porphyry	0.0177	<0.00002	<0.00001	0.0433	0.000029	<0.0005	0.000364	<0.0005	<0.003	0.00003	0.020	0.276	<0.01	0.00082	0.0006	<0.009	0.00467	0.97	0.00001
SU-391-1	Arenite	0.0322	<0.00002	<0.00001	0.0264	0.000015	<0.0005	0.000460	0.0006	<0.003	0.00006	0.006	0.496	<0.01	0.00052	0.0087	<0.009	0.00016	0.94	<0.00001
SU-587-2	Intermediate Volcanic Rocks	0.0477	<0.00002	<0.00001	0.0086	<0.000003	<0.0005	0.000053	<0.0005	<0.003	0.00003	0.003	0.053	<0.01	0.00035	0.0003	<0.009	0.00041	1.18	<0.00001
SU-589-2	Arenite	0.0263	<0.00002	<0.00001	0.0123	0.000051	<0.0005	0.000520	<0.0005	0.071	0.00005	0.004	0.089	<0.01	0.00017	0.0027	<0.009	0.00190	1.00	<0.00001
RD-02	Intermediate Volcanic Rocks	0.0800	<0.00002	<0.00001	0.0076	0.000074	<0.0005	0.00112	0.0005	0.010	0.00020	<0.001	0.298	<0.01	0.00002	0.0018	<0.009	0.00029	1.60	<0.00001
RD-03	Intermediate Volcanic Rocks	0.150	<0.00002	<0.00001	0.0061	0.000007	<0.0005	0.000042	0.0017	0.019	0.00004	<0.001	0.017	<0.01	0.00028	0.0001	0.026	0.00008	1.12	0.00001
RD-05	Latite flow	0.207	<0.00002	<0.00001	0.0153	<0.000003	<0.0005	0.000011	0.0007	0.008	0.00006	<0.001	0.014	<0.01	0.00116	0.0001	0.015	0.00010	2.10	<0.00001
RD-08	Arenite	0.0251	<0.00002	<0.00001	0.0132	0.000030	<0.0005	0.000495	<0.0005	0.004	0.00004	0.004	0.707	<0.01	0.00038	0.0008	<0.009	0.00225	0.89	0.00001
RD-09	Intermediate Volcanic Rocks	0.137	<0.00002	<0.00001	0.0050	<0.000003	<0.0005	0.000007	<0.0005	<0.003	<0.00002	<0.001	0.001	<0.01	0.00034	0.0002	<0.009	0.00005	1.15	<0.00001
RD-10	Latite Flow	0.137	<0.00002	<0.00001	0.0098	<0.000003	<0.0005	0.000008	0.0006	0.006	<0.00002	<0.001	0.007	<0.01	0.00032	<0.0001	0.028	0.00006	1.82	<0.00001
RD-13	Conglomerate	0.124	<0.00002	<0.00001	0.0096	<0.000003	<0.0005	0.000006	<0.0005	<0.003	<0.00002	<0.001	0.008	<0.01	0.00012	0.0001	<0.009	<0.00004	1.53	<0.00001
RD-14	Conglomerate	0.0174	<0.00002	<0.00001	0.0027	0.000142	<0.0005	0.00236	<0.0005	<0.003	<0.00002	0.004	4.08	<0.01	0.00010	0.0005	<0.009	0.00006	1.93	<0.00001
RD-16	Till	0.0984	<0.00002	<0.00001	0.0070	0.000005	<0.0005	0.000017	<0.0005	0.005	0.00002	<0.001	0.018	<0.01	0.00012	0.0001	<0.009	<0.00004	1.91	<0.00001
AR01	Conglomerate	0.0427	<0.00002	<0.00001	0.0100	0.000003	<0.0005	0.000021	<0.0005	0.010	0.00002	0.003	0.036	<0.01	0.00282	0.0003	<0.009	0.00025	1.27	<0.00001
AR03	Fragmental Volcanic Rocks	0.0678	<0.00002	<0.00001	0.0067	0.000005	<0.0005	0.000034	<0.0005	0.012	0.00004	0.003	0.013	<0.01	0.00419	0.0001	<0.009	0.00023	1.18	<0.00001
AR05	Mudstone	0.0277	<0.00002	<0.00001	0.0086	0.000075	<0.0005	0.00201	0.0009	<0.003	<0.00002	0.008	0.251	<0.01	0.00117	0.0050	<0.009	0.00229	1.03	<0.00001
AR05.5	Mudstone	0.0662	0.00420	<0.00001	0.0124	0.00409	<0.0005	0.101	0.110	3.22	0.00176	0.026	1.55	<0.01	0.00009	0.343	<0.009	0.00719	2.58	<0.00001
AR10	Intermediate Volcanic Rocks	0.0355	0.00038	<0.00001	0.0045	0.00115	<0.0005	0.0161	0.0011	4.26	0.00021	0.004	1.93	<0.01	0.00003	0.0141	<0.009	0.00006	0.99	<0.00001
AR10.5	Intermediate Volcanic Rocks	0.00747	<0.00002	<0.00001	0.0070	<0.000003	<0.0005	0.000132	<0.0005	0.007	0.00002	0.001	0.009	<0.01	0.00153	0.0004	0.011	0.00005	1.38	<0.00001
AR11	Porphyry	0.176	<0.00002	<0.00001	0.0084	<0.000003	<0.0005	0.000048	<0.0005	0.004	<0.00002	<0.001	0.013	<0.01	0.00101	0.0002	0.010	0.00008	1.17	<0.00001
AR12	Porphyry	0.00389	<0.00002	<0.00001	0.0061	<0.000003	<0.0005	0.000019	<0.0005	<0.003	<0.00002	0.006	0.005	<0.01	0.00158	0.0002	<0.009	0.00013	1.80	<0.00001
AR14	Conglomerate	0.0347	<0.00002	<0.00001	0.0073	<0.000003	<0.0005	0.000025	<0.0005	0.006	<0.00002	<0.001	0.006	<0.01	0.00446	0.0002	<0.009	0.00016	1.76	<0.00001
AR18	Shale	0.0178	<0.00002	<0.00001	0.0041	0.000205	<0.0005	0.00493	0.0005	<0.003	0.00003	0.004	0.389	<0.01	0.00282	0.0167	0.011	0.00444	1.02	0.00001
AR22	Shale	0.0296	<0.00002	<0.00001	0.0038	0.000021	<0.0005	0.000379	<0.0005	<0.003	<0.00002	0.003	0.126	<0.01	0.00243	0.0010	0.011	0.00309	1.08	<0.00001
AR27	Sandstone	0.0298	<0.00002	<0.00001	0.0062	0.000022	<0.0005	0.000201	<0.0005	0.008	<0.00002	0.002	0.042	0.02	0.00678	0.0006	0.018	0.0122	1.54	<0.00001
AR29	Shale	0.0138	<0.00002	<0.00001	0.0078	<0.000003	<0.0005	0.000054	<0.0005	0.006	<0.00002	0.003	0.027	<0.01	0.00916	0.0003	<0.009	0.00615	1.57	<0.00001
Aero - 1	Intermediate Volcanic Rocks	0.00259	<0.00002	<0.00001	0.0115	<0.000003	<0.0005	0.000029	0.0007	0.010	<0.00002	<0.001	0.005	<0.01	0.00071	0.0002	0.014	0.00007	1.37	<0.00001
Blank		0.00012	<0.00002	<0.00001	0.0008	<0.000003	<0.0005	0.000005	<0.0005	<0.003	<0.00002	<0.001	<0.0002	0.01	0.00009	<0.0001	<0.009	<0.00004	0.01	<0.00001
# Values <DL		-	26	28	-	12	28	-	18	11	13	11	1	26	-	2	19	3	-	24

Notes: All tested materials consisted of 250g samples, 'shaken' for 24 hours in 750mL of water

Sample ID	Lithology	Dissolved Metals								
		Sr ICP-MS mg/L	S ICP-MS mg/L	Tl ICP-MS mg/L	Sn ICP-MS mg/L	Ti ICP-MS mg/L	U ICP-MS mg/L	V ICP-MS mg/L	Zn ICP-MS mg/L	Zr ICP-MS mg/L
SU-381-1	Porphyry	3.08	51.6	0.00012	0.00004	<0.0001	0.000611	0.00035	<0.001	<0.00001
SU-391-1	Arenite	0.762	23.8	0.00005	0.00002	<0.0001	0.000059	0.00026	<0.001	0.00001
SU-587-2	Intermediate Volcanic Rocks	0.105	6.00	0.00003	0.00001	0.0002	0.000254	0.00121	<0.001	<0.00001
SU-589-2	Arenite	0.0850	19.8	0.00005	0.00002	<0.0001	0.000028	0.00021	<0.001	<0.00001
RD-02	Intermediate Volcanic Rocks	0.0120	4.21	0.00004	0.00003	<0.0001	0.000003	<0.00003	0.010	<0.00001
RD-03	Intermediate Volcanic Rocks	0.0485	1.96	<0.00002	<0.00001	0.0004	0.000023	0.00064	<0.001	<0.00001
RD-05	Latite flow	0.0682	0.81	<0.00002	<0.00001	0.0003	0.000145	0.00100	<0.001	0.00001
RD-08	Arenite	0.959	55.3	0.00009	<0.00001	<0.0001	0.000299	0.00012	<0.001	<0.00001
RD-09	Intermediate Volcanic Rocks	0.0370	1.33	<0.00002	<0.00001	<0.0001	0.000026	0.00010	<0.001	<0.00001
RD-10	Latite Flow	0.0820	0.97	<0.00002	0.00002	0.0003	0.000218	0.00070	<0.001	0.00001
RD-13	Conglomerate	0.295	1.18	<0.00002	<0.00001	0.0001	0.000464	0.00043	<0.001	<0.00001
RD-14	Conglomerate	0.355	192	0.00003	<0.00001	<0.0001	0.000165	0.00007	0.001	<0.00001
RD-16	Till	0.113	0.49	<0.00002	<0.00001	0.0007	0.000348	0.00155	<0.001	0.00009
AR01	Conglomerate	0.208	10.6	0.00002	<0.00001	0.0003	0.000056	0.00049	<0.001	0.00003
AR03	Fragmental Volcanic Rocks	0.304	1.80	<0.00002	<0.00001	0.0005	0.000006	0.00083	<0.001	<0.00001
AR05	Mudstone	0.515	53.6	0.00004	<0.00001	<0.0001	0.000043	0.00013	0.003	<0.00001
AR05.5	Mudstone	0.604	77.4	0.00026	0.00001	<0.0001	0.000274	<0.00003	1.72	<0.00001
AR10	Intermediate Volcanic Rocks	0.895	274	0.00017	<0.00001	<0.0001	0.000096	0.00003	0.065	<0.00001
AR10.5	Intermediate Volcanic Rocks	0.0498	0.79	<0.00002	0.00001	0.0001	0.000011	0.00515	<0.001	0.00003
AR11	Porphyry	0.0602	0.88	<0.00002	0.00003	<0.0001	0.000134	0.00006	<0.001	<0.00001
AR12	Porphyry	0.0424	0.48	<0.00002	<0.00001	<0.0001	0.000125	0.00066	<0.001	0.00003
AR14	Conglomerate	0.0455	1.22	<0.00002	0.00002	0.0001	0.000084	0.00132	<0.001	0.00002
AR18	Shale	0.276	25.7	0.00006	0.00003	<0.0001	0.000012	0.00007	0.006	<0.00001
AR22	Shale	0.220	6.95	0.00006	<0.00001	<0.0001	0.000005	0.00036	0.001	<0.00001
AR27	Sandstone	0.0901	3.74	0.00005	<0.00001	0.0002	0.000013	0.00129	<0.001	0.00002
AR29	Shale	0.0869	2.76	0.00002	<0.00001	0.0002	0.000026	0.00102	<0.001	<0.00001
Aero - 1	Intermediate Volcanic Rocks	0.0304	0.40	<0.00002	0.00001	0.0003	0.000019	0.00316	<0.001	0.00001
Blank		0.0001	<0.03	<0.00002	<0.00001	<0.0001	<0.000001	<0.00003	<0.001	<0.00001
# Values <DL		-	1	13	16	15	1	3	21	18

Notes: All tested materials consisted of 250g samples, 'shaken' for 24 hours in 750mL of water

APPENDIX J
QUARRY MATERIALS

APPENDIX J-1
ABA, TOTAL METALS, AND SFE DATA

Quarry Materials - ABA Data

Client Sample ID	Paste pH	Fizz Rating	Total Carbon	Total Inorganic C	$CaCO_3$ Equivalents[*2]	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur	Non-Extractable Sulphur[*2]	MPA[*1]	STD Sobek NP	NNP[*2]	NPR[*3]
Units:	pH Units		wt %	wt %	kg CaCO3/tonne	wt %	wt %	wt %	wt %	kg CaCO3/tonne			
	0.1		0.02	0.02	1.7	0.01	0.02	0.03	0.01	0.9			
SU-614-comp1	9.3	Moderate	0.19	0.17	14.2	0.01	<0.02	<0.03	<0.01	<0.9	9.4	9.4	N/A
SU-614-comp2	9.4	Moderate	0.22	0.2	16.7	<0.01	<0.02	<0.03	<0.01	<0.9	21.6	21.6	N/A
SU-614-comp3	9.3	Moderate	0.14	0.12	10.0	<0.01	<0.02	<0.03	<0.01	<0.9	11.9	11.9	N/A
SU-615-comp1	9.4	Moderate	0.28	0.26	21.7	<0.01	<0.02	<0.03	<0.01	<0.9	25.0	25.0	N/A
SU-615-comp2	9.4	Moderate	0.3	0.26	21.7	<0.01	<0.02	<0.03	<0.01	<0.9	28.8	28.8	N/A
SU-615-comp3	9.3	Moderate	0.28	0.26	21.7	<0.01	<0.02	<0.03	<0.01	<0.9	29.4	29.4	N/A
SU-616-comp1	9.4	Moderate	0.25	0.22	18.3	<0.01	<0.02	<0.03	<0.01	<0.9	31.9	31.9	N/A
SU-616-comp2	8.6	Moderate	0.21	0.18	15.0	<0.01	<0.02	<0.03	<0.01	<0.9	29.4	29.4	N/A
SU-616-comp3	9.3	Moderate	0.21	0.19	15.8	<0.01	<0.02	<0.03	<0.01	<0.9	27.5	27.5	N/A

*1 MPA (Maximum Potential Acidity): is based on HNO_3 extractable sulphide sulphur

*2 NNP (Net Neutralization Potential): is based on difference between Neutralization Potential (NP) and Maximum Potential Acidity (MPA)

*3 NPR (Neutralization Potential Ratio): is NP/MPA

Quarry Materials - Total Metals

	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	S	Hg	Tl	Ga	Sc
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	%	ppm	ppm	ppm	ppm
	Detection Limit	1	1	3	1	0.3	1	1	2	0.01	2	8	2	1	0.5	3	3	1	0.01	0	1	1	0.01	1	0	20	0.01	0.01	0.01	2	0.05	1	5	5	5
	Sample Type																																		
SU-614-comp1	Rock Pulp	1	2	<3	2	<0.3	2	<1	249	0.51	31	<8	<2	90	<0.5	<3	<3	11	0.91	0.07	7	82	0.03	195	0.06	<20	0.47	0.02	0.26	<2	<0.05	<1	<5	<5	<5
SU-614-comp2	Rock Pulp	<1	2	<3	2	<0.3	2	<1	280	0.48	30	<8	<2	99	<0.5	<3	<3	10	1.05	0.07	7	83	0.03	272	0.06	<20	0.45	0.02	0.25	<2	<0.05	<1	<5	<5	<5
SU-614-comp3	Rock Pulp	<1	2	<3	2	<0.3	2	<1	223	0.48	31	<8	<2	65	<0.5	3	<3	9	0.72	0.08	8	67	0.03	171	0.05	<20	0.44	0.02	0.28	<2	<0.05	<1	<5	<5	<5
SU-615-comp1	Rock Pulp	<1	2	<3	1	<0.3	2	<1	359	0.48	14	<8	<2	70	<0.5	<3	<3	13	1.14	0.07	7	70	0.03	222	0.05	<20	0.45	0.03	0.28	<2	<0.05	<1	<5	<5	<5
SU-615-comp2	Rock Pulp	1	2	<3	2	<0.3	2	<1	392	0.54	14	<8	<2	77	<0.5	<3	<3	15	1.23	0.07	7	74	0.03	253	0.06	<20	0.49	0.03	0.29	<2	<0.05	<1	<5	<5	<5
SU-615-comp3	Rock Pulp	<1	2	<3	1	<0.3	2	<1	355	0.5	14	<8	<2	69	<0.5	<3	<3	13	1.15	0.07	7	70	0.03	220	0.05	<20	0.45	0.03	0.28	<2	<0.05	<1	<5	<5	<5
SU-616-comp1	Rock Pulp	<1	<1	<3	3	<0.3	2	<1	228	0.59	23	<8	<2	52	<0.5	<3	<3	12	1.03	0.07	7	69	0.03	176	0.06	<20	0.48	0.03	0.3	<2	<0.05	<1	<5	<5	<5
SU-616-comp2	Rock Pulp	<1	1	<3	3	<0.3	2	<1	216	0.56	24	<8	<2	48	<0.5	<3	<3	10	0.93	0.07	7	71	0.03	159	0.06	<20	0.46	0.03	0.29	<2	<0.05	<1	<5	<5	<5
SU-616-comp3	Rock Pulp	<1	1	<3	2	<0.3	2	<1	203	0.51	24	<8	<2	47	<0.5	<3	<3	10	0.92	0.07	6	65	0.03	150	0.06	<20	0.42	0.03	0.27	<2	<0.05	<1	<5	<5	<5

Quarry Materials - SFE Data

Parameter	Unit	RDL	SU-614-comp1	SU-614-comp2	SU-614-comp3	SU-615-comp1	SU-615-comp2	SU-615-comp3	SU-616-comp1	SU-616-comp2	SU-616-comp3
Weight of dry sample used	g	0.01	250	250	250	250	250	250	250	250	250
Volume of DI water used	ml	0.5	750	750	750	750	750	750	750	750	750
On Filtered Samples (using 0.45 micron filter paper):											
pH	pH units	0.01	9.16	9.40	8.47	7.89*	7.92	9.16	9.02	9.00	9.36
EC	µS/cm	1	54.0	56 / 55	50.0	51.0	50.0	54.0	50.0	50.0	52.0
ORP	mV	1	178	163 / 154	176	184	209	162	168	163	146
Acidity to pH 8.3	mg $CaCO_3$/L	0.5	<0.5	<0.5	<0.5	6	5	<0.5	<0.5	<0.5	<0.5
Alkalinity to pH 4.5	mg $CaCO_3$/L	0.5	22	22	22	22	24	23	24	24	24
Sulphate	mg/L	0.5	1.9	2.6	1.1	1.7	1.5	1.6	0.9	0.7	0.7
Dissolved Metals by ICP/ICP-MS:											
Silver Dissolved	mg/L	0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008
Aluminum Dissolved	mg/L	0.001	0.764	0.588	0.731	0.773	0.946	0.672	0.704	0.763	0.698
Arsenic Dissolved	mg/L	0.0002	0.0104	0.0098	0.0140	0.0109	0.0115	0.0112	0.0160	0.0137	0.0156
Boron Dissolved	mg/L	0.01	<0.01	0.01	<0.01	0.02	0.02	0.02	0.01	0.01	0.02
Barium Dissolved	mg/L	0.0002	0.0302	0.0520	0.017	0.0255	0.0282	0.0175	0.0109	0.0095	0.0095
Beryllium Dissolved	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Bismuth Dissolved	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium Dissolved	mg/L	0.05	5.1	5.22	4.84	5.01	5.13	5.2	4.94	4.9	4.9
Cadmium Dissolved	mg/L	0.00001	0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Cobalt Dissolved	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium Dissolved	mg/L	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Copper Dissolved	mg/L	0.0005	<0.0005	0.0009	0.0006	0.0015	0.0006	0.0007	0.0010	0.0007	0.0015
Iron Dissolved	mg/L	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Mercury Dissolved	mg/L	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Potassium Dissolved	mg/L	0.05	5.19	5.06	5.57	4.92	5.11	5.24	5.17	5.34	4.88
Lithium Dissolved	mg/L	0.0005	0.0017	0.0016	0.0016	0.0019	0.0019	0.0019	0.0022	0.0021	0.0021
Magnesium Dissolved	mg/L	0.005	0.19	0.18	0.18	0.17	0.186	0.170	0.102	0.103	0.099
Manganese Dissolved	mg/L	0.0002	0.0032	0.0013	0.0023	0.0033	0.0047	0.0017	0.0010	0.0012	0.0011
Molybdenum Dissolved	mg/L	0.0001	0.0010	0.0012	0.0008	0.0026	0.0019	0.0017	0.0011	0.0011	0.0015
Sodium Dissolved	mg/L	0.02	1.68	1.57	1.55	1.70	1.94	1.87	1.94	1.77	1.84
Nickel Dissolved	mg/L	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Phosphorus Dissolved	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead Dissolved	mg/L	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Sulphur Dissolved	mg/L	0.5	0.8	1.0	<0.5	0.8	0.6	0.6	<0.5	<0.5	<0.5
Antimony Dissolved	mg/L	0.0001	0.001	0.0010	0.0014	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Selenium Dissolved	mg/L	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Silicon Dissolved	mg/L	0.05	2.17	2.16	2.35	2.24	2.32	2.33	2.29	2.23	2.26
Tin Dissolved	mg/L	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Strontium Dissolved	mg/L	0.0002	0.062	0.0756	0.0504	0.0659	0.0619	0.0625	0.0638	0.0560	0.0641
Tellurium Dissolved	mg/L	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Thorium Dissolved	mg/L	0.0001	0.0002	0.0002	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Titanium Dissolved	mg/L	0.0005	0.0051	0.0109	0.0112	0.0124	0.0150	0.0108	0.0106	0.0108	0.0102
Thallium Dissolved	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Uranium Dissolved	mg/L	0.00005	0.00019	0.00017	0.00023	0.00014	0.00016	0.00015	0.00019	0.00019	0.0002
Vanadium Dissolved	mg/L	0.0005	0.0028	0.0027	0.0038	0.0059	0.0058	0.0057	0.0042	0.0038	0.0039
Tungsten Dissolved	mg/L	0.0001	0.0033	0.0079	0.0027	0.0014	0.0012	0.0012	0.0067	0.0019	0.0040
Zinc Dissolved	mg/L	0.001	<0.001	0.008	0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001
Zirconium Dissolved	mg/L	0.0001	0.0007	0.0002	0.0003	0.0004	0.0007	0.0001	0.0003	0.0002	0.0002
Ion Balance:											
Anions			0.48	0.48	0.46	0.48	0.50	0.49	0.49	0.48	0.48
Cations			0.56	0.54	0.55	0.55	0.59	0.56	0.55	0.55	0.54
% Difference			-7.86	-5.29	-8.37	-7.26	-8.27	-6.51	-5.87	-6.22	-5.00

APPENDIX J-2
PETROGRAPHIC REPORTS

PETROGRAPHIC EXAMINATION OF COARSE AGGREGATE

CSA A23.2-15A / ASTM C 295

BGC ENGINEERING INC.
#800 - 1045 Howe Street
Vancouver, BC, V6Z 2A9

January 6, 2014
Project Number: 13-1417-0056-2000

ATTENTION: Mr. Brent McAfee

PROJECT: Brucejack Project, Lakeshore Quarry Site Investigation

Sample:	**Hole ID SU-614, Depth 0.38 - 23.5 m (Laboratory Crushed - Coarse Portion)**
Source:	**Proposed Lakeshore Quarry**

Date sampled: October 3, 2013 **Sampled by:** Client

	PETROGRAPHIC DESCRIPTION[2] / PHYSICAL QUALITY	% BY MASS	MULTI-PLIER	PN CONTRI-BUTION
GOOD	**Rhyolite 1 -** slightly altered, medium grey/purple groundmass with small dark purple phenocrysts, slightly calcareous, hard, strong	28.1	1	**28.1**
	Rhyolite 2 - altered, medium green groundmass with small dark purple phenocrysts, chloritic, slightly calcareous, hard, strong	7.1	1	**7.1**
	Rhyolite 3 - altered, light purple/yellow with small dark purple phenocrysts, slightly calcareous, hard, strong	22.5	1	**22.5**
	Rhyolite 4 - altered, light purple groundmass with medium dark red/purple phenocrysts, slightly calcareous, hard, strong	2.6	1	**2.6**
	Veined Rhyolite 5 - contains dark red veins and inclusions, 0.5 to 10 mm thick, layered and/or braided vein structure, slightly calcareous, hard, strong	15.5	1	**15.5**
	Veined Rhyolite 6 - contains quartz veins, 2 to 15 mm thick, veins >8 mm are sub-parallel, veins <8 mm have random orientation, slightly calcareous, hard, strong	18.3	1	**18.3**
	Subtotal	**94.1**		**94.1**
FAIR	**Rhyolite 1** - brittle, flat/elongated particle shapes	1.7	3	**5.1**
	Rhyolite 2 - brittle, flat/elongated particle shapes	0.5	3	**1.5**
	Rhyolite 3 - brittle, flat/elongated particle shapes	1.1	3	**3.3**
	Veined Rhyolite 5 - brittle, flat/elongated particle shapes	0.7	3	**2.1**
	Veined Rhyolite 6 - brittle, weathered and yellow coloured varieties with moderate strength, flat/elongated part. shapes	1.9	3	**5.7**
	Subtotal	**5.9**		**17.7**
	TOTALS	**100.0**	**PN**	**111.8**

Notes: 1. The PN is not related to potential for Alkali-Aggregate Reaction. AAR must be assessed separately.
2. Rock identification is based on cursory review of select thin sections; chemical analyses were not completed.

PETROGRAPHER: _____
B. Hudson, P. Geo.

Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other locations/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

Brucejack Mine, Proposed Lakeshore Quarry, SU-614 Crushed Rock

General

The sample consisted entirely of crushed material, which was generated by crushing rock drillcore chunks in a laboratory jaw crusher to a maximum nominal size of about 28 mm. Material finer than 5 mm was removed, after which the resulting material was split and quartered to achieve a suitable mass for the examination. The sample particles were covered with a light coating of surficial crusher dust that was easily removed with light washing effort.

Particle shape was entirely angular with a morphology that was mostly cubic with some flat and/or elongated pieces. Most of the particles had sharp edges with rough surface textures.

Lithologic Composition

Identification of rock types and minerals was done using a stereomicroscope with magnifications from 6x to about 50x, supplemented by basic geologic diagnostic methods. Thin section specimens were selected and examined, but supplementary chemical analysis was not undertaken.

A cursory review of thin sections was conducted on select rock types in this sample and samples from nearby drill holes; the purpose of the thin section examination was to aid with rock type classification and determination of primary mineral constituents. Detailed examination of all rock types is outside the scope of the requested analysis.

The sample was composed entirely of igneous rock consisting of rhyolite, composed of quartz, plagioclase and alkali feldspar in proportions that were variable; however, within the ranges for the rock being a rhyolite. Small, isolated grains of calcite were dispersed throughout the rock and occasionally occurred in veins. Due to a high proportion of medium-sized phenocrysts the mineral grain texture of the rhyolite appeared intermediate between volcanic and plutonic rock; however, most particles contained aphanitic groundmass. The rhyolite in this sample ranged in appearance due to slight differences in mineral composition, degree of alteration, weathering and presence/absence of veining; it was on the basis of these differences that subcategories were assigned.

Rhyolite that was medium grey was classified as 'Rhyolite 1' and contributed to almost 30% of the total sample. Rhyolite 1 had dark purple phenocrysts which were likely alkali feldspar mineral grains with hematite inclusions. These dark purple phenocrysts were common throughout almost all types of rhyolite in this sample. Rhyolite 1 was judged to be fresh and only slightly altered; it was strong overall with a small proportion of brittle particles.

Particles classified as 'Rhyolite 2' made up almost 8% of the sample and were medium green in colour, due to the presence of chlorite. Rhyolite 1 and 2 had similar physical-mechanical properties, with each category having roughly equal proportions of strong and moderate strength material.

Rhyolite 3, which accounted for almost 24% of the sample, was composed of particles with a light purple and yellow colour. The yellow colour may have been imparted by weathering and alteration of feldspar minerals. The mineral grain texture and colouring of Rhyolite 3 was more irregular compared to Rhyolite 1 and 2, indicating a higher degree of alteration. Rhyolite 3 was mostly hard and strong with a small proportion of brittle particles.

A small portion of the sample (2.6%) consisted of Rhyolite 4, which had a light purple groundmass with dark red and purple phenocrysts. The dark red phenocrysts may be attributed to more intense

oxidation and abundance of hematite inclusions within alkali feldspar.

Some particles contained dark red and purple veins which ranged from 2 to 10 mm in thickness. Some veins were thick, solid and continuous while others were thin, layered and braided. Thin section examination indicates that the dark red colour is imparted by iron oxide, suggesting that these veins contain higher amounts of hematite, pyrite and other metallic oxide minerals than the surrounding rock. The dark red veins did not appear to act as planes of weakness. Particles with dark red veins were classified as "Veined Rhyolite 5" and contributed about 16% of the total sample.

Particles that had white and translucent veins were classified as "Veined Rhyolite 6" and they made up about 20% of the sample. This group of particles contained veins that ranged from 2 to 15 mm in thickness. The veins with thickness greater than about 8 mm were typically sub-parallel while the thin veins had random orientation. Some veins were composed of fine-grained quartz and some contained medium-grained quartz while veins that contained fine to medium-grained calcite were less common. Particles of Veined Rhyolite 6 that were weathered and discoloured yellow were of moderate strength; however, the majority was hard and strong and the veins were not particularly weak or brittle.

Typically, dark red veins were identified in rock with mineral composition similar to Rhyolite 1, 2 and 4, while the quartz and calcite veins were common in rock similar to Rhyolite 3. The higher degree of alteration observed in Rhyolite 3 may be associated to the veining.

Iron sulphide minerals, possibly pyrite and chalcopyrite, were observed as single grains and concentrated in thin stringlets and along veins.

Engineering Characteristics

In addition to the geologic classification of the material, the sample was also examined for characteristics relevant to engineering uses. Aspects such as porosity, strength, tenacity, presence or absence of vugs, voids, fissures, cracks, coatings and impurities in the particles were considered in the assignment of individual particles into various quality classifications.

Most of the particles examined were found to be of good engineering quality, being dense, strong and unweathered. A proportion of the sample was judged to be of moderate engineering quality, due to moderate strength and brittleness.

On the basis of this sorting of the sample, the relative amounts of "Good" and "Fair" quality material were determined. This enabled the determination of a Petrographic Number (or "PN"), in accordance with the method given in CSA A23.2-15A. The PN is an index of a coarse aggregate's overall physical-mechanical quality. The PN for this sample was "112".

For reference, the PN scale referenced in CSA A23.2-15A, Attachment A2, is as follows:

PN LIMITS	PRODUCT TYPE
125	Concrete Class C1, C2, F1
140 max	Other concrete classes
125	Shotcrete

PN LIMITS	PRODUCT TYPE
125	Railroad ballast
150	Granular base
160	Select Granular sub-base

Thus the SU-614 crushed composite sample would be considered to be of suitable quality for all uses noted above, including concrete, asphalt and road base materials, subject to compliance with applicable specification requirements. The aggregate would be anticipated to provide durability and strength commensurate with these ratings, when used as construction-grade aggregate.

Alkali-Aggregate Reaction Potential

The Petrographic Examination indicates that the sample was composed of rhyolite. Quartz was identified in variable amounts and was often fine to very fine grained; additionally, some of the quartz appeared to be strained and occurred in veins. Quartz can contribute under certain circumstances to a deleterious expansive reaction in concrete termed *"Alkali-Aggregate Reaction"* (AAR). Typically, strained and fine grained quartz is associated with a higher likelihood of AAR.

The potential for AAR has been evaluated by means of the Accelerated Mortar Bar test (CSA A23.2-25A); the results indicate that the material can be classified as "reactive" with respect to AAR. Periodic testing, using methods given in the current version of CSA A23.2-1/2, including the Concrete Prism Test (CSA A23.2-14A), is recommended to provide further assessment of the material's AAR properties.

Summary

The SU-614 crushed composite sample consisted entirely of laboratory crushed rock material composed of rhyolite with altered, oxidized and veined varieties.

On the basis of the Petrographic Examination, the material is judged to be of suitable quality for use in a variety of applications; however, acceptance of the material for any use should be based upon assessment with relevant specification requirements and review of all applicable durability testing results, including those given in the current version of ASTM and CSA A23.2-1.

Reviewed by:

B. Hudson, P. Geo.

A. Briggs, P. Geo.

PETROGRAPHIC EXAMINATION OF COARSE AGGREGATE

CSA A23.2-15A / ASTM C 295

BGC ENGINEERING INC.
#800 - 1045 Howe Street
Vancouver, BC, V6Z 2A9
ATTENTION: Mr. Brent McAfee

January 6, 2014
Project Number: 13-1417-0056-2000

PROJECT: Brucejack Project, Lakeshore Quarry Site Investigation

Sample:	**Hole ID SU-615, Depth 0 - 24 m (Laboratory Crushed - Coarse Portion)**
Source:	**Proposed Lakeshore Quarry**

Date sampled: October 4, 2013 **Sampled by:** Client

	PETROGRAPHIC DESCRIPTION[2] / PHYSICAL QUALITY	% BY MASS	MULTI-PLIER	PN CONTRI-BUTION
GOOD	**Rhyolite 1 -** altered, medium grey groundmass with small dark purple phenocrysts and muddled white phenocrysts, slightly calcareous, hard, strong	59.4	1	**59.4**
GOOD	**Rhyolite 2 -** altered, medium purple groundmass with small dark purple phenocrysts and muddled white phenocrysts, slightly calcareous, hard, strong	15.2	1	**15.2**
GOOD	**Rhyolite 3 -** altered, slightly weathered, medium yellow-grey with small dark purple phenocrysts, slightly calcareous	4.3	1	**4.3**
GOOD	**Rhyolite 4 -** altered, dark purple/red groundmass with small white and dark red phenocrysts, slightly calcareous, hard, strong	12.4	1	**12.4**
GOOD	**Veined Rhyolite 5 -** contains dark red veins and inclusions, 0.5 to 3 mm thick, layered and/or braided vein structure, slightly calcareous, hard, strong	2.2	1	**2.2**
GOOD	**Veined Rhyolite 6 -** quartz veins, some calcite veins, 2 to 6 mm thick, slightly calcareous overall, hard, strong	2.1	1	**2.1**
GOOD	*Subtotal*	**95.6**		**95.6**
FAIR	**Rhyolite 1** - brittle, flat/elongated particle shapes	2.8	3	**8.4**
FAIR	**Rhyolite 2** - brittle, flat/elongated particle shapes	0.4	3	**1.2**
FAIR	**Rhyolite 3** - brittle, weathered and moderate strength, flat/elongated particle shapes	0.5	3	**1.5**
FAIR	**Rhyolite 4** - brittle, flat/elongated particle shapes	0.4	3	**1.2**
FAIR	**Veined Rhyolite 5** - brittle, flat/elongated particle shapes	0.1	3	**0.3**
FAIR	**Veined Rhyolite 6** - brittle/moderate strength veins, flat/elongated particle shapes	0.2	3	**0.6**
FAIR	*Subtotal*	**4.4**		**13.2**
	TOTALS	**100.0**	**PN**	**108.8**

Notes: 1. The PN is not related to potential for Alkali-Aggregate Reaction. AAR must be assessed separately.
2. Rock identification is based on cursory review of select thin sections; chemical analyses were not completed

PETROGRAPHER: _____
B. Hudson, P. Geo.

Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other locations/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

Brucejack Mine, Proposed Lakeshore Quarry, SU-615 Crushed Rock

General

The sample consisted entirely of crushed material, which was generated by crushing rock drillcore chunks in a laboratory jaw crusher to a maximum nominal size of about 28 mm. Material finer than 5 mm was removed, after which the resulting material was split and quartered to achieve a suitable mass for the examination. The sample particles were covered with a light coating of surficial crusher dust that was easily removed with light washing effort.

Particle shape was entirely angular with a morphology that was mostly cubic with some flat and/or elongated pieces. Most of the particles had sharp edges with rough surface textures.

Lithologic Composition

Identification of rock types and minerals was done using a stereomicroscope with magnifications from 6x to about 50x, supplemented by basic geologic diagnostic methods. Thin section specimens were selected and examined, but supplementary chemical analysis was not undertaken.

A cursory review of thin sections was conducted on select rock types in this sample and samples from nearby drill holes; the purpose of the thin section examination was to aid with rock type classification and determination of primary mineral constituents. Detailed examination of all rock types is outside the scope of the requested analysis.

The sample was composed entirely of igneous rock consisting of rhyolite. The mineral composition consisted of quartz, plagioclase and alkali feldspar in proportions that were variable; however, within the ranges for the rock being a rhyolite. Small, isolated grains of calcite were dispersed throughout the rock and occurred occasionally occurred in veins. Due to a high proportion of medium-sized phenocrysts the mineral grain texture of the rhyolite appeared intermediate between volcanic and plutonic rock; however, most particles contained aphanitic groundmass. The rhyolite in this sample ranged in appearance due to slight differences in mineral composition, degree of alteration, weathering and presence/absence of veining; it was on the basis of these differences that subcategories were assigned.

The dominant type of rhyolite in the sample was medium grey and was classified as 'Rhyolite 1." Contributing to about 62% of the total, Rhyolite 1 had both dark purple and white phenocrysts. The dark purple phenocrysts were euhedral in shape and were likely alkali feldspar mineral grains with hematite inclusions; the white phenocrysts had muddled and annealed grain boundaries and were likely plagioclase that had been partially recrystallized. These dark purple and white phenocrysts were common throughout almost all types of rhyolite in this sample. Rhyolite 1 was judged to be fresh and only slightly altered; it was strong overall with a small proportion of brittle particles.

Particles classified as 'Rhyolite 2' were similar in texture to Rhyolite 1; however, they were medium purple in colour. The purple colour throughout the rock may be due to a slightly higher content of alkali feldspar or could indicate slight oxidation and presence of iron oxide throughout. Rhyolite 2 made up almost 16% of the sample and was mostly strong.

Rhyolite 3, which accounted for almost 5% of the sample, was yellow-grey in colour and similar in composition and texture to Rhyolite 1. The yellow colour may have been imparted by weathering and alteration of feldspar minerals. Rhyolite 3 was mostly hard and strong with a small proportion of brittle and moderate strength particles.

Almost 13% of the sample consisted of Rhyolite 4, which had a dark purple - red groundmass with white and dark red phenocrysts. The dark purple - red colour of the groundmass and phenocrysts may be attributed to a higher proportion of alkali feldspar, an abundance of hematite inclusions within the alkali feldspar and more intense oxidation compared to Rhyolite 1, 2 and 3.

Some particles were veined, containing either dark red, oxidized veins, or white and translucent quartz veins. Dark red veined rock made up about 2% of the sample and was grouped in the 'Veined Rhyolite 5' category. The dark red veins were attributed to oxidation of rock zones with higher amounts of hematite, pyrite and other metallic oxide minerals than the surrounding rock; the thickness of the veins ranged from to 0.5 to 3 mm.

The white veins were determined to be composed of crystalline, fine to medium-grained quartz with lesser amounts of calcite and ranged in thickness from 2 to 6 mm. Rock with white veins belonged to the 'Veined Rhyolite 6' category and also made up about 2% of the total sample. Some quartz veins were brittle and of moderate strength; however, the majority of both dark red and white veined material was strong.

Iron sulphide minerals, possibly pyrite and chalcopyrite, were observed as single grains and concentrated in thin stringlets and along veins.

Engineering Characteristics

In addition to the geologic classification of the material, the sample was also examined for characteristics relevant to engineering uses. Aspects such as porosity, strength, tenacity, presence or absence of vugs, voids, fissures, cracks, coatings and impurities in the particles were considered in the assignment of individual particles into various quality classifications.

Most of the particles examined were found to be of good engineering quality, being dense, strong and unweathered. A proportion of the sample was judged to be of moderate engineering quality, due to moderate strength and brittleness.

On the basis of this sorting of the sample, the relative amounts of "Good" and "Fair" quality material were determined. This enabled the determination of a Petrographic Number (or "PN"), in accordance with the method given in CSA A23.2-15A. The PN is an index of a coarse aggregate's overall physical-mechanical quality. The PN for this sample was "109".

For reference, the PN scale referenced in CSA A23.2-15A, Attachment A2, is as follows:

PN LIMITS	PRODUCT TYPE
125	Concrete Class C1, C2, F1
140 max	Other concrete classes
125	Shotcrete
125	Railroad ballast
150	Granular base
160	Select Granular sub-base

Thus the SU-615 crushed composite sample would be considered to be of suitable quality for all uses noted above, including concrete, asphalt and road base materials, subject to compliance with applicable specification requirements. The aggregate would be anticipated to provide durability and strength commensurate with these ratings, when used as construction-grade aggregate.

Alkali-Aggregate Reaction Potential

The Petrographic Examination indicates that the sample was composed of rhyolite. Quartz was identified in variable amounts and was often fine to very fine grained; additionally, some of the quartz appeared to be strained and occurred in veins. Quartz can contribute under certain circumstances to a deleterious expansive reaction in concrete termed *"Alkali-Aggregate Reaction"* (AAR). Typically, strained and fine grained quartz is associated with a higher likelihood of AAR.

The potential for AAR has been evaluated by means of the Accelerated Mortar Bar test (CSA A23.2-25A); the results indicate that the material can be classified as "reactive" with respect to AAR. Periodic testing, using methods given in the current version of CSA A23.2-1/2, including the Concrete Prism Test (CSA A23.2-14A), is recommended to provide further assessment of the material's AAR properties.

Summary

The SU-615 crushed composite sample consisted entirely of laboratory crushed rock material composed of rhyolite with altered, oxidized and veined varieties.

On the basis of the Petrographic Examination, the material is judged to be of suitable quality for use in a variety of applications; however, acceptance of the material for any use should be based upon assessment with relevant specification requirements and review of all applicable durability testing results, including those given in the current version of ASTM and CSA A23.2-1.

Reviewed by:

B. Hudson, P. Geo.

A. Briggs, P. Geo.

PETROGRAPHIC EXAMINATION OF COARSE AGGREGATE

CSA A23.2-15A / ASTM C 295

BGC ENGINEERING INC.
#800 - 1045 Howe Street
Vancouver, BC, V6Z 2A9
ATTENTION: Mr. Brent McAfee

January 6, 2014
Project Number: 13-1417-0056-2000

PROJECT: Brucejack Project, Lakeshore Quarry Site Investigation

Sample:	**Hole ID SU-616, Depth 1 - 24 m (Laboratory Crushed - Coarse Portion)**
Source:	**Proposed Lakeshore Quarry**

Date sampled: October 5, 2013 **Sampled by:** Client

	PETROGRAPHIC DESCRIPTION[2] / PHYSICAL QUALITY	% BY MASS	MULTI-PLIER	PN CONTRI-BUTION
GOOD	**Rhyolite 1A -** altered, medium grey groundmass with small dark purple phenocrysts, slightly calcitic, hard, strong	43.7	1	**43.7**
GOOD	**Rhyolite 1B -** slightly weathered, altered, medium grey/yellow/green groundmass with small dark purple phenocrysts, slightly calcitic, hard, strong	13.4	1	**13.4**
GOOD	**Rhyolite 2A -** altered, medium purple/green groundmass with small dark purple phenocrysts, slightly calcitic, hard, strong	12.9	1	**12.9**
GOOD	**Rhyolite 2B -** slightly weathered, altered, medium purple/yellow/green groundmass with small dark purple phenocrysts, slightly calcitic, hard, strong	7.3	1	**7.3**
GOOD	**Rhyolite 3 -** altered, dark purple groundmass with small white and dark purple phenocrysts, slightly calcitic, hard, strong	3.5	1	**3.5**
GOOD	**Veined Rhyolite 4 -** contains dark red veins and inclusions, 0.5 to 18 mm thick, layered and/or braided vein structure, slightly calcitic, hard, strong	16.0	1	**16.0**
GOOD	*Subtotal*	**96.8**		**96.8**
FAIR	**Rhyolite 1A** - brittle, flat/elongated	1.4	3	**4.2**
FAIR	**Rhyolite 1B** - brittle, flat/elongated	0.6	3	**1.8**
FAIR	**Rhyolite 2A** - brittle, flat/elongated	0.2	3	**0.6**
FAIR	**Rhyolite 2B** - brittle, flat/elongated	0.2	3	**0.6**
FAIR	**Veined Rhyolite 4** - brittle/mod. strength veins, flat/elongated	0.8	3	**2.4**
FAIR	*Subtotal*	**3.2**		**9.6**
	TOTALS	**100.0**	**PN**	**106.4**

Notes: 1. The PN is not related to potential for Alkali-Aggregate Reaction. AAR must be assessed separately.
2. Rock identification is based on cursory review of select thin sections; chemical analyses were not completed

PETROGRAPHER: _____
B. Hudson, B. Sc., GIT

Notice: The test data given herein pertain to the sample provided, and may not be applicable to material from other locations/depths. This report constitutes a testing service only. Interpretation of the data given here may be provided upon request.

Brucejack Mine, Proposed Lakeshore Quarry, SU-616 Crushed Rock

General

The sample consisted entirely of crushed material, which was generated by crushing rock drillcore chunks in a laboratory jaw crusher to a maximum nominal size of about 28 mm. Material finer than 5 mm was removed, after which the resulting material was split and quartered to achieve a suitable mass for the examination. The sample particles were covered with a light coating of surficial crusher dust that was easily removed with light washing effort.

Particle shape was entirely angular with a morphology that was mostly cubic with some flat and/or elongated pieces. Most of the particles had sharp edges with rough surface textures.

Lithologic Composition

Identification of rock types and minerals was done using a stereomicroscope with magnifications from 6x to about 50x, supplemented by basic geologic diagnostic methods. Thin section specimens were selected and examined, but supplementary chemical analysis was not undertaken.

A cursory review of thin sections was conducted on select rock types in this sample and samples from nearby drill holes; the purpose of the thin section examination was to aid with rock type classification and determination of primary mineral constituents. Detailed examination of all rock types is outside the scope of the requested analysis.

The sample was composed entirely of igneous rock consisting of rhyolite. The mineral composition consisted of quartz, plagioclase and alkali feldspar in proportions that were variable; however, within the ranges for the rock being a rhyolite. Small, isolated grains of calcite were dispersed throughout the rock and occasionally occurred in veins. Due to a high proportion of medium-sized phenocrysts the mineral grain texture of the rhyolite appeared intermediate between volcanic and plutonic rock; however, most particles contained aphanitic groundmass. The rhyolite in this sample ranged in appearance due to slight differences in mineral composition, degree of alteration, weathering and presence/absence of veining; it was on the basis of these differences that subcategories were assigned.

The sample was dominantly composed of two types of rhyolite. The first type, Rhyolite 1, was medium grey and made up about 59% of the sample while the second type, Rhyolite 2 was greenish purple and made up almost 21% of the sample. Each of Rhyolite 1 and 2 was further divided into subcategories of rock that were slightly weathered, altered and yellow in colour. Fresh rock was given the suffix 'A' while weathered and altered rock was given the suffix 'B.' Dark purple phenocrysts were common in Rhyolite 1 and 2; they were likely alkali feldspar mineral grains with hematite inclusions.

Generally, both fresh and slightly weathered and altered varieties of Rhyolite 1 and 2 were strong with only a small portion of brittle and moderate strength particles. The green colour in Rhyolite 2 was likely caused by the presence of chlorite and the purple coloured groundmass may be due to higher content of alkali feldspar and iron oxide throughout. Both varieties of Rhyolite 1 and 2 included some particles that had slightly elongated mineral grains; this slight deformation did not have any effect on the overall strength of the rock.

A small portion of the sample (3.5%) consisted of Rhyolite 3, which had a dark purple-red groundmass with white and dark purple phenocrysts. The dark purple-red colour of the groundmass and phenocrysts may be attributed to a higher proportion of alkali feldspar, an abundance of hematite

inclusions within the alkali feldspar and more intense oxidation compared to Rhyolite 1 and 2. The white phenocrysts had muddled and annealed mineral grain boundaries and appeared to be partially recrystallized plagioclase.

Some particles contained dark red and purple veins which ranged from 0.5 to 18 mm in thickness. Some veins were thick, solid and continuous while others were thin, layered and braided. Thin section examination indicates that the dark red colour is imparted by iron oxide, suggesting that these veins contain higher amounts of hematite, pyrite and other metallic oxide minerals than the surrounding rock. The dark red veins did not appear to act as planes of weakness. Particles with dark red veins were classified as "Veined Rhyolite 4" and contributed almost 17% of the total sample.

Iron sulphide minerals, possibly pyrite and chalcopyrite, were observed as single grains and concentrated in thin stringlets and along veins.

Engineering Characteristics

In addition to the geologic classification of the material, the sample was also examined for characteristics relevant to engineering uses. Aspects such as porosity, strength, tenacity, presence or absence of vugs, voids, fissures, cracks, coatings and impurities in the particles were considered in the assignment of individual particles into various quality classifications.

Most of the particles examined were found to be of good engineering quality, being dense, strong and unweathered. A proportion of the sample was judged to be of moderate engineering quality, due to moderate strength and brittleness.

On the basis of this sorting of the sample, the relative amounts of "Good" and "Fair" quality material were determined. This enabled the determination of a Petrographic Number (or "PN"), in accordance with the method given in CSA A23.2-15A. The PN is an index of a coarse aggregate's overall physical-mechanical quality. The PN for this sample was "106".

For reference, the PN scale referenced in CSA A23.2-15A, Attachment A2, is as follows:

PN LIMITS	PRODUCT TYPE
125	Concrete Class C1, C2, F1
140 max	Other concrete classes
125	Shotcrete
125	Railroad ballast
150	Granular base
160	Select Granular sub-base

Thus the SU-616 crushed composite sample would be considered to be of suitable quality for all uses noted above, including concrete, asphalt and road base materials, subject to compliance with applicable specification requirements. The aggregate would be anticipated to provide durability and strength commensurate with these ratings, when used as construction-grade aggregate.

Alkali-Aggregate Reaction Potential

The Petrographic Examination indicates that the sample was composed of rhyolite. Quartz was identified in variable amounts and was often fine to very fine grained; additionally, some of the quartz appeared to be strained and occurred in veins. Quartz can contribute under certain circumstances to a deleterious expansive reaction in concrete termed *"Alkali-Aggregate Reaction"* (AAR). Typically, strained and fine grained quartz is associated with a higher likelihood of AAR.

The potential for AAR has been evaluated by means of the Accelerated Mortar Bar test (CSA A23.2-25A); the results indicate that the material can be classified as "reactive" with respect to AAR. Periodic testing, using methods given in the current version of CSA A23.2-1/2, including the Concrete Prism Test (CSA A23.2-14A), is recommended to provide further assessment of the material's AAR properties.

Summary

The SU-616 crushed composite sample consisted entirely of laboratory crushed rock material composed of rhyolite with altered, oxidized and veined varieties.

On the basis of the Petrographic Examination, the material is judged to be of suitable quality for use in a variety of applications; however, acceptance of the material for any use should be based upon assessment with relevant specification requirements and review of all applicable durability testing results, including those given in the current version of ASTM and CSA A23.2-1.

Reviewed by:

B. Hudson, P. Geo.

A. Briggs, P. Geo.

APPENDIX J-3
RIETVELD X-RAY DIFFRACTION REPORTS

QUANTITATIVE PHASE ANALYSIS OF 9 POWDER SAMPLES USING THE RIETVELD METHOD AND X-RAY POWDER DIFFRACTION DATA.

Project: ARD 1308 BJ-LKQ

Ivy Rajan – Prab Bhatia
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6891 Antrim Avenue
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November 18, 2013

EXPERIMENTAL METHOD

The samples were reduced to the optimum grain-size range for quantitative X-ray analysis (<10 μm) by grinding under ethanol in a vibratory McCrone Micronizing Mill for 7 minutes. Continuous-scan X-ray powder-diffraction data were collected over a range 3-80°2θ with CoKa radiation on a Bruker D8 Advance Bragg-Brentano diffractometer equipped with an Fe monochromator foil, 0.6 mm (0.3°) divergence slit, incident- and diffracted-beam Soller slits and a LynxEye-XE detector. The long fine-focus Co X-ray tube was operated at 35 kV and 40 mA, using a take-off angle of 6°.

RESULTS

The X-ray diffractograms were analyzed using the International Centre for Diffraction Database PDF-4 and Search-Match software by Bruker. X-ray powder-diffraction data of the samples were refined with Rietveld program Topas 4.2 (Bruker AXS). The results of quantitative phase analysis by Rietveld refinements are given in Table 1 (separate file, ***Global ARD Results Nov 18 2013 - Project ARD 1308 BJ-LKQ.xlsx***). These amounts represent the relative amounts of crystalline phases normalized to 100%. The Rietveld refinement plots are shown in Figures 1-9. The ideal formulae of phases present are given in Table 2.

Table 2.

Mineral	**Ideal Formula**
Albite low	$NaAlSi_3O_8$
Ankerite	$Ca(Fe^{2+},Mg,Mn)(CO_3)_2$
Calcite	$CaCO_3$
Clinozoisite	$Ca_2Al_3(SiO_4)_3(OH)$
Hematite	Fe_2O_3
Illite/Muscovite 1M	$K_{0.65}Al_{2.0}(Al_{0.65}Si_{3.35}O_{10})(OH)_2/KAl_2AlSi_3O_{10}(OH)_2$
Illite-Muscovite 2M1	$K_{0.65}Al_{2.0}(Al_{0.65}Si_{3.35}O_{10})(OH)_2/KAl_2AlSi_3O_{10}(OH)_2$
Orthoclase	$KAlSi_3O_8$
Pyrite	FeS_2
Quartz low	SiO_2
Siderite, calcian	$(Fe^{2+},Ca)CO_3$

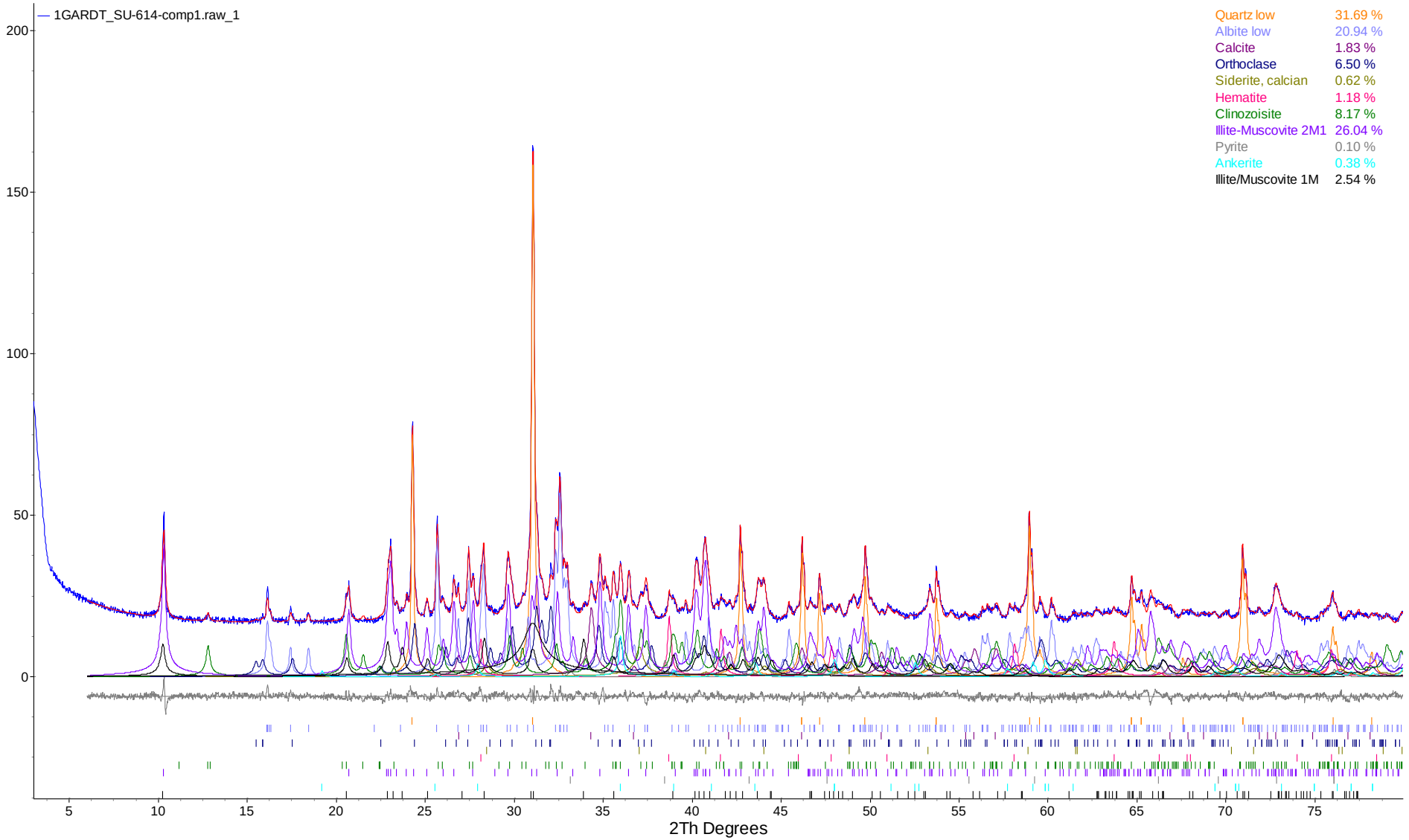


Figure 1. Rietveld refinement plot of sample **1 "SU-614-comp1"** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

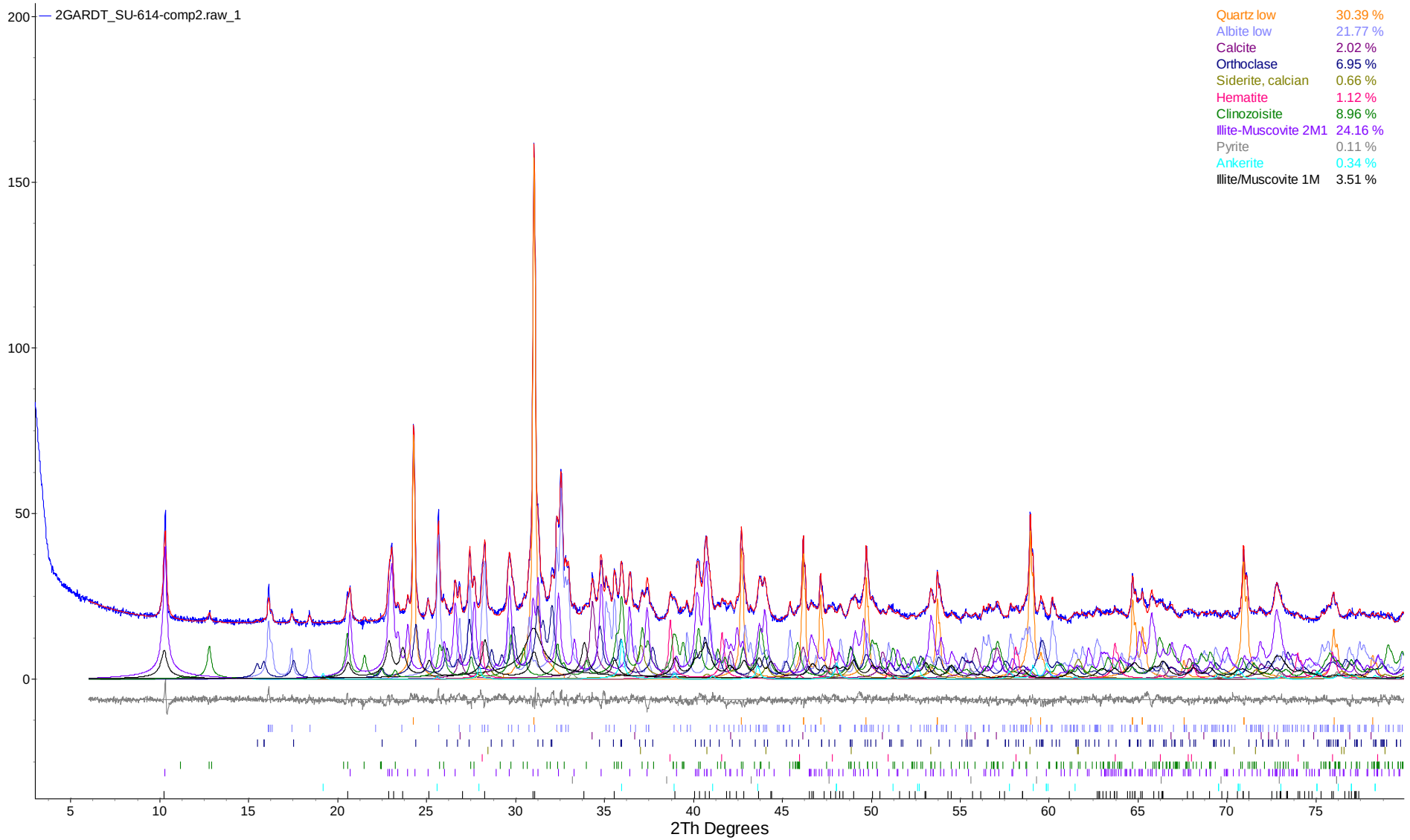


Figure 2. Rietveld refinement plot of sample **2 "SU-614-comp2"** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

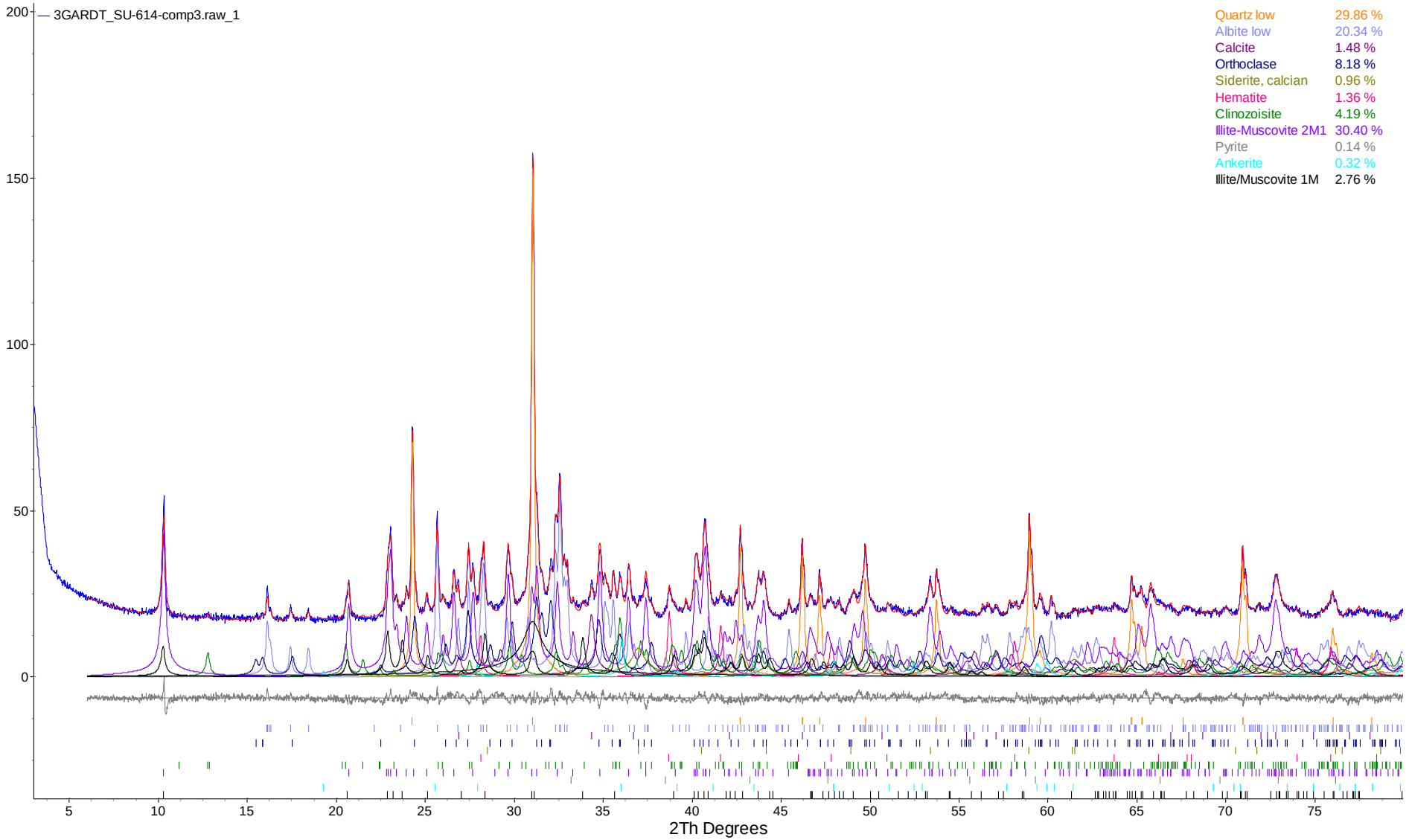


Figure 3. Rietveld refinement plot of sample **3 "SU-614-comp3"** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

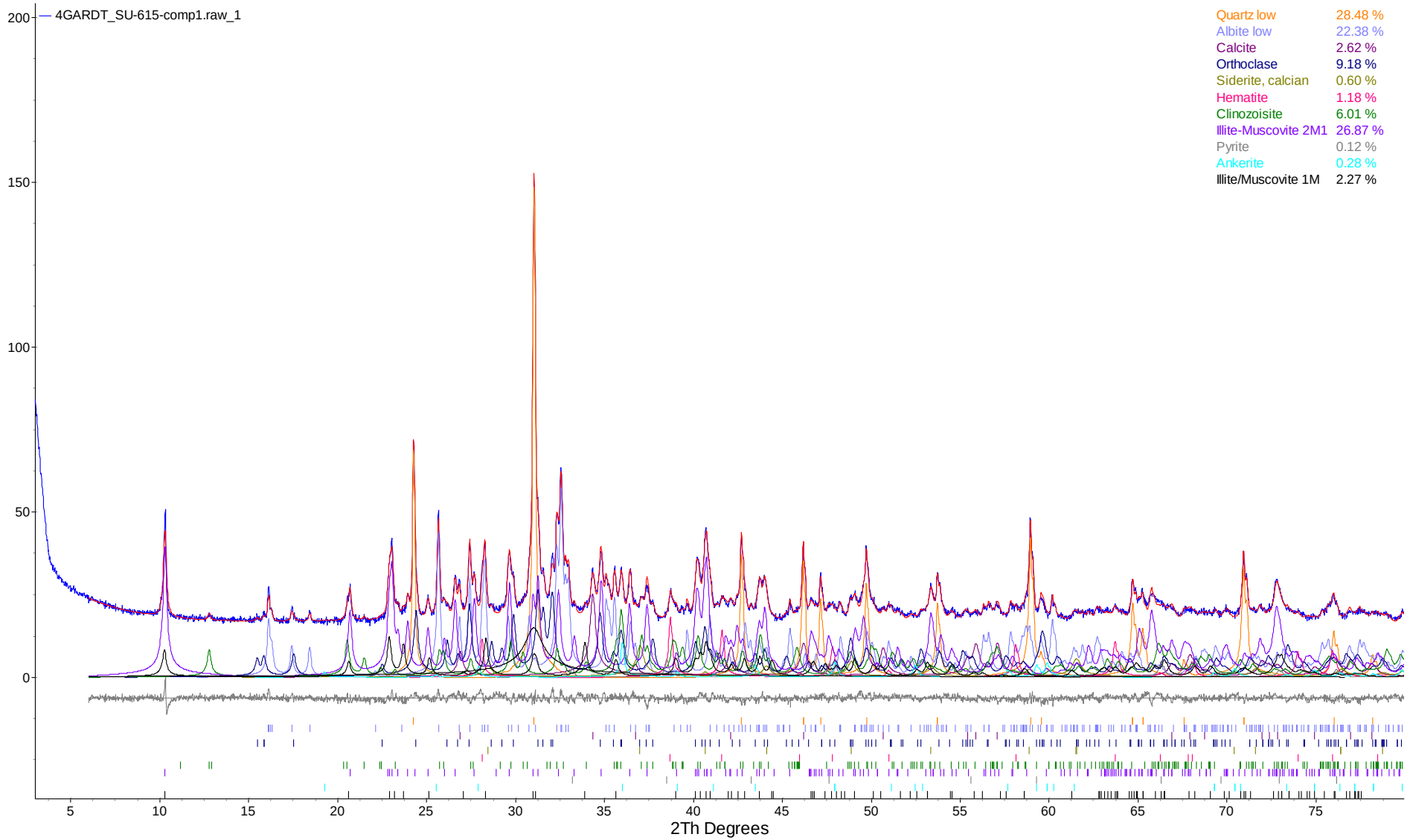


Figure 4. Rietveld refinement plot of sample **4 "SU-615-comp1"** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

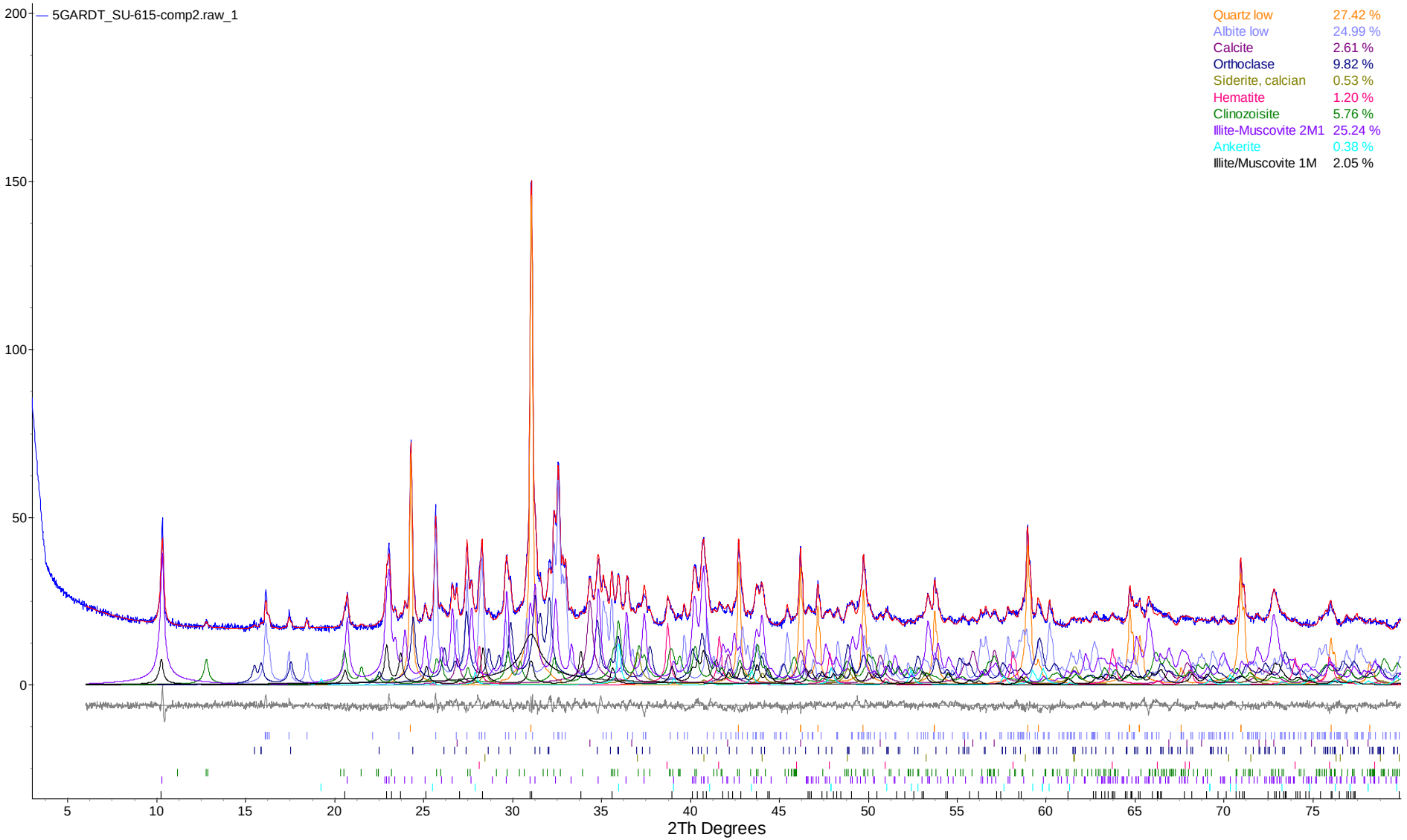


Figure 5. Rietveld refinement plot of sample **5 "SU-615-comp2"** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

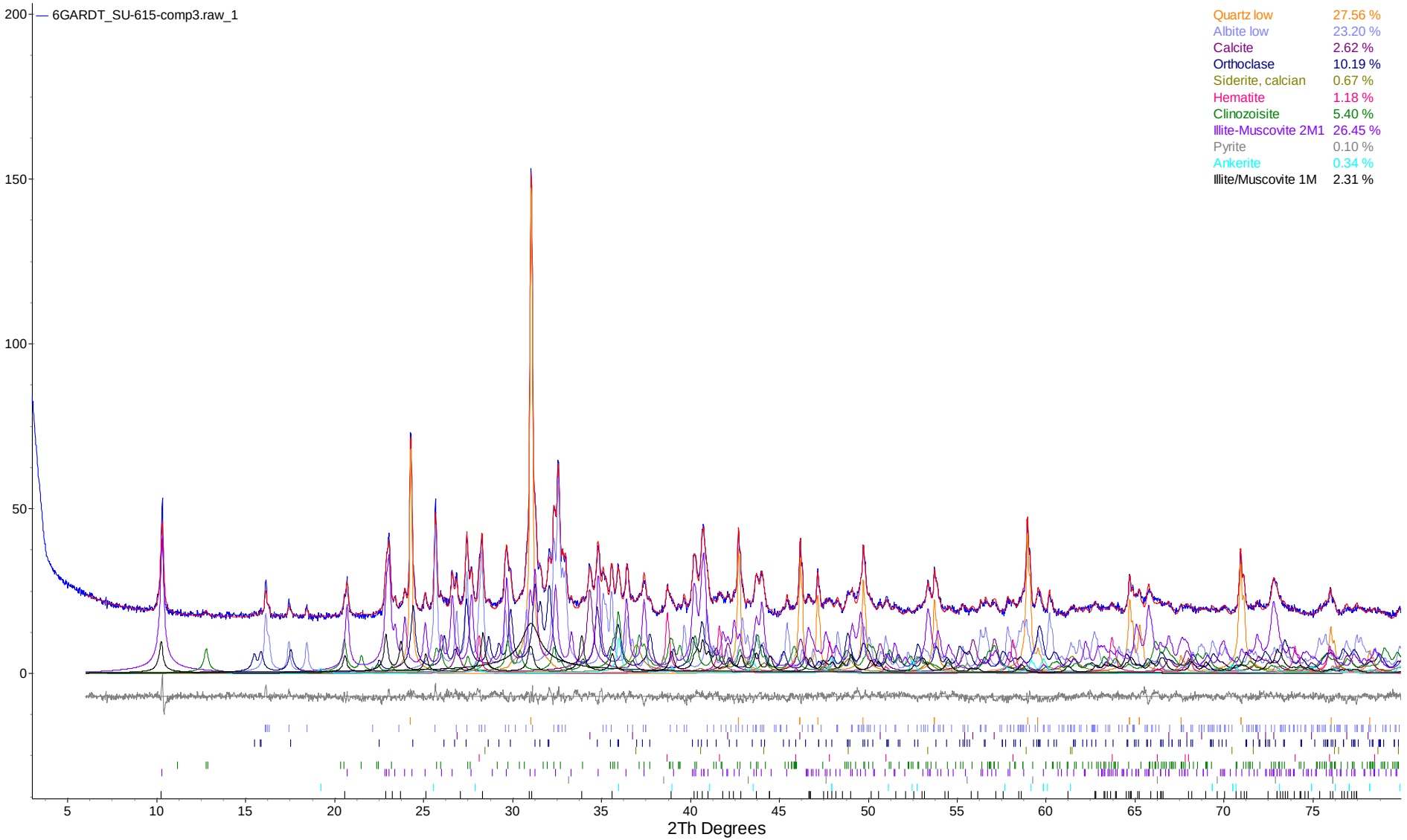


Figure 6. Rietveld refinement plot of sample **6 "SU-615-comp3"** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

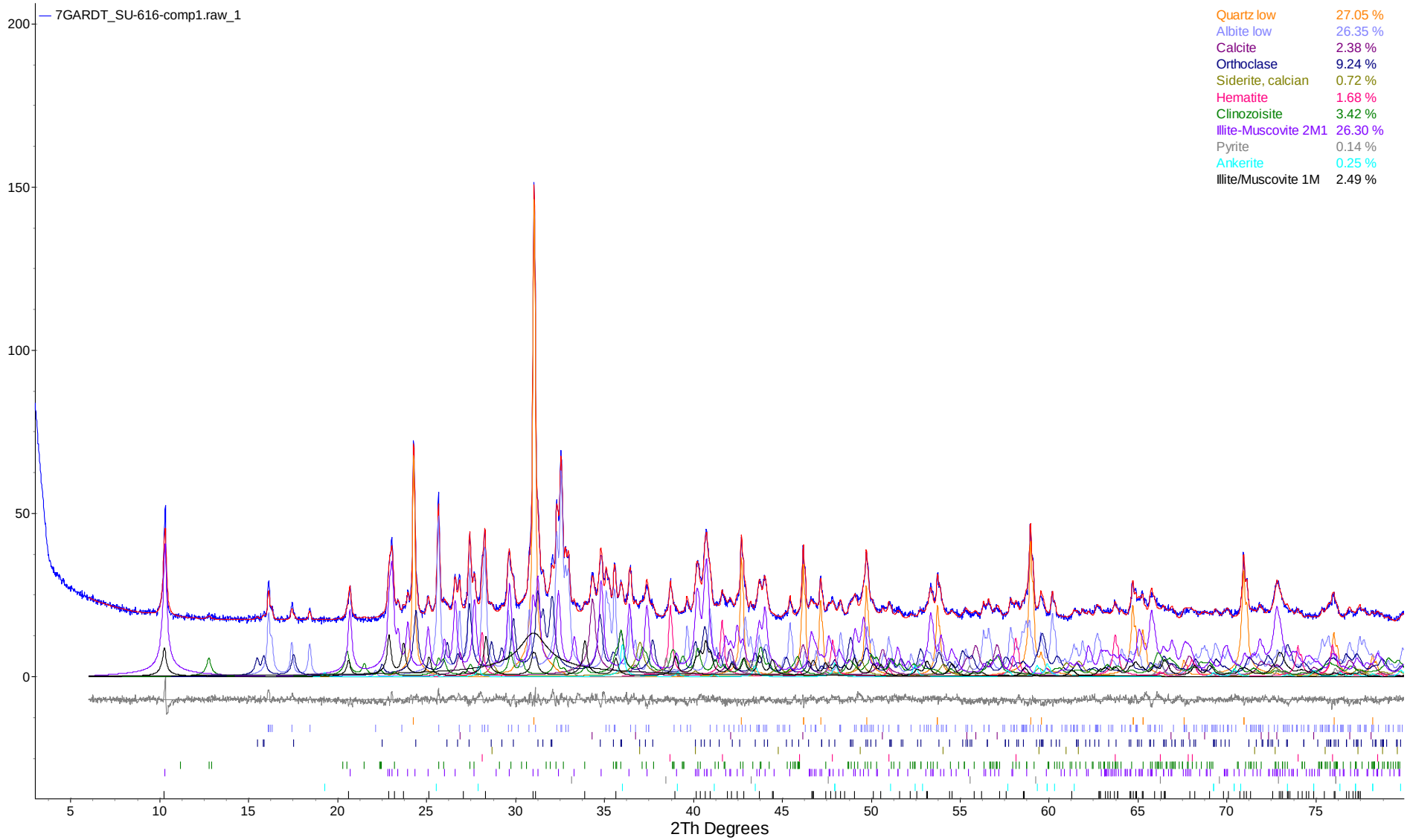


Figure 7. Rietveld refinement plot of sample **7 "U-616-comp1"** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

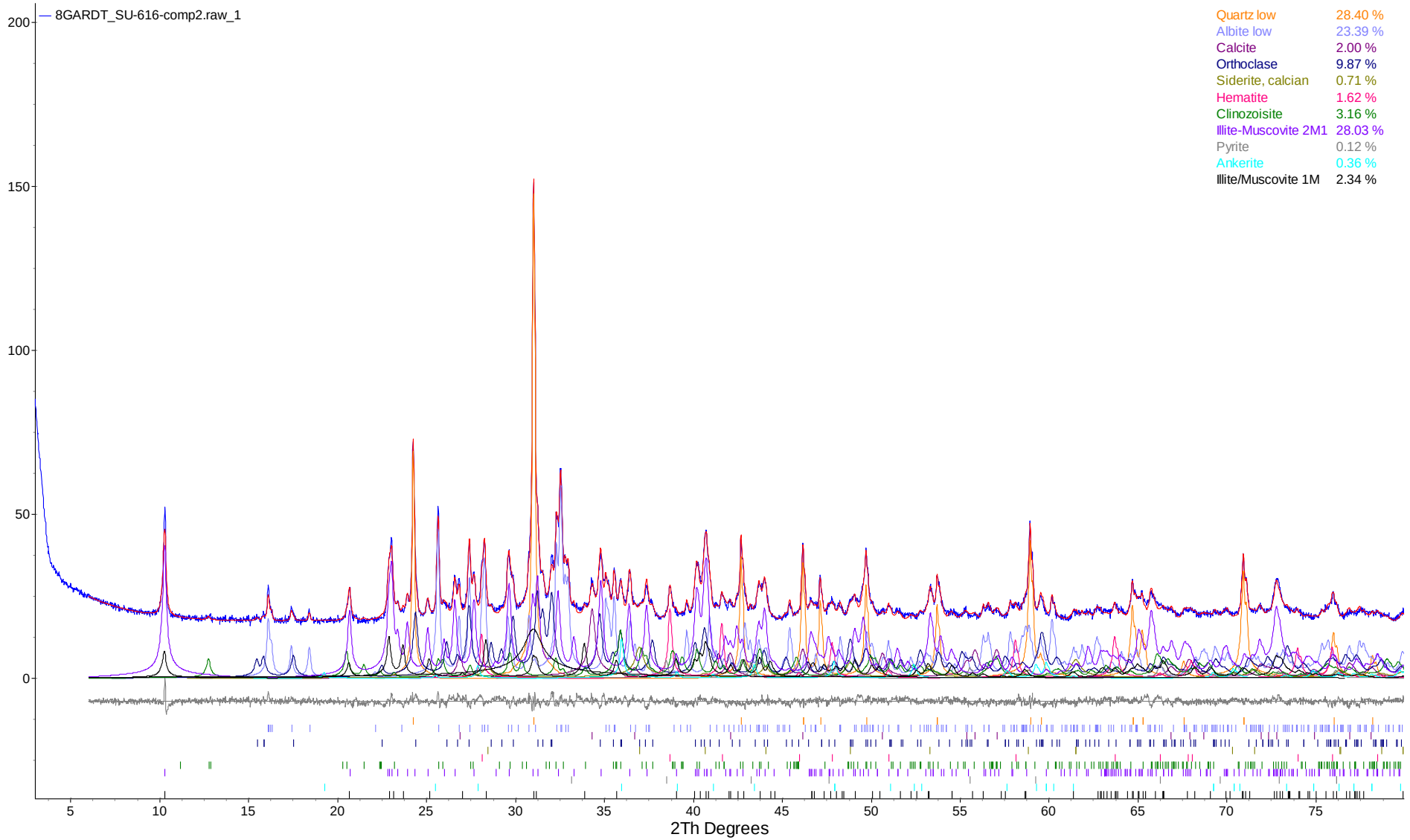


Figure 8. Rietveld refinement plot of sample **8 "SU-616-comp2"** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

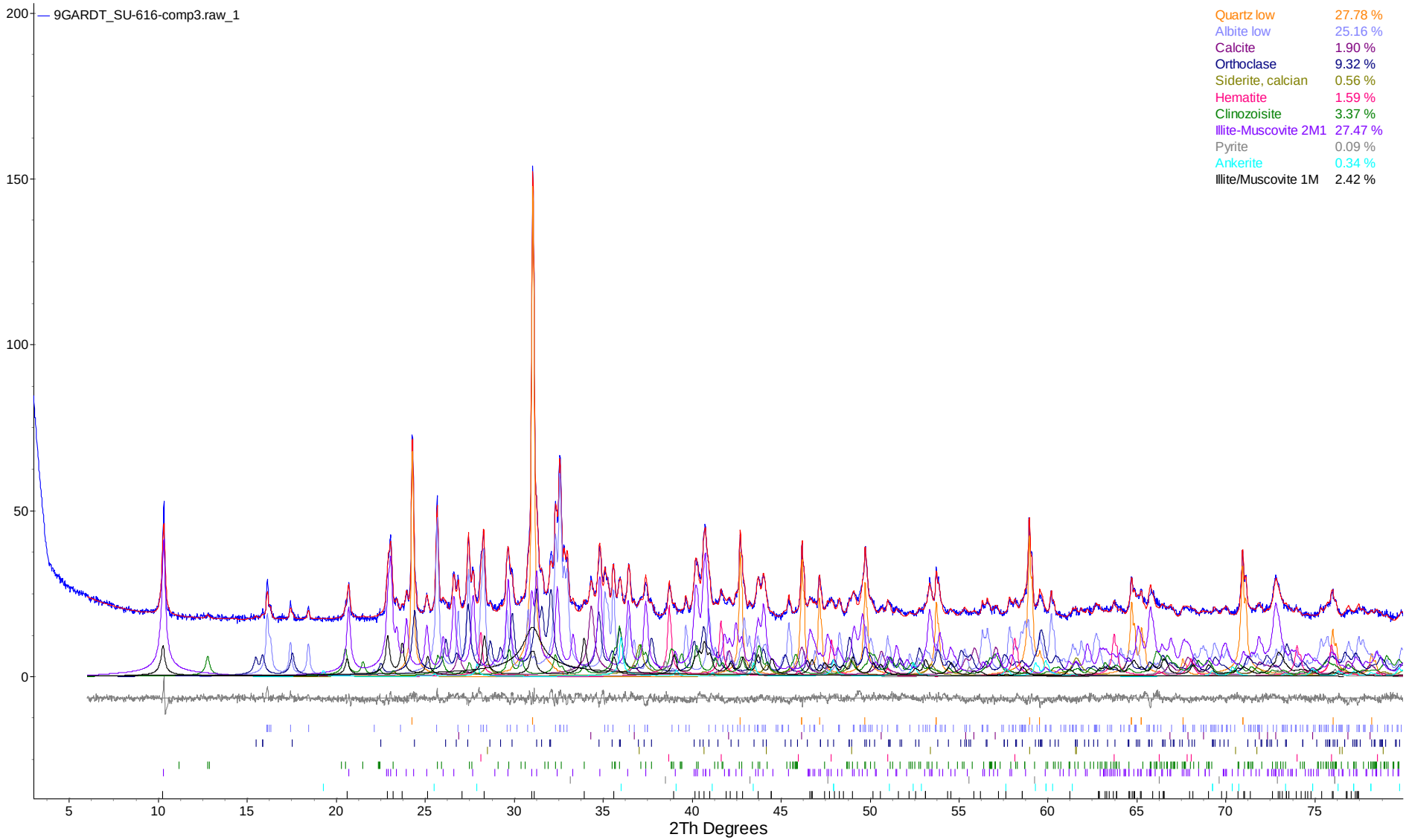


Figure 9. Rietveld refinement plot of sample **9 "SU-616-comp3"** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.